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स्वातंत्र्योत्तर हिन्दी उपन्यास में मानवतावाद
चित्रा मुद्गल के पोस्ट बॉक्स नं. 203 नाला सोपारा उपन्यास में मानवतावाद...

डॉ. सौ. विद्या शशिशेखर शिंदे*

प्रसंगिकता : चित्रा मुद्गल के पोस्ट बॉक्स नं0 203 नालासोपारा उपन्यास को 2017-18 का साहित्य अकादमी द्वारा पुरस्कृत किया गया। इस उपन्यास को पढ़ने की मन में रुचि पैदा हुई। जब मैंने यह उपन्यास पढ़ा तब मुझे पता चला की इस उपन्यास में जन्म से प्राप्त शारीरिक कमी की वजह से इस उपन्यास का नायक बिन्नी उर्फ बिजली के बहाने हमारे समाज में लम्बे समय से चली आ रही उस मानसिकता का विरोध किया गया है जो मुनष्य को मनुष्य समझने से बचती रही है। यह जाति भेद, वंशभेद, धर्मभेद की पुरानी परम्परा का प्रचलन नहीं है, महज शारीरिक कमी के चलते किसी इंसान को असामाजिक बना देने की क्रूर विडंबना को व्यक्त करके आज के समाज को चेतावनी देकर मनुष्य ने मनुष्य को मानवतावादी दृष्टिकोण से देखने के लिए प्रेरित किया है।

विषय क्षेत्र-चित्रा मुद्गल के इस उपन्यास में समाज में रहने वाले ऐसे मनुष्य का चित्रण किया गया है जो परिवार द्वारा ठुकराया जाता है। उसमें उसका कोई दोष न होते हुए भी उसे समाज से वंचित किया जाता है। जो छुपकर पत्र द्वारा अपनी मन की वेदना को माँ के सामने व्यक्त करता है। नायक और उसकी माँ की मानसिकता का चित्रण यही इसका विषय क्षेत्र है।

विषय उपलब्धि-इस उपन्यास द्वारा अपने ही घर से निकाल दिए गए विनोद की मर्मांतक पीड़ा उसके अपनी बात को लिखे पत्रों में इतनी गहराई से उजागर हुई है की हम खुद यह सोचने पर विवश हो जाते हैं की क्या शब्द बदल देने भर से अपमान समाप्त किया जा सकता है? गलियों की गाली हिजड़ा को किन्नर कह देने भर से बया देह की नासूर छिटक सकते हैं? परिवार के बीच पलनेवाले इस बालक को शारीरिक कमी की वजह से परिवार से अलग करके उसे नारकीय जीवन बिताने के लिए मजबूर क्यूँ किया जाता है। क्या यह उम्मीद नहीं की जानी चाहिए की परिवार तथा समाज अपनी संकुचित सोच से बाहर आकर अपने बेटे को परिवार में रखकर उसका सम्मान बढ़ाए।

उपन्यास में चित्रित मानवतावाद-हिन्दी साहित्य जगत में अपनी अप्रतिम जगह बना चुकी तथा साहित्य अकादमी पुरस्कृत वरिष्ठ कथाकार चित्रा मुगद्ल का यह उपन्यास एक ऐसी वास्तविक कहानी हमारे सामने रखती है जिससे पाठकों के भीतर मानवीय संवेदना जागृत होती है। बिन्नी उर्फ बिमली की तरफ देखने का अंदाज हमारा परिवर्तित हो जाता है। भारत तक इस प्रकार के लोगों ने जो समाज द्वारा प्राप्त उपेक्षा को झेला है उसकी पीड़ा हमारे अंदर कसक पैदा करती है। उस मनुष्य को जिस तरह की जिंदगी जीना पड़ता है। उसमें उसका क्या दोष है? इस प्रश्न ने पाठकों को अंदर से हिलाकर उसके प्रति मानवतावादी दृष्टिकोण को अपनाने का प्रयास अत्यंत उच्च है।

इस उपन्यास का प्रमुख पात्र बिन्नी ऊर्फ बिन्नी उसकी शारीरिक कमी की वजह से उसे घर से उस जगह पर भेजा जाता है जहां इस प्रकार के लोग रहते हैं। तब वह पत्र द्वारा अपनी माँ को पुछवाता है क्या सामान्य लोगों की तरह जीवन जीने का अधिकार न होता मेरा? जिस नरक में तूने और पापा ने धकेला है मुझे वह एक अंधा कुआँ है जिसमें सिर्फ सांप-बिच्छू रहते हैं। बस इस कुएँ ने उन्हें आदमी को नहीं रहने दिया।

उसकी माँ को यह विश्वास है कि, हमेशा ऐसी स्थिति नहीं रहने वाली है। वक्त बदलेगा। वक्त के साथ नजरिया बदलेगा। इस वाक्य से पता चलता है कि लेखिका की दृष्टी सकारात्मक बातें सोचती है। वह जताती है कि भविष्य में इस अधूरेपन का

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भी कोई इलाज निकल जाए। माँ अपने लाडले बेटे को पत्र लिखती है। मगर पोस्ट ऑफिस के नाम से तब उसके मन में सवाल उठता है क्या मेरा कोई घर नहीं है।

सचमुच मनुष्य दूसरे मनुष्य के बारे में क्यों सोचता नहीं है? जिस माता ने उसे छिपाती है। ट्रेन में पैसे मांगते हुए स्त्रियाँ इनकी तरफ तिरस्कार की दृष्टि से देखती हैं तब वह चिढ़कर बोलता है-माँ ....भूल जाती है। पैदा हमें उन्हें सालियों ने किया है। उस वक्त इनकी ममता कहाँ खो जाती है? पढ़कर मन में कसक पैदा होती है। उन्हें सामान्य मनुष्य की तरह जीने का हक होकर भी उन्हें समाज द्वारा तिरस्कृत किया जाता है। उनका दोष न होते हुए भी जीवन में उन्हें नरक यातनाएँ भुगतनी पड़ती यह कौन-सा मानवतावाद है?

मोटा भाई की पत्नी सेजल को पाँचवाँ महीना चल रहा है। मगर वह बच्चे के विषय में सदा उद्विग्न और आशंकित रहता है। उसके दिमाग में जाने कैसी ऊटपटांग शंकाएँ रहती हैं। जब सोनोग्राफी होने के बाद डॉक्टर ने पूछा आपको लड़का-लड़की दोनों स्वीकार है तो फिर आपने सोनोग्राफी क्यूँ की? तब मोटा भाई कहता है, वह लड़का लड़की न होकर वह कोई अन्य हो तो? हम उसे रखना नहीं चाहते थे। मतलब है कि ऐसे बच्चे कोई पसंद नहीं करता। उनके प्रति कोई भावना या संवेदना नहीं हैं। उपर से व्यंग्य दर्शनिवाली बात यह है कि मोटे भाई का नाम सिद्धार्थ रखा गया है। जो नाम विश्व को मानवतावादी संदेश देने वाले महात्मा गौतम बुद्ध जी का था। इतने संकुचित क्यूँ होते हैं लोग? जब वह छोटा था तब जोत्सना से ब्याह करने का सपना देखता था। वह बच्चा एक आम जिंदगी जीना चाहता था मगर उसके जीवन में नरक आ गया है जिसे वह चाहकर भी बदल नहीं सकता। घरवालों ने लोगों को बताने के लिए एक झूठ का निर्माण किया। विनोद जीप एक्सीडेंट में मर गया बॉडी नहीं मिली। खोज जारी है इस नाटक का पता विनोद को उसके दोस्त ईशान द्वारा पता चल जाता है। समाज के आँखों में धूल फेंकना आसान होता है मगर खुद की आँखों की धूल निकालना मुश्किल हो जाता है।

उपन्यास का नायक सोचता है कि इंसान बदल क्यों नहीं सकता? मैं तो चाहता हूँ कि वो बदले। वो ही क्यों सभी। पूरी बिरादरी जहाँ कहीं भी हो। समूचे हाथ-पैर, दिल दिमाग वाले लम्बा-तडंग रुलंक क्यों हैं? किसी की कलाई धर ले तो वह उनसे छूट पाने से रहा। ऐसी दुर्दम्य शक्ति, वीर्य वमन से वंचितों के भीतर ही संभव है। उन्हें ज्ञात ही नहीं।

जनगणना में किन्नरों को शामिल कर लिया है। ऐसा पूनम जोशी कहती है। लेकिन लोगों की सोच को कौन बदलेगा? उन्हें संवेदनशील कौन बनाएगा? तभी माँ-पिता अपने लिंग दोषी बच्चे को कलंक मान किन्नरों के हवाले नहीं करेंगे। हमें अन्य -ओ0 श्रेणी में संवेदना को जगाना क्या नैतिकता मानी जाती है? उसे मानवीय मुद्दा बनाकर उठाया जा रहा । आगे उपन्यास में विधायक उर्फ बाऊनी नामक पात्र को लाकर विनोद उनके यहाँ नौकरी करने लगता है। विधायक जी नामक पात्र संवेदना तथा आत्मीयता से भरा हुआ है। विनोद एक तरु पढ़ता है और दूसरी तरफ काम में जुड़ जाता है। विनोद के पहले काम करने वाला हरिश विधायकजी की संवेदनाओं के साथ किसी तरह खेलता है आज की युवापीढ़ी का जीवन के प्रति असंवेदनशील और स्वार्थी दृष्टिकोण व्यक्त किया गया है जिसके जीवन में अभाव रहता है वह जीवन की तरु गंभीर चिंतनात्मक भाव से देखता है जिन युवक को सबकुछ मिलता है वह उसकी कद्र नहीं करते। हरिश माँ और विधायकजी दोनों के प्यार के साथ खिलवाड़ करता है तो अच्छे मनुष्यों के मन में निराशा छा जाती है। लेकिन विनोद के प्रति आत्मीयता प्रेम और आत्मीयता विधायक जी दिखाने लगते हैं तो उसके मन में कुछ देर के लिए मन में संदेह पैदा हो जाता है। बचपन से विनोद ने सबका उपहास सहा है इसलिए वह मुँह खोलकर कभी हँसा नहीं था। बचपन में उसका दोस्त ईशान उसे चिढ़ाते हुए कहता था-तू मूँ खोलकर क्यों नहीं हँसता। मुँह में हापुस की गुठली फंसी हुई है क्या? प्रोफेसर वर्मा सभ्यता की आड़ में राजनीति को वोट मिलाने के लिए प्रयत्नशील है। विनोद अपनी बिरादरी के लिए लड़कर हमारी पार्टी में आ जाय इसलिए रबी जी जैसा व्यक्ति उसे उपहार देकर अपने कब्जे में करना चाहता है मगर स्वाभिमानी विनोद उसे स्वीकार नहीं करता। मानवीयता का भाव दिखाकर स्वार्थ विनोद किन्नर बिरादरी का संघर्ष इसलिए करता है क्योंकि यह संघर्ष मनुष्य माने जाने का संघर्ष है। विधायकजी ने भतीजे का पूनम के साथ अन्यायकारों की मानवता को कलंक लगाता लिंग दोषी बच्चों को परिवार ने अपना ही मानना चाहिए उन्हें समाज में अकेला छोड़ना कहाँ का मानवतावाद है?

उपन्यास में चित्रित समकालीनता—उपन्यास के विकास के बारे में डॉ0 गणपतीचन्द्र गुप्त जी ने कहा है कि विभिन्न प्रयोगों की लंबी शृंखला के बाद हमारे उपन्यास साहित्य का पाट चौड़ा अवश्य हुआ है, पर उपन्यासकार की दृष्टि तलस्पर्शी नहीं हो पायी, अतः वह मानव का जो उसके पूर्ण आयामों में प्रस्तुत नहीं कर पाया है। अभी वह समय आना है। जब भिन्न भिन्न प्रसंगों, घटनाओं और पात्रों की सृष्टि इतनी यथार्थ और नैसर्गिक होगी कि वह पाठक को सच्ची और विश्वसनीय लगेगी।

चित्रा मृद्गल के इस उपन्यास को पढ़ने के बाद गुप्ताजी द्वारा कही हुई बात यथार्थ साबित होती है। आधुनिक काल में समाज में सभ्यता को बनाये रखने के लिए परिवार अपने बच्चे को सबके लिए मरा हुआ साबित करता है और उसे घर से बेदखल करता है। इतना ही नहीं यह कभी किसी परिवार वाले से न मिले इसलिए मकान भी परिवर्तित किया जाता है। वह बच्चा जिसका कोई अपराध न होते हुए अपनी उम्र में सजा भुगतता है। अपनी माया, ममता को वह दिल में दबाकर रखने के लिए विवश किया जाता है। जिसे आम इंसान की तरह जिन्दगी ना मिली हो उसे तो भी संवेदना जब मिलती है तो वह इंसान जीने की तमन्ना को उभारता है। जो इस उपन्यास पत्र के माध्यम से पूरा करने की कोशिश की गयी है। आधुनिक काल के लोग सभ्यता को बनाए रखने के लिए इच्छा के विरोध में काम कर रहे है। लेकिन इस उपन्यास का प्रमुख पात्र अपनी इच्छा के अनुसार जीना चाहता है। वह कहता है की, इच्छा न हो तो दिखावा करना जरूरी नहीं। असामाजिक तत्वों के हाथ की कठपुतली बनने में जितनी भूमिका किन्नरों के संदर्भ में सामाजिक बहिष्कार, तिरस्कार की रही है, उसमें कम उनके पथभ्रष्ट निरंकुश सरदारों और गुरुओं की ही नहीं ऊपर से विकल्पहीनता की कुण्ठा ने उन्हें आंधी का तिनका बना दिया। आधुनिक लोग पिछड़ी परम्पराएं और मान्यताओं में विश्वास नहीं रखते। गुण्डागर्दी करने वालों के हाथों में वह अपने शिशु का अधिकार कैसे सौंप सकते हैं? बुजुर्गों की बेसिर-पैर की बातें एस और आशीष का सम्मान तो दूसरी ओर उन्हें कलंक मान घर-परिवार से उनका निष्कासन।

मतलब है कि जब मनुष्य दूसरों के मुताबिक न चलने की जिद् पकड़ता है तभी वह अपनी तरह से जी सकता है। अपने आपको किसके सामने झुकता है यह भी खुद तय करें तो वह जीवन स्वाभिमान लगाता है। आधुनिक काल की व्यवस्था के लिए जो वाक्य अपनाया गया है वह आत्मा की गहराई तक पहुँच जाता है। विनोद कहता है, फैली चीजें आमंत्रित करती हैं। व्यवस्थित होने के लिए। व्यवस्थित चीजें निष्क्रिय।

आदमी और औरत का रिश्ता खूबसूरत होता है इसकी कल्पना विनोद करता है मगर आधुनिक काल में पति-पत्नी के भीतरी संघर्ष, कड़वाहट, खीझ, उपेक्षा, तिरस्कार को उसने कभी महसूस नहीं किया। जिसके पास जिस बात की कमी है वह उसे कल्पना के माध्यम से महसूस करने का प्रयास करते हैं। जो जिसके पास है उसे उसका मोल नहीं है।

उपन्यास में चित्रित राजनीतिकता-किन्नरों को वोट देने का हक मिलने के राजनीतिक पक्ष उत्साह के साथ सहभागी हो रहे हैं। उन किन्नरों के बारे में सहानुभूति नहीं है, उन्हें सिर्फ वोट कमाने का लालच है। विनोद उनके इस कार्य में साथ दें और किन्नरों का संगठन बनाये यह चर्चा हो रही है। राजनीति में मतलब साध्य करने के लिए कौन किसे महान बनाए कहा नहीं जा सकता। हिंजडा बिरादरी का सम्मेलन करवाया जा रहा है। इस वाक्य की आज की राजनीति पर तीखा व्यंग्य कसा गया है। जो सहृद्य व्यक्ति को चुभता है। अब विनोद सम्मेलन के सभापति, मुख्य अतिथि और बीज-वक्ता बनेंगे। वह अपना ओजस्वी मर्मस्पर्शी भाषण देकर मोटी चमड़ीवालों के हृदय को हिला देगा। किन्नरों के आरक्षण का मामला उठेगा, लपटें आसमान छुएँगी। उनके प्रति करुणा जगाने का मुद्दा उठाया जा रहा है। विनोद समाज पर व्यंग्य कसते हुए कहता है की, इक्कीसवीं सदी में जीते हुए जो समाज सदियों पुराने अंधविश्वास को गले से लगाए हुए है, आज भी उसे झटकने को राजी नहीं। सचमुच आज पढ़ा लिखा समाज उसी गर्त में फँसा हुआ दिखाई दे रहा है। ज्ञान से मनुष्य में परिवर्तन होना चाहिए मगर असलियत में पढ़ा लिखा इंसान ज्ञान पाकर भी उसी तरह आचरण कर हा है यह देखकर ज्ञान पर संदेह निर्माण होने लगता है। राजनीतिवाले लोग इसी अज्ञान जनता का लाभ उठाने के लिए तत्पर। धोखाधड़ी, अंधविश्वास, भ्रष्टाचार परम्परागत मान्यताओं को बनाए रखने का साहस यह नेता लोग अज्ञानी से इसलिए कर रहे हैं, क्योंकि जनता में संगठन नहीं है। हर कोई अपनी-अपनी बात सोच रहा है। समाज के हित में अपना हित होता है! यह समझ में नहीं आ रही है।

उपन्यास में वर्णित सामाजिकता-विनोद का कहना है कि हमें तीसरे खाते में आरक्षण नहीं चाहिए। आरक्षण देना ही है, तो सरकार उन्हें उन्हीं दो खातों के भीतर दे जिन खातों के भीतर जन्म लेने वाले सभी मनुष्यों को मिलता है। उन्हें चुनने की सुविधा दे। जिस खाने को वे स्वयं के लए चुनना चाहें जो होनी चाहे। अगर कन्या भ्रूण हत्या पाप है, अपराध है तो जननांग दोषी बच्चों को जानने वालों को भी कानूनन दण्ड देना चाहिए।

विनोद जैसे जननांग दोषी बच्चा घर में पैदा होने का मतलब है की सात पुश्तों तक भी दामन धुले, ऐसे कलंक से अपने प्रतिष्ठित समाज की नजरों से बचाने के लिए पापा ने उस बच्चे की मृत्यु का नाटक रचाया। लेकिन कल अगर मीडिया के सामने सच्चाई प्रकट हो गयी तो पापा को हृदयाघात से नहीं बचा पाए। कितनी यथार्थता है इसके कहने में। मनुष्य अपने बच्चों की भावनाओं को न समझकर वह समाज का विचार क्यूँ करता है। हर मनुष्य के जवीन में जिस तरह दो रास्ते आते हैं वैसे विनोद के जिंदगी में भी दो रास्ते आ गये हैं। एक है स्वार्थ दूसरा है परमार्थ। किसे चुनना है? यह आत्मिक संस्कृति बतायेगी। बचपन

से जिन किन्नरों को अलग प्रकार की ताली बजाने के लिए सिखाया गया है तो वह सामान्य ताली कैसे बजा सकते हैं। वह उन्हें सिखाना पड़ेगा। परिवर्तन अचानक होने वाली चीज नहीं है वह धीरे-धीरे होता है। पहली बार इस उपन्यास में किन्नरों की पीड़ा, वंचना, यातना और संवेदनाओं को व्यक्त किया गया है। जिन्हें दोषी मानकर घर से निकाला गया है। उन्हें ससम्मान वापस घर जाना है यह इस संगठन का मतलब माना जा रहा है। परिवर्तन सबसे पहले बलि माँगता है जो व्यवसाय किन्नरों द्वारा किया जा रहा है वह उनकी आत्मवंचना है। उसका धिक्कार हर किन्नरों द्वारा होना चाहिए। समाज द्वारा प्राप्त अपमान, अवहेलना, खीज, कुण्ठा को वह सहेंगे नहीं। उन्हें भी सम्मान से जीने का हक कानूनन मिलना चाहिए। बिना लिंग या अविकसित लिंग के प्राणी मनुष्य नहीं है। ऐसी सोच को अस्वीकार करना होगा। किन्नर बिरादरी का संघर्ष सिर्फ वोट पाने का अधिकार या आरक्षण न होकर उन्हें मनुष्य माने जाने का संघर्ष था। राजनीति वाले यही नहीं चाहते हैं। इसलिए विनोद पर इन लोगों का दबाव बढ़ता हुआ दिखाया जा रहा है।

मानव के भीतर की दरिन्दगी-पूनम जोशी जो किन्नर जाति होकर सदा विनोद का साथ देती है। वह उसे बीजी कहकर पुकारता है। चण्डीगढ़ से अपने कमरे में वापस लौटे विनोद को पता चलता है कि पूनम जोशी आई.सी.यू. में दाखिल हैं। रात डेढ़ के करीब नाजुक हालत में पूनम को विधायक जी ने यहाँ इमरजेंसी में दाखिला करवाया। चंद्रा ने विनोद को पूनम के साथ हुए भयानक हादसे का ब्यौरा सुनाया तब विनोद का दिल कांप उठा। विधायकजी का भतीजा और उसके दोस्तों ने उसके साथ जो मजाक किया उसे मनुष्य अंदर की दरिन्दगी से सिवा क्या कह सकते हैं? आज की युवा पीढ़ी धन के बल पर मानवता को भूल गयी है। उनके मन में सदा शैतान जागता है। यह मानव जाति के सबसे बड़े कलंक हैं लेकिन यह कल बाइज्जत बरी हो जायेंगे क्योंकि किन्नर जाति की कोई इज्जत नहीं होती। कानून उसे सजा नहीं दे सकता क्योंकि यह अपराध नहीं है। जवान खून आजकल धन के बलपर बहक रहा है। उसे बहकाने वाले उनके माता-पिता के संस्कार हैं या समाज के संस्कार कुछ न समझने वाले घटना है। एक तरफ सम्मान पाने के लिए तरसने वाले किन्नर और दूसरी तरफ असंस्कृत और धन के बलपर दुनिया को मुट्ठी में करने वाली दरिन्दगी देखकर मन बेचैन हो जाता है। मानवता के प्राण खींचकर ले जाने वाली यह बर्बरता हमें सुखी बना देती है।

निष्कर्ष : इस उपन्यास में मानवतावादी भावनाओं को झकझोरा गया है। किन्नरों की विरादरी को परिवार समाज और पूरे विश्व में उनके अधिकार प्राप्त होने चाहिए। उनके लिए अलग कानून बनाने होंगे। जिन लोगों ने बचपन से अपनों से भी तिरस्कार मिलता है वह मानवता को कैसे स्वीकार कर सकते हैं? अच्छे परिवारवालों के युवक घिनौनाकृत्य इसलिए करते हैं कि उनके ऊपर उचित संस्कार हुए नहीं है। हमें अपने अंदर परिवर्तन करना होगा। मनुष्य और मनुष्य के बीच प्रेम की दार्शनिकता को न लाकर आत्मीयता और संवेदना को जगाना होगा।

<div align="center">संदर्भ-सूची</div>

1. हिन्दी साहित्य युग और प्रवृत्तियाँ -शिवकुमार शर्मा
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नरेश मेहता के काव्य में राजनीतिक मूल्य

डा0 विद्या शशिशेखर शिंदे

सारांश

राजनीति का प्रभाव संपूर्ण देश पर पडने के कारण उस देश की जनता का उससे प्रभावित होना अनिवार्य हैं. कलाकारों की कला, कवियों की कविता, लेखकों ची कृतियॉं जनता की भावनाओं को परिष्कृत कर जनता पर प्रभाव डालती हैं कोई भी साहित्यकार तभी सफल साहित्यकार कहला सकता हैं जब यह अपनी अनुभूति को जो उसे साहित्य का सृजन करते हुए होती हैं जो पाठक तक पहुँचा सके. साहित्यकार द्वारा डाला गया सद्भाव विभिन्न समस्याओं को समझने में तथा उसका समाधान करने में नूतन दृष्टिकोण प्रस्तुत करता हैं. नरेश मेहता राजनीति से खुद भी जुडे हुए थे इसलिए उन्होंने राजनीतिक व्यवस्था को नजदीक से देखा था. कवि ने कहा भी है–"राजनीति जीवन का अंग तो है साथ में राजनीति का दबाव रचना और रचनाकार पर पडता है और इसका परिणाम चिंतनीय होता हैं. राजनीति में तनाव और टकराहट स्वाभाविक हैं. यह राजनीति की प्रकृति है यहॉं"सहमति" का कोई अर्थ नहीं हैं. सहमति होती भी हैं. तो दिखावटी होती हैं इसलिए राजनीति न तो विश्वसनीय होती है और न ही स्थायी. इस तनाव और टकराहट से राजनेता का व्यक्तित्व निखरता हैं. राजनीति में उदारता की तो संभावना ही नहीं हैं क्योंकि वर्चस्व के लिए राजनीति में संघर्ष अनिवार्य हैं. विचार किया जाना चाहिए कि राजनीति और लेखन के चरित्र में क्या कोई तात्विक अंतर है और यदि अंतर है तो हमें चिंतित होना चाहिए कि यह अंतर लगातार लुप्त हो रहा हैं."नरेश मेहता तार सप्तक के कवियों में से एक हैं. अपने काव्य में राजनीति के उतार चढाव को इन्होंने प्राचीन आख्यानों के माध्यम से प्रस्तुत किया हैं।

वस्तु

1. नरेश मेहता ने अपने काव्य में व्यक्ति और राज्य व्यवस्था के विषय में संतुलन और मानव मुक्ति की संभावनाओं पर विचार किया हैं.उसे सबके सामने लाना हैं.
2. कवि ने अपनी कविताओं के माध्यम से बताया है कि किस प्रकार नेता सुचारु प्रशासन की घोषणा करते हैं और सामान्य जन अन्याय सहता हैं.उसे प्रस्तुत करना हैं.
3. शासक किस प्रकार पद प्राप्त होने पर भ्रष्ट आचरण करते है और न्याय, धर्म, शस्त्र खरीद लिए जाते हैं और इन षड्यंत्रों और कुरताओं से भरी व्यवस्था में व्यक्ति का जीवन दुर्भाग्यपूर्ण हो जाता हैं उसे काव्य के माध्यम से दर्शाना हैं.

कूटशब्द: राजनीति, कृतियॉं, परिणाम चिंतनीय

प्रस्तावना

नरेश मेहता के काव्य में भी हमें राजनीति से प्रभावित कृतियां मिलती हैं. उन्होंने पौराणिक आख्यानों में आधुनिक समस्याओं का समावेश कर मानव मूल्यों की तलाश करने की कोशिश की हैं. वो सामाजिक और राजनीतिक समस्याओं पर प्रकाश डालते हैं. इन्होंने अपनी अलग सोच से भारतीय मानसिकता को समझते हुए "महाप्रस्थान" खंडकाव्य में राज्य और व्यक्ति के संतुलित संबंधों का वर्णन किया हैं. "संशय की एक रात" में युद्ध की समस्या को व्यक्त किया हैं. "प्रवाद पर्व" में व्यक्ति, राजनीति, प्रशासन, राज्य और सामान्य जन की समुचित शालीन एवं तर्कशुद्ध वैचारिकता को प्रस्तुत करते हुए समकालीन दबावों को वाणी प्रदान की हैं.हमारे देश में सत्ता प्राप्ति के लिए गरीब जनता को झूठे आश्वासन देकर ठगाया जाता हैं. यही कारण हैं कि देश में गरीबी, बेकारी,स्वार्थी वृत्ती, भ्रष्टाचार तथा वर्ग संघर्ष बढने लगा हैं. गरीब जनता का शोषण हो रहा हैं. ऐसी स्थिति में नरेश मेहता जी का काव्य हमारे भीतर चेतावनी निर्माण कर सकता हैं.

राजनीति का यथार्थ चित्रण

नरेश मेहता जी ने राजनेताओं की ओर संकेत करते हुए अपनी काव्य कृतियों में आज की भ्रष्ट नीति को प्रस्तुत किया हैं. कवि कहता हैं कि आज के नेता देश के नाम पर कलंक हैं. वैसे कहने के लिए कहा जाता हैं कि देश की प्रगति नेताओं के कारण होती हैं. परंतु वास्तव में ऐसा नहीं हैं. नेता लोग

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मिलने के बाद ऊंचे आकाश में उडने लगते. हैं. सारी सुख
धाएँ अपना लेते हैं. हरदम देश के भविष्य की चिंता न करते
वह अपने स्वार्थ की बातें सोचते हैं. इसी कारण हमारा देश
तिल पर जा रहा हैं. "संबंध" कविता में कवि इसके प्रति अपने
विचार व्यक्त करते हैं–

"वे जितना–जितना
उड़ते जाते हैं।
उतना–उतना देश
रसातल में जाता हैं।" [2]

नरेश मेहता जी ने राजनीति को जंगल की तहजीब के समकक्ष
प्रस्तुत किया हैं. जंगल जैसे कूर रहता हैं और उसका कोई
नियम नहीं होता वहाँ पर सिर्फ शेर और भडिए जैसे खूंखार
जानवरों का राज चलता हैं. वैसे ही राजसत्ता का कानून होता
हैं. राजनीति के क्षेत्र में जिसके पास कुर्सी आ जाती हैं वही सत्ता
का मालिक बन जाता हैं.और अपने ढंग से राज्य के कानून
बनाता हैं.–

"जंगल के जाग उठने का मतलब
हुकूमत की म्यान से
तलवार का बाहर निकलना होता। हैं।
गॉद से बाहर निकलता शेर" [3]

राजनीति के मूल्य के बारे में कवि कहते है कि प्राचीन युग में भी
इसका यही रुप था और आधुनिक युग में भी इसका यही रुप हैं.
युग बदल गये परंतु राजनीति का दृष्टीकोण वैसा ही रहा हैं. जो
कुर्सी पर बैठ जाता है वही खुदा हो जाता हैं. बाकि उसके आगे
कीडे-मकोडों की तरह हो जाते हैं. राजनीति में डर पैदा करने
के लिए फॉसी, हत्या, कत्लेआम शब्दों का प्रयोग मामूली सी बात
हो गयी हैं. असीरगढ किले पर लिखी कविता में कवि ने यही
भाव व्यक्त किया हैं.–

"फॉसी!! हत्या!! कत्लेआम!!
ये भी तो शब्द ही हैं!
सिर्फ शब्द–
जिस प्रकार तमाम दूसरे शब्द होते हैं–
जैसे फूल, आकाश, नदी
घर, रोटी, मटद्दा
या और कुछ भी।" [4]

राजा लोगों की मर्जी संपादन करते हुए अच्छे लोग भी अपने
मूल्यों को भ्रष्ट कर देते हैं.राजनीति में सच बोलनेवाला दॉव पर
लग जाता हैं.

सत्य की अभिव्यक्ति और साधारण लोगो का महत्व–
'संशय की एक रात' इस खंडकाव्य में साधारण जनता कितनी
महत्वपूर्ण होती है यह दर्शाया गया हैं. सीता को राजा की पत्नी
और पतिव्रता स्त्री होने के बावजूद भी धोबी के द्वारा कहीं बात के
कारण वनवास जाना पडता हैं. इससे यही सिद्ध होता हैं कि
साधारण जन के पास चाहे राजा जैसी भाषा न हो परंतु वह देह
से बोलता हैं. किसी का राजा के सामने हाथ उठे तो उसे काटा
जा सकता हैं. परंतु जो तर्जनी उठती हैं उसे न काटा जा सकता
न ही झुकाया जा सकता हैं. राम के शब्दों में–

"साधारण के पास
कब भाषा रही हैं?
वह तो
सदा देह से ही बोलता आया हैं।

हाथ झुकाया जा सकता हैं
पर
एक अनाम साधारणजन की तर्जनी–
समय के पत्रों
और लोगों के इतिहास निरीह नेत्रों में
जब एक जलता प्रश्न
उत्कीर्ण कर देती हैं
जैसे प्रति–शिलालेख हो।" [5]

"महाप्रस्थान" के स्वाहा सर्ग में युधिष्ठिर अर्जुन से साधारण जन
के सत्व की चर्चा करते हुए कहते हैं कि कभी उन साधारणजनों
के बारे में सोचो अर्जुन जो हमारे इन श्रेष्ठ साम्राज्य का ग्रास बन
जाते हैं. अपने व्यक्तित्व को खो देते हैं–

"कभी उन
विचारहारा साधारणजनों के बारे में सोचो–
जो सदा अपमानित होते रहे हैं.
जिनके सत्व का अपहरण ही
हमारे ये दीप्तित साम्राज्य हैं।" [6]

सत्य को यथार्थ का रुप देकर निर्दिष्ट उँचाई पर खडा कर देना
नरेश की काव्य कला के प्राण हैं. प्रवाद पर्व में जब सीता धोबी
के कहने पर वनवास दिया जाता हैं तो राम के इस फैसले पर
सभा जन मानने के लिए तैयार नहीं होती. तब राम उन्हें समझाते
हुए कहते हैं कि, "अधिपति का अर्थ राजा हैं राष्ट्र नहीं हैं.
शासक कितना भी महान हो वह शासक ही हैं. वह कभी राष्ट्र
नहीं बनता. जिस दिन राजा अथवा शासक को राष्ट्र मान लिया
जायेगा उसी. दिन लोकतंत्र समाप्त हो जाएगा.

राष्ट्र का मूल्य–
राष्ट्र एक व्यक्ति से नहीं बल्कि संपूर्ण जातीय चेतना अथवा समग्र
राष्ट्रीय दृष्टि से बनता हैं. व्यक्ति राष्ट्र नहीं होता. राष्ट्र से बडा
कोई नहीं होता. इसलिए कवि कहते हैं कि–

"किसी की वैयक्तिकता नहीं
वरन्
संपूर्ण की समग्रता ही राष्ट्र हैं।" [7]

विभीषण राम का साथ तो देते है परंतु अपने राष्ट्र के प्रति, देश
के प्रति भी अपने देशभक्ति की भावना को कायत रखते हैं और
प्रजा के हित. की सोचते हैं. वह यही सोचते है देश की दूर्दशा
को कैसे रोका जाए–

"प्रत्येक क्षण
मेरा सोचना
यहीं पर टूट जाता हैं।
अपने देश की दुर्दशा का
कौन कारण हैं?" [8]

राजनीतिक मूल्य में व्यतीत कुरता के कारण भी हमारे राष्ट्र का
मूल्य घटता जा रहा हैं. कवि ने किले के माध्यम से सारी विगत
ऐतिहासिकता का वर्णन किया हैं. इतिहास की कुरता में सच की
आवाज दबाई जाती हैं. राजनीति के सारे छल–कपट, राजाओं
की कुर हठीली अमानवीय इच्छाएँ तांडव करती हैं. फिर इतिहास
की कुरता के सामने सबकी विवशता आती हैं.स्त्री सिपाहियों की
विवशता और कर्मचारियों का कपट सातने आता हैं–

"भले ही वह आमदरफल
खून टपकाते, बेडियों में कसे

वागी साहबे—आलमो
या दगाबाज, सुबेदारो, सिपहसालारो की रही हो
या जिबह के लिए ले जाए जाते,
भेड़—बकरी जैसे
युद्ध बंदियों की रही हो या
फिर रोती कलपाती
दहशत जदा ओरतों का
ऑंसुओ से तर नूरानी चेहरों की रही हो।"⁹

इतिहास अपने आपको दोहराता हैं. दोहराते हुए इतिहास से हमें सबक लेना चाहिए. कभी कभी ऐसी घटनाएॅं भी घटीत होती हैं जो पहले भी घट चुकी होती हैं. परंतु मानव कभी भी पहले घट चुकी घटनाओं से सबक नहीं लेता. अगर वह इन बीती घटनाओं, बीते इतिहास से सबक ले, तो हमारा आनेवाला कल सुनहरा हो सकता हैं.—

"वैसे यह मत भूलो, कि
बीतती तारीखें हैं
तबारीखें नहीं,
तबारीखें—
तारीखें नहीं, घटनाएॅं होती हैं.
या वो बदनसीब लोग होते हैं."¹⁰

नरेश मेहता जी ने अपने काव्य में युद्धों का विरोध किया हैं. युद्ध इस शताब्दी के मानव की एक मुख्य समस्या हैं. प्राचीन युग में जिस प्रकार युद्धों में क्षति होती थी.तब इन्सानियत का विनाश होता था.वैसे युद्धों की स्वीकृति में मानव मूल्यों के संरक्षण की भावना मिलती हैं. पर युद्ध स्वयं में मूल्य नहीं माना जा सकता. वह तो उपलब्धि का उपक्रम मात्र होता हैं. कवि ने युद्ध की आड़ में सामंतवादी अथवा साम्राज्यवादी प्रवृत्ति दासता अत्याचार के विरुद्ध न्याय अधिकार और स्वतंत्रता के महत्व को स्वीकार किया हैं. कवि कहते हैं कि—

"क्षमा करें महाराज
हम केवल घटना हैं
इतिहास नहीं
संभव हैं
हमारे कारण ही
अनागत युद्धों की नींव पड़े
पर इस डर से
क्या हम न्याय और अधिकार छोड़ दे।"¹¹

युद्ध का कारण अपमान भी हैं. प्रायः सभी युद्धों के मूल कारणों में अपमान का बोध प्रमुख हैं. रामचरितमानस में राम रावण का युद्ध अपमान से ही हुआ हैं. मानव के सभ्यता के अभाव में और सद् मूल्यों के विघटित होने पर युद्ध की स्थिति बन जाती हैं. सत्ता की कुरता और निरंकुशता व्यक्ति तथा समाज के विकास को अवरुद्ध कर देती हैं.

निष्कर्ष

इस प्रकार कवि नरेश मेहता के काव्य में राजनीति के सभी पक्षों पर विचार मिलते हैं. जो आज के वर्तमान स्थिति की तरफ भी संकेत करते हैं. कवि ने अपने काव्य में स्थान—स्थान पर सद्मूल्यों को ही महत्व दिया गया हैं. उन्होंने भारतीय संस्कृति के सभी उन श्रेष्ठ मूल्यों को आचरणीय माना हैं. जिनसे मनुष्य समाज और राष्ट्र की सत्ता और प्रतिष्ठा बनती हैं. उन्होंने झूठ, फरेब, छल, कपट, ठगी, चोरी, हत्या, युद्ध, संघर्ष इन सबको नकारा हैं. इन्होंने सत्य, सभ्यता, सहानुभूती, दया, करुणा, प्रेम,

भक्ति, उपकार आदि मूल्यों को महत्व दिया हैं. नरेश मेहता जी का काव्य इन्हीं सब मानवीय मूल्यों की अभिव्यक्ति का काव्य हैं.

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Special Issue

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शोध सरिता

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समकालीन काव्य में युग चेतना

☐ प्रा. डॉ. विद्या शशी शेखर शिंदे*

शोध सारांश

मूल्य संक्रमण एव मूल्य विघटन महानगरीय जीवन के हरं पहलू में देखने को मिलता है। संयुक्त परिवार के समानन्तर मूल्य विघटन को महसूस किया जा सकता है। संयुक्त परिवार एकाकी परिवार में परिवर्तित हो गया है। बाप बेटे के बीच वैचारिक असमानता ने दोनों पीढ़ियों क बीच गहरी खाई पैदा कर दी जिससे परिवार में संघर्ष बढ़ता ही चला गया। ऐसी संघर्षमय स्थिती में माना पिता को समझौता करना पड़ रहा है या तो उसे परिवार छोड़कर वृद्धाश्रम में शरण लेनी पड़ रही है। महानगरीय स्त्री पुरुष के लिए विवाह संस्था का कोई मूल्य नहीं रहा। महानगरीय मानव अधिक सुख के लिए पूरा दिन भाग दौड़ करता है। अर्थ महानगरीय मानव की कमजोरी है। के लालच में लोग घिनौने से घिनौने कार्य करने को तैयार हो जाते हैं। अर्थ को पाने के लिए नारी अपना तन बेचती है। तो पदोन्ती लिए घर की नारी को दूसरों के सामने परोसा जाता है। समकालिन कविता में उन मूल्यों की तलाश की जा रही है जो आज नष्ट होते जा हैं। बाजारवाद के गंभीर दुष्परिणाम के प्रति हमें सचेत होना पड़ेगा। पश्चिमी सभ्यता के अंधानुकरण क कारण हमारी सोच बिगड़ती हुई नजर आती है। भारतीय संस्कृती की सभ्यता को पहचानकर उसे फिर से अपनाने की जरूरत महसूस की जा रही है।

Keywords : पश्चिमि सभ्यता, अंधानुकरण, महानगरीय जीवन, मूल्य संक्रमण, मूल्य विघटन

हमारे भारत देश कों गाँवों का देश कहा जाता है। फिर भी नगरीकरण और औद्योगीकरण की तीव्र गती के कारण देश में कस्बे नगर और नगर महानगर बनते जा रहे हैं। ऐसे कस्बाई जिंदगी जीने वाला व्यक्ति महानगर में आकर अपने आपको नगरी संस्कृती में 'एडजस्ट' नहीं कर पाना। महानगर का जीवन उस गाँव के अपनेपन तथा स्नेहशक्ति जीवन का अनुभव न होकर उदासी और शुष्कता का जीवन लगता है। भारत में ग्रामीण जनता की गरीबी, अभाव, निर्धनता, बेकारी ने उन्हे अपनी भूमी से उखड़ने जए विवश किया और उसे यहा नगरों की और जाने के लिए बाध्य किया। परंतु गाँव से आये व्यक्ति के लिए महानगर में समाधान का प्रयास काफी कष्टदायक तथा तनावपूर्ण अनुभव बन जाता है। शहरों में रहने वाले लोगों को सांस्कृतिक तथा बुनियादी मानव—मूल्य खत्म हो रहे हैं। उसका वर्णन समकालीन कविता में किया गया है। उसी की और ध्यान खींचने का प्रयास इस शोध कार्य द्वारा किया गया है।

विषय क्षेत्र :

समकालीन कवि उदय प्रकाश, अरुण, कमल, कुमार कृष्ण, राजेश जोशी, कुमार अम्बुज, ज्ञानेंद्रपति, मंगलेश डनरंत्न बोधिसत्व, विश्वनाथ प्रसाद तिवारी, अशोक वाजपेयी, निर्मला तुन, किरण अग्रवाल, प्रज्ञा मजूमवार तथा दुष्यंत कुमार जी की कविताओं में युग चेतना का वर्णन समाज की वास्तविक स्थिती

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को दर्शाता है उसका वर्णन किया गया है।

विषय उपलब्धि —

समकालीन काव्य विद्वानों ने 1960 के उपरांत माना है। लेकिन मैंने तत्कांलीन कवियों की समकालीन कविताओं के भीतर की वास्तविकता को पहचानने की कोशिश की है। आज के कवियों ने अपने समय को अत्यंत निकटता से, बारीकी से देखा है और उसे अनुभूत कर उसे वाणी देने का सफल प्रयास किया है। वहा हमें आज के अराजक और दिशाहीन स्थिती से अवगत कराती हैव जिससे मनुष्य प्रभावित हो रहा है। इस कविता के माध्यम से आधुनिक समाज को चेतना देने का प्रयास कवियों ने किया है उसे ढूँढकर पाठकों के सामने लाना इस शोध निबंध का महत्वपूर्ण उद्देश्य है।

1) समकालीन कविता में मानव मूल्यों की तलाश —

आज हमारे सांस्कृतिक तथा बुनियादी मानव मूल्य खत्म हो रहे हैं जिससे कारण घर संस्कृती बह गयी है। घर ईट—पत्थर से नहीं बनता बल्कि मानव मूल्यों के कारण बनता है। आज इन्सान इन्सान से दूर होता जा रहा है। संचार के इस युग में तथा आधुनिकता की स्पर्धा के इस युग में मूल्यवान वस्तुएं हमसे छूटती जा रही है। **संचार के** इस युग में भावनाओं का संचार नष्ट हो रहा है। सांस्कृतिक तथा बुनियादी मानव मूल्यों के हास के कारण आज अहंकार तथा अकेलापन बद रहा है, मानवीय संवेदना तथा

संयुक्त परिवार खत्म हो रहे। इसलिए कवि अरुण कमल जी कहते हैं।

"दुनिया में इतना दुःख है इतना ज्वर
सुख के लिए चाहिए बस दो रोटी और एक घर
और वही दिन-ब-दिन मुश्किल पड़ रहा है।"1

कवि के अनुसार आज हम जहां पहुंच गये हैं, वहां से हमें लौटना पड़ेगा अन्यथा जीवन में दुःख और उदासी के सिवाय कुछ नहीं रह जाएगा। इसी कारण शायद आज कवि उस घर की तलाश के लिए बाध्य हो गया जिसमें मूल्यों की खोज करनी न पड़े। आज धन की लालसा ढाढ रही है उसके लिए रिश्तों को भी तोड़ा जा रहा है। धन का अहंकार इतना बढ़ गया है कि आदमी हवा में सैर करने लगा है। उसके पांव धरती से छूटते नजर आ रहे हैं। सहानुभूती, प्यार, दया शांति ये चीजे खत्म होती जा रही हैं । जिसके कारण अकेलापन महसूस होने लगा है। अस्तित्व को इस लड़ाई में स्त्री पुरुष रिश्ते आपसी प्रेम संबध बिगड़ते हुए नजर आ रहे हैं। प्यार के नष्ट होने के कारण और अहंकार के बढ़ने का नया नतीजा होता है उसे उदय प्रकाश जी कहते हैं–

"मैं तुम्हारे बिना रह सकता था पृथ्वी पर अपनी उम्र भर
यह मुझे सिद्ध करना था चुपचाप
यह मैंने सिद्ध किया।
तुम भी रह सकती थी अपनी उम्र भर इसी पृथ्वी पर मेरे बगैर
तुमने भी सिद्ध किया।"2

इस तरह समाज में मूल्यों का ह्रास होने के कारण आज आपसी संबंधों का ताना बाना भी टूटता नजर आ रहा है, तालमेल खत्म हो रहा है जिससे समाज में असंतुलन की स्थिती पैदा हो गयी है। यांत्रिक युग में लोग यंत्र की तरह दिन रात काम में इतने व्यस्त हो गये हैं कि उन्हें एक दुसरे से दो शब्द कहने की फुर्सत नहीं है। यही कारण है आज अजनबीपन बढ़ने लगा है। कवि समाज के मनुष्यों का ध्यान बार–बार मूल्यों की तरफ खींचने का प्रयास कर रहे है ।

रिश्तों के विघटन के कारण अकेलापन का आना स्वाभाविक ही है। सबंधो के विघटन से उपजे अकेलेपन को कवि ने बखूबी प्रस्तुत किया है। आज व्यक्ति समाज में इतने व्यस्त है गली मोहल्ले में भी एक दूसरे को नहीं पहचानता। समय की गति ही ऐसी है यही कहा जा सकता है।

संबंधों का विघटन इन पंक्तियों में देखा जा सकता है –

"माँ धीरे–धीरे चली गयी है इतनी दूर
तक उसके सबसे स्मरणीय और चमकदार रुप के लिए
लौटना होता है कई साल पहले के वक्त में
मै चाहूं तो भी नहीं रोक सकता मां को जाने से
दूर दूर तक नहीं बची रह गयी है मुझमें अबोधन।
धीरे धीरे मै खुद चला आया हूं मां से इतनी दूर

कि मेरे घर में अन, मां एक अतिथी है।"3

कुमार कृष्ण जी की अनेक कविताओं में बचपन में बिताए हुए स्नेह के मधुर अवसर की पहचान मिलती है। वह दिन याद करके वह भावविभोर होते हुए कहते है –

"बहुत छोटा था
जानता था मैं –
दादा के कम्बल में है कोई जादू
कह झट से झूला देता है बच्चों को
बहुत बार मैने
सोती हुई बहन को
उसी कम्बल में सोता देखा था।"4

मतलब है की आत्मीयता मुनष्य को अपनापन देती है। वह स्मृतियों के आधार पर भी जी सकता है। मगर आज अकेलापन इसलिए महसूस हो रहा है क्योंकि कह सार चीजे छूटती नजर आ रही है। जिंदगी में हमारे आसपास सुविधााओं का ढेर लगा हुआ है मगर प्रेम, सहानुभूती, आत्मीयता जैसी चीजे बिखरती हुई नजर आ रही है। यह व्यथित करने वाला चिंतन है। आज वह क्षमता होकर अकेले भटकने को मजबूर हो गया है। वह सिर्फ अपने लोगों का प्यार चाहता है मगर उसे कुछ नहीं मिल रहा है। समकालीन कवियों की कविता में चेतावनी दी गयी है की आज जीवन में प्यार की प्रमुख भूमिका है। इसमें वह ताकत मौजूद है जो व्यक्ति को व्यक्ति से, परिवार और समाज से जोड़ती है। प्यार की इस जीवनदायीनी शक्ती को समझने की जरुरत है। प्रेम के अभाव के कारण मनुष्य–मनुष्य से दूर होकर अकेलापन महसूस कर रहा है।

समकालीन हिंदी गजलों में वास्तविकता का चित्रण –

आज भारत की सामाजिक हालत बिगड़ी हुई नजर आती है। देश में बेकरी, गरीबी का, महंगाई, भ्रष्टाचार, धोखाधड़ी, बेईमानी, धर्म के नाम पर देंगे, पूजीवाद, सर्वहारा वर्ग का शोषण उसकी समस्याएं आम आदमी की पीड़ा आदी कई तरह की समस्याएं देखने के लिए मिलती है। आज की सामाजिक व्यथा का कारण समाज ही है। वर्तमान समाज व्यवस्था के मापदंड कुछ बदले हुए नजर आते है। वे पतन की और जा राहे है। समाज फिर भी विवश है। वह इन आपत्तियों का सामना करना नहीं चाहता बल्की जैसा है वैसे ही जीवन जीना चाहता है। इसी को दृष्टि में रखकर दुष्यंत जी ने सहनशीलता की परिसीमा का दिखाते हुए कहा है –

"न हो कमीज तो पांवों से पेट ढक लेंगे
ये लोग कितने मुनासिब है इस सफर के लिए ।"5

आज सामाजिक व्यवस्था ही भ्रष्ट होती जा रही है। सड़कों पर भ्रष्टाचार का कीचड़ फैला हुआ है और हम सभी उसमें सने हुए है। दुष्यंत जी ने भ्रष्ट सामाजिक व्यवस्था पर करारी चोट की है। वे कहते है –

'इस सड़क पर इस कदर कीचड़ बिछा है
हर किसी का पांव घुटनों तक सना है।''6

में नैतिकता का पतन व्यक्ति के अजनबीपन पर दुष्यंत जी रग करते हुए लिखा है –

'' इस शहर में जो कोई बारात हो या वारदात
हर किसी भी बात पर खुलती नहीं है खिड़कियाँ।''7

समाज में यह प्रवृत्ती बढ़ती हुई दिखायी दे रही है। शहरों में दोयम या दोहरे सबंध होते थे अन वह भी नहीं रहे। यहां एक पशु के रूप में गरजवंत काम करता रहता है। वहीं इन्सान घर में अपने आप को इस तरह कैद करता है की उसे किसी अन्य की आवश्यकता नहीं। चाहे वह किसी की बारात हो या कोई उसे कोई सरोकार ही नहीं रहता। यहां दुष्यंतजी ने शहरी मूल्य दिन–न–दिन बदलते हुए दिखाये हैं। परिवर्तन ही संसार का नियम है। समाज में बहुत सी बातें हैं जो पुरानी पड़ चुकी हैं। हमें पुरानी बातों को हटाना चाहिए और नयी नयी बातों को स्वागत करना चाहिए! इसी बदलाव से हमारी उन्नती हो सकती है अन्यथा नहीं। इसो वास्तविकता को दुष्यंत जी ने अपनी गजल के माध्यम से व्यक्त किया है–

''पुराने पड़ गए डर, फेंक दो तुम भी
ये कचरा आज बाहर फेंक दो तुम भी
लपट आने लगी है अब हवाओं में भी
ओसारे और छप्पर फेंक दो तुम भी
यहां मासूम सपने जी नहीं पाते
इन्हें कुमकुम लगाकर फेंक दो तुम भी ।''8

समकालीन हिन्दी कविता में स्त्री विमर्श

समकालीन हिन्दी कविता में स्त्री विमर्श संबधी कविताओं को पढ़ने पर ज्ञात होता है। कि उसके साथ कैसा व्यवहार हो रहा है और वहां अत्याचार अन्याय को चुपचाप कैसे सह रही है। जुल्म के खिलाफ आवाज उठाने की हिम्मत उसमें नहीं दिखती जिसकी वजह से शोषण तंत्र मजबूत होता जा रहा है। समकालीन कवि ने ी पर होते रहे दमन को अपनी आँखों से देखते हुए स्पष्ट किया है की अभी वह बद से बद्तर जिंदगी जी रही है और निरंतर उपेक्षा की शिकार हो रही है। उसकी दयनीय स्थिति देखिए की पहले वह लोगों के घरों मे जूठे बर्तन माँजती थी लेकिन इससे गुजारा न होने पर वह अब ठेकेदार के पास काम करती है –

''वह तोड़ती है पत्थर
ढोती है सीमेंट की बोरीयां
फर्श बनाती है
ढलाई करती है छत की
और वह सब कुछ
जो ठेकेदार कहता है।''9

अंतिम दो पंक्तियों से जाहिर है कि वह मजबूरी में यह सब कुछ चाहे वह उचित हो या अनुचित, नैतिक अनैतिक सबकुछ

करने की तैयार होती है। उनके बच्चे आवारा कुत्तों से गलियों से घूमते हैं और बच्चियों की तो दशा दर्दभरी है। कवि कहते है कि –

मुद्ठी भर भुने चने या मूंगफली देकर
कोई भी उसकी बच्चियों को फुसला ले जाता है
वे नहीं जानती 'बलात्कार' शब्द
वे सुबक सुबककर रोती हैं बस
और उपनी नन्ही नन्ही मैली हथेलियों से
अपने धूल से सने आंसू पोछती जाती है।''10

वह तो आज अपने घर में भी सुरक्षित नहीं दिखाई देती। भाई बहन का पवित्र रिश्ता भी आज सिर्फ नाम का रह गया है। अस तरह आज की स्त्री उपेक्षित, लाचार शोषित दिखाई देती है। महानगर में कामकाजी लड़की किस तरह से तनाव और दानवों के बीच जी रही है असे ज्ञानेंद्रपती ने अपनी कविता पुस्तक 'भितसार' में बनानी बैनर्जी कविता में बखूबी प्रस्तुत किया है। ऑफिस में काम करने वाली मिस बैनर्जी नकली हंसी हंसते थक गयी है। जीवन के जंगले में वास्तविक हंसी वह भूल गयी है। इन, बस, ट्राम में सफर करते समय वह इज्जत लुटने के डर से भयभीत रहती है। इस डर के कारण वह रात को अच्छी तरह सो भी नहीं सकती। उसके परीवार के सदस्य इसके बारे में कुछ नहीं जानते विश्वनाथ प्रसाद तिवारी की कविता पुस्तक 'शब्द और शताब्दी की ही है कविताएं 'स्त्री की तिर्थयात्रा' और 'वह लड़की' में भी औरतो की जिंदगी किया है की कटू वास्तविकता की अभिव्यक्ति देखने को मिलती है। स्त्री सिर्फ एक दुसरे सेविका है और उसके प्रति समाज का नजरिया उत्पीड़नकारी है। इसमें कवि ने एक स्त्री की दुनिया को बखूबी पहचानते हुए उसके सुबह बिस्तर से उठने से लेकर शाम को बिस्तर पर जाने तक की क्रिया का वर्णन किया है। वह घर के काम से लेकर बाहर सबके लिए सेविका के रूप में हाजिर है परंतु उसके लिए कोई सहानुभूती तक व्यक्त नहीं कर रहा है। उसके लिए किसी के पास कोई वक्त नहीं है। वह अपने को हर स्थिती में एडजस्ट कर लेती है। कम सामान में गुजारा कर लेती है। कवि कहते हैं की –

'दोपहर भोजन के आखिर दौर में
आ गये गए मेहमान
दाल में पानी मिलाकर
किया उसने अतिथी सत्कार
और खुद बैठी चटनी के साथ
बची हुई रोटी लेकर।'11

उसका जीवन समर्पित है घर तथा कार्यालय के सभी सदस्यों के लिए लेकिन उसके लिए किसी के पास प्रेम से भरे दो शब्द भी नहीं है। वह कोल्हू के बैल की तरह काम में लगी हुई है। आज दुनिया में बड़े से बड़े बदलाव आ चुके हैं। पर स्त्री की स्थिती में आया बदलाव आटे में नमक के समान है। वह परंपरागत सांचे में ढली हुई उस स्थिती, मानसिकता में जी रही है, पुरुष कि

मशीन बनकर रह गयी है। और चुपचाप अन्याय को सह रही है। लेकिन कवि कहते है कि आज की स्त्री चुप है इसका मतलब वह गूंगी नहीं है। यह सही है कि तुम्हारे खिलाफ अकेले लड़ने में अनेक खतरे मौजूद हैं। परंतू मैं उनसे नहीं घबराती। निडरता के साथ बुलंद आवाज में पुरुष को ललकारकर वह कहती है।—

"तुम्हारी मानसिकता की पेचीदी गालियों से गुजरती
मै तलाश रही हूं तुम्हारी कमजोर नसे
ताकि ठीक समय पर
ठीक तरह से कर सकूँ हमला
और बता सकूँ सरेआम गिरेबान पकड़
कि मैं वो नही हूं जो तूम समझते हो।"12

ऐसा होने पर सच में उसकी अपने वजूद कि तलाश पूरी हो जाएगी। और उसे इस तरह भटकना नहीं पड़ेगा यह चेतावनी कवि दे रहा है।

उपसंहार

प्रस्तुत शोध निबंध द्वारा महानगरों कि नयी पीढ़ी ने पुराने मूल्यों को तोड़कर नये मूल्य की कोशिश की है। मूल्य संक्रमण एवं मूल्य विघटन महानगरीय जीवन के हर पहलू में देखने को मिलता है। संयुक्त परिवार के समानन्तर मूल्य विघटन को महसूस किया जा सकता है। संयुक्त परिवार एकाकी परिवार में परिवर्तित हो गया है। बाप बेटे के बीच वैचारिक असमानता ने दोनों पीढ़ियों के बीच गहरी खाई पैदा कर दी जिससे परिवार में संघर्ष बढ़ता ही चला गया। ऐसी संघर्षमय रिथती में माना पिता को समझौता करना पड़ रहा है या तो उसे परिवार छोड़कर वृद्धाश्रम में शरण लेनी पड़ रही है। महानगरीय स्त्री पुरुष के लिए विवाह संस्था का कोई मूल्य नहीं रहा। महानगरीय मानव अधिक सुख के लिए पूरा दिन भाग दौड़ करता है। अर्य महानगरीय मानव की कमजोरी है।

अर्य के लालच मे लोग घिनौने से घिनौने कार्य करने को तैयार हो जाते हैं। अर्य को पाने के लिए नारी अपना तन बेचती है। तो पदोन्नति के लिए घर की नारी को दूसरों के सामने परोसा जाता है। समकालिन कविता में उन मूल्यों की तलाश की जा रही है जो आज नष्ट होते जा रहे हैं। बाजारवाद के गंभीर दुष्परिणाम के प्रति हमें सचेत होना पड़ेगा। पश्चिमी सभ्यता के अंधानुकरण क कारण हमारी सोच बिगड़ती हुई नजर आती है। भारतीय संस्कृति की सभ्यता को पहचानकर उसे फिर से अपनाने की जरूरत महसूस की जा रही है। मरे इस शोध निबंध की प्रासंगिकता और सार्थकता इसमें ही नीहित है।

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Potential of New Tourism Types in Konkan- A Geographical Study

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Introduction

Tourism is known as multidimensional and multifaceted activity in world with diverse social, cultural and economic impacts. It has evolved as one of the largest and most significant industry. Tourism has been recognized as a major force in global economy and a key driver for socioeconomic progress. Tourism cannot be considered as just an economic activity but now has described as a social phenomenon. It is now accepted that tourism is bridging the gap between 'Haves' and 'Haves-not'.

India has been a spiritual and cultural destination for tourists from all over the globe from time immemorial. India's physical and cultural diversity, religion, languages, Music, art, historical monuments have attracted millions of tourists from all over the world. Since ancient times ,the rulers of various kingdoms in India have built luxurious palaces, marvelous temples, grand forts, tombs and memorials shows the rich cultural heritage of our land . Still today India has immense potential for all types of tourists across the world. According to Max Muller (the world famous Orientalist) " If we look over the world to find out the country most endowed with all the wealth , power and beauty that nature can bestow- in some parts, a veritable paradise on earth – I should point to India.(Muller, 1882)

Being the most dynamic economic activity in the world, tourism is witnessing the emergence of new tourism forms and trends every day. People were travelling for specific purposes from before few years ago, i.e. religious, meeting relatives, pleasure, but now the motives of tourists are changing very vastly.

Objectives of the Study –

1. To study the development of tourism in Konkan,
2. To identify the potential places for development of new types of tourism,
3. To know the problems related to the development of new types of tourism and suggest the remedies for sustainable tourism development of Konkan.

Research Methodology –

Primary and secondary data is used to study the new trends of tourism in Ratnagiri district. Primary data is collected by field visit through proper questionnaires. Secondary data is collected through various government departments, local NGOs, newspapers and websites.

Study Area -

Konkan is an important region of Maharashtra state which has its own identity since historical period. Konkan is a 720 km long coastal strip occupies the entire west coast of Maharashtra which extends from Dahanu in the north up to Goa in south and surrounded by the Sayhadry hills on the east and the Arabian Sea on the west. The Konkan includes the districts of Palghar, Thane, Raigad, Ratnagiri and Sindhudurg. Konkan's greenery, coconut trees, beautiful virgin beaches, waterfalls, mountains and lush green valleys will definitely provide a rich and pleasant experience for the traveller.

Konkan which is famous for golden-brown sand, sea forts and the mesmerizing blue sea, has tremendous advantage to develop as a tourism destination due to its connectivity with entire state & nation. Konkan is well known for its natural beauty and that's the reason the region is referred as naturally gifted. .
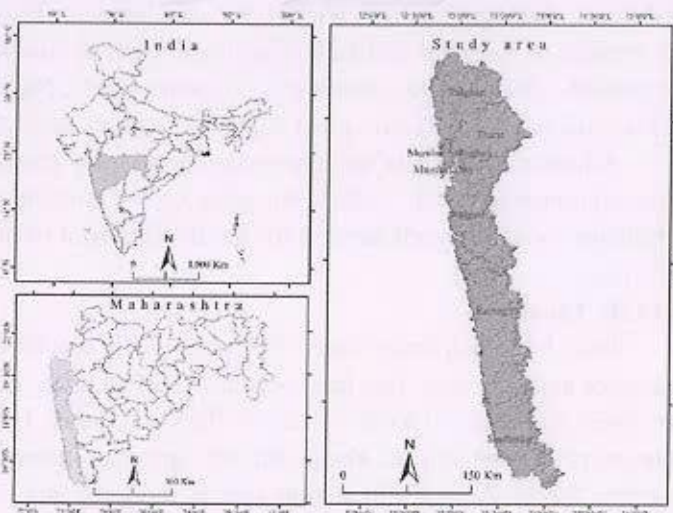
Konkan is truly a heaven on earth for nature lovers who wish to relax in beaches, adventure to the top of hills and enjoy the beautiful waterfalls and sport in the clean backwaters. Konkan is well known for its natural beauty and that's the reason the region is referred as naturally gifted. Most of the district area is covered by dense rain forest, and are suitable for habitant of wild animals.

Generally the climate of Konkan region is hot and humid. The region witness all climatic seasonal changes i.e. monsoon, winter and summer. Most of the district area is covered by dense rain forest, and are suitable for habitant of wild animals.

Historically, Konkan has been the land with dense forest cover, waterfalls, mountains and lush green valleys with beautiful beaches, picturesque hamlets, paddy fields, coconut groves and mango orchards. Konkan is blessed with many unspotted & virgin natural beaches which is the major attraction of tourists. Government of Maharashtra has announced many tourism development plans but in reality this region has yet to be developed as heart of coastal India. There is wide scope to develop coastal Maharashtra / Konkan as a tourism destination by converting challenges into opportunities.

Analysis of Data

Konkan region is known for its natural beauty and cultural diversity. Tourism has developed in various districts of Konkan, but is not developed evenly everywhere. Few places like Alibag, Ganpatipule, Malvan-Tarkarli, Devbag are developed on large scale, while other places are very less developed. As per the potential of tourist resources in Konkan region following new trends of tourism can be developed in coming years –

Adventure Tourism :-

As a kind of tourism in India, adventure tourism has recently grown in India. It involves exploration of remote areas and locals and engaging in various activities for adventure tourism in India, generally tourists prefer to go for trekking to places like Ladakh, Himachal Pradesh, Uttarakand, and North Eastern Himalaya. The various kinds of adventure tourism activities in India are Rock climbing, Skiing, Camel safari, Paragliding, Mountaineering, Rafting , Trekking . Konkan is also having the great potentiality of Adventure tourism in various areas. Coastal areas of Konkan can become favourite hot spot sites for snorkelling, scooba diving, paragliding, parasailing and other water sports. In some creeks and coastal areas dolphins are seen frequently, so here development of Dolphin tourism can easily started on commercial level with proper training.

As another type of adventure tourism, rock climbing is also has tremendous potential in Western Ghat of Maharashtra, whereas ,Kanheri Caves,Manori Rocks , are popular sites , but Karnala and many more sights near Mahad, Ratnagiri are still waiting for development. Bicycle rides/ bike rides also can be developed in Ghat sections of Sahyadri mountain.The jungle treks of Andharban forest, Kalavantin Durg trek near Panvel, Makrandgad – Mahipatgad – Sumargad – Rasalgad trek , Nageshwar trek, Chakdev trek and Mahimatgad trek near Devrukh of Ratnagiri have great potential to attract adventure tourists.

Adventure tourism in India has recorded a steady growth in recent years.

For the continuous growth , efforts are taken by the government of India. Similarly in Konkan also planning and policies should be implemented for the development of adventure tourism by state government and local authorities.

Wild Life Tourism :-

India has a rich forest cover which has exotic species of wildlife in world, out of which some are even endangered and very rare. This has boosted wildlife tourism in India. Almost 40% of Konkan is covered with green forest and home to a rich variety of flora and fauna. The Konkan is home to many endangered and rare species of plants and animals along with 367 species of marine flora and fauna. Most of the area covered by dense rain forest, Amboli hill station area is most suitable habitat for wild animals like leopard, wild cats, rabbits, wild hen and wild buffalo also appears in winter season.

Konkan is home of various migratory birds after rainy season. Flamingos', Painted stork,Sea-gulls and so many different species of birds are seen every year in various parts of Konkan, this can be a great opportunity to introduce Bird tourism as a new type of tourism. Karnala Bird Sanctuary and Sanjay Gandhi

National Park, Borivali are popular tourist places. Similarly, crocodile safaris in rivers/ creeks, butterflies and vultures in Phansad sanctuary, coastal sites of birds, and Olive Reedley turtle sites on entire Konkan coast can attract tourists from all category which will promote sustainable and eco-tourism in Konkan.

Ecotourism :-

Ecotourism, a environment friendly type of tourism has developed in India recently, but it can be developed in most of the parts of Konkan. Konkan is known for its lush green forest, paddy fields, coconut groves and mango orchard which has already great potential and have all the things to develop Eco tourism. Ecotourism means traveling to places known for their natural beauty and social culture, while making sure that not to damage the ecological balance of the place.

Ecotourism means conscious and responsible effort to preserve the diversity of a naturally endowed region and sustaining its beauty and local culture. Konkani people have been known since ages to worship and conserve nature in the form of Devrai or Sacred Grooves. Most of the rare species are seen here; because this forest is not cut by local people from so many years. They keep forest on the name of god, which is a good indicator of preservation of forest. These sites can be used for ecotourism. Matheran is famous eco tourist place in Maharashtra, but other places like Machal in Lanja tehsil, Amba Ghat and other such areas can be developed as eco tourist sites as per the demands.

There are few beautiful lakes and water bodies in the region of Konkan, Dhamapur Lake and Moti Talav are two most famous among them. Dhamapur Lake is a natural and one of the largest lakes of Konkan, an ideal picnic spot can be utilised up to its natural potential for various nature related activities.

Cultural Tourism :-

India has been considered the land of ancient history, heritage, and culture from time immemorial. The rich Indian cultural heritage is one reason why tourists in all over world come to India to experience it. The various fairs and festivals that tourists can visit in India are the Pushkar Mela, Kumbhmela, Taj festival, as well as Ganpati festival, Pune and Elephanta festivals, etc. Various rulers who ruled on India since historical periods have made impact on Indian culture. This impact has seen on various forms of dances, paintings, music, art, architecture, traditional customs, languages and food. The "Incredible India campaign" started by Indian Government has given successful identity to India at world level and this has led to the growth of culture tourism in India.

Konkan is known for its historical monuments, ancient caves and beautiful temples also. The rulers like Chalukya, Vakatak, Marathas, Portugij, and British etc. have spread their rich culture from historical period. The major forts of Maharashtra are situated along with the Konkan coastline; which includes the sea forts of Sindhudurg Fort, Janjira Fort and Vijaydurg Fort Suvarndurg Fort. Other most famous forts of Konkan are the Raigad Fort, Bhagavati fort, Kille Nivati and the Jaigad, Purnagad Fort, Rasalgad, Mahipatgad forts. These amazing forts can attract tourists as one of the most important trekking destinations to understand the glorious history of past and it will also bring tourists close to colourful facets of Konkan traditions and architecture..

The Konkani People are festive by nature. Their love for celebration is deeply rooted in their culture and it discovers its expression through the different celebrations celebrated throughout the year. A few of the Main Festivals celebrated in the Konkan region are: Ganesh Chaturthi, Holi, Diwali, Dassera, Gudhi Padwa, Narali Pournima and Makar Sankranti.

Cuisine Tourism :–

Cuisine / Food tourism, the new type of tourism has tremendous potential as India has diverse culture of traditions, customs. Every state has its unique identity of variety food .Maharashtra being a large state has known for different food culture according to the regions.

Konkanis are a very diverse group of people. The diversity is reflected in the religion and also in their food dietary. Good sign of Konkan region is that Konkani food and cuisines are famous for its mouth-watering delicious. Malvani cuisine means famous and spicy dishes of sea-food dishes, Malvani Mutton Curry and Kombdi Vade along with local Solkadhi one of the popular local drink of the Konkan region Ukadiche Modak and many dishes of Konkanastha Brahmin. All these food variety have potential to attract many more tourists from all over Maharashtra.

Wellness Tourism :-

Wellness tourism is one of the fastest growing forms of international and domestic tourism in India. This form of tourism involves people who travel to the different places for the maintaining of personal health and wellness. Wellness tourism include Naturopathy, massages, body treatments, facial treatments, exercise facilities & programs, weight loss programs, nutrition programs, Spa treatments and mind/body programs. In Konkan also Madhvbag near Khopoli is known for panchacarma, Pachal for naturopathy. Some other places have the potential for the development of such wellness tourism. Massage centres, mind/ body peace programmes, Vipassana centres Yoga centres can be easily started for the tourists who come for rest / refreshing / peaceful stay. The tourist places like Dapoli, Guhager, Ganpatipule, Ratnagiri, Malvan Tarkarli, Alibag etc.wich are already attracting thousands of tourists can be developed as centres of Wellness tourism related activities.

Heritage Tourism :-

Heritage tourism is a travel to experience the places and activities that authentically represent the stories and people of the past and present, which include historic, cultural and natural attractions. India is known for its rich heritage and culture since the past and has recorded immense growth in the last few years in heritage tourism. Heritage tourism has two types i.e. Natural Heritage and Cultural heritage.Natural Heritage means the areas of rich biodiversity. Cultural heritage can be seen in many forms including buildings, dance, food, dress, events, values, lifestyles and handicrafts. India's rich heritage is reflected in the various temples, palaces, monuments, and forts . Similarly Maharashtra and Konkan has also potential of heritage tourism. The rock sculptures which have recently found in many villages of Ratnagiri district has a great potential to attract not only Indian but foreign researchers, tourists also.

Famous Wooden toys of Sawantwadi, Dashavtar art form of Sindhudurg, Pinguli art and paintings, Warli art and paintings , Balya dance, Koli dance form and various other folk dances are the assets of Konkan.

Pinguli or Chitrakathi -- As a traditional art form of the Konkan region, Chitrakathi is quite unique and unlike any other because it engages the audience with nothing but mythological fables narrated with the visual help of pictures drawn on paper. This form of art was a speciality of the Thakar community and practised with vigour and passion when it had royal patron Chitrakathi is the art of storytelling with the help of pictures painted on cardboard pieces and cut to proper size. These tales are mostly based on the Puranas and popular epics such as the Ramayana and Mahabharata. The pictures are pasted on the top of a wooden strip and these are held by the artist and displayed in front while he narrates the story from behind.

Rock Art / Petroglyph in Ratnagiri District :-

A petroglyph is usually a prehistoric **carving** in a **rock**. Prehistory refers to the period of time before civilization and writing. Petroglyphs which are carved into the flat open **rock** surface gives them a scale and look that is unique. The recent discovery of 1,000 rock carvings on Maharashtra's Konkan coast is expected to provide new insights into the early history of the region. Jayant Sriram reports on the archaeological significance of these petroglyphs, which are estimated to be 12,000 years old. This carving is one of the over 1,000 such petroglyphs that have been discovered in and around the Ratnagiri and Rajapur districts over the last two or three years, making them one of the most significant archaeological finds of recent times. The carvings cover over 52 sites across the region.

India is famous for ancient caves and 80% of caves are found in Maharashtra. Konkan is also having lot of caves sites in various places. Elephanta caves are popular among tourists but there are some other sites where tourists can visit easily if these sites can be developed as tourist places. Panhale kazi caves, Gandhar Pale caves near Mahad, Kondana caves near Karjat- Raigad are few examples of such caves
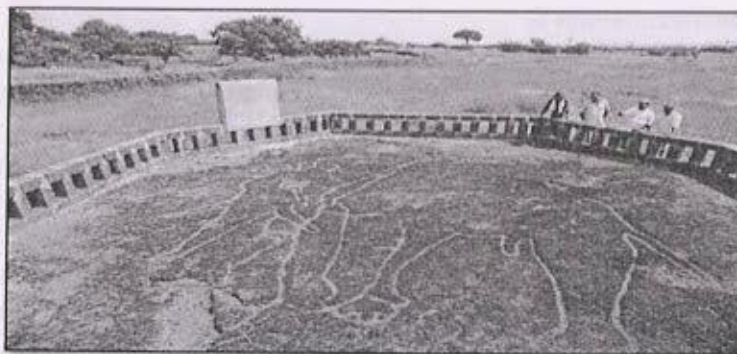
Agro Tourism :–

This form of tourism has enormous potential in India due to its agro-based economy and more rural population. Various states of India have agriculture problems, so in such situation if Agro tourism has to be promoted by Government/ local authority. Maharashtra a famous state in agriculture, but facing various issues of agriculture will be great advantage if Agro tourism is developed. A large numbers of migrations have taken place to Mumbai and other large cities after Independence. Today Konkan region is ideal for the development of Agro tourism to reduce unemployment and out migration. The warm and humid climatic conditions are quite favourable for Horticulture, e.g. Mangoes, Kokam, Cashew Nuts, Coconuts, Beetlenuts, Chikoo and many fruits are cultivated. Even Rubber Plantation is also successfully practiced in some areas. Konkani people depend mainly upon fishing and farming for their income and nowadays some are making their living with the assistance of growing Tourism in the area. The areas of Devgad, Dapoli , Khed and Ratnagiri are well-known for its Alphonso mangoes. The Coconut, Mango Orchids can attract thousands of tourists from all over India as like Goa and Kerala. Still now few Agro tourism sites are well known and popular among the tourists. Entire Konkan coast has large potential for agri tourism sites, because of clean, calm beaches are close to agricultural fields. Agro tourism will be beneficiary to local people fot stopping of out migration and to increase the local people income.

Coastal /Beach Tourism :–

India having the 7500 km. coast line which has not utilised still up to it's potential. Coastal / beach tourism related various activities have not given that much importance as this can promote India as world famous tourist destination. The states like Goa and Kerala have been attracted large number of tourists from all over world. Maharashtra being a coastal state have 720 km. long coastline which has virgin and pristine beaches. Most of these beaches are untouched, unspoiled having white and golden sand, but proper plans should be implemented for development of these coast. Snorkelling, scuba diving and water sports related games are the attractions here. Similarly Malvan- Tarkarli, Devbaug, Ganpatipule, Alibag- Murud-Janjira etc. few beaches are well developed but rest of all beaches and all the coastal villages can be focused as new tourist sites.

Sea world project at Malvan is pending from last 10 years, while Angria Bank which is rich in corals will be one the great attractions in future. This area has been declared as Marine park of India. Velas, Anjarle, Dabhol, Guhager and many sites are known for Olive Reedley turtles nesting sites can be developed as ecotourism hubs of Konkan. Dolphins cab be seen in most of the coastal areas and creeks, these places will be introduced as Ecotourism and sustainable tourist destinations of Konkan.

Cruise Tourism :-

It is fast emerging new marketable product in world and India. Konkan with its vast and beautiful coastline, virgin beaches can attract tourists for development of cruise tourism. Before independence cruise transportation was an only mode of transportation, but due to development of road and railway network it was neglected. Cruise tourism can be better option to attract tourists on large scale. Cruise can be run in creeks, or sea as per the available demands, for example Mumbai to Goa such cruise is started before few months ago and getting good response from tourists. Various creeks like, Karli, Jaigad, Dabhol , Thane creeks has potential to start such cruise tourism. It will helpful for local fishermen also to increase their income.

Conclusion and Recommendations :–

Tourism is emerged as an important instrument for sustainable human development including poverty alleviation, employment generation, environmental regeneration and development of remote areas and advancement of women and other disadvantaged groups in the region.

Historically, Konkan has been the land with dense forest cover, waterfalls, mountains and lush green valleys with beautiful beaches, picturesque hamlets, paddy fields, coconut groves and mango orchards. Konkan is blessed with many unspotted & virgin natural beaches which is the major attraction of tourists. The right policy at right place, will ensure growth of tourism industry in Konkan and Maharashtra.

Konkan region is naturally endowed region of variety tourist resources. Out migration after independence has affected lot of on the local development and economy. People were not accepting big projects like Sterlite, Enron, Nanar, Jaitapur etc. at one side and employment opportunities were lacking other side . Konkan is a must visit travel destination that you can enjoy with your entire family. To develop the new types of tourism in Konkan region following are the few recommendations --

1. Attract the private sectors/ investors to come forward for the investment in tourism infrastructure.
2. Through PPP investment, development should be in both tourism and civic infrastructure. Efforts towards development of overall transport infrastructure in the form of good quality roads, rail network, airports, helipads, availability of tourist vehicles etc. may also be strengthened in order to improve the overall infrastructure.
3. There should be provision of way side amenities, such as drinking water, well maintained and clean waiting rooms and toilets, first aid ,Bank and ATM facilities, Petrol pump information, etc., tourist information centres and websites for providing requisite tourist information.
4. Access and connectivity should be developed within tourist places, specially the rural potential sites or new types of tourism sites.
5. Aggressive and catchy advertisement campaigns on the tourist destinations should be made to attract more and more tourists.
6. To fulfil the tourist demands well trained manpower or workforce is required, hence local people should be trained skills and mannerism of hospitality industry.
7. Audio-visual shows should be arranged to tell the past and present features of history and life of the eminent people of the region.
8. Focus should be remained on different segments of tourism i.e. newly married couple, Family, school/ College students, Retired persons/ senior citizens and foreigners.
9. Plan for sustainable growth of rural tourism and balance of economics with people, culture and environment can be prepared for protecting natural resources, local heritage and lifestyles.
10. Promotion of local traditional tourism products for long-term growth and prosperity.

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Structural Study of a Binary Mixture of Multifunctional Group Molecules Using Time Domain Reflectometry

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Abstract

The dielectric relaxation study of diethanolamine with triethanolamine binary mixture have been determined over the frequency range of 10 MHz to 20 GHz, at 30°C using time domain reflectometry (TDR) method for 11 concentrations of the system. The present work reveals molecular interaction between same multi-functional groups [−OH and −NH$_2$] of the alkanolamines (diethanolamine and triethanolamine) using different models such as Debye model, Excess model and Kirkwood model. The dielectric parameters viz. static dielectric constant (ε_0) and relaxation time (τ) have been obtained with Debye equation characterized by a single relaxation time without relaxation time distribution by the least squares fit method.

Keywords: Structural Properties, Diethanolamine, and Triethanolamine.

1. Introduction

Dielectric study of binary polar liquids provides information regarding solute-solvent interaction. Considerable dielectric relaxation study has been done in aqueous solutions[1-3]. The diethanolamine (DEA) and triethanolamine (TEA) are multifunctional substances that are capable of hydrogen bonding by both donation and acceptance of hydrogen bonds. Their properties, in this respect, have not so far been determined, and it should be of interest to see how one functional group (the two hydroxy and primary secondary functional groups) affects to the behavior of the other (the two hydroxy and tertiary amine functional groups). Dithanolamine (DEA) and triethanolamine (TEA) both are highly polar liquids. Dielectric relaxation of liquid mixture gives information about molecular interactions. Objective of the present work is to report the dielectric relaxation study for DEA-TEA system at various concentrations at 30°C.

Article Info:

2. Experimental Details

DEA (AR grade, Merck Specialties, Pvt. Ltd., Mumbai, India) and TEA (AR grade, Qualigens fine chemicals Pvt. Ltd., Mumbai, India) were used without further purification. The solutions were prepared at 11 different volume percentage of DEA from 0 % to 100 %. Using these volume percent the mole fraction is calculated as

$$x = (v_1\rho_{1}/m_1) /[(v_1\rho_{1}/m_1) + (v_2\rho_2/m_2)] \qquad (1)$$

where m_i, v_i, and ρ_i represent the molecular weight, volume percent, and density of the ith (i=1, 2) liquids, respectively.

The complex permittivity spectra were studied using the time domain reflectometry [4] method. The Hewlett Packard HP 54750 sampling oscilloscope with HP 54754A TDR plug in module has been used.

The relaxation behavior of DEA-TEA system agrees with the Debye model. Therefore the experimental values of $\varepsilon^*(\omega)$ were fitted with the Debye equation [5].

A nonlinear Least-Squares fit method [6] was used to determine the values of dielectric parameters.

3. Results and discussions

3.1 Dielectric Properties

The static dielectric constant (ε_0), dielectric constant at high frequency (ε_∞) and relaxation time (τ) obtained by fitting experimental data with the Debye equation are listed in table (1) for DEA-TEA system.

The values of static dielectric constant randomly increase with increasing the temperatures up to the melting points of DEA and TEA in the system, and then it becomes smoothly decreases with increase in temperatures. This behavior of static dielectric constants of DEA and TEA indicates that the change of phase from semi solid state to liquid state and increase in static dielectric constant may be correlated to disturbance in antiparallel arrangement of dipoles which leads to increase effective dipole moment. The melting point of DEA is 28°C and TEA is 20.5^{o}C. The values of relaxation

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time decreases with increase of temperature, but these values suddenly decreases at the melting points.

Table 1 - Temperature dependent dielectric relaxation parameters for DEA-TEA mixture

x_2	T=15°C	T=20°C	T=25°C	T=28°C	T=30°C
ε_0					
0.0000	19.07	20.93	22.56	24.69	24.53
0.0743	23.44	25.12	27.20	29.77	27.53
0.1530	25.30	27.68	29.53	31.22	30.04
0.2364	26.80	28.60	30.47	31.53	31.18
0.3251	27.89	29.55	31.22	32.54	31.60
0.4194	28.10	32.05	32.44	33.18	32.74
0.5201	27.33	31.94	31.22	30.92	30.06
0.6277	27.19	31.56	30.64	30.13	29.35
0.7429	26.84	30.77	30.08	29.79	28.93
0.8667	26.12	30.34	29.94	29.02	28.60
1.0000	25.18	29.83	29.26	28.57	28.09
ε_∞					
0.0000	2.69	2.78	3.03	2.57	2.46
0.0743	2.84	2.79	3.10	2.59	2.49
0.1530	2.71	2.81	3.13	2.61	2.53
0.2364	2.99	2.81	3.19	2.68	2.55
0.3251	3.12	2.83	3.22	2.70	2.58
0.4194	3.21	2.88	3.27	2.73	2.60
0.5201	3.76	2.91	3.09	2.74	2.63

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0.6277	3.04	2.93	3.01	2.81	2.64
0.7429	2.81	2.98	2.98	2.88	2.69
0.8667	2.77	3.13	3.04	2.96	2.71
1.0000	2.61	3.30	3.18	3.02	2.97
$\tau(ps)$					
0.0000	474.21	439.73	414.84	307.48	285.94
0.0743	488.03	441.84	423.10	326.30	298.52
0.1530	496.51	443.98	425.62	332.83	307.03
0.2364	502.47	450.04	428.04	345.31	310.44
0.3251	509.85	452.08	430.16	349.43	316.85
0.4194	513.64	457.24	432.96	353.01	327.24
0.5201	519.33	458.73	435.82	361.60	339.61
0.6277	528.07	460.85	437.44	369.55	358.77
0.7429	531.63	464.52	440.72	384.74	364.64
0.8667	548.70	470.35	441.65	400.33	371.38
1.0000	556.34	472.20	443.13	407.54	383.19

3.2 Excess Dielectric Properties

The information related to liquids 1 and 2 interaction may be obtained by excess properties [7, 8] related to the permittivity and relaxation times in the mixture.

The excess permittivity may provide qualitative information about multimers formation in the mixture as follows:

$\varepsilon^E = 0$ indicates that the unlike molecules of the mixture constituents do not interact at all.

$\varepsilon^E < 0$ indicates that the unlike molecules of the mixture constituents interacts in such a way that the total effective dipoles get reduced. These liquids may form multimers leading to the less effective dipoles.

$\varepsilon^E > 0$ indicates that the unlike molecules of the mixture constituents interacts in such a way that the total effective dipole moment increases. There is a tendency to form multimers, dipole aligned in a parallel direction.
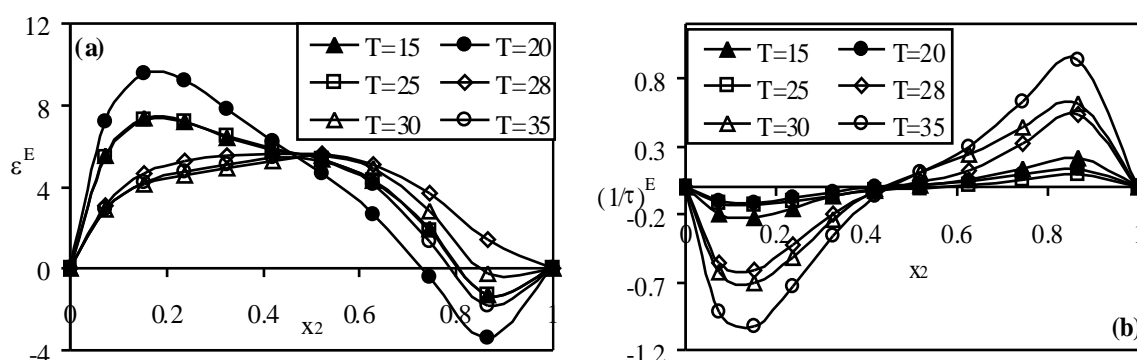

Fig. 1. (a) Excess permittivity (ε^E), (b) Excess inverse relaxation time $(1/\tau)^E$ versus mole fraction (x_2) of TEA in DEA at different temperatures.

The excess permittivity values are positive in the DEA rich region and negative in the TEA rich region, except 28°C. Excess inverse relaxation time value has reverse trend for all concentrations and at all temperatures. The positive peak values are different at all temperatures of excess permittivity in DEA rich region. The negative peak in the ETA rich region is at 0.8667 mole fraction of DEA in ETA in the system. The negative peak of excess inverse relaxation times is noted at 0.1530 and the positive peak at 0.8667 mole fraction of DEA in the ETA of the system. The excess permittivity values are positive up to the 80 % of TEA in DEA and then it becomes negative for 15, 25 and 30°C in the system. For 20°C, these values are positive up to the 90 % of TEA in DEA and then it becomes negative. At 28°C, all values are positive. The excess permittivity plots for the system studied show that, with addition of TEA, the values of excess permittivity become positive indicating formation of monomers in the mixture and it is negative in TEA rich region nearly 90 % TEA in the system.

Similarly, the excess inverse relaxation time $(1/\tau)^E$ which represents the average broadening of dielectric spectra. The inverse relaxation time analogy is taken from spectral line broadening (Which is the inverse of the relaxation time) in the resonant spectroscopy [9, 10].

The information regarding the dynamic of liquid 1 and 2 interactions from the excess inverse relaxation time is as follows:

$(1/\tau)^E = 0$: There is no change in the dynamics of liquid 1 and 2 interaction.

$(1/\tau)^E < 0$: The liquid 1 and 2 interaction produces a field such that the effective dipoles rotate slowly.

$(1/\tau)^E > 0$: The liquid 1 and 2 interaction produces a field such that the effective dipoles rotate quickly i.e. the field will co-operate in rotation of dipoles.

The excess inverse relaxation time values are negative up to the 50 % TEA and then it becomes positive in the system. The negative value of excess inverse relaxation time indicates slower rotation of the dipoles of the system and positive values indicates faster rotation of the dipoles of the system.

3.3 Kirkwood Properties

The Kirkwood correlation factor g [11] is also a parameter for getting information regarding the orientation of electric dipoles in polar liquids. The dipole moments for DEA and TEA in the gas phase are taken as 2.80D and 3.57D [12] respectively.

The structural information about the liquid by dielectric parameters can be obtained using Kirkwood correlation factor. The values of g^{eff} and g_f are tabulated in table (2). The value of geff is linearly increases up to 50 % TEA in DEA, and then it becomes decreases at 15oC. After all the temperatures (after the melting points) these values are linearly decreases with increase in the % volume of TEA in the system. After 28^oC, these values are linearly increases with temperatures in DEA and TEA rich region (i.e. both are in liquid state). These val-ues are greater than one indicating parallel orientation of the electric dipole and less than one indicating anti-parallel orien-tation of the electric dipole in the system. gf< 1 for all con-centrations at 20 to 30^oC. The gf values are close to unity for DEA-TEA system studied, indicating weaker intermolecular interactions between components of the system. The maxi-mum deviation from unity is observed at 15^oC, around 20 % of TEA in DEA mixture.

Table 2 - Temperature dependent Kirkwood parameters for DEA-TEA mixture.

ϕ_2	T=15^oC	T=20^oC	T=25^oC	T=28^oC	T=30^oC

g^{eff}					
1.0	0.8148	0.6783	0.7878	0.9391	0.9590
0.9	1.0304	0.8598	0.9860	1.1874	1.1263
0.8	1.1310	0.9903	1.1001	1.2925	1.2827
0.7	1.2168	1.0641	1.1624	1.3521	1.3852
0.6	1.2847	1.1437	1.2192	1.4477	1.4593
0.5	1.3110	1.2945	1.2982	1.5310	1.5741
0.4	1.2890	1.3396	1.2746	1.4733	1.4958
0.3	1.2986	1.3746	1.2780	1.4868	1.5173
0.2	1.2977	1.3913	1.2823	1.5242	1.5555
0.1	1.2777	1.4260	1.3060	1.5391	1.6004
0.0	1.2456	1.4578	1.3048	1.5723	1.6363
g_f					
1.0	1.0000	1.0000	1.0000	1.0000	1.0000
0.9	0.9823	0.9433	0.9728	0.9727	0.9623
0.8	0.9825	0.9235	0.9684	0.9634	0.9538
0.7	0.9937	0.9100	0.9683	0.9583	0.9538
0.6	1.0112	0.9095	0.9752	0.9698	0.9579
0.5	1.0235	0.9452	0.9977	0.9877	0.9821
0.4	1.0193	0.9529	0.9869	0.9637	0.9500
0.3	1.0279	0.9613	0.9863	0.9631	0.9504
0.2	1.0320	0.9644	0.9866	0.9762	0.9614
0.1	1.0227	0.9806	1.0008	0.9813	0.9805
0.0	1.0000	1.0000	1.0000	1.0000	1.0000

3.4 Conclusion

The Dielectric relaxation properties have been reported for same multifunctional (-OH and –NH2) compounds binary mixture for various temperatures and concentrations.

- The values of static dielectric constant increase upto their melting points and then it becomes decreases with increasing the temperature in the system.

- The relaxation time of these molecules sudnly drops down at the melting poins.

- The excess permittivity may provide qualitative infor-mation about multimers formation in the mixture.

- The information regarding the dynamic of liquid 1 and 2 interactions from the excess inverse relaxation time.

- The Kirkwood correlation factor is also a parameter for getting information regarding the orientation of electric dipoles in polar liquids.

- In semi-solid state, the strong inter-molecular intraction is observed as compaired to liquid state of the system contains same functional groups.

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Online submission of AQAR for Criterion III: Research, Innovations and Extension

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Abstract:

As per the NAAC Guidelines all the Heigher Education Institutes need to submit AQAR online. Submitting AQAR by e-mail/hard copy is not accepted w.e.f 1st January 2019. Heigher Education Institutes which have not yet registered to online portal of NAAC need to follow the registration process and requested to register immediately. We have detailed discussed on formats of criterion III for online submission.

Introduction:

Heigher Education Institutes are eligible for submission of AQAR-1 only after one year from date of declaration of grade.There are main two steps to follow the online submission of Annual Quality Assurance Report (AQAR) for Higher Education Institute: Step 1: Registration and Step 2: Filling & Submission of AQAR. Step 2 basically divides in two parts Part A: Basic details of Institution and Part B: - Data as per SSR, for the period of previous one year. In this

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paper we can discuss on formate and additional documents formatting were necessary at the time of online submission for criterion III.

Discussion:

3.1 Resource Mobilization for Research

3.1.1 Research funds sanctioned and received from various agencies, industry and other organisations

Nature of the Project	Duration	Name of the funding Agency	Total grant sanctioned	Amount received during the Academic year
Major projects				
Minor Projects				
Interdisciplinary Projects				
Industry sponsored Projects				
Projects sponsored by the University/ College				
Students Research Projects (other than compulsory by the College)				
International Projects				

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Any other(Specify)				
Total				

- Project sanctioned letter, e-copies,

- Upload these details to college website under Research activities.

3.2 Innovation Ecosystem

3.2.1 Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

Title of Workshop/Seminar	Name of the Dept.	Date(s)

- At least 30% students need to be related to IPR related workshops/ seminars.

- Industry Academia innovative practices related activities and workshops for at least 20 to 40 % students/ at least 5 activities with innovation.

- Industry interaction related activity list:

- Establishment of IPR- one should belonging to Law Subject background

- Organized workshop/ seminar on Intellectual property Right (IPR)

- Industrial – Academic Innovation –

In collaboration with Industry conducts programs like commercial Research project for improvement in industrial processing procedure & product, Develops Industrial training based

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courses (Value added courses), adaptation of village for adult literacy for which financial support by Industry under CSR while experts, procedure, methodology will provide by college

- These activities also used for no. of linkage (3.5.1)

Data Template:-

- Year, Name of Workshop/ seminar, date from – to, link to activities report on website, Date of establishment – IPR cell.

Additional Information:-

- IPR workshop/ seminar – brochures, notice, list of participants, attendance, feedback, photos, upload to SSR as well as on college website

Industry Academic innovation- activities with each detail upload on college website.

3.2.2 Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of the Award	Awarding Agency	Date of Award	Category

3.2.3 No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Centre	Name	Sponsored by

Name of the Start-up	Nature of Start-up	Date of commencement

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Incubation centre-

- Incubate to students for their future field of profession, institute has to provide ICT supported infrastructure, invite experts in field of industry, business, and corporate sector & organize interaction session with the students.

Start-up

- To provide financial support for the student as a seed money for to establish business or small scaled Industry.

Additional Information:-

1. Establish IC Committee, under which organize program.
2. Date of Activity, Initiatives with details, title of the program, list of participants students with attendance , photographs; upload on website .
3. Proposal of start-up, sanctioned by IQAC/CDC/GC, Report, Audited statement of expenditure.

3.3 Research Publications and Awards

3.3.1 Incentive to the teachers who receive recognition/awards

State	National	International

Data Template:-

- (FOR SSR)Name of full time teacher receiving award from State level, National Level,

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International Level/ year of Award/ PAN/ Designation/ Name of award, fellowship received from Government recognized bodies, Incentives given by the HEI in recognized of the award, link to relevant documents.

Description:-

- Teacher fellowship award, best teacher award, award from NGO/ Societies, best paper (Published) award, best paper presented award, Young Scientist Award, etc.
- Incentives by HEI in the form monitory, study leave, promotion (Institutional Level with increments)
- Letter of Award/ recognition upload on college website & provide link to SSR
- **Letter of Incentives sanctioned; upload on website**

3.2.2 Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of the Award	Awarding Agency	Date of Award	Category

3.2.3 No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Centre	Name	Sponsored by

Name of the Start-up	Nature of Start-up	Date of commencement

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Incubation centre-

- Incubate to students for their future field of profession, institute has to provide ICT supported infrastructure, invite experts in field of industry, business, and corporate sector & organize interaction session with the students.

Start-up

- To provide financial support for the student as a seed money for to establish business or small scaled Industry.

Additional Information :-

1. Establish IC Committee, under which organize program.
2. Date of Activity, Initiatives with details, title of the program, list of participants students with attendance , photographs; upload on website .
3. Proposal of start-up, sanctioned by IQAC/CDC/GC, Report, Audited statement of expenditure.

3.3Research Publications and Awards

3.3.1 Incentive to the teachers who receive recognition/awards

State	National	International

Data Template:-

- (FOR SSR)Name of full time teacher receiving award from State level, National Level, International Level/ year of Award/ PAN/ Designation/ Name of award, fellowship received from Government recognized bodies, Incentives given by the HEI in recognized of the award, link to relevant documents.

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Description :-

- Teacher fellowship award, best teacher award, award from NGO/ Societies, best paper (Published) award, best paper presented award, Young Scientist Award, etc.
- Incentives by HEI in the form monitory, study leave, promotion (Institutional Level with increments)
- Letter of Award/ recognition upload on college website & provide link to SSR
- **Letter of Incentives sanctioned; upload on website**

3.3.2 Ph. Ds awarded during the year (applicable for PG College, Research Center)

Name of the Department	No. of Awards

Not Applicable for Only UG

- No. of Ph.D.'s awarded (amongst student) & no. of teachers as Research Guide
- Ongoing Ph.D.'s are not considered

Data Template :-

- Name of Ph.D. holder, name of Department, Name of Guide/ co guide, title of thesis, year of Ph.D. registration, year of award of Ph.D.

Additional information :-

- Ph.D. awarded letter/ certificate upload to SSR as well Guide ship letter of teachers. Detail information of Ph.D. Scholar under 'Research Activities' uploads to college website

3.3.3 Research Publications in the Journals notified on UGC website during the year

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	Department	No. of Publication	Average Impact Factor, if any
National			
International			

(FOR SSR)Title of Paper, Name of Author/authors, Department of teacher, name of journal, year of published, ISBN/ ISSN no., link of recognition in UGC enlistment of the Journal/ on line link of paper.

Additional Information :-

- Upload all published research paper on college website under 'Research Activities'

3.3.4 Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	No. of publication

- No. of books published (ISBN/ ISSN considered
- Chapter in book / volume
- Paper published in national / international conference proceeding (ISBN/ ISSN considered)

Data Template: -(FOR SSR)

- Sr.no, name of teacher, title of book/ chapter published, title of paper, title of proceeding of conference, name of conference, national / international, year of

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publication, ISBM/ ISSN number of proceeding, affiliating institute of the time of publication (venue of conference held), name of publisher, relevant link

Additional Information:-

- Cover page, content page & first page of selected publication (for books & paper in proceeding).

Aforesaid same upload on library webpage of college website

3.3.5 Bibliometrics of the publications during the last Academic year based on average citation index in Scopus/ Web of Science or Pub Med/ Indian Citation Index

Title of the paper	Name of the author	Title of the journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self - citations

- The Indian Citation Index (ICI) is an online bibliographic database containing abstracts and citations from academic journals.
- Currently ICI covers more than 1100+ journals from India covering scientific, technical, medical, and social sciences that includes arts and humanities.
- ICI covers data from 2004 onwards and provides full text of the title for Open Access journals, at present there are more than 300+ OA journals.
- ICI provides search and analytical features. ICI was launched in India in 2009 and is funded by Diva Enterprises Pvt. Ltd.

3.3.6 h-index of the Institutional Publications during the year. (based on Scopus/ Web of science)

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Title of the paper	Name of the author	Title of the journal	Year of publication	h-index	Number of citations excluding self-citations	Institutional affiliation as mentioned in the publication

h- FACTOR: INDIVIDUAL

- h = HIS/HER, h-index is an author-level metric that attempts to measure both the productivity and citation impact of the publications of a scientist or scholar. The index is based on the set of the scientist's most cited papers.
- If the journal is with UGC notified keep the necessary proofs. These need to be with the author and be kept with the paper.

3.3.7 Faculty participation in Seminars/Conferences and Symposia during the year :

No. of Faculty	International level	National level	State level	Local level
Attended Seminars/ Workshops				
Presented papers				
Resource Persons				

-Invitation letter/broacher, certificate/letter of attended, paper presented/resource person for seminar, conference, symposia and workshop

3.4 Extension Activities

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3.4.1 Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations   through NSS/NCC/Red cross/Youth Red Cross (YRC), Adult learning programs National Literacy mission. etc., during the year

Title of the Activities	Organising unit/ agency/ collaborating agency	Number of teachers co-ordinated such activities	Number of students participated in such activities

- Activities of NSS, NCC, Red Cross, YRC(Youth Red Cross) in collaboration with industry, Community & NGO, Blood Donation, Health Checkup, Road safety, Swatch Bharat Abhiyan
- Activities organized during NSS Residential Camp could be included.

Data Template:-

- Name of Activity, organizing unit/ agency/ collaboration agency, year of activity, number of teacher participated in activities, Number of student participated in such activities

Additional Information:-

- Report of program/ activities with geo-tag photographs .
- Newspaper curing .
- List of Teacher & student participant .
- Appreciation letter if any .

Aforesaid all activities upload under 'NCC Activities' of college website

3.4.2 Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the Activity	Award/recognition	Awarding bodies	No. of Students benefited

- Award for institute & that's only for extension activities considered
- Award or appreciation letter received to institute for extension/ social activities

Data Template:-

- Name of Activities, name of award/ Recognition, Name of the awarding government / Recognized bodies, year of award

Additional Information:-

- Letter of award / e-copies, report & geo-tag photo .
- Similar information upload on college website under 'Extension Activities'

3.4.3 Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/ agency/ collaborating agency	Name of the activity	Number of teachers coordinated such activities	Number of students participated in such activities

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- Number of students participating Swachh Bharat, Aids Awareness, Gender Issue, Paani foundation, riverbed cleaning, , etc. Programs/ activities in collaboration with Government (Nagar Parishad, Tahasil, Collector office, Gram Panchayat etc.) & NGO

Data Template:-

- Name of Activity, organizing unit / agency/ collaborating agency, Name of Scheme, year of activities, list of student and teacher participated.

3.5 Collaborations

3.5.1 Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of Activity	Participant	Source of financial support	Duration

- Collaborative activities between near by institutes will be beneficial. Nature of activity(for research/faculty exchange/student exchange).Participant(student/teachers),if financial support is required, source.
- Letters of communication, date wise activity reports, list of participants, geo-tag photo.

3.5.2 Linkages with institutions/industries for internship, on-the-job training, project work, sharing of research facilities etc. during the year

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Nature of linkage	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Duration (From-To)	participant

Data Template:-

- Nature of linkages(Through agreements / formal), Title of linkage (internship, job training linkage, project work linkage,)Name of partnering institution / Industry/ Research lab with contact detail, Year of Commencement, duration fro – to, Nature of linkage (formal linkage, with agreement)

Additional Information:-

- Any corresponding documents / letters e-copies could be documentary evidence.
- All activities report with geo-tag photograph upload on college website

3.5.3 MoU's signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose and Activities	Number of students/teachers participated under MoUs

- Memorandum of understanding (MOU) with documentary format Agreements on STAMP PAPER.

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Data Template:-

- Organization with which MOU is signed (Academic MOU, Research MOU, Training MOU, Program/ Activity conducting MOU…)Name of the Institution / Industry/ Corporate house, Year of Signed MOU, Duration, List of actual activities under each MOU year wise, Number of student/ teacher participated under MOU, link of Relevant document (All MOU documents, activities report with geo-tagged photograph upload on college website .)

Additional Information:-

- Program report with geo-tagged photographs upload on College website
- List of student & teacher participated upload on college website

References:

1. http://www.naac.gov.in/
2. http://www.naac.gov.in/19-quick-links/83-aqar-online-submission
3. http://www.naac.gov.in/images/docs/AQAR_ONLINE/Guidelines-Submission-AQAR-27-12-2019.pdf
4. http://www.naac.gov.in/images/docs/AQAR_ONLINE/Process--of-AQAR.pdf

Synthesis And Gas Sensitivity Of ZNO Thick Film By Different Technique: A Review.

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dist. Nanded.(M.S.)

Abstract: Zinc oxide nanostructures prepared using two different methods: first method (simple evaporation) with different flow rates of (100, 200 and 300) (sccm) using a mixture of $(Ar + O_2)$ with a ratio of (10:1). The second method (hydrothermal) zinc nitrate aqua solution and Teflon lined stainless steel autoclave was used as a reactor. Zinc oxide (ZnO) thick films were prepared on glass substrates by screen printing and their structural, morphological, optical and electrical properties were investigated. X-ray Diffraction (XRD) analysis revealed the films' hexagonal wurtzite phase with a preferred (002) grain orientation. Scanning Electron Microscopy (SEM) micrographs revealed the film's granular nature composed of rod-shaped and spherical nanoparticles Field emission scanning electron microscope (FESEM), Atomic force microscope was used to study surface morphology of the films and X-Ray diffraction to study the structural properties of the films.

Keywords: XRD. Scanning Electron Microscopy, FESEM.

Introduction: The sensors are required basically for measurement of physical quantities and for use of controlling some systems. Presently, the atmospheric pollution has become a global issue. Gases from auto and industrial exhausts are polluting the environment. In order to detect, measure and control these gases, one should know the amount and type of gases present in the ambient. Thus, the need to monitor and control these gases has led to the research and development of a wide variety of sensors using different materials and technologies. The ZnO is a multifunctional material. Because of its high chemical stability,

low dielectric constant, large electromechanical coupling coefficient and high luminous transmittance, ZnO based materials have been widely used as dielectric ceramic, pigment, catalyst and sensing material [1]. As gas sensing material, it is one of the earliest discovered and most widely applied oxide gas sensing material [2]. It is sensitive to many sorts of gases and has satisfactory stability. However, these sensors are not selective for a particular gas and various attempts are being made to improve their selectivity. One approach is to use dopants and additives [3–7] which can modulate the gas-sensing characteristics to some extent. Other methods to improve the selectivity of the sensor include the use of masks and filters or temperature programming wherein the temperature is carefully controlled so that the sensor detects only a particular gas with high sensitivity. Recently, another method was reported [8, 9] for selectivity control using surface functionalization of semiconducting oxides. The method seems to be very promising for tuning selectivity. Detection of ammonia at a trace level is important since it is used extensively in many areas such as food processing, fertilizers, chemical technology, medical diagnosis, fire power plants and environmental protection. Some of the well-known materials for ammonia sensors are pure ZnO[10,11], SnO2 [12], TiO2 [13], Cr2O3-doped TiO2 [14], etc. This article deals with preparation procedure of thick films of pure ZnO, and surface ruthenatedZnO by screen printing technique and their gas sensing performance. Studies were carried out and the results are presented on the variation of sensitivity with different operating conditions, the selectivity of a sensor to identify a target gas and the effect of catalysts on the sensing performance. Efforts are made to improve the selectivity and to enhance the sensitivity by surface functionalization of ZnO thick film samples. The results are interpreted and summarized in the terms of conclusions.

Experimental :

ZnO thick films with were prepared on glass substrates by screen printing from 0.1 M of zinc acetate dehydrate [Zn (CH$_3$COO)$_2$, 2H$_2$O] (Sigma-Aldrich,USA,99.999%purity) dissolved in

a mixture of methanol and deionized water. The ratio of methanol to deionized water was maintained at 2:1 and a few drops of acetic acid were added to the prepared solution to prevent the precipitation of zinc hydroxide. Prior to deposition, the substrates were ultrasonically cleaned with acetone, isopropanol and finally with deionized water for 15 min in each step and then dried using compressed air. The prepared solution was pumped by means of an infusion syringe pump at a constant flow rate of 2ml/min and sprayed directly on to glass substrates placed on a hot plate stove set at 623K. A stream of compressed air was used to atomize the spray solution through the nozzle fixed at 15 cm directly above the substrate. Film thickness was measured using a 2D surface profile meter (Alpha-stepD-100, KLA-Tencor, USA) with a sub- angstrom re solution and 0.1% step height repeatability. Structural properties were examined by an X-ray diffraction (XRD, D 8 Advance, Bruker, Germany) using Cu Kα radiation ($\lambda = 1.5418Å$), operated at 40kV and 40 mA. The surface morphology was characterized by a Zeiss field-emission scanning electron microscope (FE-SEM) operating at 2.00 kV. Optical transmittance measurements were performed using a UV//NIR spectrophotometer (Lambda-750, Perkin-Elmer, America) in the 300–800 nm wavelength range. Electrical properties were evaluated from Current-Voltage (I–V) measurements using the four point probe equipment consisting of an EZGP-4303 power supply, a Sign at one probing Table and two Keithley 197 digital multi meters. Raman spectroscopy was performed using a Horiba–Job in Yvonne Raman Spectrometer (Lab RAMHR Evolution, France) in the back scattering geometry with the 532 nm excitation line of a solid state laser at an incident power of 2mW in the range 200–750 cm−1. High purity ZnO powder (99.90%) was the commercially available. Thick film samples of pure ZnO were prepared by screen printing technique [15, 16] on a glass substrate in a desired pattern. The paste is screen printed in (1 cm) square pattern on different pre cleaned substrates (glass. Si, Sio2), the screen print is a simple technique to prepare the thick films with exact pattern and then the thick films are dried in air then, heated in a box furnace to 500 _C with a rate of 8 _C/min for 1 h to remove the organic material. Then the films were examined by different

devices to study its structural properties. Ohmic contacts were fabricated on P type Si (1–10 X.cm) by evaporating 99.999 purity aluminum wires for backcontact for (I–V) measurements using Edwards coating system. A boat of tungsten was used to include the evaporated source, while finger integrated electrodes were screen printed on the thick film using silver paste

Results and discussion: In order to understand the structural properties of ZnO film samples prepared at different method, the X-ray diffraction study was carried out. X-ray diffraction analysis of ZnO film samples were carried out in the 20–80_ range using Cuka radiation.

Structural properties Fig. 1 shows the XRD pattern of ZnO thick films of thickness 650 nm. All diffraction peaks were indexed to ZnO with a hexagonal wurtzite crystal structure (Crystallography Open Data base, COD1011258).The appearance of weak diffraction peaks corresponding to the (100), (101), (210), (103) and (212) planes of ZnO suggested the presence of some randomly oriented grains. However, there was a strong preferential growth orientation along the (002) plane indicating that the films grow perpendicular to the substrate. This was comparable with other ZnO micro structures such as micro-rings [17], micro rods and micro sausages
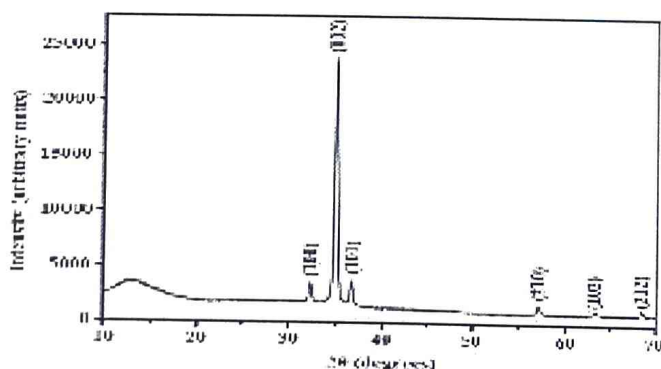
Fig. 1. XRD pattern of the micro-ring structured ZnO thick film deposited on glass substrate at 623 K

[15] but in contrary with micro-rings[17, 19] which had a pre dominant (101) diffraction peak. The mean crystallite size (D) was evaluated according to broadening

of the highest intensity peak corresponding to the (002) diffraction plane using the Debye- Scherer formula shown in Eq. (1)

$$D = 0.9\lambda / \beta COS \theta \tag{1}$$

Where λ, β, and θ are the X-ray wavelength (1.5418Å), full width at half maximum (FWHM) in radians (corrected for instrumental broadening) and Bragg's diffraction angle, respectively. The FWHM and D were found to be 0.347° and 24nm , respectively. The dislocation density (δ) was calculated from D using Eq. (2)

$$\delta = 1/D^2 \tag{2}$$

and was found to be 1.7×10^3 nm^{-2}. This lower value for δ implied that our films had very few lattice defects and good crystalline qualities. The lattice parameters a and c were calculated using Eq. (3)

$$1/d^2_{hkl} = 4/3 (h^2 + hk + k^2 /a^2) + l^2 / c^2 \tag{3}$$

where d_{hkl} is the inter planar spacing obtained from Bragg's law, and h, k and l are the Miller indices denoting the plane. The lattice parameters were estimated to be a = 3.21Å and c = 5.12Å, which are slightly lower than those for bulk ZnO, a = 3.22 Å and c = 5.2Å (COD1011258), may be due to the effects of compressive strain on the film's grains. The obtained values indicated the presence of small amounts ofcompressive strain and tensile stress in the film and the seamy be the ones responsible for theslightly larger(002) peak position and relatively smaller lattice parameter c. Figures 2 and 3shows an XRD pattern.

a   b   c
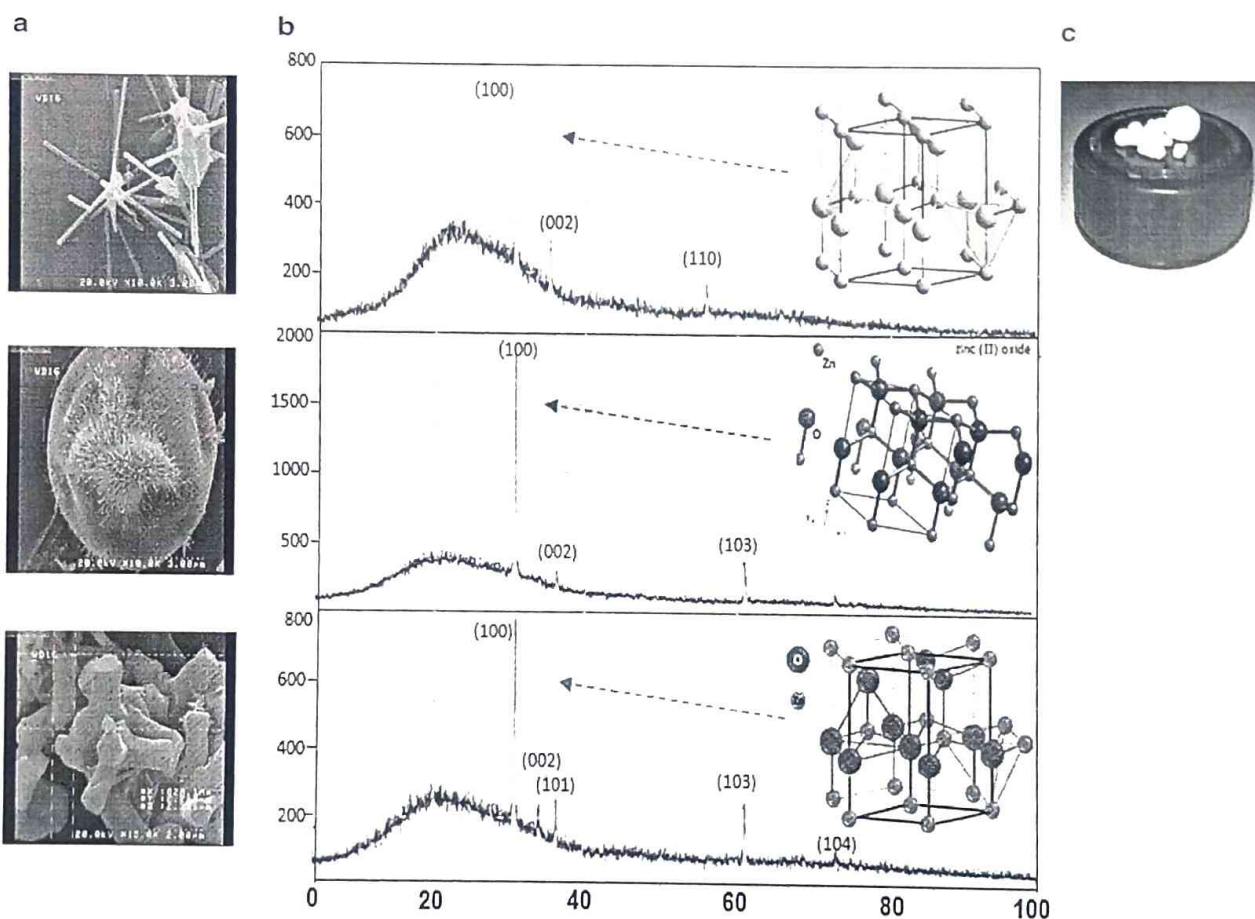
Fig. 2: XRD pattern of ZnO screen printed thick films prepared using simple evaporation system at (a) 100 sccm, (b) 200 sccm and,(c) 300 sccm flow rate mixture gas (O_2 + Ar)
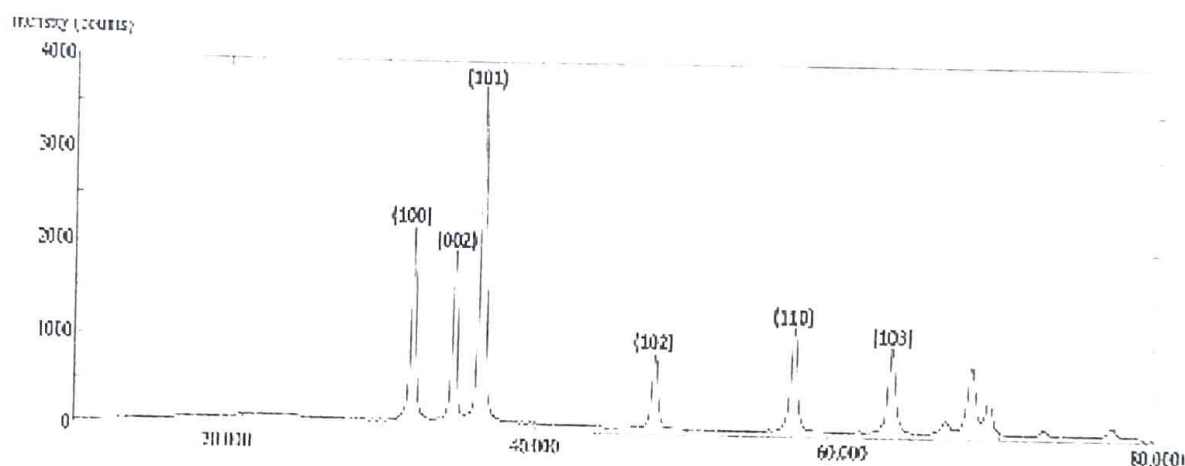
Fig. 3: XRD pattern of ZnO screen printed thick film prepared using hydrothermal method. In this work the temperaturewere fixed and the inert gas was Argon, the flowrate of the mixture (Ar+ O_2) were change (100, 200, and300) sccm per minute.

Conclusion:

The structural, morphological, optical and electrical properties of spray pyrolysis deposited ZnO micro-ring structured thick films were characterized. The films had a hexagonal wurtzite crystal structure with a preferred orientation along the (002) direction. SEM micrographs showed nanoparticles which coalesced to form micro- rings on the surface of the film. High average transmittances, around 75–80% were observed in the visible region. The wave length dependence of refractive index and extinction co efficiently so confirmed the high transparency nature of the films. The optical band gap and Urbach energy were determined to be 3.28 eV and 57 meV, respectively. The ZnO E2 (high) and A1 (LO) Raman modes were observed at 436 cm^{-1} and 576 cm^{-1}, respectively. A low electrical resistivity of 6.03 $\times 10^{-1}$ Ω cm and high figure of merit of 4.35 $\times 10^{-6}$ Ω^{-1}, indicated the suitability of the ZnO micro-ring structured thick films for optoelectronic applications.

Acknowledgments:

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Research Article

Theme- *New horizons in chemical sciences.*
Guest Editor- *R.P. Pawar*

A novel Schiff base of 3-formyl-6-methylchromone and 3-aminoquinoline and its Cu(II) and Co(II) complexes: Synthesis, characterization and Antimicrobial screening studies.

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ABSTRACT
A novel Schiff base 6-methyl-3-((quinolin-3-ylimno) methyl)-4H-chromen-4-one obtained by the condensation of 3-formyl-6-methylchromone and 3-aminoquinoline and synthesis of its Cu (II) and Co (II) complexes. Schiff base and its complexes have been characterized by analytical data, elemental analysis, molar conductance, magnetic moment and thermogravimetric analysis. The structural elucidation of prepared compounds carried out by UV-Visible, infrared ^{1}HNMR spectroscopic techniques. The elemental analysis revealed metal to ligand stoichiometry was 1:2. Spectroscopic studies and magnetic moment data interpret octahedral geometry of the complexes. The measured low molar conductance values in DMF indicate that complexes are non-electrolyte. The synthesized compounds were evaluated by in vitro antimicrobial analysis and results were compared with standard tetracycline. Schiff base and its metal complexes shown remarkable antibacterial and antifungal activity.

KEYWORDS
Schiff base, Antimicrobial activity, 3-aminoquinoline, 3-formyl-6-methylchromone.

1. INTRODUCTION

Development of coordination chemistry happens through the synthesis of newly emerged Schiff base and its transition metal complexes. Chromones are a group of naturally existing compounds that have immanent in nature especially in plants [1-3]. Molecules containing the chromone structure receive considerable attention of chemist due to their biological and physiological activities. Compounds contain chromone moiety show wide range of biological activities. Chromones derivatives exhibit biological and pharmaceutical importance such as anticancer, neuroprotective, HIV-inhibitory, antimicrobial, antifungal and antioxidant activity [4-12]. In the present work, we have synthesized novel ligand from 3-formyl-6-methylchromone and 3-aminoquinoline and its complexes with Cu(II) and Co(II) metal ion. Ligand and its complexes are characterized by IR, NMR, UV, elemental analysis. Thermogravimetric analysis. Emphasis has been put on biological evaluation of the complexes.

2. MATERIALS AND METHODS

2.1. Materials

3-aminoquinoline, 3-formyl-6-methylchromone, Copper chloride dihydrate, cobalt chloride hexahydrate and solvent used were AR grade.

2.2. Physical measurement

Molar conductance of the complexes was measured in DMF at 1×10^{-3} M using Elico CM-180conductometer. Elemental analysis (CHN) was carried out using Thermo finnigan, Italy CHN analyzer. Thermal analysis carried out on a Perkin Elmer USAA TGA instrument at heating rate 10 ^{0}C/min and temperature range 30^{0}C to 1150^{0}C. The IR spectra (4000-400 cm^1) in KBr disc were recorded on Bruker, Germany spectrophotometer. The NMR spectra were carried out by mercury plus 300 MHz NMR spectrometer, using TMS as internal standard. Electronic spectra were measured by using Shimadzu UV-160A spectrophotometer. The magnetic moment data obtained by Gouy-type magnetic balance at room temperature using Hg[Co(NCS)$_4$] as calibrant.

2.3. In vitro antimicrobial studies

The antibacterial and antifungal activity of Schiff base ligand and its Cu(II) and Co(II) complexes towards the bacteria *Klebsiella pneumoniae,* Staphylococcus aureus and *Proteus vulgaris* and fungi *Candida albicans* and *Aspergillus niger* was carried out at different concentration by using minimum inhibitory concentration (MIC) method and disc diffusion method. The assay was performed in flat bottom 96 well plate. 1st column was used as negative control while second column onward the test drug was added. Initially in second column 2× Muller Hinton broth (100μl) was added while 3rd column onwards 1× Muller Hinton broth (100μl) was added. Now 4000 ppm (100μl) concentration of drug was added in second column the drug was mixed properly in order to achieve final concentration of 2000 ppm and now 100μl of solution from second column was taken out and added into 3rd column in order to achieve the 2-fold dilution. Finally, 100μl of culture was added to achieve 1.5×10^6 cell/ml in each well. Similarly, in the 1st row the culture along with diluent and 1× Muller Hinton broth was added. The plates were for incubation and after 24 hours, 5 μl resazurin (6.75 mg ml^{-1}) was added to all

wells and incubated at 37^0C for another 24 hours. Change of colour was observed and recorded. The lowest concentration prior to colour change was considered as Minimum Inhibitory Concentration (MIC). The culture equivalent to 10^6 cells was added to molten agar and was poured in sterile petri dish and kept for solidification. Wells were made and samples were added in each well. DMSO and tetracycline was used as negative and positive control respectively. Plates were incubated at 37^0C for 24 hours. The zone of clearance was considered for antibacterial activity and was measured in mm.

2. 4. Synthesis of ligand

The Synthesis of Schiff base (L) was carried out by refluxing hot ethanolic solution of 3-formyl-6-methylchromone (10 mmol, 1.88 gm) in 40 ml of alcohol and 3- aminoquinoline (10 mmol, 1.44 gm) in 15 ml of alcohol. The reaction mixture was refluxed for 5 hours. The progress of reaction was monitored by TLC. The resulting yellow coloured product precipitated, filtered off and washed with ether. The product thus obtained was recrystallized form ethanol [13].

2.5. Synthesis of the complexes

A hot ethanolic solution of ligand (10 mmol, 3.14 gm) was added to ethanolic solution $CuCl_2 2H_2O$ (5 mmol, 0.85 gm) and $CoCl_2 6H_2O$ (5 mmol 1.18 gm). The resulting reaction mixture was refluxed for 4-5 hours. After cooling, the coloured precipitate obtained was collected, filtered, washed with ether, recrystallized from ethanol and dried in vacuum.

3. RESULTS AND DISCUSSION

The colour of Schiff base ligand is yellow and it is soluble in chloroform. The solubility of Cu (II) and Co(II) complexes are in DMF and DMSO solvent. The complexes are stable in air and atmosphere. Interpretation of elemental analysis shown that metal to ligand ratio is 1:2 in both the complexes. The lower values of conductivity measurements indicate neutral nature of the complexes. The analytical, elemental, physical, molar conductance data and magnetic moment values are shown in table 1.

3.1. IR spectral data

IR spectral data of Schiff base and its complexes are given in table 2. In the IR spectrum of ligand, the band at 1598 cm^{-1} shows azomethine formation. On complexation, this azomethine band was shifted to lower wave number by 16-39 cm^{-1} [14]. The υ(C=O) of chromone system of the ligand appear in the region of 1650-1620 cm^{-1}, while in their Cu(II) and Co(II) complexes the band is shifted to lower wave number by 6-40 cm^{-1}[14,15]. Furthermore, evidence for the presence of coordinated water shown by the broad band in the range of 3500-3400 cm^{-1}[16,17]. The spectral band observed in the spectral range of 600-400 cm^{-1} corresponds to υ(M—O) and υ(M—N) vibrations respectively [18]. Thus the IR data suggest that Schiff base ligand (Fig. 1) in reported complexes is bidentate and metal ion (Cu(II) and Co(II)) coordinated by azomethine nitrogen and carbonyl oxygen of chromone moiety of ligand. The position in the coordination sphere would be completed by water molecule.

3.2.^{1}HNMR spectra

The ^{1}HNMR spectrum of ligand recorded in chloroform-d_6 and its Ni(II) and Fe(III) metal complexes recorded in DMSO-d_6. The spectrum of ligand shows following signals: 8.07 ppm (H, S, -HC=N- azomethine proton); 2.35 ppm (3H, S, -CH$_3$ protons); 6.9-7.9 ppm (m, aromatic protons of chromone nucleus); 7.6-8.9 ppm (m, aromatic protons of quinolone nucleus). However, in metal complexes the NMR signal of azomethine proton shifted to downfield as compared to NMR signal of azomethine proton in Schiff base [19]. In Cu(II) and Co(II) complexes resonance signal for azomethine proton at 8.31 ppm and 8.27 ppm respectively. Thus there is confirming the metal complex formation.

3. 3. Electronic spectra and magnetic moment

The geometry of Cu(II) and Co(II) complexes was predicted from electronic spectra. The electronic spectra of ligand show two bands, one band at 23310 cm^{-1} is attributed to the n→π* transition. Another band at 32258 cm^{-1} is due to the π→π* transition [20]. The electronic spectra of Cu(II) complex exhibit bands at 11337 cm^{-1}, 14598 cm^{-1} and 21598 cm^{-1} are assigned to $^2B_{1g}$ → $^2B_{2g}$, $^2B_{1g}$ → ^2E_g and LMCT transitions, respectively. These bands are characteristic for distorted octahedral geometry. Octahedral geometry of Cu (II) complex was also confirmed by magnetic moment value (1.78) [21-22]. The electronic spectra of Co(II) complex shown three bands at 8620 cm^{-1}, 15011 cm^{-1} and 18621 cm^{-1} are assignable to $^4T_{1g}$ (F) → $^4T_{2g}$ (F) (υ_1), $^4T_{1g}$ (F) → $^4A_{2g}$ (F) (υ_2), and $^4T_{1g}$ (F) → $^4T_{1g}$ (P) (υ_3) transitions, respectively, characteristic of octahedral geometry. Octahedral geometry of Co (II) complex was also confirmed by magnetic moment value (3.87) [21,22].

3.4. Antimicrobial activity

All synthesized compounds were screened for their antibacterial activities against two gram-negative i.e. *Klebsiella pneumoniae* and *Proteus vulgaris* and one gram-positive i.e. Staphylococcus aureus. Also screened for antifungal activities against fungi Candida albicans and *Aspergillus niger*. MIC (ppm) and zone of inhibition values for antimicrobial activity of the ligand and its Cu (II) and Co (II) complexes were shown in table 3. Schiff base and its complexes showed a varying degree of activity against respective organisms. Schiff base and its complexes found to be significantly active against all organisms at 1000 ppm and 2000 ppm. Schiff base showed good activity against P. vulgaris, C. albicans and A. niger. Cu (II) complex revealed significant activity against K. pneumoniae, P. vulgaris and C. albicans. Co (II) complex displayed significant activity against K. pneumoniae. Co (II) complex shown better activity than Cu (II) complex against A. niger. Cu (II) and Co (II) complexes demonstrated significant activity when compared with standard tetracycline at 2000 ppm against A. niger. There are also other factors which increase the activity are solubility, conductivity, and bond length between metal and ligand [23,24,25].

3. 5. Thermogravimetric analysis

Thermogravimetric analysis carried out for [Cu(L)$_2$(H$_2$O)$_2$] and [Co(L)$_2$(H$_2$O)$_2$] complexes, the range of heating was 30^{0}C to 1150^{0}C and heating rate was 10^{0}C/min. TG curves are shown in figure 2 and 3. Interpretation of thermal data is given in table no 4. Copper complexes,

[Cu(L)$_2$(H$_2$O)$_2$] decomposed in three step, in first step complex undergo decomposition with weight loss of 5.11 corresponds to two water molecules in the temperature range between 30^{0}C and 130^{0}C. In the second step, quinolone nucleus with azomethine group undergoes decomposition with weight loss 41.10 in the temperature range of 131^{0}C and 730^{0}C. In the third step complex decomposes gradually with remaining ligand moiety i.e. chromone nucleus and CuO with weight loss 53.78 in the temperature range greater than 731^{0}C [26]. TGA studies of Co(II) complex shown three decomposition step. In the first step decomposition at 30^{0}C to 120^{0}C corresponds to the loss of two water molecules with weight loss 6.13. The second step of decomposition start from 121^{0}C to 760^{0}C corresponds to chromone nucleus with weight loss 41.98 and in third step temperature greater than 761^{0}C shown decomposition of remaining ligand moiety and CoO residue with final weight loss 51.88 [26].

4. CONCLUSION

The Schiff base complexes of Cu (II) and Co (II) obtained from 6-methyl-3-((quinolin-3-ylimno) methyl)-4H-chromen-4-one was synthesized and characterized on the basis of analytical and spectral data. IR spectra revealed coordination of Schiff base ligand with metal ion through azomethine nitrogen and carbonyl oxygen of chromone moiety. The structural elucidation studies by various spectral techniques (IR, UV-Visible, and NMR) suggested the nature of ligand is bidentate and octahedral geometry of the metal complexes. Thermogravimetric analysis studies demonstrate the stability of complexes as well as provided the number of coordinated water molecules. Antimicrobial activity was studied by minimum inhibitory concentration (MIC) method and disc diffusion technique. Antimicrobial studies suggest that Schiff base and its complexes play a vital role in developing a new class of antibiotics.

5. ACKNOWLEDGEMENTS

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Table 1. Physical, analytical, molar conductivity data and magnetic moment of Schiff base and Cu (II) and Co (II) complexes.

Compounds	Colour (%Yield)	M.P. (^{0}C)	% Found				Molar Cond. (ohm^{-1}cm^{2}mol^{-1})	μ_{eff} (BM)
			C	H	N	M		
L	Yellow (78)	215	76.91 (76.41)	4.06 (4.45)	7.47 (8.90)	—	7	—
[Cu(L)$_2$(H$_2$O)$_2$]	Parrot	295	65.13	3.15	6.70	8.61	13	1.78

	Green (81)		(65.96)	(4.39)	(7.68)	(8.72)		
[Co(L)₂(H₂O)₂]	Green (79)	226	66.93 (66.38)	3.66 (4.42)	6.32 (7.73)	8.47 (8.14)	10	3.87

Table 2. IR spectral data of ligand and its metal complexes.

Compound	$\upsilon(C=N)$	$\upsilon(C=O)$	$\upsilon(M\!-\!O)$	$\upsilon(M\!-\!N)$
L	1598 cm⁻¹	1650 cm⁻¹	-	-
[Cu(L)₂(H₂O)₂]	1572 cm⁻¹	1614 cm⁻¹	470 cm⁻¹	537 cm⁻¹
[Co(L)₂(H₂O)₂]	1550 cm⁻¹	1615 cm⁻¹	485 cm⁻¹	535 cm⁻¹

Table 3. MIC (ppm) and zone of inhibition values for antimicrobial activity of the ligand and its Cu(II) and Co(II) complexes.

Micro.	L diameter of zone of inhibition (mm)				[Cu(L)₂(H₂O)₂] diameter of zone of inhibition (mm)				[Co(L)₂(H₂O)₂] diameter of zone of inhibition (mm)				Std.
	250 ppm	500 ppm	1000 ppm	2000 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm	250 ppm	500 ppm	1000 ppm	2000 ppm	
K. pneumoniae	9	12	13	15	6	9	13	17	6	10	14	18	18
S. aureus	8	10	12	16	7	9	13	17	3	6	10	13	16
P. vulgaris	12	14	16	18	6	8	12	16	5	9	13	16	19
C. albicans	10	16	18	20	7	10	13	15	4	7	11	14	14
A. niger	8	10	15	17	3	5	9	13	5	8	11	15	12

Table 4. Thermal data of complexes.

Complex	Temperature (⁰C)	Weight loss found (calc. %)	Assignment
[Cu(L)₂(H₂O)₂]	25-130	5.11(4.94)	2H₂O
	131-730	41.10(42.60)	C₂₀H₁₄N₄
	>731	53.78(52.45)	C₂₀H₁₄O₃ and CuO
[Co(L)₂(H₂O)₂]	30-120	6.13(4.97)	2H₂O
	121-760	41.98(41.78)	C₂₀H₁₄O₃
	>761	51.88(53.24)	C₂₀H₁₄N₄ and CoO
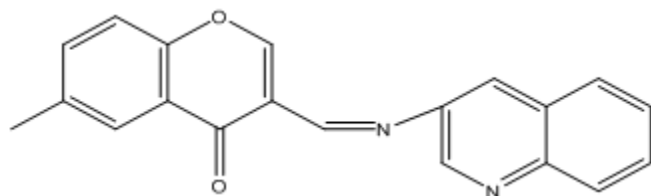
Fig. 1. Structure of ligand (L)
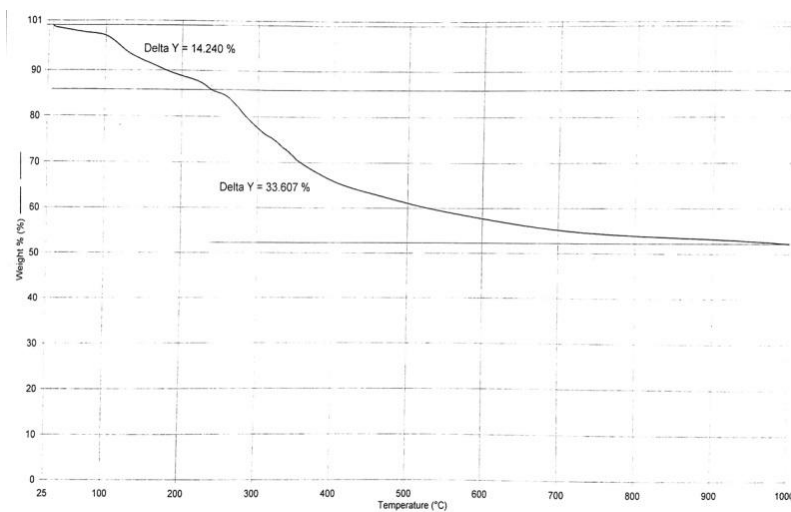
Fig. 2.TGA graph of Cu(II) complex.
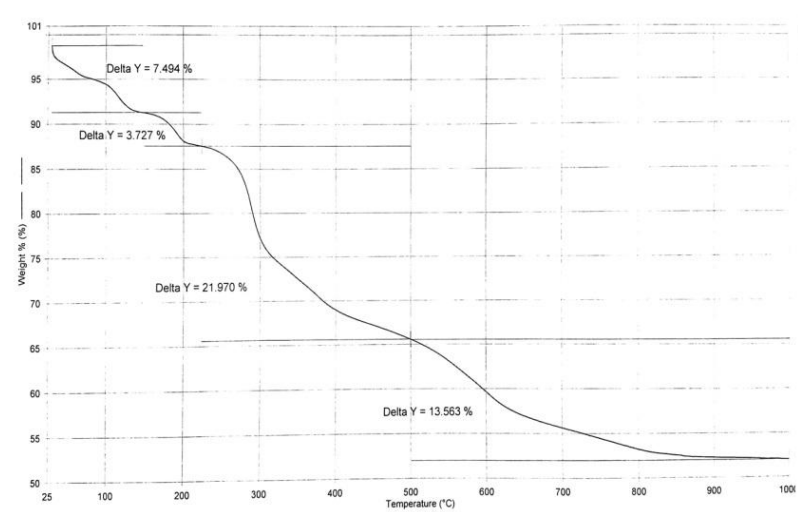
Fig. 3.TGA graph of Co(II) complex.
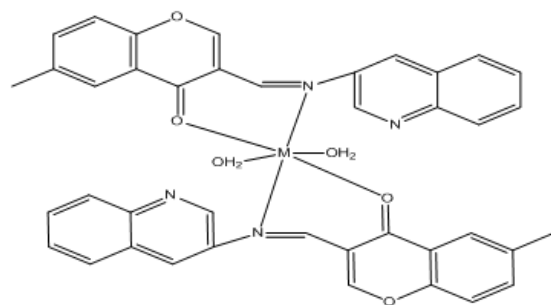
M = Ni(II) and Fe(III)
Fig. 4. Proposed structure of complexes.

A Study of Some Physico-Chemical Parameters and Heavy Metals in Adulsa (AdhatodaVasica) with Medicinal Point of View

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Abstract: **The present research work is undertaken to study physical-chemical properties of Adulsa leaves which having medicinal importance. The present investigation focus on physical properties like weight, length, width, shape and size along with chemical properties such as Moisture (14.00%), Crude protein(05.74%), Crude fat(00.19%), Crude fiber(04.02%), Carbohydrate (16.16%), Ash (02.10%). The concentration of Heavy metals like Magnesium, Iron, Manganese, Zinc, Copper are 3700, 58.07, 00.43, 12.58 and 00.32 ppm respectively. The results found during present work are in good agreement with earlier references.**

*Keywords***:** Adhatoda vasica Leaf, Physical properties, Heavy metals

I. INTRODUCTION

Adhatoda vasica is a very famous medicinal plant in Indian mythology, it is known as Adulsa, its Sanskrit name is vasaka and its English name is malabar nuts, and is used as Ayurvedic medicine. Now a days adulsa is used as medicine for various diseases. Earlier this was the name Justicaadhatoda by Linnaeus (Species Plantarum, 1753). Later on Nees (1981)vasaka redefined as adhatoda vasica. The leaves of adulsa as the prime content in various medicine from the ancient period, mostly comprises herbal medicine, particularly leaves are endorsed with insecticidal and parasitic properties, Roots are useful in strangury, bronchitis, asthma, bilious vomiting, Tuberculosis, fever and gonorrhea. Adulsa roots are also used for antiseptic, antiperiodic and anathematize [1].

Bisolona is a famous drug containing adulsa as an ingredient is used for to clear the airways by decreasing the mucus and opening the air passages[2]. Adhatoda Vasica is a small evergreen shrub having 10-15 cm long and 3-10 cm broad leaves and dense flowers, small and cleft fruits is widely found in throughout the world, especially tropical region of south Asia (Malesia and Singapur, Shrilanka, China, Myanmar, Indonesia, In India Himalaya region, Punjab, Maharashtra, Assam and Bengal.[3-6].The leaves of Adulsa containing alkaloids, vasicinone, visicinol, Adhatodine, Adatonine, Anisotine and peganine as major constituents[7].

Heavy metal toxicity related to using traditional drug treatments used throughout the globe. Heavy metal can be introduced into a medical product through infected agricultural resources and negative manufacturing practices, Deliberate addition of Heavy metal for the alleged medical price has been documented in different cultural groups. Poisoning by heavy metal contamination of medicinal plant product has caused countless health implications, including liver and Kidney failure or even dying [8].

II. Experimental

2.1 Materials and Method

Sample Collection

The leaves of adulsa were collected from the Ayurvedic garden of the Department of Botany, I. C. S. College, Khed, Dist- Ratnagiri, Maharashtra in the month of Oct- Nov 2017. The sample was washed thoroughly with distilled water to clean dirt, dust,and other possible parasites and then were properly rinsed with deionized water. The rinsed adulsa leaves were dried under shade at $25\text{-}30^0$C. The dried sample was powdered by mortar and pistol and then stored in clean, dried plastic bottles for further analysis.

2.2 Analysis of Plant sample

Specific weight of dry powdered of adulsa leaves taken in a china dish for heating in oven at 105^0C for several hours to remove moisture. Then moisture free sample was kept in a muffle furnace. The temperature of muffle furnace was increased by 550^0C for one hour. The sample was ashed for about 5 hours until a gray or white ash residue formed.The content of china dish was cooled to room temperature in Desiccators and 2 ml of 6M HNO_3 solution was added into the dish and the mixture was heated to dissolve the content. The solution as filtered through the whatmann filter paper into a 25 ml flask diluted to the mark. The solution was stored in clean and dry plastic bottles[9]. Determination of concentration of heavy metal like Mg, Fe, Mn, Zn and Cu was carried out by Atomic absorption Spectrophotometer.

2.3 Physico Chemical Analysis

Physico chemical studies such as Moisture, Crude protein, Crude fat, Crude fiber, Carbohydrate and ash were determined according WHO guidelines on quality control methods for medicinal plants [10]. Crude Protein and Crude fat content were determined by Kjeldahl method and the Soxhlet method respectively. Crude fiber and Carbohydrate were determined by Gravitational method and calculation respectively.

III. Results and Discussion

3.1 Physical properties of Adulsa leaf (Adhatoda vasica)

In the present undertaken research work the physical properties of adulsa like shape, Colour, Length, Width and Average Weight were studied, the results obtained were tabulated in table1.

Table 1: Physical properties of Adulsa Leaf

Physical Parameter	Result
Shape	Oval
Colour	Green
Length (cm)	16.50
Width (cm)	06.2
Average weight(gm)	1.56

This Table shows that shape of Adulsa was oval with green coloured leaves. The length and width of adulsa leaves were measured by using vernier caliper which had given on information about the leaf structure. The length and width was found to 16.50 and 6.2 cm respectively, while the average weight of adulsa leaf was recorded 1.56 gm.

3.2 Chemical Properties of Adulsa Leaf (Adhatoda vasica)

In the present study to determine certain chemical parameters such as Moisture, Crude protein, Crude fat, Crude fiber, Carbohydrate and ash were carried out and the results obtained were tabulated in Table 2.

Table 2: Chemical Properties of Adulsa Leaf

Chemical Parameter	Result (%)
Moisture	14.00
Crude protein	05.74
Crude fat	00.19
Crude fiber	04.02
Carbohydrate	16.16
Ash	02.10

This table shows that the moisture content in adulsa leaves was found to be 14.00% and crude protein was 05.74%, whereas crude fat was 00.19%, which is decreased compared to studied parameters. Nutritionally fiber is beneficial to the human body since it has been reported that food, fiber aids absorption of trace elements in the gut and reduce absorption of cholesterol [11]. And present investigation showed 04.02%. Carbohydrate performs a variety of functions such as cellulose forming part of the structural component and it was found to 16.16%, which is increased compared to studied parameters. The amount and composition of ash remaining after combustion of plant material vary considerably according to the part of the plant, age, treatment, etc. Ash usually represents the inorganic part of the plant [12] and undertaken research work it was recorded 02.10%.These all chemical value were found more or less with result found by earlier references [13,14]

3.3 Heavy Metals Concentration in adulsa leaf (Adhatoda vasica)

The concentration of heavy metal like Mg, Fe,Mn, Zn and Cu were determined by Atomic Absorption Spectrophotometer. The table shows the concentration of Heavy metals in Adhatoda vasica (Adulsa)

Table 3: Concentration of Heavy metals in Adulsa leaf (Adhatoda vasica)

Heavy Metals	Concentration (ppm)
Magnesium	3700
Iron	58.07
Manganese	00.43
Zinc	12.58
Copper	00.32

Magnesium is an important ion taking part in several physiological functions. It is a vital role in the body to maintain more than 300 biochemical reactions. Its help with strong bones, it also keeps heart beat steadily. It is in the energy-requiring metabolic processes, in protein synthesis, membrane integrity, nervous tissue conduction, neuromuscular excitability, muscle contraction, hormone secretion, and in intermediary metabolism. The concentration of magnesium was found in Adhatoda Vasica Nees 3700ppm. While the concentration of magnesium recorded higher than other metals [15].

Iron is an essential cation present in the human body, and it is a vital role in Hemoglobin, myoglobin, ferredoxins and several enzymes active in porphyrin synthesis, transport of oxygen and normal functioning of the immune system[16]. Iron is also necessary to maintain healthy cells, skin, hair and nails. Deficiency in iron causes anemia and other diseases. Infant children and mostly women who have pregnant.On present investigation the concentration of heavy metal iron was found to 58.07p.m., which is second highest content than other studied metals [17].

Manganese is an important ion present in the body that help activate powerful antioxidant enzymes, that convert fats and protein into energy and help to cartilage and bone formation. Manganese is an active agent and a constituent of many enzymes, which maintain lipid and carbohydrate metabolism, bone and tissue formation, and skeletal growth and present study show the concentration of manganese is 00.43 ppm[18].

Zinc is an essential element to beneficial in human being, natural environment and vital part in several biological processes. Zinc is an important micronutrient is essential for normal growth and reproduction of all higher plants, animal and human being. It is beneficiary for the stabilization of DNA, and for gene expression. Zinc is an antioxidant to prevent cancer disease. Zinc is an important to human health and metabolism, and in physiology, Toxicity, tetragenicity, carcinogenicity and immune system in the body.Undertaken study show the concentration of zinc was found to 12.58 ppm [19].

Copper is an essential element for the vital to the health of living organism, the highest concentration of copper is found in the brain and liver. Its most important function is that it is incorporated into metalloenzymes involved in hemoglobin formation, xenobiotic metabolism, carbohydrate metabolism and antioxidant defense mechanism. And deficiency of copper can cause anemia, leukopenia, and osteoporosis.

Copper protein plays an important role in carbohydrate, nitrogen metabolism and lignifications of the cell wall. In the present study the concentration of copper was found to 00.32 ppm, which having decreased value compared to other studied heavy metals[20].

IV. CONCLUSION

From the present investigation, it can be concluded that the physical parameter of Adulsa leaves like length, width, weight, color and shape was found more or less similar with earlier references. Where as the chemical parameter like moisture, crude protein, crude fat, crude fiber, carbohydrate, and ash were found in required range concern to medicinal importance, While heavy metals like magnesium, iron, manganese, zinc and copper were found within acceptable limits. Therefore the leaves are recommended for the exploration and utilization in value added product.

V. ACKNOWLEDGMENT

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ELECTRON SPIN RESONANCE STUDIES OF Cu(II) COMPLEX OF NOVEL SCHIFF BASE

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Abstract : Cu(II) complex obtained from Schiff base of 3-formyl-6-methylchromone and 3-aminoquinoline. ESR spectra have carried out at X-band i.e. at 9.1 GHz. Electron Spin Resonance spectral studies indicate presence of unpaired electron in the Cu(II) complex.

Keywords: ESR, Cu(II) ion, X-band

I. INTRODUCTION

Electron spin resonance (ESR) spectroscopy is very significant and sensitive method to evaluate unpaired electron and electronic structure in the compounds. There is different types of ESR techniques, every technique have its own merits. In continuous wave ESR (CW-ESR), the sample is treated to continuous beam of microwave irradiation of fixed frequency and the magnetic field is swept. Different microwave frequencies may be used and are represented as S-band (3.5 GHz), X-band(9.25 GHz), K-band (20 GHz), Q-band (35 GHz) and W-band (95 GHz) [1].

II. MATERIAL AND METHODS

Electron spin resonance spectral studies carried out at JEOL Japan model JES-FA200 ESR spectrometer with X and Q band at Indian institute technology Bombay.

Synthesis of Schiff base and its Cu(II) complex:

Schiff base was prepared by refluxing equivalent mole of 3-formyl-6-methylchromone with 3-aminoquinolinein ethanolic solution [2,3]. Cu(II) complex was synthesized by refluxing hot ethanolic solution of Schiff base with ethanolic solution $CuCl_2.2H_2O$ for 5 hours [2,3].

III. RESULT AND DISCUSSION

Characterization of Schiff base and its Cu(II) complex:

Schiff base and its Cu(II) complex were characterized by IR, ^{1}H NMR, UV-Visible spectral techniques as per literature reported [3].

ESR Spectral Studies:

ESR spectra of Cu(II) complex was measured at room temperature in the solid state. ESR spectra have carried out at X-band i.e. at 9.1 GHz. In the current work, Cu(II) complex showed four well resolved hyperfine peaks with the Hamiltonian parameters $g_{||}$ = 2.11, $g_{\perp}$ = 2.02, $A_{||}$ = 140 x 10^{-4} cm^{-1} and $A_{\perp}$ = 31 x 10^{-4} cm^{-1}. Where $g_{||} > g_{\perp} > 2.0023$ revealed that the unpaired electron in the ground state of Cu(II) predominantly lies in d_{x2-y2} orbital [4]. The ratio of $g_{||} / A_{||}$ values also indicates the possible geometry of the Cu(II) complexes. The range of $g_{||} / A_{||}$ is different for different geometry. For square planar complexes the range is 105-135 cm^{-1} and for tetragonally distorted octahedral complexes the range is greater than 135-250 cm^{-1}. In the present work, ($g_{||} / A_{||}$ =150.71 cm^{-1}), these value in the range to revealed Cu(II) complex have tetragonallydistorted octahedral geometry [5]. According to Kivelson and Neiman, complex carried ionic environment if g is 2.3 or > 2.3 but the g value is less than 2.3 then complex show covalent environment [6]. In the present work, g value for the Cu(II) complex is 2.11, consequently the environment is covalent.

One more bonding parameter G is calculated from the following equation;

$$G = \frac{g_{||} - 2.0023}{g_{\perp} - 2.0023} = \frac{4K_{||}^2 \Delta E_{xz}}{K_{\perp}^2 \Delta E_{xy}}$$

According to Hathway [7] if the value of G is greater than 4, exchange interaction between Cu(II) centers in the solid state is negligible. Whereas its value are less than 4, a considerable exchange interaction exists in the solid state. In the present work, G value of Cu(II) complex are greater than 4, proven the absence of exchange interaction between Cu(II) centers in the solid state.

The values obtained for hyperfine splitting and covalency parameters are in good agreement with other Cu(II) complexes reported in the literature.
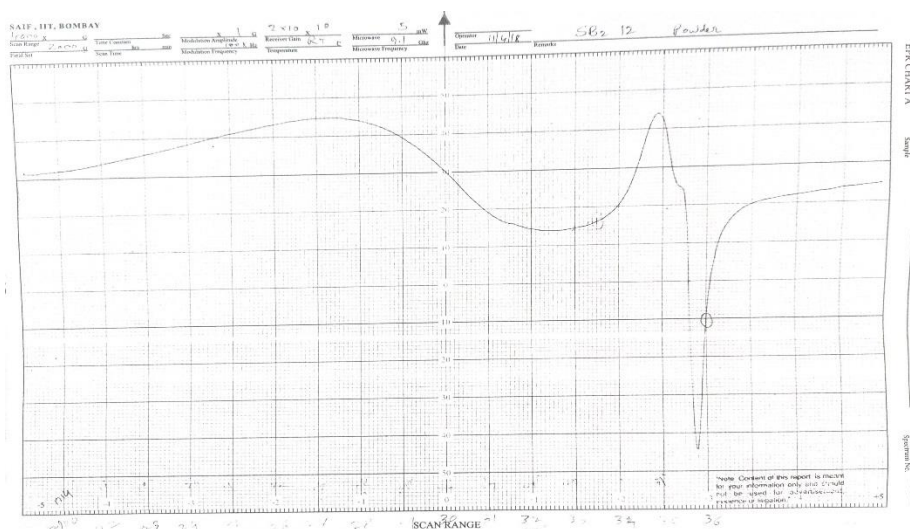

Figure 1: ESR Spectrum of Cu(II) Complex.

IV. CONCLUSION

Electro resonance spectra revealed Cu(II) complex show distorted octahedral structure.

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Antimicrobial Studies Of Ni(II) And Cu(II) Complexes Of 3-Formyl-6-Methylchromone And 4-Nitrobenzenesulphonamide

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Abstract

Synthesis and characterization of Ni(II) and Cu(II) complexes of Schiff base obtained from 3-formyl-6-methylchromone and 4-nitrobenzenesulphonamide. The characterization of synthesized compounds performed by UV-Visible, IR, elemental analysis and physical properties. Antimicrobial screening studies of Schiff base and complexes against two types of bacteria i.e. *Klebsiella pneumoniae* and *Proteus vulgaris*. Metal complexes shown more antimicrobial activity than the parent Schiff base.

Keywords: 3-formyl-6-methylchromone, 4-nitrobenzenesulphonamide, Schiff base and Antimicrobial activity

1. Introduction

Research workers have more attention on Formylchromone containing Schiff bases due to their diversified application. The natural occurrence of chromone have cytotoxic effect in the different types of cell. The medicinal applications of chromone derivatives such as antifungal, antihypertensive, antiviral, anti-inflammatory, anticancer, anticonvulsant, antioxidant, antimycobacterial [1-5]. Schiff bases of chromone and their derivatives played the role in DNA binding [6-7]. The metal ions such as Co(II), Ni(II), Cu(II) and Zn(II) in their metal complexes have shown magnificent binding and cleavage activities [8-9]. Fluorescent behavior of metal complexes have shown remarkable electrochemical, or photochemical properties which enhancing the functionality of the binding agent [10]. Chromone is a natural bioactive molecule contain pharmacophore have huge medicinal applications. The natural existence of chromone in plant kingdom have shown immense spectrum properties [11]. Chromone carried a significant role as an intermediate in pharmaceutical, agrochemical, and dyestuff industries [12].

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2. Experimental Details

Melting point of synthesized compounds was determined in open capillary tubes. Purity of the compounds were checked by TLC (Thin layer Chromatography) on silica gel plates and spots were visualized by iodine vapours. Electronic spectra were measured using Shimadzu UVmini-1240 Spectrophotometer. IR spectra (KBr, cm^{-1}) were recorded on Perkins Elmer Infrared-283 FTIR.

2.1 Synthesis of Schiff base

The Schiff base was synthesized by condensation reaction of 3-formyl-6-methyl chromone with 4-nitrobenzenesulphonamide. The preparation of Schiff base was carried out by stirring the mixture of 3-formyl-6-methyl chromone (1mmol) and 4-nitrobenzenesulphonamide (1 mmol) at 60-70 ^{o}C in ethanol. The resulting product was recrystallized from ethanol.
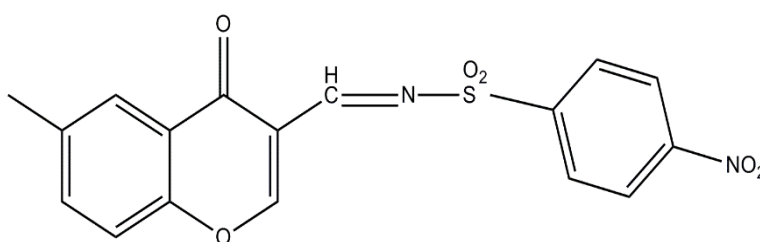
Figure 1: Structure of Schiff base

2.2 Synthesis of metal complexes

Metal complexes were prepared by mixing hot ethanolic solution of ligand (2 mmol) with hot ethanolic solution of metal salts of Ni(II) and Cu(II) (1mmol). The resulting mixture was refluxed for 4-5 hours. The final product obtained was cooled, filtered and washed with ethanol.

3. Result and discussion

3.1 UV-Visible electronic spectra

The absorption spectra of Schiff and their Ni(II) and Cu(II) complexes were measured in DMSO solution in wavelength range 200-1100 nm. The electronic spectra of ligand show two bands, one band at 23817 cm^{-1} is attributed to the $n \rightarrow \pi^*$ transition. Another band at 32376 cm^{-1} is due to the $\pi \rightarrow \pi^*$ transition [13]. The Ni(II) complex showing three bands 8417 cm^{-1}, 15623 cm^{-1} and 23154 cm^{-1} assignable to the $^3A_{2g}(F) \rightarrow ^3T_{2g}(F)$ (υ_1), $^3A_{2g}(F) \rightarrow ^3T_{1g}(F)$ (υ_2) and $^3A_{2g}(F) \rightarrow ^3T_{2g}(P)$ (υ_3) transition respectively which are characteristic of octahedral geometry [13]. The electronic spectra of Cu(II) complex exhibit bands at 13264 cm^{-1}, 14828 cm^{-1} and 21432 cm^{-1} are assigned to $^2B_{1g}$

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$\rightarrow {}^2B_{2g}$, ${}^2B_{2g} \rightarrow {}^2E_g$ and LMCT transition respectively. Tese bands are characteristic for distorted octahedral geometry. Octahedral geometry of Cu(II) was also confirmed by magnetic moment value (1.8) [13-14].

Table 1: Physical Characterization of Schiff base and their metal complexes.

Sr. No.	Ligand/Complex	Colour	Molecular Formula	M.P.	Yield
1	L	Yellow	$C_{17}H_{13}N_2S_1O_6$	268^0C	70
2	$NiL_2(H_2O)$	Green	$C_{34}H_{30}N_4S_2O_{14}Ni$	290^0C	74
3	$CuL_2(H_2O)$	Leaf Green	$C_{34}H_{30}N_4S_2O_{14}Cu$	282^0C	68

Table 2: Micro-analytical data of Schiff base and their metal complexes.

Sr. No.	Ligand/Complex	Elemental analysis (%) (Cal.)/found					
		C	H	N	S	O	% Metal
1	L	(54.69)	(3.48)	(7.50)	(8.57)	(25.73)	--------
		54.71	3.30	7.67	8.46	25.94	
2	$NiL_2(H_2O)$	(48.53)	(3.57)	(6.66)	(7.61)	(26.66)	(6.98)
		48.26	3.69	6.86	7.52	26.81	6.40
3	$CuL_2(H_2O)$	(48.25)	(3.54)	(6.62)	(7.56)	(26.49)	(7.51)
		48.30	3.75	6.46	7.20	26.72	7.60

3.2 Infrared Spectral Studies

The comparative FTIR spectra of Schiff base and its coordination site during chelation. Schiff base and its complexes show characteristic azomethine $\upsilon(C=N)$ band in the range of 1570-1620 cm^{-1}. All the complexes show this band shifted about 15-20 cm^{-1} to lower wave number [15].This show evidence that nitrogen of azomethine involved in the coordination with metal. Ligand and metal complexes show the band in the region 1650-1620 cm^{-1} assignable to the $\upsilon(C=O)$ of chromone moiety [16]. All the complexes show that band was shifted to lower wave number 10-40 cm^{-1},which confirms the participation of oxygen of carbonyl group in coordination to the metal ion [17]. Involvement of nitrogen and oxygen in coordination with metal ion confirmed by far IR spectral band in the range of 600-400 cm^{-1} [13].

Table 3: IR spectra cm^{-1} of Schiff base and its metal complexes.

Sr.No.	Ligand/Complex	$\upsilon(C=N)$	$\upsilon(C=O)$	$\upsilon(M-N)$	$\upsilon(M-O)$

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1	L	1614	1644	-----	------
2	$NiL_2(H_2O)$	1599	1634	551	590
3	$CuL_2(H_2O)$	15951604	542	583	

3.3 Antibacterial activity

The synthesized ligand and their metal complexes were evaluated for their antibacterial activity against bacterial strain *Klebsiellapneumoniae* (Gram +ve) and *Proteus vulgaris* (Gram –ve) by disc diffusion method at 500 ppm and 100 ppm. Ciprofloxacin is used as standard drug for antibacterial activity. The complexes are more potent than ligand.

Table 4: Antibacterial activity of ligand and its complexes (inhibition zone in mm) against *Klebsiellapneumonie* and *Proteus vulgaris*

Sr. No.	Ligand/Complex	*K. pneumoniae* (+ve) Ciprofloxacin		*P. vulgaris* (-ve)		
		(zone of inhibition)				(Std. drug)
		500 µg/ml	250 µg/ml	500 µg/ml	250 µg/ml	1000 µg/ml
1	L	13	9	10	8	20
2	$NiL_2(H_2O)$	15	12	14	13	23
3	$CuL_2(H_2O)$	16	10	15	11	21

M = Ni(II) & Cu(II)
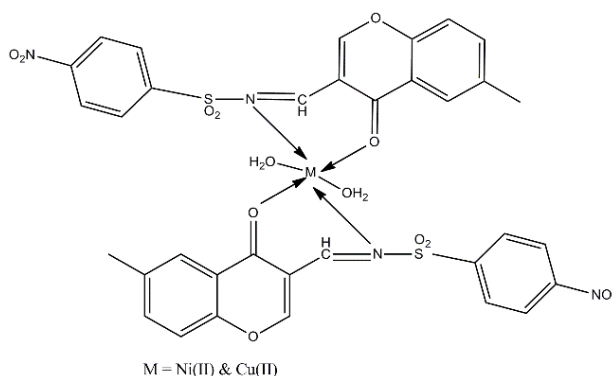
Figure 2: Probable structure of metal complex.

3.4 Conclusion

A novel Schiff base synthesized the condensation of 3-formyl-6-methyl chromone and 4-nitrobenzenesulphonamide and their metal complexes Ni(II) and Cu(II). The Schiff base and metal complexes were characterized by analytical, UV-Visible and spectral data. The data revealed that the ligand is coordinated through carbonyl oxygen and azomethine nitrogen to the metal ion which is indicated the bidentate nature of ligand. The Schiff base and metal complexes shown remarkable antibacterial activity.

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Optimization and Input–Output Analysis:

A Mathematical Approach

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Abstract

Optimization of profits is one of the significant goals of business. Input-output analysis is a part of operations research which can help in deciding the relationships between variables of input and output of a given industry. The inputs include various variables like raw material, labour, direct expenses, transportation cost etc. The output may be single or multiple. A mathematical model can be built-up for this purpose

Keywords: Optimization, Input, Output, Mathematical Model.

1. Introduction

Optimization of profits is one of the significant goals of business. Input-output analysis is a part of operations research which can help in deciding the relationships between variables of input and output of a given industry. The inputs include various variables like raw material, labour, direct expenses, transportation cost etc. The output may be single or multiple. A mathematical model can be built-up for this purpose.

One of the significant aspects of the economic theorist's and the approach of operations researchers to the analysis of business behavior and business problems is the concept of optimization. In business practice it is common to see management's decisions made on the basis of some set of fixed numbers which are meant to represent the extent of the opportunities open to the firm. For example, businessmen frequently arrange for market

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surveys to estimate how much of their products they will be able to sell in the next year or some other period in the future. On the basis of such figures, which management seems to treat as fixed constants (under some such name as "market potential"), it decides how much raw material to put into inventory, how many salesmen to hire, etc.

The objectives of this paper is to study the mathematical aspects of input-output analysis and its relevance with optimization issues in business.

This paper is limited to the relationship between optimization and input-output analysis. Further, the mathematical model is explained with the help of an hypothetical example.

The hypothesis of the study is that, it is possible to construct an input-output analysis model based upon given variables. It is possible to determine definite relationships between the variables. Such a model can be useful in optimization of profits.

.

2. Methodology

This paper is an explorative type of study based upon conceptual model.

3. Results and discussions

Input-output analysis, for which we are indebted to Professor Leontief is the name given to the attempt to take account of general equilibrium phenomena in the empirical analysis of production. The three italicized elements in this statement are crucial and merit further discussion. Reversing their order, we observe, first, that the analysis deals almost exclusively with production. Demand theory plays no role in the hard core of input-output analysis. The problem is essentially technological. The investigation seeks to determine what can be produced, and the quantity of each intermediate product which must be used up in the production process, given the quantities of available resources and the state of technology.

The second distinctive feature of input-output analysis is its devotion to empirical investigation. This is primarily what distinguishes it from the work of Walras and later general equilibrium theorists. A consequence of this no doubt long-overdue concern with the facts is that compromises have been forced on the investigator. Input-output employs a model which is more severely simplified and also narrower in the sense that it seeks to encompass fewer phenomena than does the usual general equilibrium theory. Its narrowness lies in its exclusive emphasis of the production side of the economy. Its oversimplifications I shall discuss presently.

The third distinctive feature is its emphasis of general equilibrium phenomena. Input-output seeks to take account of the interdependence of the production plans and activities of the many industries which constitute an economy. This interdependence arises out of

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the fact that each industry employs the outputs of other industries as its raw materials. Its output, in turn, is often used by other producers as a productive factor, sometimes by those very industries from which it obtained its ingredients. Steel is used to make railroad cars and railroad cars are, in turn, used to transport steel and the coal and pig iron which are used in its manufacture. Other examples should come to mind at once.

The basic problem, then, is to see what can be left over for final consumption (consumer, military, etc.) and how much of each output will be used up in the course of the productive activities which must be undertaken to obtain these net outputs. It should be clear that a successful attack upon these problems can result in an abundance of applications. It can be used in predicting future production requirements if usable demand estimates can somehow be obtained. Particularly, it can be used for economic planning including problems of economic development in "backward areas" and problems of military mobilization. A more modest purpose which it has already successfully begun to serve is the provision of a very illuminating detailed structure for national income accounting.

As it is stated earlier, the intransigence of the empirical materials and the computational problems have forced on input-output analysis a number of simplifying assumptions even more extreme than those usually employed in our theoretical models. Particularly noteworthy are two assumptions, each of which has to some extent been relaxed in practice. One assumption, which will not be discussed, states that no two commodities are produced jointly. Each industry produces only one homogeneous output. But this restriction can be somewhat relaxed by interpreting this good as a composite commodity which is made up of several items produced in fixed proportions. Such a compound good can, for example, consist in packages of chewing gum and fertilizer in which there are always ten sticks of gum and one pound of fertilizer.

Perhaps more serious is a second assumption which states that in any productive process all inputs are employed in rigidly fixed proportions and the use of these inputs expands in proportion with the level of output. This is a special case of an assumption of constant returns to scale. But the fixed-proportions assumption is far more restrictive. Constant returns to scale is perfectly consistent with the substitution of one factor for another. A linear homogeneous production function (constant return to scale) permits .both labour-intensive and capital-intensive processes. The firm whose production function exhibits constant returns can if it wishes, have one hundred workers for every Rs. 1.00 lakh invested in machinery, or it may use machines which require only ten workers per Rs. 1.00 lakh machine investment. A linear homogeneous production function requires only that if the firm decides to triple the scale of either of these types of operation, the result will be a tripling of output. Not so the Leontief fixed-proportions premise, which requires that a manufacturing process which is labour-intensive offer no option of a capital-intensive alternative. If fifty-three men per Rs. 1.00 lakh of investment are required at any level of operation, it is assumed that the same ratio will be required no matter how much the size of the firm expands or contracts. Whether this assumption is relatively innocuous or does

considerable violence to the input-output results is still under dispute. The premise is certainly never absolutely true, even in those cases where chemistry and engineering dictate fixed proportions between some ingredient and output.

3.1 The Mathematical Model

Basically, the input-output analysis consists in nothing more complicated than the solution of a set of N simultaneous linear equations in N variables. To illustrate this, let us consider a three-industry economy related with sugar industry which produces sugar, ethanol, electricity, bagasse and many more. Each - of these is measured in dollar terms. Each of these industries employs the products of the others in its manufacture, say in proportions shown by the following table 1:

Table 1: User of Output

Production of Input	Sugarcane	Fuel	R.R.
Sugarcane	0.2	0.2	0.1
Fuel	0.4	0.1	0.3
R.R.	0.2	0.5	0.1
Labour	0.2	0.2	0.5
	Total	1	1

For example, the first column of the table states that every Rupee's worth of sugar uses in its manufacture 20 cents in fuel, 40 cents in sugarcane, 20 cents in railroad transportation, and 20 cents in labour.

Suppose, now, that somehow there have been set consumer output targets of sugar, fuel, and in railroad transportation. How much of each of these goods will have to be manufactured for both consumer and industrial use to meet the final output goals? Let S, C, and R represent the Rupees' value of this total output of sugar, fuel, and railroad transportation, respectively. Let us first examine the demands on the steel industry: In addition to the 100 demanded by final consumers, there will be the demand for its product for internal use which (the table tells us) amounts to 2/10 of the total steel output or 0.2S. Similarly, the railroad industry will require 1/10 of a "dollar of sugar for every dollar of its service, so that the total railroading demand for sugar will be 0.1 R, etc. Thus we have the equation,

(Total Sugar output) equals (amount used in sugar mfg.)

S = 0.2 S plus (use in fuel mfg.) plus (R.R. use) plus + 0.2 C + 0.l R +

(Amount left over for consumption) 100

or

S = 0.2S + 0.2C + 0.1R + 100.

Similarly, we have the following two equations giving the amounts of coal and rail transportation available for final consumption:

C = OAS + O.IC + 0.3/2 + 20

and R = 0.2S + 0.5C + O.IR + 40.

These are three simultaneous linear equations in the three unknowns, S, C, and R. If the equations for the values of these variables we find what we started out to seek—the total outputs of the three commodities needed to meet the stated consumer targets. Only one more step is required. We note from the input-output table that $0.2 of labour time are consumed in the manufacture of Rs.1 of sugar, so that 0.27T Rs. of labour will be needed to produce the required S dollars of sugar production. Continuing in this way we see that 0.2S + 0.2C + 0.5ft Rs. worth of labour will be needed to produce the outputs of the three commodities required by our program. Taking the price of labour to be fixed, we see that this involves a specific requirement of labour man-hours. If this computed number does not exceed the available supply, all is well—the targets are feasible. Otherwise more modest targets must be substituted. That is the core of the theory of input-output.

It can be seen now, why it is so convenient to work with fixed coefficients of productions With variable input proportions, single numbers will not suffice in the input-output table. Instead we would have to deduce, from the available statistics and engineering information, functional relationships between the level of output of each industry and the quantity of each input which would be required to produce it. The enormous statistical problems should be obvious enough. It is equally clear that the relevant equations would be complicated enormously. Even with the huge economy effected by the fixed-coefficients premise, the statistical and computational difficulties are tremendous. We can see that the first three rows of our table contain nine figures, the three inputs required by each of the three industries. Similarly, a four-industry model would require more than 16 figures, and so on. The number of required pieces of statistical information increases as the square of the number of industries considered, although in practice the work is reduced by the fact that many of the entries in the input-output table are zeroes because some industry, A, does not use as an input any of the products of some other industry, B. It can also be shown that the number of computational steps involved in solving the equations increases as the cube of the number of industries. Thus, the labour involved in an input-output analysis rapidly

becomes astronomical as the breakdown of industrial classifications becomes finer. A table has been constructed for a model involving some 450 industries, but most computation has involved considerably fewer industries. Certainly even 450 industries is too coarse a breakdown for most detailed planning purposes in an economy where the number of items produced can be considered to go well into the millions.

4. Conclusion

From the discussion presented in the paper it can be concluded that, optimization is one of the goal in business. Operational research methods can be applied for this purpose. A mathematical model of input-output analysis can be built-up with given variables. A definite relationship between such variables can be established.

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CHATBOT APPLICATION USING ARTIFICIAL INTELLIGENCE

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Some of the authors of this publication are also working on these related projects:

Project   A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

CHATBOT APPLICATION USING ARTIFICIAL INTELLIGENCE

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ABSTRACT

In today's era of technology Chatbots are now replacing some of the tasks that are traditionally performed by a human. With the use of Artificial Intelligence, the performance of chatbots is improving. A chat-bot is an interaction agent where a computer software is used to simulate an intelligent conversation. It is in the format of taking inputs in form of text or digits. Chatbots can "chat" nowadays as like human being. Experience indicates that the conversation between chatbot and computer are mostly short but also indicates that it is accessible anywhere at any time. In this article, we will have a technique for developing an android application chatbot which will co-operate with operator using text.

Keywords: Artificial Intelligence, Chatbot, Computers, Application, Technology

I. INTRODUCTION

Since last few years, Chatbots are playing a protuberant role as human-computer interaction.

Chatbots consist of three major components: the user interface, an interpreter and a database.

Laven [1] defines Chatbot as a platform that efforts to simulate typed discussion, with the goal of at least provisionally tricking the social into thoughtful they were speaking to other person. Actually, chatbot is a conversational agent that cooperates with operators for a given topic using the natural language. Till date several chatbots have been organised on the internet for the determination of education, consumer service site, supervision, entertaining, etc. The famous existing chatbots are ALICE [2], Siri and Ok Google.

The AI based chatbots are famous because they are light weight, easy to configure as well as at low cost. In our paper, we are going to have an application for college purpose which will provide all the information related to college and student queries.

Firstly the bot analyzes user triggered message to the chatbot program, then according it matches reply from the MySQL database, the answer is formulated and send back to the user. Students must select the category listed in a drop down fashion having various options such as admission, faculty details, syllabus, exams etc. Hence, this will avoid student's direct enquiry to college. If any new applicant enquirers for admission and the particulars about any section of the college this bot will assistance to get the answer of enquiry of the applicant. The chatbots that are currently been live in market uses text, voice and emotion intelligence as the input. In this paper, we have used the text as user input. If the present proposes need to be improved, we have to provide some options. For the same, we restart from the basics. There is always need to rethink about the fundamental abilities on which intelligence works.

a) Arithmetic
The power to compute is the fundamental of intelligence. It contains arithmetic processes like addition, subtraction, division and so on. Today's machineries do well on this portion. They can help carry out even complex calculations within no time.

b) Comparison, Logic and Reasoning
The choice of AI becomes wider when a structure has the capability to apply logic and make Assessments. Current generation PCs can accomplish logical operations nicely with the Values of Boolean algebra.

c) Education, Heuristics and Memory
The main objects of AI will be a tool to remember past incidents, learn new things and gain experience. Heuristics implementation in newer software has given the ability for machines to grow, learn and gain experience.

d) Senses
It helps to know the environment around us. We humans are lucky enough to have really efficient and effective set of senses. Some animals like dogs are said to have even greater abilities to sense. A working machine with correctly installed equipment's to sense the surroundings will prove to be a great body for its intelligent brain.

But for example, even a caterpillar can outstand machines in the ability to know about their nearby environment.

e) Perception
The output of senses is then processed here. This leads to creativity along with intelligence. We can call a machine with a perception as a distant dream of AI.

f) Consciousness
It is a most difficult content to be detailed on. Most difficult task to implement in a machine. Take for an example - How can a physical system come to notice the presence of itself in the world? This question is really very difficult to answer for. Everyone will have their own views.
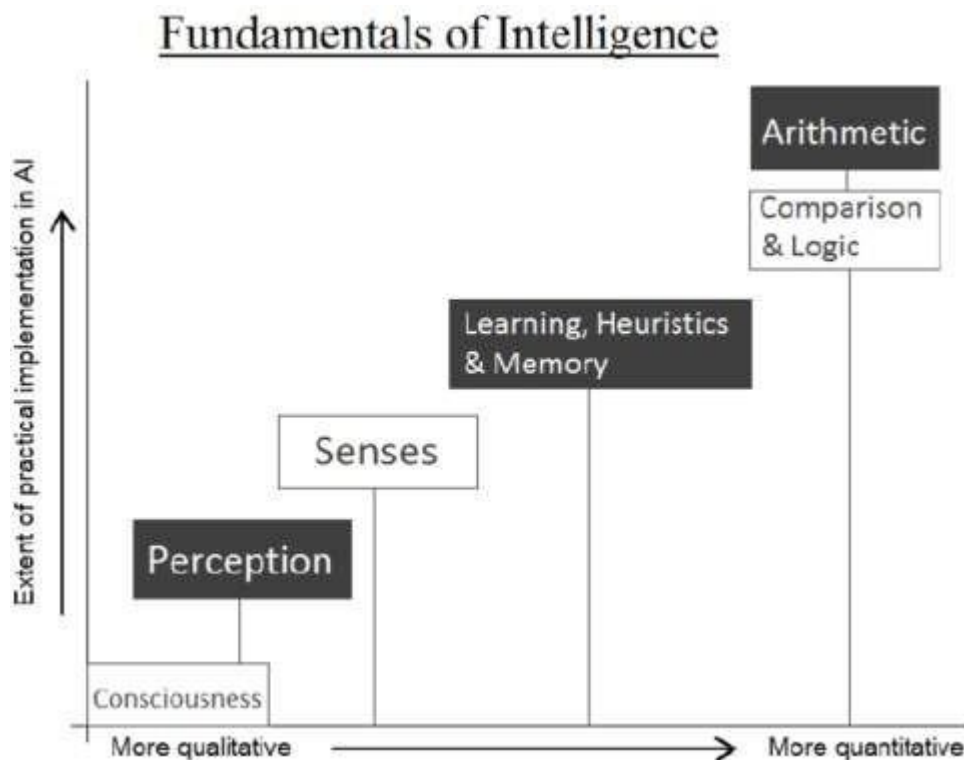
Figure-1: Analysis of Fundamental Traits of Intelligence and Today's AI

ARTIFICIAL INTELLIGENCE / MACHINE INTELLIGENCE
This paper intends to offer summary concerning Artificial Intelligence application such as chatbot.

a) Partially Intelligent Systems
Any engine, system or application taking some of the overhead registered basics of intelligence is a Partially Intelligent System. For example, chatbots exhibition some of above listed characteristics, specifically Assessment, Logic & Intellectual and Learning, Heuristics & Memory. If there is an option for additional module, they may display some more qualities also, like ability to perform arithmetic operations. Therefore, chatbots are Partially Intelligent Systems.

b) Completely Intelligent Systems
Any machine, structure or database enlightening all of the mentioned basics of intelligence completely will be considered a Completely Intelligent System. Such a unit will represent the true power of AI.

c) Performance Factor
The Performance Factor of a system is a degree offered for representing the capability of an intelligent system in terms of the vital qualities of intelligence it holds.

IV. LITERATURE SURVEY
Eliza is been considered as the first chatbot which works on the pattern matching system. It was developed by Joseph We izenbaum in 1964 [3]. ALICE [2] is a rule-based chatbot based on the Artificial Intelligence Markup Language (AIML). It has several categories, where each category has combination of pattern and its response.

The need for college inquiry system comes up due to multiple reasons which include the slow nature of college website, an outsider would not know where to search for a particular piece of information, difficult for the

person outside college's domain to extract information. The smart solution for all the drawbacks leads to the need of the system. This chatbot will deliver the reply by summarizing the enquiry and then output responses, it also delivers selective info what the user needs. A chatbot will distribute all answers connecting to domains such as admission, inspection cell, notice board, attendance, placement cell and other numerous domains.

The major features of the chat bot are
- College admission related queries could be answered through it.
- Viewing consumer profiles and recovers attendance and grade/ pointers.
- College students can get info about inspections to be held.

The objectives of this application are
- To analyse users queries and understand users message.
- To provide an answer to the query of the user very effectively.
- To save the time of the user since s/he does not have to personally go to the college for inquiry.
- This system will help the student to be updated about the college activities.

V. APPLICATIONS
- It allows the students to be updated with college related activities.
- It helps to saves period for the students as well as teaching and non-teaching employees.
- It provides us a readily available information source without taking any physical efforts for any task.
- It provide ease to use and access, saving time and cash also.

VI. CONCLUSIONS
It is really impossible to get all the required data on a single interface without the complications of going through multiple forms and windows. The present college chatbot intends to remove this difficulty by providing a common and user-friendly interface to solve basic queries of college students. The purpose of a chatbot system is to pretend a human conversation. The students can freely ask queries to bot any time. The chatbot provides quick and effective search for answers to the queries. The database holds information about questions, answers, keywords, and logs. We have also developed an interface which will have two parts, one for users and the other for the administrator.

VII. FUTURE ENHANCEMENTS
Other than AIML based chatbot, other algorithms can be implemented. We can also take in voice-based queries. The users need to give voice input and the system will give the output in form of text. Moreover, post successful execution of chatbot in college sector, we can implement it in other fields like medical, forensic, sports, etc. It will be valuable in all the fields as without spending much time, we are accessing the relevant information and that too without any sorting.

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An Empirical Study of Outlook difference among Indian Students towards ICT for Demography and Educational Standards View project

A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

BUSINESS INTELLIGENCE FOR PMS APPLICATION

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ABSTRACT

Currently the doctors provide boluses manually using a syringe to infuse the drug intravenously or by using a catheter inserted into epidural space. This manual drug delivery whether in intermittent (at regular time intervals) manner or in the continuous manner is prone to human errors. The manual drug delivery method blocks manpower and reduces regularity and accuracy of drug delivery. Pain Management System has applications in many fields of medicine like oncology, orthopedics, 'Painless Labor' in obstetrics and many more where pain needs to be reduced. The typical pain management team includes medical practitioners, clinical psychologists, physiotherapists, occupational therapists, and nurse practitioners. The enhanced accuracy of drug delivery by designing an automated syringe pump for pain management and its wide usage in various departments of medicine, makes this project relevant and helpful to the medical practitioners. Syringe drivers are defined as power driven devices that drive the plunger of a syringe at an accurately controlled rate to deliver medications. Their use as a method of drug delivery to control symptoms in palliative care is a common and accepted practice. They provide symptom control via infusion of drugs to treat pain.

Keywords: boluses, accuracy, automated, reduced manual labor, infusion pump..

I. INTRODUCTION

Pain Management (also called algiatry) is a branch of medicine employing an interdisciplinary approach for easing the suffering and improving the quality of life of those living with pain.

The Pain Management System comprises of reducing pain by infusing analgesics in an automated manner, intravenously or epidurals and assessing the pain of the patient. The medical practitioner's assessment of pain will decide the further increase or decrease of analgesic infusion accordingly.

An automated device to infuse analgesics could allow the doctors to manage patient's pain by infusing the drug in a continuous manner (constant rate) or in an intermittent manner (at regular time intervals).

The Pain Management System comprises of an Infusion Pump which can infuse analgesics epidural and intravenously to reduce pain. The infusion could be continuous or intermittent. The analysis of pain assessment will decide the further increase or decrease of analgesic infusion accordingly.

The Pain Management System has applications in many fields of medicine like oncology or orthopedics; it can also be used for 'Painless Labor' in obstetrics. The term epidural is often used for epidural anesthesia, a form of regional anesthesia involving injection of drugs through a catheter placed into the epidural space. The injection can cause both a loss of sensation (anesthesia) and a loss of pain (analgesia), by blocking the transmission of signals through nerves in or near the spinal cord. The epidural space is the space inside the bony spinal canal but outside the membrane called the dura mater.

II. LITERATURE SURVEY

A literature review was undertaken to identify the most current evidence regarding syringe driver management. The following databases were searched for the purposes of these guidelines: CINAHL, Medline, PsycArticles and PsycInfo. The review of the literature was limited to adult patients and the English language, and covered a ten year period from 1995-2005. Search terms included: syringe drivers; subcutaneous infusions, end-of-life care, Graseby and palliative care. An internet search using the Google search engine was also undertaken using the same search terms. This identified relevant websites relating to syringe driver and pain management.In addition, clinical notes, websites and books about syringe driver devices identified as relevant to the project were examined.

The first paper we referred was "Advancement in "Insulcagon Pump" Simulating as an Artificial Pancreas for the Treatment of Diabetes"[Engr.S.Ghufran Khalid - BMED, NED University of Engineering & Technology, Karachi, Pakistan, Prof.Dr.Iqbal Bhatti - BMED, Ziauddin University, Karachi, Pakistan, Engr.Kamran Hameed - BMED, Sir Syed University of Engineering & Technology, Karachi, Pakistan][Reference No.1]. The basic concept of fabricating the insulcagon pump is to design a prototype that automatically regulates glucose levels in the blood of diabetic patients just like in the feedback system in the human body because glucose is the main

physiological controller of insulin as well as glucagon secretions in human body . It includes some peculiar functions in this medical instrument. These functions include: trend, modes and power compatibility. Trend provides the past activities according to the time selected. Modes have options for the user to select either calibration, either auto-mode or manually selecting required amount of bolus directly injected into the body. Power compatibility option prevents disruption in the continuity of the device.

The second paper referred was "International Journal of Advanced Research in Computer Science and Software Engineering - Micro Flow rate Infusion Pump Prototype" [Prof. Smita R.Dikondwar Department of Instrumentation and Control, College of Engineering Pune, ShivajiNagar, Pune- 411005, India][Reference No.2]. Since manual method of micro or nano flow-rate of liquid handling is inaccurate and tedious job, the automated micro flow-rate liquid delivery system is best suitable. This paper presents the development of practical approaches to liquid-delivery system for micro flow-rate with accuracy and precision. The experimental and results demonstrate that the liquid-delivery system is capable of generating accurate and condition-independent micro- and nano-flowrate. Liquid delivery can be used in medical Infusions such as in anesthesia, diabetes mellitus [1][2] (Juveniles,Type1 and Type2)and in several applications where extremely small volume of liquid in predefined time duration, at a constant flow rate is required , therefore the system find its use in research and development related to biomedical ,biotechnology, bioengineering, chemical laboratories and analytical instruments.

The third paper referred was "The Infusion Pump: Clinical Observation H. Hooshmand, M.D. and Eric M. Phillips][Reference No.3]. The use of an implantable infusion pump for the treatment of chronic pain is to provide the patient with approximately 1/10 the dose that the patient is taking at the present time, and this small dose will be given in a steady fashion in the form of drip irrigation. The drip irrigation is through a small plastic catheter and a titanium pump under the skin which drips the pain medication in minute amounts continuously. The infusion pump is usually installed in advanced cancer patients as a palliative treatment. In a small minority of noncancerous patients the use of the infusion pump is indicated for treatment. The use of an infusion pump is the best form of treatment for advanced, severe cases of complex regional pain syndrome (CRPS) as long as the patient and the physician understand that the dosage of Morphine cannot be mixed with other forms of strong pain medications.

III. KEY FEATURES

	Analgesic Infusion Unit
1	PMS design - Micro Controller based design of drug delivery system for Pain Management - Intravenously & Epidurally
2	PMS Modes - Option of Continuous & Intermittent Bolus method for analgesic drug delivery
3	Continues Infusion PMS - pump delivers at the decided rate (ml/hr) till the given Volume Limit or Time Limit is achieved
4	Intermittent Bolus PMS - Entered Bolus Volume is infused, Time Gap Between 2 Bolus, Infusion Rate should be programmable
5	Infusion Rate Range - 0.1 to 500 ml/hr in steps of 0.1 ml
6	Volume Limit - max. 9999ml in steps of 1 ml
7	Time Limit - in Hours & Minutes (max. 99 hrs & 59 mins)
8	Auto Infusion Rate Calc - Calculation of Infusion Rate if both Volume Limit & Time Limit are given
9	Drug Delivery - Accurate drug delivery by precise control of the syringe plunger (piston) by a lead screw mechanism using a Stepper Motor
10	Syringe Types - Compatible with all Syringes:
	10ml, 20ml, 30ml & 50ml of different brands
	automatic configuration by user of a New Syringe
11	Drug Library -
	Selectable Drug names Library
	Should allow entry of new drug names
12	EEPROM Storage - for non volatile storage of data
	Last Usage Settings
	Drug names
	Syringe Types & Brands
	Drug Lockout values
13	Syringe Detection -

	Syringe in position
	Syringe Removal
	Wrong Syringe
14	Configuration Module -
	Programmable Bolus Volume and Infusion Rate
	Programmable KVO Rate
	Key Pad Lock Enable / Disable
	Key Pad Lock Password
	Occlusion Level Selection: Low / Med / High
	Patient Controlled Analgesia (PCA) - Enable / Disable
	Bolus Parameters configuration
	Keep Vein Open (KVO) Configuration
15	LCD Display -
	Syringe Type , Syringe Brand
	Drug Name
	Infusion Rate
	Volume Limit
	Time Limit
	Intermittent bolus mode
	Bolus Count
	Bolus Volume Infused
	Analgesic Name
16	Keypad - Matrix Key Pad with numeric keys & keys for -
	Pause: Infusion Pause/ Standby mode
	Config: System Configuration
	State: System Info/ Status
	Bolus: To purge fluid
17	Key Pad Lock (Data security) - to prevent unauthorized changes
18	Online Infusion Rate Change - allowing the doctor to change the Infusion Rate while the infusion is in process
19	Occlusion Detection Levels - To detect Line Blockage or needle out condition
20	Occlusion Detection - Encoder using Infra-Red Optical Sensor to keep track of smooth motor movement and any obstruction to it.
21	Anti Bolus - to prevent purging of analgesic in case of occlusion
22	Air-in-Line Detection - Optical Bubble Detection
23	Drug Lockout - Calculations to prevent over dosage of analgesic drug
24	Alarm Types - Audio Visual Alarm Indications
25	Battery Back Up - Rechargeable Battery with automatic recharging
Patient Feed Back Unit - Micro Controller based design	
1	Patient Controlled Analgesia (PCA)- Key to demand an extra analgesic dose by the patient in excess pain, provided the drug lockout calculations permit & if the doctor has allowed it through the configuration module
2	Wireless Communication - Feedback unit to communicate with the main unit wirelessly

- Bridging multi-jurisdictional boundaries;

- Retaining and preserving evidence;

- Acquiring appropriate powers;

- Decoding encryption;

- Proving Identity;

- Knowing where to look for evidence;

- Tackling the tools of crime and developing tools to counter crime;

- Rethinking the costs and priorities of investigations;

- Responding to crime in real time;

- Coordinating investigative activities;

- Improving training at all levels of the organization;

- Developing strategic partnerships and alliances;

- Improving the reporting of electronic crime;

- Enhancing the exchange of information and intelligence;

- Acquiring. Developing and retaining specialist staff; and

- Avoiding „tech-lag‟ (or getting access to cutting edge technology).

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IV. WORKING

It is proposed to design and implement a Microcontroller based Syringe Pump with Pain Management features, allowing the doctors to reduces the pain of the patients by giving analgesics epidurals or intravenously in an automated manner and which activates alarms in case it identifies any deviation in infusion rate or decided dosage, along with the type of alarm on the display.

The features of infusing device - Syringe Pump

a. Infusion: Infuses at the decided rates in ml/hr. Change pumping rate whenever required.

b. Limits: Dispense a specified volume (Volume Limit) or infuse at given rate for a specified time (Time Limit)

c. Bolus mode will infuse a specified volume in ml, at a high

d. Alarms: Audible buzzer can be programmed to alert when an alarm condition occurs or the pumping program completes.

e. Battery back-up in case of Power failure.

f. EEPROM: Non-volatile memory restores all setup parameters and the pumping program, on power up.

g. Occlusion pressure detection using an encoder.

Type of Infusion modes to be implemented for Pain Management

A. Continuous Infusion

This mode will allow the doctors to infuse the drug at constant rate with an additional option of deciding the Volume Limit and/ or Time Limit after which the infusion should stop automatically. It will also have the Keep Vein Open (KVO) feature.

B. Programmed Intermittent Boluses

The basic requirement is to infuse analgesic drug of a selectable dosage in ml, after a fixed time gap at a programmed infusion rate in ml/ hr entered by the doctor. The number of such doses and the drug-lockout value for that particular drug should also be taken in the design logic.

C. Patient controlled analgesia (PCA)

In PCA, a doctor should be able to allow it using the configure module. In this mode a patient will be able to add an extra shot of drug if drug lock-out logic permits. Although the design provides continuous and intermittent type of infusion, the intermittent bolus method is more effective than continuous infusion method in many a cases.

Patient's Feed Back

The pain scale hand held unit, consisting of 7 faces (smiley's & frowns) is to be used to take feedback from the patients. This patient feed-back will be taken into account by the design logic at regular intervals or before each dosage in case of intermittent bolus mode of pain management.

Requirements

Main module will comprise of a Microcontroller AT 89S8253 as per the company's requirement. Keypad will be interfaced in order for input from the patient/doctor to set the rate of flow or time duration or amount of dose. Stepper Motor mechanism is introduced in order to control movement of syringe plunger. Optocoupler is used for detection of occlusion.

Pain Scale Hand Held Unit (Feedback Mechanism)

Various keys will be introduced like KVO, BOLUS, SELECT, etc. These all will be interfaced with an ARM7 Microprocessor (LPC2148) with indication on Graphical LCD. Zigbee module will be used as serial interface medium between handheld unit and syringe pump mechanism.

V. CONCLUSION

The use of syringe drivers in palliative care to achieve symptom control is standard and accepted practice. There are many benefits that syringe drivers present to the patient in terms of convenience and effective management of symptoms. . However use of this device has not been without its risks and limitations, including the inflexibility of prescription, technical problems, safety issues and skin reactions at the site of the infusion. Syringe drivers may also cause concerns and fears for some patients and their families because they are associated with disease progression. The guidelines presented in this report are intended to promote a standardized approach to clinical care, thereby minimizing practice errors that can result in serious adverse events that present an on-going risk for patient safety. Syringe infusion pumps are used in the medical field to administer medication to patients. Syringe infusion pumps provide the ability to automatically administer medication over an extended period of time. Thus, patients receive a desired rate of medication administration. Further, medical personnel are free to attend to other duties instead of repeatedly and manually administering medication.

VI. FUTURE SCOPE

Generally, infusion pumps are fairly well-known in the medical field. Typical syringe infusion pumps utilize a standard syringe pre-filled with a fluid medication. The pre-filled syringe is loaded onto the syringe infusion pump for automatic dispensing of the fluid. Automatic dispensing of the fluid occurs by controlling the insertion of the syringe plunger into the syringe barrel. To control the insertion of the syringe plunger it is desirable to determine the location of the syringe plunger in relation to the syringe barrel. Additionally, it is desirable to detect capture of the syringe plunger in the syringe plunger driving mechanism when the syringe is loaded onto the syringe infusion pump. Existing infusion pumps have detected the position of the syringe plunger. For example, linear potentiometers, rotary potentiometers, and optical vane techniques have been used in the past. Existing infusion pumps have detected capture of the syringe plunger. However, past devices have provided separate sensing of the plunger position and sensing of the plunger capture. Furthermore, some past devices have utilized an electrical connection to the moving syringe plunger driver. To accomplish an electrical connection to a moving part, those devices have utilized sliding electrical contacts or flying wires, for example.

Therefore, a need exists to improve existing infusion pumps by simplifying and combining the functions of sensing syringe plunger position and capture. The future invention satisfies this need to improve existing infusion pumps. The future invention will combine both functions of sensing syringe plunger position and capture. Furthermore, the future invention will remove electrical contacts between moving parts of the driving mechanism. Thus, the future invention simplifies infusion pump design, reduces space requirements and potentially reduces manufacturing cost.

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ISSN 2394 –7780 E-LEARNING USING THE CHALKBOARD SYSTEM IN LIGHT OF THE QUALITY OF EDUCATION AND CYBER SECURITY

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E-LEARNING USING THE CHALKBOARD SYSTEM IN LIGHT OF THE QUALITY OF EDUCATION AND CYBER SECURITY

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ABSTRACT

With the growing requirement on the Internet, and the devices connected to the worldwide network and the increasing probability of attacks and cybercrime is cyber security the important substance of e-learning safe, so can not visualize the development of any information action gone from attaining, and e-learning in the current time faces many tests, Maybe the most significant detonation information and knowledge , The most ecosphere's uuju233niversities and all colleges presently deliver advanced technical technologies for computer, internet and other multimedia for the growth of teaching, and became the construction of Blackboard from instructive assemblies which take an significant part of the educational technological situation. It is a acquainted means for maximum educational determinations, as well as providing and giving courses and debates. It similarly works to disruption the Inactivity between the teacher and the student, thus developing the educational process and making it more comfortable. service the e-learning by structure safe Blackboard develop The verbal of the age and has a important influence in refining the excellence of education, and communication between students automatically and linking it to cyber security has a important role in upholding the growth and excellence of e-learning, hence the position of research has touched numerous results and references was one of the most significant: The connecting of e-learning (Blackboard) to cybersecurity makes a safe education and delivers a great chance to give the chance to education to many clusters of civilization, providing data and information that socializes through networks for e-learning makes it more operative, As a Blackboard Cooperate tool to deliver online trainings and lectures as it exceeds places and times intermissions, it assisted distance training and feast education and complete beginners able to learn very effectively.

Keywords: E-learning – Education- Blackboard system - Blackboard Collaborate(Virtual classes) - Cyber security

INTRODUCTION

The fast growth in the field of current technologies has run to the growth of the instructive procedure and found it current approaches or so-called e-learning and the defense of its systems and agendas have been attained through cybersecurity, a set of structural , technical and procedural tools and performs meant at defensive computers and networks and the data from injury ,What brands e-learning active and have been compulsory us the work bazaar extensive vagaries Events in the arena of application of educational for courses , and the most significant of these variations the essential to study many of the technical skills, which compulsory by new specialisms this needs the memberships of the facility to evaluation the instructive sequences to keep up with the growths of the current time done the use of the accessible skills, specially e-learning signified in the Blackboard structure, which delivers interface tools for the student such as declaration, download sequences , Tests, task, debates , virtual classes. In my research, I aim to Application and beginning of e-learning in the light of the excellence of Learning and cybersecurity.

1- Application of the e - learning system is signified in the system Blackboard for progressions through the following gears: Performance of gratified, debates, tasks , calculation, activities, virtual classes and linking it to cybersecurity .

2- Learning the devices and making them to make the students methodically through inspiration, stating estimation and touched a set of grades, the most significant of which is the teaching of progressions using the Blackboard system works to increase the superiority of learning and harmonization the growth of electronic technologies and permits both instructor and student growth Effective information, skills and features if safe (linked to cybersecurity),And favor sets of the results and references.

In this article we will debate the following topics:

1. The idea of e-learning and its relative to cybersecurity, its stages, purposes, importance, benefits, advantages, blackboard system and its tools.

2. The alteration between e-learning and customary learning.

3. E-learning surroundings.

4. Announcement types in e-learning surroundings

5. Values of e-learning in light of superiority and learning outcomes.

6. Main worldwide involvements in e-learning.

So I do not increase you here:

1-The idea of e-learning and its relative to cybersecurity, its heights, objects, importance, welfares, advantages, blackboard system and its tools.

The concept of e-learning
E-learning is a form of Distance learning and can be definite as a way of teaching using modern message devices such as computers, multimedia and Internet gates in order to connect information to the beginner as rapidly and defend the systems and programs of e-learning systems finished cybersecurity are a set of structural, technical and technical tools, To protect computers and networks and the data from injury.

E-learning levels –
Basic level: a even classroom learning with the interference of skill in a simple manner does not change the class attendance forever. Classroom Attendance 100% -

blend level: This level contains the mixture of classroom teaching and learning through knowledge and syndicates the advantages of classroom teaching and education through the skill classroom attendance 25-75% -

Full level: The benefit that the classroom presence is very little is incomplete to tests and some conferences and be knowledge through knowledge at a very high classroom attendance 10% - **Progressive Enrollment**: E-learning is used as other to classroom education. The part of the beginner here is the main role, where he or she studies self in single or supportive manner with a small group of generations and connections involvements in a synchronous or asynchronous way classroom appearance 0%.

E-Learning Objectives
1. Work on exercise and lingers education.

2. Working to deliver a diversity of instructive resources, which helps to decrease the singular alterations between students

3. Developing the services of learners, as it delivers information and knowledge a lot associated to traditional education methods as this type of e - learning delivers numerous sources of different information as well as the opportunity of conversation of educational involvements.

4. E-Learning provide for women with a great opportunity to complete their education, especially university education, to overcome the difficulties of leaving the home and attending university.

Importance of e-learning
1. It is a good confirmed of traditional education can be blended it's method with the usual teaching will be supportive and in this case the teacher refers students to some activities or duties based on electronic media.

2. Benefits from Learning and learning resources are available on the Internet, where millions of sites provide courses and information that can be utilized within the limits of efforts and possibilities available to learners.

3. Supports cooperative learning through communication and consultation with colleagues through communication and interaction tools on the Internet.

Benefits and advantages of e-learning E-learning has several benefits and advantages
1. makes chance for everyone to get the education

2. Increasing the ability of learners to communicate with each other by provide of this education from the communication in many directions such as discussions and e - mail, which would support the contribution of learners to raise their views and participate in the discussion.

3. Provide courses in any time.

4. Achieves what is known as self-education where any student's reliance on himself and this makes it The student is looking for information rather than just receiving it as is the case with traditional education.

5.   Able to overcome many barriers to access to traditional education such as Presence, time, place, working conditions.

BLACKBOARD SYSTEM AND TOOLS

Is learning management system from the company Blackboard is characterized by strength for other systems, where the system provided a variety of educational opportunities through the solution of educational problems and related administrative aspects and helps To break all barriers to face educational institutions and learners, and helped the system educational institutions to spread education strongly through the Internet. The system provides multiple tools that support the teacher and learner and is easy to browsing. It allows students quick access to content, discussions, tests, tasks, announcements, virtual classes, e-mail and assessments, tools for student assessment**.**

2. The difference between e-learning and traditional learning, for example, but not limited to the following:

A - the method of education used

E-Learning

It employs technological tools , where depend on multimedia presentations, discussion method and web pages**.**

Traditional education

Depends on the book does not use any means or methods of technology only sometimes**.**

B- Interaction

E-Learning

Based on interactive, where the use of multimedia to the learner for the electronic presentations, and deal with it as he wants, and allow discussions over the web interactively

Traditional education

Does not depend on interaction, since it is done only between the teacher and the learner, but is not always between the learner and the book, as a traditional method that does not attract attention**.**

C-Availability

E-Learning

Available at any time, so flexible and available anywhere, where you can enter the Internet from anywhere, so his education opportunities are available worldwide**.**

Traditional education

It has a specific time in the table, places are designed, and educational opportunities are limited to those located in the area of education**.**

E-learning environments: are represented below

Basic components

A) Teacher: Should be able to use modern teaching techniques.

B) Learner: to have the skills of self-learning and familiar with the use of the computer.

C) Technical support staff: Must be a specialist in computer and Internet components and education technology and can be provided through training programs or workshops or seminars and others.

D) Technical Support Manager

Basic equipment
A) Service devices. B) Internet use.
4. Communication types in e-learning surroundings
There are two sorts of e-learning partition as follows:

- **Synchronous e-learning:** This is an electric teaching in which the instructor happens the apprentices concurrently, so that they have concurrent communication as well as virtual classes

- Asynchronous e-learning: A communication among the instructor with the scholar, and asynchronous instruction. The staff member can develop foundations with a coaching and assessment plan on the education management system. Then the learner arrives any time and follows the lecturer's teachings to complete the education without concurrent communication with the instructor as tasks, discussion and e-mail.

5. Standards of e-learning in light of quality and learning outcomes.
The achievement of any instructive and teaching system depends mainly on potential to globally decided quality standards. To attain excellence in e-learning, excellence matters contain from eight criteria As follows.

Course Overview and Introduction
The whole proposal of the course is made clear to the student at the beginning of the course

Education Purposes
Education drives or abilities define what students will be able to do upon completion of the course

Assessment and Capability
Assessment are essential to the education process and are designed to assess student progress in attaining the stated education purposes or mastering the capabilities.

Instructional Tools
Instructional Tools allow students to accomplish stated learning purpose or capabilities.

Course Events and Learner Interface
Course activities streamline and sustenance student communication and appointment.

Course Technology
Course technology provision students attainment of course purposes or capabilities.

Student Support
The course allows student access to institutional provision facilities significant to student success.

Accessibility and Usability
The course design replicates a commitment to convenience and usability for all learners.

6. Major global experiences in e-learning.

There are a number of countries in the developed world have carried out experiments in the application of different systems of e-learning started using tools to illustrate some of the concepts and experiences and finally Implementation with the application of advanced systems.

Previous studies
1. The results of the 2008 revision The Result of Using Courses and Designing Electronic Courses on the Internet on the Achievement of Students in the Faculty of Specific Education showed that the use of electronic courses increases students' educational success associated to the usual method.

2. The results of the study conducted by one of the researchers from Sultan Qaboos Institution of higher education in Amman showed that they started using electronic courses in 2001, where 8 electronic courses were introduced, with 981 students. The amount of courses in 2002 increased to 40 electronic courses were introduced, with 3001 students.

3. The results of the study 2007 The use of the Blackboard system in improving the quality of e - learning in Arab universities The value of e - learning by the Blackboard system lies in providing time and effort to the student and professor, In terms of encouraging innovation, stimulating mind and thought, it provides communication between student and professor at all times and everywhere.

4. A study entitled Information security and cybersecurity by Dr. Adnan Mustafa Al-Bar, Dr. Khalid Ali Al-Marji at King Abdulaziz University, in which he mentioned the future of cybersecurity in the Kingdom of Saudi Arabia and the protection of information security.

RESULTS
1. The importance of linking e-learning to cybersecurity There is a safe learning and provides a very great chance to give the chance of education to many groups of society

2. Working to secure and safety the data and information that circulates through networks for e - learning makes it more effective .

3. Statement of the cost of e-learning by the system Blackboard lies in the provision of time and effort to the student and professor and also provides the University's expenses, and is an effective system in the educational process.

4. The use of electronic courses is working to increase the educational success of students associated to the traditional way

5. The importance of blackboard collaborate virtual classrooms as it is one of the main means to provide online lessons and lectures on the Internet as they transcend temporal and spatial separations and working on distance training and helped to spread education and made the learner able to learn very effectively.

6. E-learning is compatible with modern technology in education in the process of transferring knowledge and information as well as relying on printed sources of books, magazines ,journals, and researches, which in turn encourages the possibility of expanding this type of education and spreading its benefit to all members of society.

RECOMMENDATIONS

a. Developing education in general through improving the institutional and professional capacities and developing the academic and leadership skills of human resources through the principle of modernization of elements of the educational process since its initial stages and linking them to cybersecurity.

2. Provide students with the essential information and services to protect information from the growing threat of cybercrime.

3. Develop solutions to guard PC networks and information from threats and breakthroughs.

4. Find ways to qualify university professors to apply cybersecurity for e - learning in the educational process through training programs or workshops or seminars.

5. Developing the capacity of the faculty to improve the quality of education outputs in order to achieve the demands of the Saudi work market .

6. Providing an integrated educational electronic environment (computers, internet, software)

7. To identify technical, organizational and administrative means to prevent unsafe use of electronic information retrieval

8. Confirming the stability of e-learning and taking the necessary measures to enhance its protection.

9. Work on the rehabilitation and empowerment of university professors and stimulate innovation in the field of cybersecurity to contribute to achieving access to secure electronic education.

10. Combating electronic crimes through the identification of safe programs.

11. Suggestion development mechanisms for transition from traditional to safe e-learning.

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ABSTRACT

Soft Computing in general refers to the art of reasoning, thinking and conclusion that identifies and uses the real world marvels of federation, associations and organization of various quantities under study. As such, it is an extension lead of natural heuristics and skilled of dealing with complex systems because it does not require firm mathematical definitions and divisions for the system works. It differs from hard computing in such a way unlike hard computing, it is lenient of fuzziness, uncertainty and partial truth. In consequence, the role model for soft computing is the human awareness. The guiding principle of soft computing is exploit the lenience for inaccuracy, uncertainty and incomplete truth to achieve docility, strength and low solution cost. The main methods in soft computing are evolutionary computing, artificial neural networks and fuzzy logic. Respectively techniques can be used distinctly, but a powerful benefit of soft computing is the balancing nature of the techniques. Used collectively they can produce solutions to problems that are too composite or inherently noisy to handle with conventional mathematical methods. The presentations of soft computing have proved two main advantages. First, it made resolving nonlinear problems in which mathematical replicas are not available, possible. Second, it presented the human knowledge such as reasoning, appreciation, understanding, learning, and others into the fields of figuring. This caused in the likelihood of constructing intelligent systems such as independent self-tuning systems, and robotic designed systems. This current paper highlights various zones of soft computing techniques.

Keywords: Soft Computing, Reasoning, Skilled, Fuzziness, Neural Network, Intelligent System, Techniques.

I. INTRODUCTION

In this existing real world, we face many problems which we have no solution to solve logically or bugs which could be solved theoretically but actually difficult due to its requirement of enormous resources and massive time required for calculation. For such problems, approaches motivated by nature occasionally work very proficiently and efficiently. Though the results attained by these methods do not always seem equivalent to the mathematically firm solutions, a near optimum solution is sometimes enough in most practical purposes. These biologically inspired methods are called Soft Computing. Soft Computing is a canopy term for a crew of computing techniques. The term was first created by Professor Lotfi Zadeh who established the thought of fuzzy logic. Soft computing is grounded on natural as well as artificial ideas. It is stated as a computational intelligence. It varies from straight computing that is hard computing. It is lenience of fuzziness, vagueness, partial truth to achieve tractability, approximation, robustness, low solution cost and better relationship with reality. In fact the role model for soft computing is human thoughts. It refers to a collection of computational methods in computer science, artificial intelligence, machine learning applied in engineering areas such as Aircraft, rocket, cooling and heating devices, communication network, mobile operated robot, inverters and converters, electric power system, power electronics and motion controllers. Usually soft computing has been data driven hunt and optimization approach.

II. SOFT COMPUTING

Soft computing is a partnership is which each of the constituent contributes a distinct methodology for addressing problem in its domain. In this perspective, the principal constituent methodologies in soft computing are complementary rather than competitive. In fact, soft computing's main characteristic is its intrinsic capability to create hybrid systems that are based on the integration of constituent technologies. This integration provides complementary reasoning and searching methods that allow us to combine domain knowledge and empirical data to develop flexible computing tools and solve complex problems. Hybrid computing is the combination of hard computing and soft computing which having their inherent advantages and disadvantages. To get the advantages of both these techniques their individuals limitations are reduced for solving a problem more efficiently by Hybrid computing. Hybrid soft computing models have been applied to a large number of classification, prediction, and control problems

III. APPLICATION AREAS: SOFT COMPUTING

Soft computing field, vastly evolving area practices have become one of promising tools that can provide exercise and rational solution. Soft computing techniques are used in several arenas.

AGRICULTURAL ENGINEERING
Agricultural engineering is the field of engineering on the way of working that over spreads engineering science and technology to agricultural trade and processing. Agricultural engineering also takes up in reflection the policy of animal biology field, field of plant biology, mechanical stream, civil stream, electrical and chemical engineering stream principles with information of agricultural values.

FEATURE SELECTION
In the field of machine learning and statistics, feature selection plays an important role which also stands as a variable selector, attribute selector or variable subset selector. It is the process of choosing a subset of prominent features for use in model designing. Feature collection techniques are a subclass of the more general field of feature abstraction. Feature abstraction opens up new features from functions of the original features, while feature selection returns a part of the features.

BIOMEDICAL APPLICATION
Biomedical application is a design thought to medicine and biology. This field look for to close the gap between engineering and medical field. It syndicates the design and problem solving skills of engineering with medical and biological sciences to improvement healthcare behavior, comprising diagnosis, monitoring, treatment and therapy.

FAULT-TOLERANCE
Fault-tolerance is the stuff that allows a system to endure working properly in the occasion of the failure of some of its components. If its functioning quality decreases at all, the reduction is proportional to the strictness of the failure, as related to a naïvely-designed system in which even a minor failure can cause total collapse. Fault-tolerance is mainly preferred in high-availability or life-critical systems.

INDUSTRIES MACHINERIES
Industries apparatuses are tools that comprises of one or more parts and uses vitality to attain particular goal. Technologies are usually motorized by mechanical, chemical, thermal or electrical means and are regularly motorized.

CRIME FORECAST
Crime forecast is a tool where we can carry out planning that aids to accomplish crime in ours. Computer engineers typically have drill in electronic engineering, design of software and embedded system instead of only embedded system engineering or electrical and electronic engineering. Engineers in computer stream are tangled in several embedded system features of computing from the design perspective of individual microprocessors, personal computers or desktops, and supercomputers to circuit design. This arena of engineering not only emphases on how computer systems work by themselves, but also how they assimilate into the larger picture.

COMPUTER ENGINEERING
Computer engineering is a stream that concatenates several fields of electrical engineering and upkeep of the physical and naturally built environment, plus works like roads, links, waterways, barriers and buildings. Civil engineering takes room on all levels as like in the public sector from municipal over to national governments and in the isolated sector from individual proprietors through to global companies.

IMAGING PROCESSING
In image processing, it is any form of signal processing for which image acts as an input, such as a photograph or video and the output of same may be moreover an image or a set of features or factors related to the image. Most image-processing practices involve giving the image a two-dimensional signal and spreading standard signal-processing techniques to it.

DATA MINING
Data mining becomes a substantial part of computer science which is the computational procedure of determining patterns in large data sets connecting methods at the joint of artificial intelligence, machine learning technique, stats and database form systems. The complete goal of the data mining method is to extract information from a data set and convert it into a logical structure for further use.

NANO TECHNOLOGY
Nanotechnology is one step to the matter on an atomic and molecular scale. Normally, nanotechnology the whole thing works with materials, devices and other arrangements with at least one dimension sized from 1 to 100 nanometers. Nanotechnology International Journal of Contemporary Research in Computer Science and Technology (IJCRCST) e-ISSN: 2395-5325 Volume 4, Issue 1 (January '2018) IJCRCST © 2018 | All Rights

Reserved www.ijcrcst.com 48 entails the submission of fields of science as varied as surface science, organic chemistry, molecular biology, semiconductor physics, micro fabrication, etc.

PATTERN RECOGNITION

Pattern recognition intends to provide a sensible answer for all possible ideas and to perform "most likely" corresponding of the inputs, taking into account their statistical difference. Pattern recognition is considered in many fields counting psychology branch, psychiatry field and ethology stream, cognitive science branch and traffic flow topic and computer science.

MEDICAL DIAGNOSIS

Medical diagnosis denotes both to the procedure of trying to regulate or recognize a possible disease and to the view reached by this process. From the opinion of data the diagnostic process involves classification tests.

IV. CONCLUSIONS

As the expansion of soft computing progresses in several areas counting physics, chemistry, biology, material science, and computer scientists necessarily be aware of their roles and support themselves for the greater progression of soft computing in mere future. This paper has drawn different extents of soft computing. The effective applications of soft computing and the quick growth suggest that the influence of soft computing will be felt progressively in coming years. It inspires the mixing of soft computing systems and tools into both every day and advanced applications. It is anticipated that this gentle analysis will benefit computer scientist who are intense to contribute their works to the field of soft computing

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A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

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ABSTRACT

This document replicates upon Digital marketing, the requirement for using Business Intelligence in Digital Marketing, the framework for Business Intelligence performs and Business Intelligence from Web Analytics. It talks about the principle of Digital marketing and the various roles of a Digital marketing executive. It then reasons about incorporating Business Intelligence tools and practises in regular digital marketing performs which is important to improve productivity and maximise gains for any marketing campaign. It then proposes a framework to model Business Intelligence from the point of Data gathering and provides a brief understanding of the decision-taking procedure. Finally, web analytics and its appropriate usage in investigative data sets is also spoken about in this article. The main emphasis of this research is to highlight how valuable and essential Business Intelligence is to Digital marketing.

Keywords: Digital Marketing, Business Intelligence, Need for Business Intelligence, Business Intelligence Framework, BI from Web Analytics.

I. INTRODUCTION

Digital Marketing provides to a varied set of consumer wants through various marketing channels such as search engines, blogs, email, social network, and product websites to create an actual advertising and communication bionetwork. It can be a separate entity or be a part of traditional marketing efforts. Since the interaction of the client to the product from the initiation phase takes place on a digital domain, data harnessing of such communications is automated but can be difficult to handle at the equal period. Online marketing is parasol word for the advertising of goods or facilities using digital technologies, mostly on the Internet, but also counting mobile phones, show publicity, and any additional digital medium [1].

Data compelled resolutions are esteemed more in any administration, thus it becomes important to pass every corporate exertion over a logical channel to measure and expect results fairly. Business Intelligence delivers an improved situation to perform such operative calculation. This research is meant at appreciative how Business Intelligence gears can be used in merger with Digital marketing movements and expands the study by signifying a structure for such an connotation.

II. DIGITAL MARKETING

Digital Marketing caters to a diverse set of customer needs through numerous marketing channels such as search engines, email, blogs, social network, and product websites to create an effective advertising and communication ecosystem. Consequently, there is a good amount of data generation, analysis and recycling being done in order to establish a lucid marketing structure. Most productions opt for preliminary with Search Engine Optimisation (SEO) to boost the biological circulation expected on their blogs and websites. A data determined SEO policy might include planning out the possible traits of a general customer and then directing on directing the purchaser later by enhancing the on-page Meta pictures somewhat than plainly directing on tedious content.

Social media has managed to create a biosphere of its own with customers accessing these platforms daily. The focus of digital marketers mainly lies in finding a suitable methodology to interact with these consumers on Facebook, Twitter, YouTube, LinkedIn and Instagram. Social media, apart from playing a very important role of being a platform of live consumer presence, is also a new home for advertisers of the digital domain. Pay-per-Click which used to have a base only on search engine pages, has now found home in Facebook news feed and other micro blogging websites as well. Social media has allowed brands to have a direct consumer interaction via influencers who interact with them in return of affiliate marketing links creating mutually benefiting associations. Digital Marketing apart from focussing on drawing attention thrives greatly on being able to measure the Key Performance Indicators (KPIs) as a marketing campaign progresses from initiation and up towards the sales cycle.

Figure-1: KPI indicators

III. NEED FOR BUSINESS INTELLIGENCE

Having to process abundant information manually can invariably result in partial understanding of subject matter and can lead to actions that incur losses. To avoid this and to maintain an organized workflow, data handling structures better known as Business Intelligence can be employed in routine Digital marketing efforts as a best practice. Business Intelligence refers to technologies and practices that aid in data accumulation, synthesis and its study to present fruitful business information to maximise gains and to avoid losses. The agenda of Business intelligence is to mechanize the process of decision making and reduce the chances of error in judgement. BI tools when handled by experts can procure exemplary solutions in the digital marketing sphere. The main tasks of marketing analytics are to explore customer sales: the effectiveness of a marketing campaign includes the complicated tasks of forecasting, segmenting and jointly analyzing the accounting data alongside data coming from web, mobile, and geographical systems (GIS)[2].Studying customer behaviour is complex and requires to be done regularly. Often, digital marketers are expected to be one step ahead in predicting what the customer desires. A thorough analysis of consumer reactions can be processed using relevant BI tools to scan a great number of consumer feedback left on websites and on social media. Moreover, an organisation's primary aim is to always satiate the customers, but at the same time, it is also essential to acknowledge how its competitors are building their next move. A single product can be developed under varying nomenclature by several companies, here, Business intelligence enables the developers to study competition and then initiate a final decision. BI does not restrict the marketer to only think of the product at hand but encourage the decisions to be well integrated with the likes of the entire company. Data from digital marketers translate further to various levels of the company and BI makes it more comprehensive by breaking the matter into charts, graphs which can be understood by both technical teams and nontechnical managerial strata in the workforce.

It's common for a digital marketer to be flooded with indefinite amounts of data absorbed from various sources, thereby, it becomes essential to give attention to the absolute superior documents. For this purpose, the BI interface is expected to highlight problems in dire need of a solution so that data sets can be examined swiftly, and accurate monetisation of data can be deciphered. An all integrated Dashboard lends such a support to the marketing executive. A CRM system is a good example of a platform which provides information pertaining to every lead in the sales funnel, every action initiated by the lead and its journey towards a successful sales conversion. It also categorises leads based on demographic, region, gender etc. As important as it is to focus on the key performance indicators (KPI) at this point, a digital marketing executive also has the responsibility to analyse the return on investment (ROI) from the campaigns he or she has generated which solely decides the continuation or shelving of a marketing idea. BI tools are agile in examining the time a potential customer is spending in the marketing environment, what advertisements they gravitate towards, the Click through rates (CTR) and consequently the Cost per Click (CPC).

Fundamentally all challenges faced in the digital marketing environment can be resolved using BI tools as it possesses the capability to be in tune with the dynamic changes experienced by digital media and can provide real-time solutions to reach a final, more promising output.

IV. BI FRAMEWORK FOR ONLINE MARKETERS

Main objectives of employing Business Intelligence tools in Digital marketing are:

1) To conduct research and identify right data.

2) To keep a check on Return on investment (ROI) from campaigns to justify their existence

While collecting data is no longer a problem, building an effective framework to process it is the real challenge. However, a few pointers can be outlined that lay the idea of this amalgamation in succession:

1) **Handling data collected –** The accumulated data can be broadly classified as Unstructured and structured. A digital marketer receives data from numerous sources which are available in raw form to be processed. Most of this data is organised and can be analysed by spreading or participating social media and analytics engines using BI tools and performing numerous analytical operations and visualizations with slice and cube, drill down, drill through, sifting and other analytical operations. The content generated and written by users on various social media platforms is not structured, and to access and analyse this data, a business must apply semantic analytics to derive quantifiable data from these unstructured data and make confident decisions[3].

2) **Source and Segregation–** Once the data is assembled, it is essential to retreat to its source and analyse what is it trying to convey. For instance, every feedback form generated on a social platform isn't valuable information. Consequently, not all data needs to be processed. Segregation is essential to identify necessary tools that will break it down in further iterations of analysis.

3) **Identifying metrics of judgement-** Each type of data needs to be analysed across a set of parameters that evaluate its authenticity to reflect upon the subject matter at hand. Statistical data acquired from page visits, clicks, likes, shares, feedback, comments are some specifications which are analysed to evaluate data from social media networks.

4) **Creating a dashboard-** In order to analyse trends in the parameters developed previously, firms use Dashboards that can reciprocate and provide numerous customization options to the executive. With the help of a dashboard an executive can align all the metrics in a proper fashion and draw conclusions from them.

5) **Establishing correlation-** One thing to identify here is the need of a variable in that specific frame of time. Sometimes an otherwise primary element may not have any implications on the result that we want to arrive at. If correlation is not handled with absolute caution, one might end up with irrelevant modelling done between several ambiguous variable.

V. BUSINESS INTELLIGENCE FROM WEB ANALYTICS

From the perspective of developing an efficient marketing strategy, the Internet provides better insights into sometimes hidden and unavailable data regarding customers, their impacts on business, consumer behaviour and buying decisions[4]. Analysing data procured from the web becomes imperative when a marketing campaign is executed over web-based platforms, namely blogs, websites and social media sites. First step in this process is to infuse the tracking tool with the website source code after which the outcomes generated can be exported to a suitable file format. Obtaining Business intelligence from of a statistical analysis software can buttress the harnessing of useful business information at this point. Sometimes this s plainly used to generate comprehensive displays for otherwise dense subsets that may not be vividly understood by all strata in management. The extent to which one decides to use such tools is entirely in the hands of the analytics expert working for the digital team. Progressing from seemingly linear to much complex correlations of subsets is what makes using intelligence tools productive. Good content is directly proportional to the success of a website. Business intelligence procured from analysis of consequent web sessions from the consumer end matters greatly in the construction of a website. It provides a skeleton to the web engineers to improvise on the theme and code of the web platform. A website becomes a profit generation environment when it becomes monetised with advertisers pitching in to display their content. Not all ads can be of direct relevance on a landing page and this can be judged with drawing patterns in visits and time duration of a session. Every form of communication happening between a client and the website is logged and preserved in the analytics software. Google analytics is a platform that is increasingly being used to monitor web-based content. It's a linear application to run and can be used for examining blogs as well as websites.it provides comprehensive data correlations and helps to alter queries.

VI. CONCLUSION

Digital marketing in addition to being a part of most marketing efforts is also a method that can be used in various connotations. Many marketers are progressing towards real time execution of market penetration and thereby a need for the use of Business Intelligence stems in. Business Intelligence with its range of optimization tools and correlation capabilities is certainly what every marketer should incorporate in his or her efforts. Using BI can be a bit challenging for marketers not technically versed with analytical science but due to the presence of a huge array of tools, this aspect can easily be dealt with. Business Intelligence is proven to provide a performance boost and sets a promising path for reaping greater profits.

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National Seminar on "Trends in Geography, Commerce, IT And Sustainable Development" Construction of Smart Shoe System for Visually Challenged People Mr. Sachin S. Bhosale1, Dr.Raje...

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Project A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

Construction of Smart Shoe System for Visually Challenged People

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Introduction

For living a life independently the vision is must. Without having the vision the living life is nothing because vision is must in our day to day life. Vision give the ability to think about or plan the future with the imagination. So every person should be able to think or imagine their own life. But some people have the problem of blindness. Blindness means the person is in the state where he or she couldn't able to see anything. Some people's also suffers from the problem of the night blindness. During night time they are unable to see. Vision plays an important role to travel independently.

The statistics by World Health Organization[1] there are around 285 million people who are visually impaired. Globally, with 39 million blind about 246 million have low vision.The vision is must for everyone in their day-to-day life. The visually challenged people need the help to travel anywhere. Mostly to cross the road, travelling by train.

Some of the peoples use the guided dogs to travel. Guide dogs can guide the peoples about the obstacles, crowd, staircases. Guide dogs give the right way to travel but it is misconception that guide dogs indicates when it is safe to cross the road, because guide dogs don't know about the traffic signals, they don't know about the indicating lights. So travelling by using the dogs will be dangerous.

Some researchers have developed the walking stick fulfilling the blind navigation. Gayathri[2] proposed a smart walking stick that can detect the obstacles, water, pit. But using the stick will not be safe because stick can get the break easily. Stick is difficult to carry, it's also a heavy.

Another work is[3] Virtual eye for the visually challenged peoples in the some specific area. This virtual eye give only the directions which are stored in it. It doesn't give all the directions. So it will be helpful only in the some area. But development of all these aids are not satisfying because according to the World Health Organization there are 285 million people's who are suffering from the blindness. So these aids doesn't fulfill the requirements of all the blind people's.

To address the limitations of previous methods we developed a smart shoe which will help the blind people's to detect the obstacles from the front, back, right and left, and it will also help to detect the knee level obstacles. Smart shoe is made up of the ultrasonic sensors which will detect the obstacles. So this smart shoe will help the blind people to travel the independently.

Proposed System

The proposed Smart Shoe system is constructed using various hardware components like :

- **shoe :** whose size is up to knee level ultrasonic
- **sensors :** to detect obstacles in surrounding micro controller arduino mega : for calculating the distance of obstacle in the surrounding from system
- **memory :** to store the pulse samples
- **speaker :** to provide audio feedback to the user
- **connecting wires :** to connect all hardware components together
- **battery 9 volt :** to give power supply to all above hardware components.

Fig 1. Smart Shoe system showing arrangement of system components

III.Design Of Navguide System

The designed system aims to help the visually challenged people to travel independently. The proposed system system is constructed accordingly by taking into consideration various parameters that would help the visually challenged people.

The Smart Shoe system consists of total 8 ultrasonic sensors which are divided into levels i.e. level 1 and level 2.Level 1 consists of 4 sensors (G1, G2, G3, G4) for detecting ground level obstacles present in the surrounding and Level 2 consists of another 4 sensors (K1, K2, K3, K4) for detecting knee level obstacles in the surrounding. Sensors G1 and K1 are facing to the front of user and G4 and K4 are facing back to the user to detect ground level and knee level obstacles. Sensors G2 and K2 are facing at the right of user and G3 are K3 facing at the left of the user to detect ground and knee level obstacles.The sensors transmits ultrasonic waves to the object and after hitting the wave back from the object it gives the information accordingly to the processor to calculate the distance of the object from the system.Then based on the surrounding area conditions the feedback is provided to the user in the form of audio.

IV.Proposed System Architecture

The proposed system consists of three main modules i.e. ICM- Information Collection Module, LMCM– Logical Map Construction Module, GFM- Generating Feedback Module.

ICM – This module[5] consists of ultrasonic sensors to detect the obstacles present in the working environment at knee and ground level and also detect the staircase. Initially a trigger of 10ms is given to sensor after which it transmits the ultrasonic waves and after hiting wave from the object the reflected wave is back provided to sensor.The main function of the sensor is to calculate the time upto which the echo pin of sensor remains high.

LMCM- This module[5] consists of micro controller unit i.e. arduino mega processor and a memory module.The output of ICM module is provided as input to this module which calculates the actual distance of the obstacle object from the system based on the inputted time provided by DGM module. The memory module stores a file which contains the audio pulses which need to be fired based on the distance of obstacles present in nearby area of the user.

GFM- This module[5] consists of speaker which is used to provide audio feedback to the user according to the conditions. Based on the audio pulses provided by memory module, this module selects the corresponding text from the stored memory file and gives the final output in the form of audio response to the user.
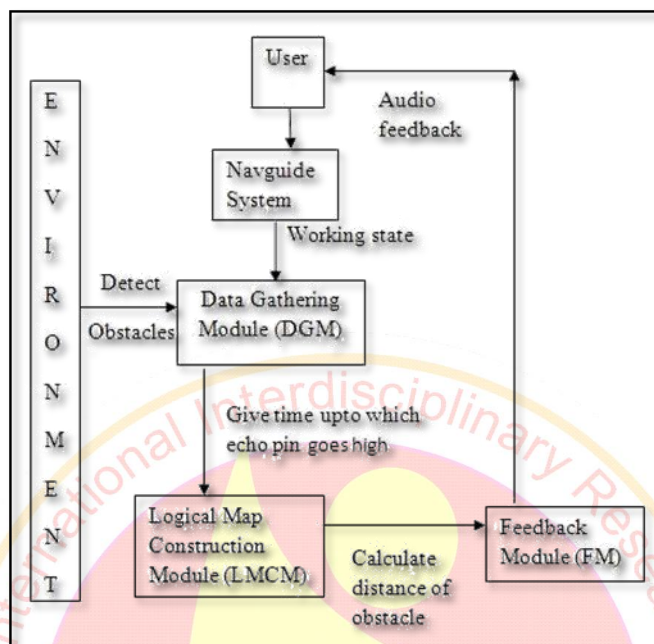
Fig.2 Proposed system architecture

In addition to this architecture, we also need an external toggle button to on and off the working state of the system.

V. Features Of Smart Shoe System

- This proposed system detects the obstacles present in the surrounding at knee level and ground level.
- Generates a logical map of the surrounding for detecting obstacles at left, right, bottom and back sides of the user.
- It also helps to detect the staircase.
- Audio response is given back to the user with help of speakers.

VI. Results

The smart shoe system after successful implementation provides the audio feedback to the visually impaired people in different conditions as shown in the following given table I.

Sr. No	Situation	Audio Feedback
1	Obstacle in front	Blocked front
2	Obstacle on left	Blocked left
3	Obstacle on right	Blocked right
4	Obstacle on left and front sides	Go right
5	Obstacle on right and front sides	Go left
6	Obstacle on left and right sides	Go straight
7	Obstacle on left, right and front sides	All blocked
8	Staircase detected	Stairs ahead

Fig.3 Table I

VII. Conclusion

We designed a smart shoe for visually impaired people which provide directional solutions in walking independently. The Smart Shoe system overcomes shortcomings of existing system by detecting wet floors, floor level and knee level obstacles and providing prioritized information to a user's in tactile and auditory form. The system is easy to use.

In future the Smart Shoe system must itself guide the directional obstacle-less way to reach to the destination according to user by using GPS module.

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Big Data Application in Smart Education System

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Big Data Application in Smart Education System

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Introduction

Information building of universities has arrived the phase of smart education, as established by the fast promotion of technologies such as bulk storage, cloud computing and Internet of things in universities. The application of big data will also develop one of the core solicitations of smart education system. Big data solicitation attaches the physical stage for data storage and calculation, the associate stage for information gathering and organization, and the management platform for data examination and dispensation. Data attaches all parts of smart education system. The huge volume of information on the rank and actions of each part pooled composed will be prepared through big data analysis to current their designs of growth and put into smart application [1] .

Smart Education System.

Information Standard System. The construction of a smart education system on the campus is an informatization project integrating unification of management, mechanism, and technology. Management is the basis of regulator, business is the source of provision, data is the source of basis, and information standard is the source of direction. Information standards, the foundation of informatization construction on campus, are a necessary condition to realize application service, data sharing and information exchange service [2] .

The design and implementation of information standards in universities should follow the normative model. In agreement with Information Values for Education Management---Informatization Standards for Higher Education Institutions and drawing from the successful experiences of standardization work at home and abroad, normative systems and information standards of universities shall be designed and compiled based on their actual needs and by following the "Five Uniformization" principle of "uniformize file formats", "uniformize index systems", "uniformize terminologies", "uniformize classification codes" and "uniformize information exchange formats".

System for safe operation and maintenance of informationization. The building of a security maintenance system, a significant provision for the building of a smart education system, contains physical security,operation security, and evidence security. Physical security includes ecological security, apparatus security, line security, adversity prevention, and recovery. Operation security includes management security, application security, risk analysis and assessment, auditing and tracking, backup and recovery. Information security includes operating system and application system security, network security, data and communication security, virus and Trojan anticipation, encryption, individuality verification and access control [3].

Network service system

The basis of the construction of smart education system is the complete incorporation of networks, which means to assimilate numerous types of networks on campus, accept unified management and control, and deliver expanded network accesses and open standard borders, so as to safeguard the network and communication for diverse application services within the smart campus system. Presenting cloud computing and other facilities to smart campuses and providing private cloud computing services to universities. By provided that the teachers and students with a diversity of personalized information services, cloud services can be efficiently used for teaching, technical research, management and living resolutions, allowing them to enjoy the suitability of cloud computing facilities. Construction of central data platform. By construction a unified data distribution and interaction center, uniformization of information portal, individuality verification and single sign on can be realized [4].

Public service system

Application facility: Provided that business facility segments, containing management and provision modules such as educational administration, systematic research, OA, finance, student affairs, recruitment, personnel and logistics.

General information service: Provided that public service modules, in specific a diversity of service functions containing user management, business functions, approval, log audit, identity verification, reports, data interchange, inquiry statistics, workflow, information, official framework and network community [5] .

Data resource system

As a data center, data resource system, which is a basic data layer for the overall informatization of different departments in universities, includes application business data, application exchange data and other core contents. Data source layer can, by mixing numerous data sources, deliver universities with complete and correct data, sustenance data interchange between systems, deliver a unified verification service, and deliver a united and sharing data provision platform [6]. Founding a shared data center based on big data technology. The collective data center based on SOA system construction can, by providing uniform, standard data boundaries, understand united management and use of data. With the support of big data technology, the data will be more efficiently and correctly conveyed to the top level application system, allowing more comprehensive, correct, intelligent and enhanced smart education applications.

Complete information service system

The complete information service system is functioned on the data storage and interchange stage. Built on the application of big data and from the perception of the whole university, the system conveys out on this platform centralized cleaning, adaptation and scattered storage of data collected from all business systems, before combined external data service is delivered. In the form of informations or charts, in-depth statistical analysis is delivered. This delivers strong provision for decision-making of all kinds of handling staff in universities by providing correct and effective complete system for school condition inquiry, report creation system and information filling system.

The complete information service system is based on big data podium. big data stage on campus, based on the data incorporation, storage, mining and analysis of big data technology, delivers top layer application system with data provision service.

The application of big data in smart education system.

The conception of big data. Big data, a creation of high-tech age that accentuates the capture, management, and processing of data, is not a single technology. It can be assumed as a massive amount of informational properties with various sources, or an accumulation of data which cannot be simply captured, deposited, achieved and examined by general software. Combined and analyzed with a new method, big data can determine appreciated information, donate to decision making, and make new value [7,8].

Collection and management of big data. The various types of structured, semi-structured (or weakly structured) and unstructured massive data, such as radio frequency data obtained through RFID, sensor data, social network interaction data and mobile Internet data are the important of big data provision models.

Big data management means storing composed data in the memory, found consistent database and then apply and achieve the data. The attention of big data management is to address the management and dispensation technologies of complex designed semi-structured and unstructured big data. Key difficulties to be solved include the accessibility of storage, expression, management, consistency and actual transmission of big data. We should develop dependable distributed file system (DFS), storage with optimization of energy efficacy, computing-integrated storage, big data severance and big data storage tools with high competences and low costs. We should make a innovation in distributed and non-relational big data management and treating technology, data synthesis technology of varied data, data organization technology, and manner researches on big data modeling technology. We should also make a advance in the transmission, backup, replication and other technologies of big data and develop imagining technologies of big data. Data storage can be skillful through storage devices in smart campus data center, and data management and handling can be understood through the central database of data center[9,10].

The basic data of big data system is mostly from the current information management system of universities. The main purpose of big data system is to gather, analyze and display the basic data. Moreover numerous types of third party management systems, the big data system gathers and completes information on users on campus from WEB and mobile APP, like information on geographic location and notices.

Application of big data in smart education system. Big data analysis technology can deliver durable data analysis for student activities management. From the point of view of data mining jobs and approaches, the main objective in the application of big data in smart education system is the conception of data, which permits users to detect data dispensation results straight. The second objective is to bring analytical analysis, giving possible decision at a sure degree allowing to visualized data.

Big data technology can, by mining the information and knowledge hidden in a vast amount of data and providing the basis for social and economic activities of human beings, improve operational efficiency. Big data analysis and mining technologies can also be functional to advance teaching quality in universities, analyze performances of users in campus network and public views, which will efficiently indorse the in-depth addition of information technology and teaching.

Promoting the optimization of teaching results. Data resources of university include abundant information on teaching, which can be effectively used. By analyzing and mining the data such as click rate, download, and repetition rate of knowledge points, the emphasis and difficulty of curriculum can be obtained, personalized learning guidance can be established rendering to the visit performances of individual student, and guidance can also be made on the career development of students in future.

Effective asset management. By completing the registration and marking of asset information such as building information (the name of the building, construction area, number of floors, number of rooms on each floor, total number of beds, fire control facilities and monitoring facilities), condition of living (name of school, profession, number and grade of students), and property information (hardware and software facilities), the administrators can request and achieve information about people, finance and assets in the management system in accordance with their access level by using fixed keyword inquiry and user-defined fuzzy inquiry, realizing the effective management of assets.

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Decision-making aids. Focusing on data capturing smart decision analysis service application is built. By building the shared database with "captured data", the authority and consistency of data used by all systems are guaranteed. By ensuring the consistency, integrity and accuracy of data of all business systems in the universities with enterprise level information standards, accessibility, intelligibility, reliability and availability of basic data throughout the universities are enhanced in data quality.

With big data, statistical summaries can be made on various data, including population statistics, event statistics and department statistics and the like, which can be displayed in the form of reports and charts (histograms, pie charts). Big data supports decision making process by allowing administrators to clearly see the statistics on people and events of various departments under their jurisdictions.

Analysis of public feelings. Public views of universities in network age are mostly shared on campus BBS, micro-blogs, WeChat and all kinds of immediate communication software. Beside the background of big data technology, a typical application of big data is to accurately and quickly grasp the trend of online public opinions and guide students to express their views properly.

Conclusions

With the growth of user number and data on user performance in campus network, big data application can improve the value of huge data and deliver the expectedness and significance for administration work. The application of big data, by providing more intellectual, efficient and correct services for education, scientific research, management and living, can indorse the in-depth addition of information technology and teaching and appreciate the overall development of the level of teaching. With cloud computing and IoT serving as the network basis for the gathering, delivery, exchange and storage of information, and big data as the core

technology for data mining and analysis, a smart education system featuring information gathering, source sharing, application addition and complete operation can be built to meet the growing demands at all levels in campus development. On the united smart education platform, highly effective campus management and intellectual teaching process can be realized to increase the well-being of teachers and students on campus.

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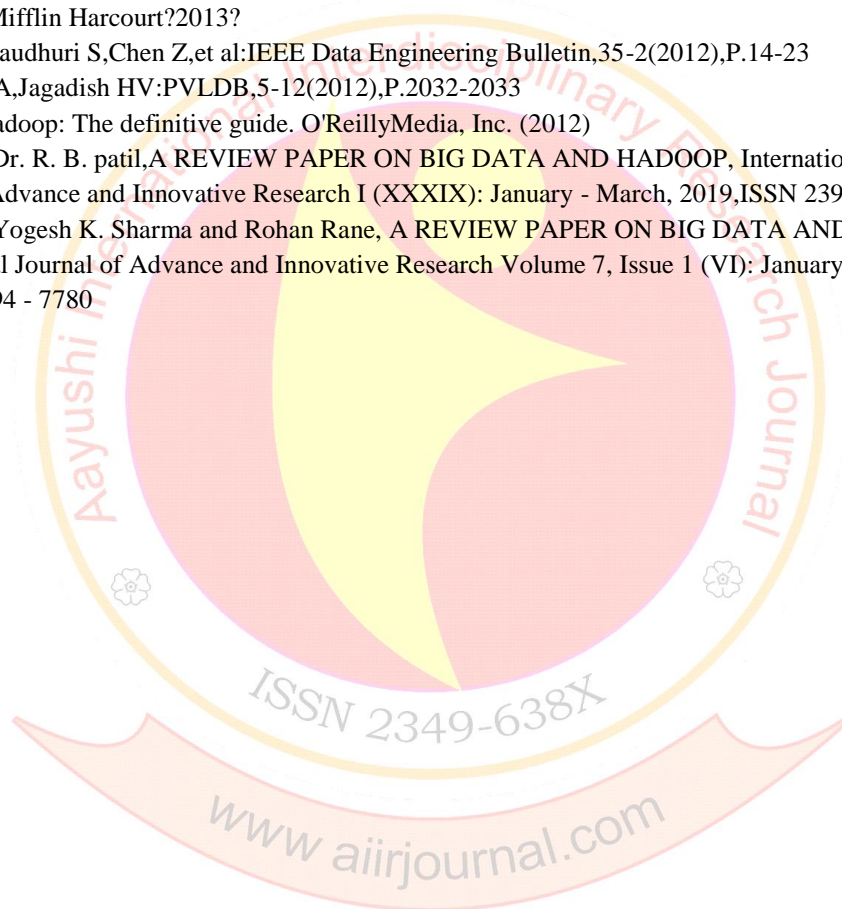
National Seminar on "Trends in Geography, Commerce, IT And Sustainable Development" Advantages And Disadvantages Of Artificial Intellegence

Conference Paper · February 2020

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Advantages And Disadvantages Of Artificial Intellegence

Mr. Sachin Bhbosale[1], Mr. Vinayak Pujari[2],Mr. Zameer Multani[3]

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1. Abstract:

AI is the technology which is very helpful for human being. By using this technology the hard work of human can be escape. The artificial intelligence can be use in healthcare, education, in electronics, software development, pharmacies, games, engineering, communication and development. AI is based on science and technology on discipline like information technology, biology, phycology, mathematics etc. The main advantage of artificial intelligence is , the work will be accurate and the time can be save.

Keywords: Introduction to Artificial intelligence, Aims of AI ,Applications, Advantages & Disadvantages.

Introduction:

Artificial intelligence is of two words one is Artificial and second is intelligence , artificial means man-made and intelligence means the capacity of thinking, So we can define the artificial intelligence the branch of computer science by which we can develop intelligent machines who can behave like human, think like human and make decisions as per the logic program in memory.

Artificial intelligence is a branch of science which deals with modifying machines for finding solutions of complex problems in human-like fashion. In common manner it is borrowing characteristics form human intelligence, and by using algorithm we can command the computer. The AI is very helpful for the human as well as society. In this the work of human is reduced and by using machine or devices we can complete our task. The committee of scientist every five years to assess the current state of AI. The committee checking the development of AI.

Here, one among the booming technologies of computing is AI which is prepared to make a replacement revolution within the world by making intelligent machines. The Artificial Intelligence is now all around us. It is currently working with a spread of subfields, starting from general to specific, like self-driving cars, playing chess, proving theorems, playing music, Painting, etc.

The Artificial intelligence refers to compute control robot to complete the given task. Since mid-20th century, scientists have attempted to develop a system capable of carrying out tasks perceived as requiring human intelligence.

Definition of AI:

AI refers to the similarity of human intelligence in machines that are programmed to think like humans and copy their steps. This term is mainly use to solve the problem like human being. AI is a method in which we program the machine to work like a human example, driving cars etc.

Artificial intelligence (AI), the ability of a computer or computer- controlled robot to complete the tasks mainly associated with intelligent beings.

Aim of AI:

The goals of AI are: - To build the computers then they can see, hear, walk, talk, and feel. A main thrust of AI is the building of computer functions normally clustered with human intelligence, such as thinking , learning, and problem solving. That's why John McCarthy coined the term artificial intelligence at MIT in 1956.

- -To Create Expert Systems −The device or machine which exhibit intelligent behavior, learn, think, demonstrate, explain, and give suggestions to its users.
- -To Implement Human Intelligence in computer − Creating systems that understand, think, learn, and behave like human beings.

Applications of AI:

AI has big role in: transportation; robots ; health ; education; commination; public safety and security, entertainment; employment.

Smarter cars:

In 2001 GPS was introduced for personal vehicle for car navigation devices and from this it is become a basic part of the transportation infrastructure. Nowadays vehicle are equipped with sensors .An average automobile in the US is predicted to have seventy sensors including gyroscopes, accelerometers, ambient light sensors, and many sensors are used. Automobiles built 2000 sensor for the better quality and service of cars.

AI in social media:

Social Media sites like Facebook, Twitter, and Snapchat contain billions of user profiles, which require to be stored and managed during a very efficient way. AI can organize and manage massive amounts of knowledge. AI can analyze many data to spot the newest trends, hashtag, and requirement of various users

AI in Robotics:

Artificial Intelligence has a remarkable role in Robotics. Usually, general robots are programmed such they will perform some repetitive task, but with the assistance of AI, we will create intelligent robots which may perform tasks with their own experiences without pre-programmed.

Humanoid Robots are best examples for AI in robotics, recently the intelligent Humanoid robot named as Erica and Sophia has been developed which can talk and behave like humans.

AI in e-commerce:

AI is providing a competitive edge to the e-commerce industry, and it's becoming more demanding within the e-commerce business. AI helps shoppers to get associated products with recommended size, color, or maybe brand.

AI in Education:

From fifteen years AI is considered as it is advance in education field. Applications are used by educators and learners today. Robots have long been popular educational devices, In 1980s in MIT Lab the Lego Mind Storms kits are developed for purpose of education. Some robots like Ozobot and Cubelets teach and help learners and children's.

AI in Safety And Security:

AI is used only when necessary. And deployment is very carefully done, AI is also helpful for removing some of the bias inherent in human decision-making. The term AI is also helpful in Cybersecurity, and machine learning is making an impact. The CCTVs are deployed almost everywhere in the world today tend to be more useful for helping solve crimes and preventing them.

Advantages:

By using Artificial intelligence human works can be reduce, by replacing peoples by machines, people can do others works.

- programming , self-writing , sself modifying etc by these works man feels burden on him.
- The artificial intelligence is like a cheap labor, and by using this labor our work will be fast and the profit will be increased.
- Artificial intelligence can be deployed easily.
- Machines not required refreshments and breaks as like human beings.
- The machines can be re programmed for work for long time without getting bored or getting tired.
- The science of robotics and artificial intelligence can be deploy into mining and other fuel exploration process by this we can save human life because human can make new robots but we cant make that human.
- Artificial intelligence can be deployed at industries and companies.

The "human error" this phrase was born because humans are mistaking from time to time. Computers, however, don't make these mistakes if they're programmed properly. With AI , the choices are taken from the previously gathered information applying a particular set of algorithms. So errors are reduced and therefore the chance of reaching accuracy with a greater degree of precision may be a possibility.

In our day-to-day work, we'll be performing many repetitive works like sending a thanking mail, verifying certain documents for errors and lots of more things. Using AI we'll productively automate these mundane tasks and should even remove "boring" tasks for humans and free them up to be increasingly creative

Some of the highly advanced organizations use digital assistants to interact with users which saves the necessity for human resources. The digital assistants also utilized in many websites to supply things that users want. We can chat with them about what we are trying to find. Some chatbots are designed in such how that it's become hard to work out that we're chatting with a chatbot or a person's being.

Using AI alongside other technologies we will make machines take decisions faster than a person's and perform actions quicker. While taking a choice human will analyze many factors both emotionally and practically but AI-powered machine works on what it's programmed and delivers the results in a faster way.

Daily applications like Apple's Siri, Window's Cortana, Google's OK Google are frequently utilized in our daily routine whether it's for searching a location, taking a selfie, making a call , replying to a mail and lots of more.

Disadvantages:

- Not easy to develop the machines because the equipment are also expensive.
- Can cost tons of cash and time to create , rebuild, and repair. Robotic repair can occur to scale back time and humans wanting to fix it, but that'll cost extra money and resources.
- Robots, with them replacing jobs, can cause severe unemployment, unless if humans can fix the unemployment with jobs AI can't do or severely change the govt to communism.
- Machines can easily cause destruction, if put within the incorrect hands. That is, a minimum of a fear of the various humans.
- AI is making humans lazy with its applications automating the bulk of the work. Humans tend to urge hooked in to these inventions which may cause a drag to future generations.
- As AI is replacing the majority of the repetitive tasks and other works with robots, human interference is becoming less which may cause a significant problem within the utilization standards. Every organization is looking to exchange the minimum qualified individuals with AI robots which may do similar work with more efficiency.
- There is little question that machines are far better when it involves working efficiently but they can't replace the human connection that creates the team. Machines cannot develop a bond with humans which is an important attribute when involves Team Management.
- Machines can perform only those tasks which they're designed or programmed to try to , anything out of that they have a tendency to crash or give irrelevant outputs which might be a serious backdrop.

Conclusion:

From the above discussion we can see that Artificial Intelligent Technologies ease human's life and by coming future Artificial Intelligent Technologies can provide more competitive advantage.

At the end, we've been during this research through the AI definitions, brief history, applications of AI publicly , applications of AI in military, ethics of AI, and therefore the three rules of robotics. This is not the top of AI, there's more to return from it, who knows what the AI can do for us within the future, maybe it'll be a whole society of robots.

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5G Technology

Mr. Sachin S. Bhosale[1], Dr. Rajendra Patil[2] , Miss.Kazima Tambe[3]

Introduction

Mobile and wireless networks have made extraordinary development in the last few years. At the present time many mobile phones have also a Wireless LAN adapter. One may expect that near soon many mobile phones will have Wax adapter too, besides their 3rd Generation, 2nd Generation, Wireless LAN, Bluetooth etc, adapters. We are using Internet Protocol for both generations as 2.5th Generation or 3rd Generation Public Land Mobile Networks (PLMN) on one side and Wireless LAN on the other side, raised study on their integration. Concerning the 4th Generation, its focus is towards perfect incorporation of cellular networks such as GSM and 3G. Multi-mode purchaser workstations are seen as need for the 4th Generation, but security mechanisms and special operating system support in special wireless technologies remains a test. Nevertheless, integration among different wireless networks (e.g. PLMN and WLAN) is execute in implementation even nowadays. Although, different wireless networks from a only utmost used absolutely, i.e., there is no combining of separate wireless access technologies for a same session (e.g., FTP download). The anticipated Open Wireless Architecture (OWA) in is targeted to propose open baseband processing modules with open interface parameters. The OWA is related to MAC/PHY layers of future Generation mobiles. The 5th Generation terminals will have software defined radios and modulation scheme and new error-control schemes can be downloaded from the Internet . The enhancement is seen towards the consumer terminals as a focus on the 5th Generation mobile networks. The 5G mobile terminals will have access to separate wireless technologies at the same time. The 5G mobile workstation should be capable to blend special flows from different technologies. The network will be dependable for managing user. The 5th Generation workstation will make the ultimate selection among different mobile access network providers for a specified service. The paper gives the concept of intelligent Internet phone where the mobile can bring the great connections.

Literature Survey
1-CHALLENGES IN RELOCATIOM FROM 4th GENERATION:
A. Multi-mode user terminals by means of 4G network, there will be a necessity to design a single user terminal that can operate in separate wireless networks and conquer the design issues such as restrictions on the size of the device, its cost and power utilization. These issues can be solved by using software radio proposition.

B. Choice among different wireless systems. Every wireless system has its typical characteristics and roles. The choice of most proper technology for a particular service at a specific place and at particular time. This will be applied by making the choice according to the best possible fix of consumer QoS (Quality of Service) requirements.

C. Security Reconfigure, adaptive and lightweight protection mechanisms should be designed.

Network infrastructure and QoS support Integrating the current non-Internet Protocol and Internet Protocol-based systems and providing QoS assurance for end-to-end services that engage various systems is a challenge.

Charging and Billing It is hard to assemble, handle and accumulate the Consumers account information from various service providers. In the same way Consumers billing is also a different-different task.

Data Encryption: If a Global Positioning System (GPS) receiver will communicate with the main transmitter then the communication link between these two is not hard to break and consumer must use encrypted data.

2-Key terms of 5G Technology:
5G is a completed wireless communication with no limitation; somehow people called it's a REAL wireless world.

- Some additional features such as a Multimedia Newspapers, and also to watch a T.V programs with the clarity of an HD T.V.
- An this Generation We can send Data much faster than that of the previous generations.
- 5G will bring about perfect real-world wireless or called as" World Wide Wireless Web"(WWWW).
- Real wireless world with no more limitations to access.
- Wearable devices with AI capabilities.
- Internet protocol version 6 (Ipv6), where a visiting care-of mobile Internet Protocol (IP) address is assigned according to a location and the connected network.
- One unite global standard.
- Cognitive radio technology, are also known as smart radio.
- High Altitude stratospheric Platform Station (HAPS) systems.

How 5G Works

As any other cellular network, 5G networks will consist of cells divided into sectors and send data through radio waves. Each cell is connected to a network backbone through a wired or wireless connection. 5G may transmit data over the unlicensed frequencies currently used for Wi-Fi. It promises as a smarter, faster, and efficient network. The goal of 5G is to have far higher speeds available, at higher capacity per sector, and at far lower latency than 4G. In order to increase network efficiency, the cell is subdivided into micro and pico cells. 5G will be a new mobile revolution as it is expected to provide gigabit-per-second data rates anytime, anywhere. In a 5G wireless network, every mobile phone will have an Ipv6 address depending on the location and network being used. 5G utilizes user-centric network concept World Wide Wireless Web (WWWW) instead of operator- centric as in 3G or service-centric as in 4G. WWWW will be capable of supporting applications and services and interconnected the whole world. 5G includes the latest technologies such cognitive radio, Internet of things, nanotechnology, and cloud computing.

5G technology has the following advanced features:

- Architecture will be device-centric, distributed, programmable, and cloud-based. High data rates.
- One to Ten Gbps connections to end points. One millisecond end-to-end round-trip delay. Low battery consumption.
- Better connectivity irrespective of location. Larger number of supporting devices.
- Lower cost of infrastructure development.
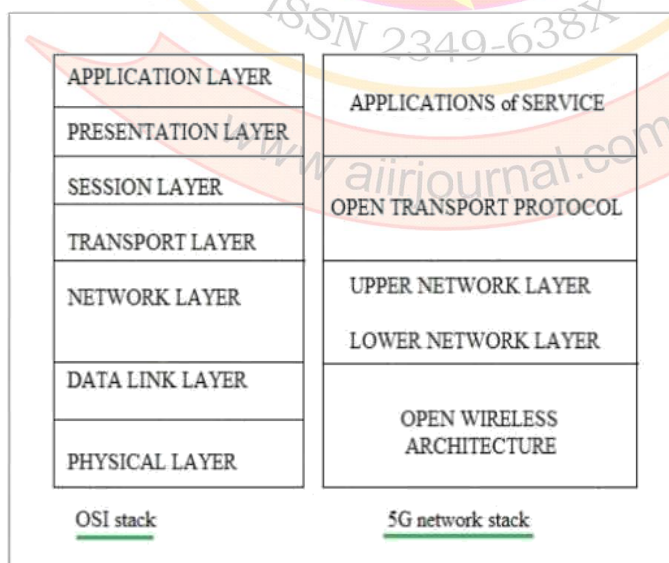
Physical/MAC layer:

Physical and Medium Access Control layers i.e. OSI (Open System Interconnection) layer 1 and OSI layer 2, define the wireless technology and shown in Fig. For these two layers the 5th Generation mobile networks is likely to be based on Open Wireless Architecture (OWA).

B. Network layer:

The network layer will be IP because there is no competition today on this level. The Ipv4 (Internet Protocol version 4) is worldwide spread and it has various problems such as limited address space and has no real possibility for QoS support per flow. These issues are solved in Ipv6(Internet Protocol Version6), but traded with significantly bigger packet header. Then, mobility still remains a problem. There is Mobile IP level on one side as well as many micro-mobility solutions (e.g., Cellular IP, HAWAII etc.)

C. Open Transport Protocol (OTA) layer:

The mobile and wireless networks be different from wired networks regarding the transport layer. In all TCP (Transmission Control Protocol) versions the assumption is that lost segments are due to network congestion, while in wireless network losses may occur due to higher bit error ratio in the radio interface. Therefore, TCP (Transmission Control Protocol) moderation and conversion are proposed for the mobile and wireless networks, which retransmit the lost or damaged TCP segments over the wireless link only. For 5G mobile workstation will be suitable to have transport layer i.e. Possible to be downloaded and installed.

D. Application layer:

Regarding the applications, the ultimate request from the 5th Generation mobile workstation is to provide intelligent QoS management over a variety of networks. In This Days mobile phones, the users physically select the wireless interface for specific Internet service without having the possibility to use QoS history to select the best wireless connection for a given service.

5G mobile phone Design

Fig. shows 5th Generation mobile phone design. The 5th Generation is being developed to put up the QoS and rate needs set by the forth coming applications like wireless broadband access, MMS (Multimedia Messaging Service), video chats , mobile TV, HDTV content, DVB (Digital Video Broadcasting) , minimum services like voice and data, and other services that make use of the bandwidth. The definition of 5th Generation is to provide sufficient RF coverage, more bits/Hz.

Features

1. 5G technology offers high resolution for cell phones user and bi- directional large bandwidth shaping.
2. The advanced billing interfaces of 5th Generation technology make it more attractive and effective.
3. 5G technology are also providing subscriber supervision tools for fast action.
4. The high-quality services of 5G technology based on Policy to keep away from error.
5. 5G technology is providing large broadcasting of data in Gigabit which supporting nearly 65,000 connections.
6. 5G technology offers a transporter class gateway with equal consistency.
7. The traffic statistics by 5G technology makes it more exact.
8. Through remote management offered by 5th Generation technology a user can get a better and faster solution.

9. The remote diagnostics also a feature of 5G technology.
10. The 5G technology is providing up to 25 Mbps (Megabytes per Second) connectivity speed.

Challenges

The transition from 4G to 5G presents several transformational challenges which must be tackled to fully realize the 5G vision. There are challenges faced with the new technologies enabling 5G. There are also challenges with the integration of this technology to provide services in different application scenarios. Some have criticized 5G for its high projected cost and that it is incompatible with the previous generations. Just as 2G phones could not connect to 3G or 4G networks, 3G and 4G phones will not connect to a 5G network. One is forced to buy a new phone which is likely to be more expensive than 4G/LTE (Long Term Evolution) service. To address these challenges, we need a drastic change in the design of cellular architecture. We also need to meet 5ᵗʰ Generation system execution need such as Mfentocells, stringent latency, network scalability, very long battery life, and green communications. It is a challenge to satisfy these requirements and minimize costs at the same time.

Applications

Some of the remarkable applications of 5G wireless technologies include:

Virtual reality/augmented reality/tactile Internet Autonomous driving/connected cars Wireless cloud-based office/multiple-person videoconferencing Unified global standard for all Network availability anywhere and anytime Blockchain 3D and ultra HD videos Smart gird Smart surgery and remote medical examination Mobile security In addition, 5G will allow one to pay all bills in a single payment with his/her mobile and vote from his/her mobile

Future Scope

In this paper we have surveyed 5ᵗʰ Generation technology for mobile communication. The 5G technology is designed as an open policy on various layers, from the physical layer up to the application. Presently, the current work is in the modules that shall offer the best Operating System and lowest cost for a particular service using one or more than one wireless technology simultaneously the 5G mobile. A new look of the 5ᵗʰ Generation technology is about to start because 5ᵗʰ Generation technology is going to give tough completion to normal computer and laptops whose marketplace value will be pretentious. There are lots of improvements from 1G to 5G (i.e. 1G, 2G, 3G, 4G , 5G) in the world of mobile communication. The new approaching 5G technology is available in the market at cheap rates, high peak expectations and much reliability than its foregoing technologies. 5G network technology will release tale age in mobile communication. The 5G mobiles will have access to various wireless technologies at the identical time and the workstation should be able to integrate various flows from different technologies. 5G technology offers high resolution for intense mobile phone consumer. We can watch an HD TV channel in our mobile phones without any dis. The 5G mobile phones will be a tablet, PC, Cell phones etc… Many mobile root technologies will be developed.

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ICT based Challenges and Innovations in E-Learning

Article · November 2019

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Convener

Dr. Rajendra Patil
Convener

Dr. Sangeeta Kohli
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INFORMATION, COMMUNICATION AND TECHNOLOGY BASED CHALLENGES AND INNOVATIONS IN E LEARNING

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ABSTRACT:

This paper examines the e-learning strategies adopted by various universities in India, from the perspective of three common objectives: widening access to educational opportunity; enhancing the quality of learning; and reducing the cost of higher education.[13] Because providing education and training to the masses on gigantic scale, for economic survival and to meet the ever-changing requirements of the society and also to meet the individual's special requirements and tastes, is not possible through the conventional system of education based on brick-and-mortar schools, colleges and universities. The discussion is illustrated by drawing on case studies of universities in India. It is concluded that the most striking characteristic of the e-learning strategies adopted by universities is their diversity, and inherent characteristic of adaptability in use and flexibility in application. The implicit compatibility with institutional aims suggests that the e-learning strategies universities adopt reflect, rather than influence, institutional ethos and that by virtue of the capacity to adapt to different contexts, e-learning may be more adaptable – and ultimately less threatening – to academic more than some observers fear.
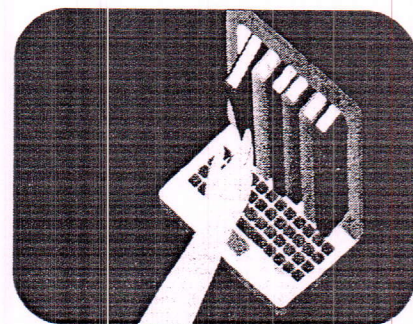
KEYWORDS: *E-learning, synchronous, challenges, synchronous, empowerment, innovations.*

1. INTRODUCTION

E-learning is commonly referred to the intentional use of networked information and communications technologyin teaching and learning. A number of other terms are also used to describe this mode of teaching and learning. They include online learning, virtual learning, distributed learning, network and web based learning. Fundamentally, they all refer to educational processes that utilize information and communications technology to mediate asynchronous as well as synchronous learning and teaching activities.

E-Learning is...

• The use of electronic technology to deliver, support and enhance teaching and deliver learning (Learning Skills Development Agency [LSDA] definition)

• The use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.

• If someone is learning in a way that uses information and communication technologies (ICTs), they are doing e-learning. Department for Education and Skills (DfES).

• *Interactive*: All E learning materials are interactive in nature with the help of simulation etc. which will enforce the learning.

• *Collaborative*: The use of groups and teams working together in collaborative learning and learner-learner interaction enforces employability skills.

• *Used To Track Student Performance*: student usage of the materials can be monitored and early potential drop-out can be detected and given remedial support.

• *Used to Facilitate understanding*: of concepts by offering alternative ways of visualizing materials and alternative explanations to those given in a single delivery mode such as a lecture, seminar or tutorial (for example, multimedia and hypermedia).

• *Used to Give Instant feedback*: from online self-assessment or formative assessment particularly through multiple choice question formats.

• *Used for Self Assessment*: students can be offered automatically-marked self-assessment exercises to identify skill/knowledge levels and learning needs before engaging with course content.

• *Used to assist students with certain Disabilities*: Access for students with hearing and some physical disabilities may be enhanced.

• *It moves faster*: According to an article by magazine," e-learning courses progress up to 50 percent faster than traditional courses. This is partly because the individualized approach allows learners to skip material they already know and understand and move onto the issues they need training on.

• *It can be updated easily and quickly:* Online e-learning sessions are especially easy to keep up-to-date because the updated materials are simply uploaded to a server. CD-ROM-based programs may be slightly more expensive to update and distribute, but still come out cheaper than reprinting manuals and retraining instructors.

4. DISADVANTAGES OF E-LEARNING

• *Dependent on technology:* E-Learners are not need high configured machines for e-learning supplier or access to a service with a high bandwidth to transfer the course materials in a timely way.

• *Material Incompatibility:* some materials designed for one particular system will not function properly on another (for example, the Apple Macintosh and the Windows PC).

• *Traning types are unsuitable:* In this type any skill that relies heavily on inter-personal contact although these courses could be supplemented by e-learning.

• *Unsuitable for Certain Types of Learners:* e-learning requires a high-level of self-discipline and personal time management. Eleraners can take complete advantage of the medioum if they are highly self motivated as the online learning process can be impersonal. Working through 'packaged' programmes can be irritating.

• *Reliant of the Quality of the Content:* it is too easy for some institutions to defer the photocopying costs onto the learner by placing all lecture notes and course handouts online. Such practices often mean that the course materials are in an inappropriate format for online learning. Course providers need to develop new technical skills and course design skills to suit the new medium.

• *Expensive:* start-up cost of an e-learning service is expensive and the cost of production of online training materials is very high. One should be confident that though online courses cost extra but they also provide lot of benefits. Significant time needs to be invested in course set-up and in ongoing maintenance.

• *Dependent on Human Support:* e-lerarning is completely depedent on course material, software, etc. with human support.

• *Social/economic disadvantage*: can limit or prevent access by some student groups (for example, cost of equipment, online access and printing).

• *No Replacement for Face-to-Face Teaching:* E communication is more static in nature then face to face communication on discussion

• *Too Reliant on IT Skills:* learners may have limited IT skills, or be uncomfortable with electronic communication and need to learn how to use the medium effectively.

• *Disabilities:* Students with visual or physical impairments may be disadvantaged.

• *Inflexible:* Flexibility may be lost as adjustments to the course in response to student reaction are not easy to make once the course is underway.

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• *Pedagogically Unsound:* Electronic environment does not completely support the instructional methods in learning environment.

5. Innovations

1. Educational developments in e-learning during 2017:-

Here are some of the more interesting technologies that could have a major impact on e-learning. The NMC Horizon 2017 Higher Education Review lists six technologies:

Mobile apps & Tablets: - I am completely in line with their prediction for adoption of tablets and mobile apps in 2017. I think learning analytics will be adopted more quickly.

Micro learning Delivers Bite-Sized Content:- Micro learning is a big deal in the eLearning world right now. It comes as no surprise as we discover that the human brain performs better with smaller pieces of information that are spaced out.

*Real World Training through the Online Platform:-*If you need a surgeon, then chances are you want to know that your surgeon has experience performing on real, live human beings. Reading books and memorizing facts and instructions isn't enough. The eLearning industry addresses this problem through real world training. Activities are integrated into systems through task-based simulations.

Digital Textbooks for Faster Research and Study:- Digital textbooks are another growing trend that continues to improve the student experience. Some organizations offer eLearning tools but still hand out hard copy textbooks. Transitioning to the digital format is not only cost effective but easier for the learner. Searching text is much faster when a link or a quick word search can direct the user to the section they need. It also cuts down on the need for storage space and waste in schools & Colleges.

Game-based learning & learning analytics: - game-based learning will become more prevalent(common), but I don't see it as becoming widely used, because of the cost of design. It will be used in pockets or selectively rather than as a widespread tool.

gesture-based computing & the Internet of Things : - gesture-based computing (or haptics) as just one of a wider range of ways of interacting and interfacing with computers, of which touch screen technology is also a part. They might also have included voice control.

The most interesting item on the Horizon list is the Internet of Things. This will be the way ordinary, everyday objects will become linked, through wireless technology, to the Internet, enabling, for instance, remote control through mobile phones of equipment in the office or house. This has fascinating possibilities. All we need as instructors or teachers is imagination as to how we can use the Internet of Things to enhance our teaching.

2. Google Buzz, Google Wave and PKM (Personal Knowledge Management)

PKM stands for Personal Knowledge Management, which is a definite passion of mine (see Work Literacy and Social Media for Knowledge Workers). 1. PKM in a nutshell, March 22, 2010
2. PKM in 2010, January 27, 2010 3. Google Buzz in eLearning, February 11, 2010 4. Seven Ways to Use Google Buzz for Education by Jeremy Vest, Feb 17, 2010 5. Google Wave: 100 tips & tricks, January 25, 2010 6. New Features Added to Google Wave: More useful for e-Learning by Bill Brandon, January 26, 2010.

3. iPad, Mobile Learning, iPhone

The iPad and other mobile solutions offer something pretty interesting. Retail, restaurants, construction – great stuff!

1. Making Sense Of The iPad For Online Learning, February 8, 2010.
2. Apple's iPad: What does it offer for e-Learning? by Bill Brandon, Jan. 27, 2010.
3. The iPad and its impact on m-learning., February 22, 2010.
4. Tools For Mobile Learning Development, March 21, 2010.
5. Five Mobile Learning Implementation Tips, March 1, 2010.
6. The Advent of Mobile Learning Technology, January 7, 2010.
7. A List of Interesting Mobile Learning Links, May 28, 2012.
8. Top 7 Myths Of Mobile Learning, Upside Learning, July 5, 2012.
7. Massive Open Online Courses:-This flexible and diverse concept sounds simple -online videos of real-life lectures-, but not when it involves the astronomic number of 36,000 students, which is how many people

Enrolled in one of Harvard's first massive online courses. And it's not just Harvard that jumped on the MOOC bandwagon.

8. *Credits & fees for MOOCs:*-It's only natural that MOOC will eventually stop being a free service, since they do require the presence of an instructor, the use of technology, content providers should enhance them with wikis, webinars, seminars, discussions, etc.

9. *The importance and greater recognition of informal learning:*-Accessibility and availability of social media tools enable and encourage people to gain the information they need. E learning is bound to evolve and show growth in future with the help of ample resouces such as videos, tools, blogs, podcast.

4. Video 1. Planning A Video Production, January 8, 2010 2. Instructional Design for Videos, January 22, 2010 3. 25 places to find instructional videos, February 8, 2010

5. Social Learning, Social Media, Twitter, Facebook 1. Twitter for Learning – 55 Great Articles, March 24, 2010 2. Social Learning Strategies Checklist, January 11, 2010 3. How to use Twitter for Social Learning, March 20, 2010 4. Checklist of Social Learning Strategies, January 12, 2010.

6. Virtual World

The tools are starting to get there where simulations in 3D worlds makes sense. 1. Eight 3D Virtual World Design Principles, March 8, 2010 2. Virtual Immersive Environments: From Theory to Practice, February 7, 2010 3. Instructional Design for Virtual Worlds, January 22, 2010.

7.Nuts-and-Bolts Topics/Other

Organizational Learning 1. Webinar 2. Instructional Design 3. Course
4. Learning Management System 5. Content 6. Camera 7. Templates 8. eLearning Strategy 9. Cost 10. Classroom.
8.These are general technology trends, not specific to education, but most relevant to education.

General technology trends

1. The changing user interface: - These are the range of factors influencing the user interface
   voice control
   gesture control/haptics
   touch screens
   3D

2. html5: - *HTML5* — the fifth iteration of the HTML standard — lets developers creates richer, more interactive applications than ever. HTML5 helps in building apps once which can work anywere through Android to iOS to Windows Phone and beyond. The rise of HTML5 is bound to be accelerated by a recent revelation: Adobe is killing off Flash for mobile devices, meaning one of the primary methods of serving videos and rich applications on mobile phones is about to disappear. HTML5 will fill that gap. For us as consumers, that means richer applications and experiences on all our devices.

3. The end of the laptop? : - *We* believe that for many users, tablets will replace laptops as the main form of 'terminal', especially considering the next trend towards cloud computing. Certainly for students, I see the laptop becoming rapidly obsolete, but for that to happen, we will need tablets with more 'creative' functionality than at present – and probably a large screen to which we can connect the tablet.

4. To the cloud: - The move to cloud computing will probably move faster in the business sector than in higher education in 2012, but nevertheless the trend for higher education is inevitable, because of the likely cost savings. The question is not whether HE will move to cloud computing, but how? Will we see 'private' clouds with shared services, run by government agencies that provide security and protection for institutions? Or will HE institutions 'trust' commercial cloud services? There are still legal and jurisdictional issues around privacy that are likely to slow the move to cloud computing in higher education, but over time I think these will be addressed.

6. Chanllenges in E-Learning[2]

1. *Awareness:* - Generally there is still a lack of awareness amongst the population, especially parents, of the effectiveness of e-learning. Many parents feel the traditional learning mode is better.

2. *Low Adoption:* - Most institutions are keen to embrace e-learning. Nevertheless, issues like lack of e-content, inadequate infrastructure coupled with the problem of digital divide, has resulted in a relatively low adoption rate.

3. *Bandwidth Issue and Connectivity:* - Engaging content requires a rich combination of multimedia components. However, due to bandwidth and connectivity limitations, downloading of engaging content to the learners will be slow. This creates frustration and boredom among learners and affects the ease of learning.

4. *Computer Literacy And Digital Divide:* - In India, there is a large segment of the population that is computer illiterate. This is especially true in the rural areas. This hinders the introduction and implementation of e-learning.

5. *Lack of Quality E-Content:* - Currently, there is a dearth of high quality e-learning content in India. This is due to the lack of expertise as well as huge financial resources required to develop the content. As a result, most of the e-learning content has low interactivity and moderate impact on learners.

6. *Difficulty in Engaging Learners Online:* - Engaging learners actively is one of the key factors in determining the success of an e-learning program. Online learning requires a very high degree of self-motivation which is found to be lacking among our learners. E-learners are have difficulties to convert from traditional learning mode to e-learning mode.

7. *Language Barrier:* -The extensive use of English in e-learning contents is also one of the factors that has hindered the success of e-learning, especially in non-English speaking countries like India. Many, who like to enrol in e-learning programs, are deterred from doing so as they are not confident with the contents in English.

7.Applied E-Learning Preograms

1. The **U.S. News E-Learning Guide** provides links to 2,800 colleges and universities with online courses, and eLearners.com offers information to online learners, connecting them to 169 schools offering online learning.

2. The U.S. Department of Education lists accredited colleges and universities at www.ope.ed.gov/accreditation [source: Federal Trade Commission].

3. Online degrees or courses offered at **George Washington University,** or you could search for any school offering online nursing courses.

4. India Inc clicks for Learning

1. **ICS College, Khed-** www.icskhed.org
2. **NIIT Imperia-** www.niitimperia.com
• Senior Management Programme with IIM Calcutta.
• General Management Programme for Executives with IMT Ghaziabad.
• Post-Graduate Certificate Program in Management with IIM Indore.
• Post Graduate Certificate Program in International Business with Indian Institute of Foreign Trade, New Delhi.
3. **Reliance World e Learning-**[8]
• Executive General Management Programme (EGMP) with IIM Bangalore www.relianceworld.in
• Post Graduate Certificate in Business Management (PGCBM) with XLRI, Jamshedpur.
4. **HughesNet Global Education-** www.hnge.in
• Executive Management Education Programme with IIM Kozhikode.
• Executive Program for Young Professionals (EPYP) with IIM Calcutta
• Executive Programme on Leadership for Young Managers (EPLYM) with IIM Calcutta.
5. **U21Global Education-** www.u21global.com
• Master of Business Administration (Public and Private Sectors)
• Postgraduate Diploma of Business Administration.

"Applications of ICT for Effective Outcomes in Higher Education "

6. **24x7 Learning-** www.24x7learning.com

• Post-Graduation Certification in Project Management with Institute of Management Technology –Centre for Distance Learning.

7. **Spoken-tutorial:** A spoken tutorial is a an audio-video tutorial that explains an activity performed on the computer. An expert explains the working of a software, by demonstrating it on the screen, along with a running commentary.

7. CONCLUSION

E-learning is still learning!! We believe that the learners and instructors in India today have accepted it as one of the practical delivery modes. In view of this, we are confident that e-learning is here to stay and will play an important role in democratizing education and contributing towards generating knowledge workers. However, in order to realize the full potentials of e-learning, the government needs to play a more active role in promoting and supporting E-learning initiatives.

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Infant Cry Detection by Signal Analysis and Feature Extraction

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79 PUBLICATIONS   **77** CITATIONS

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61 PUBLICATIONS   **91** CITATIONS

Some of the authors of this publication are also working on these related projects:

Project   A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

INFANT CRY DETECTION BY SIGNAL ANALYSIS AND FEATURE EXTRACTION

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Abstract

The first verbal communication of newborn baby with the world is baby's cry. An infant crying signal is the attention call for parents orcaregivers and motivates them to alleviate the distress. Nowadays it is a difficult forhousekeeper mothers to take care of their newborn baby. Thispaper proposes a method to detect infant cry. The cry sound of baby has different frequency and pattern than other surroundingsoundsthus it is necessary to eliminate the surrounding sound and remove the noise for perfect crydetection. The designed system can be used in various applications such as signalingparent's about the cry also distinguishing different sounds. There are some monitoring devices including wireless camera and LCD to solve the problem but they are expensive. Our idea is to present simple algorithm with low cost device to detect infant cry.

Keywords: Infant, DsPIC, Audio Codec, Wireless Camera, LCD.

INTRODUCTION

The first verbal communication of newborn baby with the world is baby's cry. Infant crying is a biological alarm system. An infant crying signal is the attention call for parents or caregivers and motivates them to alleviate the distress. Infants need their parents love and care but their parents are not always available to them. This motivates the proposal of the system for infant cry detection.

Nowadays it is a difficult for housekeeper mothers to take care of their newborn baby while doing house chores. Our idea is to present a simple algorithm applicable to create a low cost device with the ability to detect infant's crying and call the parents.

Cry is the infant's most powerful, multimodal, dynamic behavior, and sometimes the only means of communication and sign of life a birth. It involves characteristic vocalization, facial expressions and limb movements, all of which change over time. It is in the most sensitive range of the human auditory sensation\ area. Several models of cry sound have been proposed. The theory that underlies most acoustic analyses of cry sounds is the sound-filter theory. In this theory, cry is expressed by a waveform that impinges upon the listener's ear is a function of the characteristics of the source and its filters.

Infant cry detection technique can be very useful for baby care and monitoring. There are many techniques proposed but there are some drawbacks with the previous designs. The external noise is one of the most important factor which hinders the detection, the noise may corrupt the cry sound and processor may not be able to distinguish between noise and infant cry.

Thus external noise has to be removed in order to have only cry detected. The proposed system focuses on removing the external noise in order to detect only cry sound using DSPIC processor.

RELATED WORK

This section gives a brief introduction about existing infant cry detection techniques.

Kevin Kuo [1] proposed a short-time signal detection method, LPCC feature extraction, and vector quantization to performed and discriminate between three cries of differing pathologies originating from a two month old baby boy. Analysis of the recordings resulted in the discovery of all

three cry types embedded in each recording to varying degrees. Despite the imprecision in the classification results, there were still noticeable presence of the cry whose pathology was predetermined with the aid of the infant's parents. The modest success was encouraging in the fact that it felled under the expected result.

Lichuan Liu et.al [4] suggest that high noise level inside the infant incubator results in numerous adverse health effects for premature newborns and the active noise control (ANC) systems are developed to reduce the noise. The paper proposes an infant cry classification integrated ANC system for infant incubators. The developed system can dramatically reduce the harmful noise level, and the integrated infant cry detector and analyzer can monitor the infants' physical conditions. The infant cry signals are picked up and detected by the same microphones used by the ANC system, the cry signal's features are extracted and then recognized. The simulation and experiment results showed that the cry recognition of specific infants yielded promising results.

Mohammad Kia1 et al. [5] proposes a simple voice recognition system which can be applied practically for designing a device with capability to detect a baby's cry and informing the parents automatically. The overall algorithm is to evaluate the resemblance of the infant's voice signal with the data stored in a database, which is already prepared by recording some cry and laughter samples, using an automatic fuzzy classifier system which can lead to detection of cry or laughter. This algorithm can serve as a reliable foundation on which the future creation of a portable real-time, automatic voice detection system device can be based. To achieve the result they created a database of sample cry and laughter signals and written a sample Matlab program for carrying out the real-time frequency-domain calculations and a sample visual program in Labview programming environment for interfacing with user.

BhagatpatilVarsharani V et al. [7]mainly focused on automation of Infant's Cry. For the implementation LFCC was used for feature extraction and VQ codebook for matching samples using LBG algorithm. First, in training phase, in which LFCC was applied for feature extraction, and then VQ codebooks are generated to compress the feature vectors. Second, is the testing phase in which features extraction and codebook generation of samples are repeated. Here, comparison of the codebook template of samples to the all the available templates in the database are carried based on Euclidian distance between them. LFCC effectively capture the lower as well as higher frequency characteristics than MFCC, hence we will get good results over MFCC.

Proposed System

The proposed block diagram for infant cry detection is shown in figure 1. It comprises of a microphone, DSPIC30F5011 processor and LCD display with speaker. The 30F family of DSPIC processor is mainly used for audio processing.
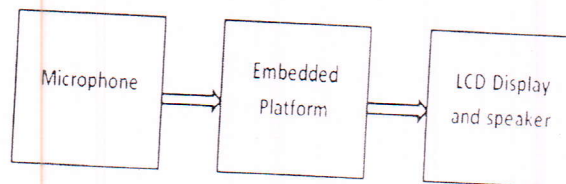
Figure 1: Block diagram of the proposed system

A real time sound is given to the processor via microphone, the given sound then is processed to compare with the testing data. FFT is carried out on the signal to obtain a pattern the obtained pattern of sample is then compared with the testing data at first the sample is seen if the sound is cry or other sound if cry sound is not found the message is displayed that cry is not detected is cry is detected the LCD display's message of cry sound detection.

METHODOLOGY

The proposed system goes through several stages of data capturing and analysis to meet the required results. The figure 2 shows the flow graph of the proposed system.
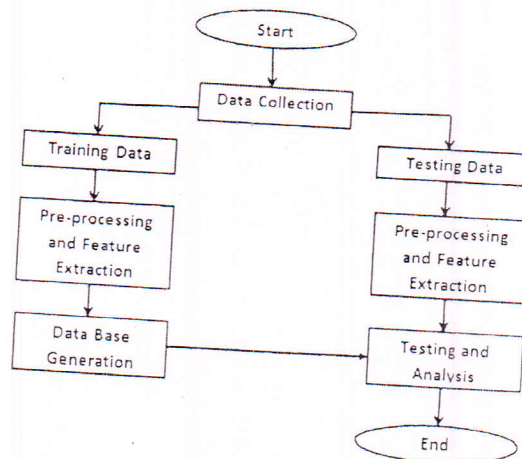
Figure 2. Flowchart of proposed system.

Stage1: The data is collected from the user it can be any audio sound using microphone.

Stage2: The collected data is trained and tested for creation of code book.

Stage3: Collected data undergoes filtering for removal of surrounding sound and FFT is carried out for generation of the pattern.

Stage4: The generated pattern is then compared with the database and the best fitting sample is checked for cry sound.

After all the stages the message is displayed if cry is detected or not.

HARDDWARE USED

The important components of the proposed system are dsPICprocessor and audio codec Ic.

1) dsPIC30F5011:

A digital signal processor, dsPIC30F5011 is a 16 bit microcontroller from Microchip
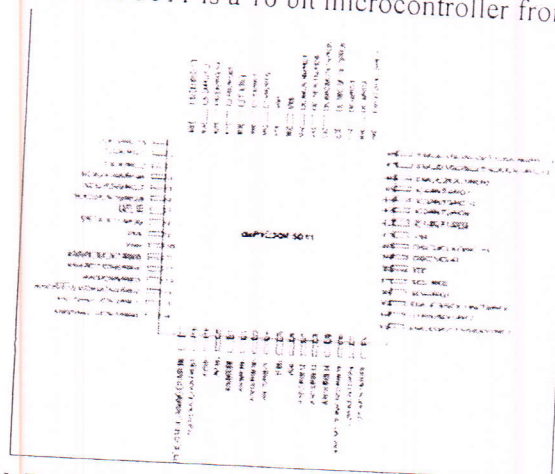
Figure 3. Pin Diagram of dsPIC30F5011 Processor

The pin diagram of dsPIC30F5011 is shown in Figure 4. The microcontroller has 64 pins which include General Purpose Input Output (GPIO) pins, and dedicated pins for SPI, CAN, UART, ADC, Timers and Output Compare.

Features of dsPIC30F5011:

- 64 pin. high performance RISC CPU
- 66KB Flash Memory. 4KB on-chip RAM
- 16 bit Timers
- 16 bit PWM/ Compare output functions
- 3- wire SPI modules
- Addressable UART modules
- 12 bit Analog to Digital Converter (ADC)
- In circuit serial programming (ICSP) capability with two UART modules.

2) Si3000 Audio codec:

The Si3000 is a complete voice band audio codec that offers integration by incorporating programmable input and output gain attenuation. a microphone bias circuit. handset hybrid circuit and an output driver for 32Ω headphones
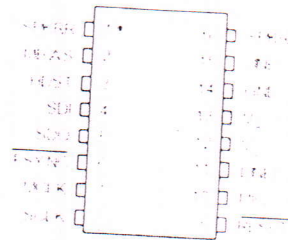
Figure 4. Pin Diagram of Si3000 audio codec.

Features of Si3000 Audio Codec:

- 84 dB ADC Dynamic Range.
- 84 dB DAC Dynamic Range.
- 4–12 kHz Sample Rates.
- 30 DB microphone pre amplifier.
- Programmable input gain: Attenuation: −34.5 dB to 12 dB
- Programmable output gain: Attenuation: −34.5 dB to 12 dB
- Support for 32 ΩHeadphones.
- 3:1 Analog Input Mixer.
- 3.3–5.0 V Power Supply.
- Direct Serial Interface to DSPs.

It also serves as a companion chip to FAT ISO modem chipset with vice features providing hardware support for handset and speaker phone. The device operates from a single 3.3 to 5 v power supply and I s available in 16bit small outline package.

RESULTS

Different sound samples were taken for study. the samples were then analyzed by taking FFT and pattern generation for distinguish between different sound patterns with cry pattern.

Figure 5 and 6 shows patterns of different sound samples. Figure 5 shows the patterns generated by sound samples such as train, owl traffic jam sound. Figure 6 shows the patterns of different cry samples
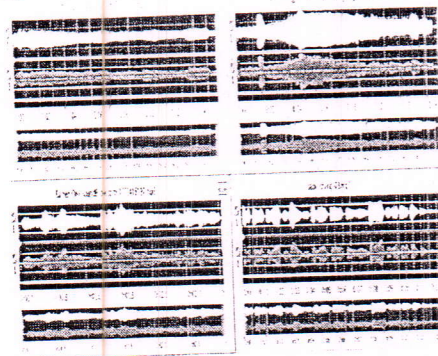
Figure 5. Patterns of different sound samples
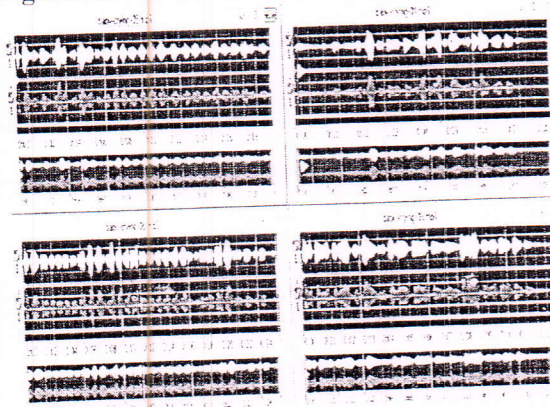
Figure 6. Patterns of different cry samples

It can be seen that the pattern of sound samples such as traffic or train sound are different than the cry sound samples. The frequency and amplitude changes can also be observed. This analysis is used in the algorithm developed for cry detection.

Further detail analysis are carried out on human body sounds and cry sounds because human sounds are similar in nature which can affect the detection of perfect cry sound.
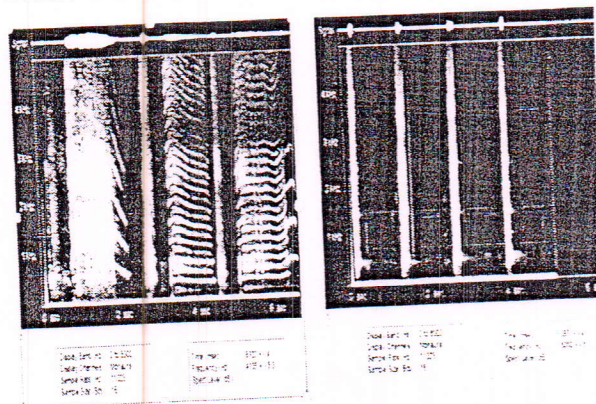
Figure 7(a). Spectrogram of cry sound and hiccup sound

Figure 7(a) shows the spectrogram of infant cry sound and human hiccup sound the pattern difference can be seen in terms of time interval and amplitude of the signal. The infant cry sound can be easily distinguished from the hiccup sound.
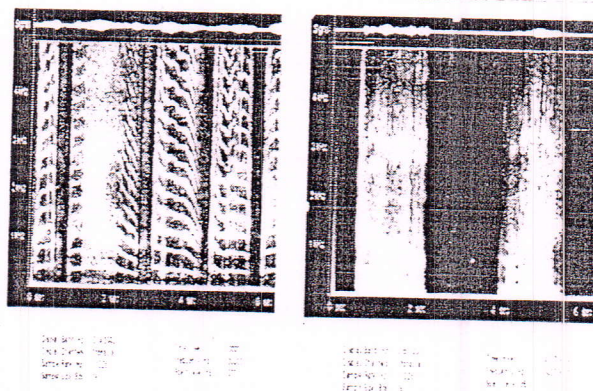
Figure 7(b). Spectrogram of cry samples and human snoring sound.

Figure 8 and 9 show the hardware experimental setup for proposed system. Programming is done in MPLAB XIDE
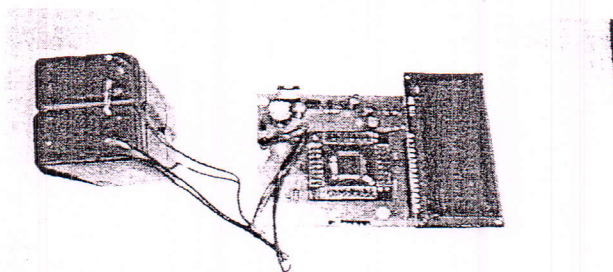
Figure 8: Experimental Setup 1
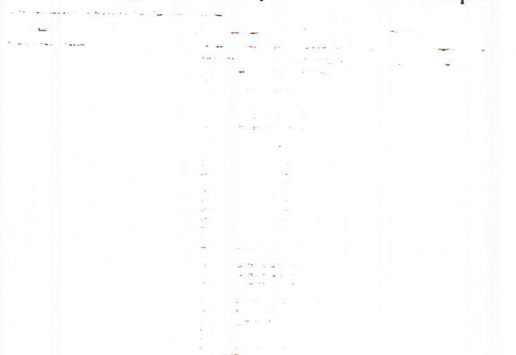
Figure 9: Experimental Setup 2
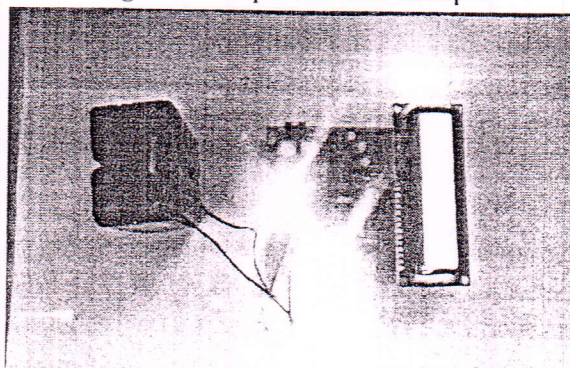
Figure 10: LED glowing when the system is powered.
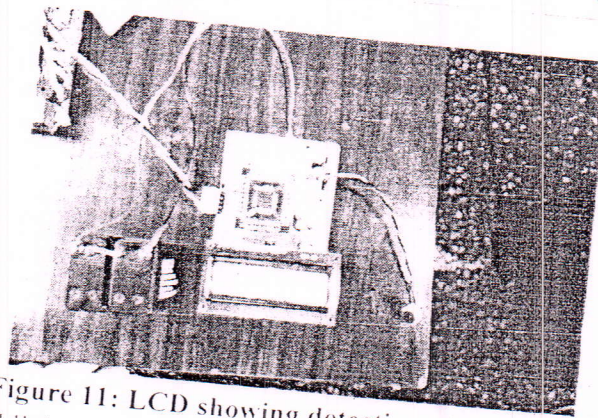
Figure 11: LCD showing detection of cry sound

Fig. 10 shows the blinking of leds when the system is powered and shows a message on the LCD display "Welcome" when battery is connected for 500ms delay and then changes to "Infant Cry Detection" for 1200ms delay. The LEDs used are toggle with a constant delay of 20ms. Fig 11 and 12 shows the when result of cry detected or cry not detected after the sound sample is processed
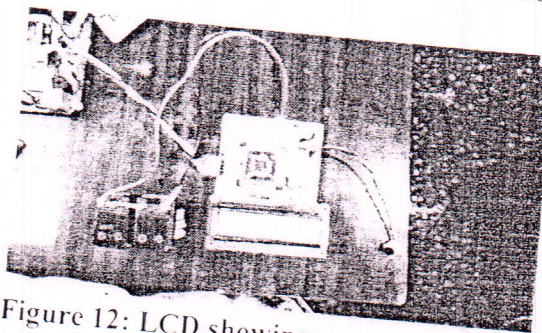
Figure 12: LCD showing cry not detected.

CONCLUSION AND FUTURE WORK

Theresults show successful implementation of DsPIC30F5011 processor and Si3000 Audio codec Ic on an embedded platform. The program generated in MPLAB XIDE using embedded C language is dumped successfully and shows the desired results showing proper working of the processor. Different sound samples were analyzed according to the pitch and frequency patterns and the difference was spotted between cry samples and other surrounding sounds The obtained spectrograms add more details to the study and differentiating of cry samples from other human sounds. Detected results are displayed on the LCD.

Future work is to develop an algorithm that will distinguish between different surrounding sound and detect only cry sound neglecting other sounds.

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National Seminar on "Trends in Geography, Commerce, IT And Sustainable Development" Green Technology

Conference Paper · February 2020

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Project   A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

Green Technology

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Introduction

Green technology which is also called as sustainable technology takes impact on the environment. Recycling, renewable resources, safety disquiets, reducing and reusing are used in making of green technology. Green technology works with science and technology to protect the environment.as this technology helps in balancing the ecosystem it is referred to as clean technology. It is seen that nowadays companies consume more energy than what is needed which leads to pollution in the environment. Green technology which is also called as environmental friendly Technology helps in making the technology without harming the nature. The aim of the green technology is to inhibit the natural resources and fresh the environment. Green technology uses the 3 mantras such as reduce, reuse and recycle for the betterment of the environment. Some of the benefit of green technology is that it is environmental impact. it reduces the emissions of toxic gases from the environment and it is used for saving the natural resources. The Green technology devours the fewer energy then conventional technology. The main purpose of green technology is to slow down the global warming and decrease the green house gases(GHG).Green energy comes from sunlight ,rain ,tides ,wind and plants this energy are renewable

5. Importance of Green Technology

The above figure describes Importance of Green technology which includes the effectiveness to promote the green industry. Due to green technology there is a major savior of the environment. Before the green technology there was loss of the environment by the industries but since we use the method of green technology we do not harm the environment. Green technology is the elevation to the green business. Green technology gives strategic pivot of green growth. Green technology supports in dipping the green house gas emissions. It is the new-fangled source for the progress of the country.

IV. Limitations of Green Technology

Green Technology wants the renewable and biodegradable material which is expensive.Many of the individuals are oblivious of the green harvests and their customs. Most of the people are unwary to remuneration a premium of the green products. Water conduct technology is also overpriced.

6. Goals Of Green Technology

7.

The goals of the green technology are as follows:

- Rethinking: The goal of the rethinking is to think on changing the patterns of the production so as to reclaim or reuse the products.
- Recycling: It is the process of converting the waste materials into new ones. It is the waste discarding technique which can be used for saving the natural resources.
- Renewing: It is the process by which the renewable resources are used to save the natural resources. The things which can be used again and again are refurbished.
- Reducing: The waste which cannot be used again for eg: the electronics which are not in condition to be used are reduced.
- Responsibility: Green Technology takes the responsibility of maintaining the beauty of the nature by not harming the environment.

VI. Future Scope of green Technology

As we grasp before few years or before the execution of green technology there was lots of complications such as global warming, energy- shortages, pollution and we were facing many environmental issues. But since we have applied the green technology there is a change in the environment as well in the human life.

Now is up to us that how we look at green technology if we support the green IT then there would be a very moral change in the society. Green technology helps in blending the fossil fuels as well as the renewable energy from the environment and minimize the environmental influences. The green electricity is the freshest and the most valuable form of renewable energy. The green technology reliefs in reducing the emissions of toxic gases. It also chains in reducing the waste. It is assumed that both the electricity and hydrogen will become the future fuels as the distribution of electric and fuel cell vehicles is growing speedily. The green technology uses the renewable energy such as geo thermal energy, rain , wind, tides, algae and plants which decreases the global warming from the environment.by saving the energy we can save the natural resources from getting harm by the toxic gases and global warming. Using the green products which are free from ozone depletion and toxic compounds can protect the nature.

VII. Conclusion

By using the Green technology we help to encourage an eco-friendly and domestic environment along with our welfares by dropping costs, wounding down of waste and preserving energy. Green technology not only comprise in green computing but also emphases on the mechanisms used in the computers. Green technology correctly discourses the matter of global warming. Currently all the companies focuses on the concept of green IT. Green technology tips to a lot of energy savings, decrease in production of CO2 and CFC's which leads to environment defense. Green economy has a latent to realize sustainable development an eliminate poverty on an extraordinary scale.

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Influence of Modern Technology in Education

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A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

Influence of Modern Technology in Education

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Introduction

The age of 21st century is often observed as an age of technology. Technology, today, plays a actual significant role in our life. It is understood as a basis of development of an economy. An economy which is unfortunate in technology can never grow in today's situation. This is because technology makes our work much informal and less time unbearable. The influence of technology can be felt in every conceivable field one such field is Education. Current technology in education According to the latest visions as to how exactly current students of today wish to use technology and how does their education get an influence if they use technology, it was exposed that the use of modern equipment technology and tools, the education and interactivity of scholars increases. They also find it much more communicating, as well as full of interesting areas, when aided by technology. The transmission of information becomes very easy and suitable, as well as effective. What this means is, that our minds now incline to work faster when helped with the use of modern technology, be it any part of life, here we talk about learning. The dependence and necessity of such an invention, that simply makes life an easy, smooth journey is completely unescapable these days even in schools, universities and colleges. Now a days Students can make use of technology in the following ways:

Internet connection and round the clock connectivity

The internet has grown up in importance by many crinkles, over the process of the period. Its importance in the teaching world can now never be destabilized. In spite of the chances of deception and drawbacks, the use of the internet is like a blessing for learners. Today, the internet is something that is current in almost everything we use. From television to gaming comforts, and our phones, the internet is exactly everywhere. The use of the internet allows students to find wonderful suitability, they can find numerous kinds of help, tutorials and other kinds of assisting material that could be used to academically improve and enhance their learning.

Using projectors and graphics

Visual images always have a robust appeal associated to words. Using projectors and graphics to aid in learning is another form of excessive technological use. Top institutes around the world, now depend on the use of amazing PowerPoint presentations and prognoses in order to keep the learning collaborating and stimulating. Technological use such as projectors within the schools and institutions can take the communication and attention levels right up and also improve inspiration. Students like to see pleasing visuals and something that tempts them to think rather than just reading words. The learning part also becomes pretty effective when it comes to technology.

Digital footprint in the education sector

If we talk about digital and education, then the diffusion of digital media within the education sector has now grown-up. This diffusion has resulted in round the clock connectivity with scholars and diverse media that are available for different types of assignments or help. As the influence of digital increases, there are and there will be more applications that will contribution students in growth and learning.

Online degrees with the use of technology

Online degrees now have become a very common sensation. Persons wish to take up online courses for their education and certifications. Top organizations offer incredible online programs with the use of numerous applications and the internet. This is a notion that will continue to increase as it gets more support and mindfulness. The online degree situation around the world is more well-known among learners who work and look for flexible studying programs.

Significance of technology in education

The part of technology in the field of education is four-fold: it is comprised as a part of the prospectus, as an instructional distribution system, as a means of helping commands and also as a tool to improve the whole learning process. Thanks to technology; learning has gone from inactive and sensitive to interactive and violent.

Education is vital in business and educatiional settings. In the previous, education or teaching is used to help labors do things differently than they did before. In the latter; education is geared towards making interest in the minds of students. In either case, the use of technology can help learners understand and retain ideas better.

Factors affecting technology in education

I. Jung talks about the huge challenge educators are facing in our civilization due to the rapid growth of information. The current technologies are challenging that instructors learn how to use these technologies in their teaching. Hence these new technologies growth the instructors' exercise needs. Gressard and Loyd (1985) declared that instructor's attitudes toward computers are a key factor in the effective implementation of ICT in education. They pointed out that instructors do not always have positive arrogances towards computers and their poor attitudes may lead to a disappointment of the computer- based projects. Also the most commonly cited barriers are:

- lack of time;
- lack of access;
- lack of resources;
- lack of expertise and
- lack of support.

Another barricade given by Butler and Sellbom (2002) and Chizmar & Williams (2001) is dependability. Dependability involved hardware failures, incompatible software between home and school, poor or slow internet connectivity and out of date software which are accessible mostly at school while the students/educators are having more up-to-date software at home.

Influence of ICT on education

In learning context, ICT has the possible to growth access to education and progress its significance and quality. Tinio (2002) asserted that ICT has a marvelous impact on education in terms of gaining and fascination of information to both teachers and students through the promotion of:

Active learning: ICT tools help for the control and analysis of information got for inspection and also learners' performance report are all being computerized and made simply accessible for inquiry. In difference to memorization-based or repetition learning, ICT indorses learner appointment as learners choose what to study at their own pace and work on real life positions' problems.

Collaborative and Cooperative learning: ICT inspires communication and collaboration among students, teachers regardless of distance which is between them. It also delivers students the chance to work with people from different principles and working Together in clusters, hence help learners to improve their communicative skills as well as their global consciousness. Researchers have found that naturally the use of ICT leads to more collaboration among learners within and beyond school and there exists a more collaborative relationship between students and teachers (Grégoire et al., 1996). "Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect the abilities and contributions of their peers." (Panitz, 1996).

Creative Learning: ICT indorses the operation of current information and to create one's own information to produce a tangible product or a given instructional purpose.

Integrative learning: ICT indorses an integrative method to instruction and learning, by removing the artificial separation between theory and practice unlike in the traditional classroom where prominence encloses just a particular phase.

Evaluative learning: Use of ICT for learning is learner-centered and delivers useful feedback through numerous interactive features. ICT allow students to discover and learn through new ways of instruction and

learning which are continued by constructivist models of learning rather than students do memorization and repetition learning.

☐ When a school in diverse parts of the state, students

Positive impact

1. Enhanced Teaching and Learning:

☐ Technological growths like digital cameras, projectors, mind training software, computers, Powerpoint presentations, 3D visualization tools; all these have become excessive sources for instructors to help students grasp a idea easily.

☐ It has to be understood that a visual clarification of ideas makes learning fun and pleasant for students.
They're able to contribute more in the classroom and even teachers get a chance to make their classes more collaborating and stimulating.

2. Globalization: can "meet" their complements through video conferencing without leaving the classroom.

☐ Some sites, such as www.glovico.com are used to help learners learn foreign languages online by combination a group of learners with a teacher from another country.

3. No Geographical Limitations:

☐ With the overview of online degree programs, there is hardly any need of being present physically in the classroom. Even numerous foreign universities have started online degree courses that students can join.

☐ Distance edu cation and online education have become a very important parts of the education system now a day.

Negative impact

Declining Writing Skills:

Due to the extreme usage of online chatting and shortcuts, the script skills of today's young generation have failed quite extremely.

☐☐These days, children are trusting more and more on digital communication that they have totally forgot about educating their scripting skills.

☐☐They don't know the spelling of diverse words, how to use grammar properly or how to do cusive writing.

2. Increasing Incidents of Cheating:

☐☐Technological developments like graphical calculators, high tech watches, mini cameras and similar tools have become countless sources to fraud in exams.

☐☐It is easier for learners to write formulas and notes on graphing calculators, with least chances of being caught.

3. Lack of Focus:

☐☐SMS or text messaging has become a preferred pastime of numerous students. Students are seen playing with their cell phone, iPhones day and night or driving and very often even between lectures.

☐☐Being ever-connected to the online world has caused in lack of focus and attention in instructors and to some extent, even in sports and additional activities.

Advantages

☐☐It makes students more excited to learn.

☐☐Help students with busy schedules, freedom to work at home on their own time.

☐☐Train students to learn new technology skills they can use later in the work place.

☐☐Reduction paper and copying costs, promoting concept of "green revolution".

Disadvantages

☐☐Many experts and experienced people say that, due to such technology in education, students imagination is affected, their thinking ability is reduced.

☐☐Sometime it's also time-consuming from teacher's point of view.

☐☐It is costly to install such technology.

☐☐There can be health issues too when used over limit.

Conclusion

Technology has a positive influence on education and at the same time may also posture negative effects. Instructors and learners should take advantage of this in the good light and remove the disadvantages which are pulling back many of learners as well as schools from achieving superiority. It is thus time for every nation to present a more technologically armed education sector in the future.

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Internet of Things (IoT): Research, Architectures and Applications

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Introduction

The Internet of things (IoT) is the network of corporeal devices, home appliances, vehicles, and other substances fixed with electronics, sensors, software, actuators, and system connectivity which allow these substances to gather and conversation data. To each object is uniquely recognisable over its embedded calculating system but is able to interoperate within the present Internet substructure. The IoT permits substances to be detected or measured remotely diagonally existing network substructure [1], making occasions for more straight incorporation of the physical world into computer-based systems, and subsequent in better competence, correctness and economic advantage in addition to minimise human interference [2-5]. When IoT is increased with devices and actuators, the technology develops a sample of the more universal class of virtual physical systems, which also includes technologies such as smart networks, smart homes, virtual power plants, intelligent transport and smart cities. Things, in the IoT intellect, can refer to a wide variety of policies such as heart observing grafts, biochip transponders on grange animals, cameras flowing live foods of harsh animals in beach waters, vehicles with built-in sensors, DNA examination devices for ecological, food, pathogen observing [6], or field process policies that support fire fighters in hunt and release processes [7].

Created on overhead conversation the upcoming of the IoT will be on many requests. Its application will variety from, smart city, smart grid, intelligent automobiles, smart electricity meters etc. This article presents a study on IoT and its application in science and technology. A literature appraisal is providing based on different application of IoT. Architecture and basics of IoT, along with key topographies is also been conversed.

II. Literature Review

A education founded on context-aware calculating, education, and big data in Internet of Things was providing by Sezer et al. [9]. Na et al. [10] has planned energy-efficient mobile charging for wireless power transmission in Internet of Things links. Jin et al. [11] projected an info framework for making a smart city over Internet of Things. Wu et al. [12] cultivate a new paradigm, named cognitive Internet of Things (CIoT), to empower the current IoT with a "brain" for high-level intelligence. Xia et al. [13] proposed GPS-free greedy routing with delivery guarantee and low stretch factor on 2-D and 3-D surfaces. Ren et al. [14] proposed a technique for exploiting the data sensitivity of neurometric fidelity for optimizing EEG sensing. Yu et al. [15] developed a method for carbon-aware energy cost minimization for distributed internet data centers in smart microgrids. Abdelwahab et al. [16] discussed enabling smart cloud services through remote sensing: an internet of everything enabler. Khan et al. [17] discussed a design of a reconfigurable RFID sensing tag as a generic sensing platform toward the future Internet of Things. Zhang et al. [18] provided information about ubiquitous WSN for healthcare. Främling et al. [19] proposed a universal messaging standard for the IoT from a lifecycle management perspective. Sheng et al. [20] proposed leveraging GPS-less sensing scheduling for green mobile crowd sensing. Chen et al. [21] discussed information fusion to defend intentional attack in Internet of Things. Kantarci and Mouftah [22] proposed trustworthy sensing for public safety in cloud-centric Internet of Things. Lin et al. [23] proposes a protocol and a method of spectrum management that can guard against common types of security threats despite the limitations of the local processing. New and innovative IoT based applications and its basics were discussed in literature [26-29]. As the Internet of Things (IoT) is emerging as an attractive paradigm, a typical IoT architecture that U2IoT (Unit IoT and Ubiquitous IoT) model has been presented for the future IoT. Based on the U2IoT model, this paper proposes a cyber-physical-social based security architecture (IPM) to deal with Information, Physical, and Management security perspectives, and presents how the architectural abstractions support U2IoT model. In particular, 1) an information security

model is established to describe the mapping relations among U2IoT, security layer, and security requirement, in which social layer and additional intelligence and compatibility properties are infused into IPM; 2) physical security referring to the external context and inherent infrastructure are inspired by artificial immune algorithms; 3) recommended security strategies are suggested for social management control. The proposed IPM combining the cyber world, physical world and human social provides constructive proposal towards the future IoT security and privacy protection [30]. The Internet is evolving rapidly toward the future Internet of Things (IoT) which will potentially connect billions or even trillions of edge devices which could generate huge amount of data at a very high speed and some of the applications may require very low latency. The traditional cloud infrastructure will run into a series of difficulties due to centralized computation, storage, and networking in a small number of datacentres, and due to the relative long distance between the edge devices and the remote datacentres. To tackle this challenge, edge cloud and edge computing seem to be a promising possibility which provides resources closer to the resource-poor edge IoT devices and potentially can nurture a new IoT innovation ecosystem. Such prospect is enabled by a series of emerging technologies, including network function virtualization and software defined networking. In this survey paper, we investigate the key rationale, the state-of-the-art efforts, the key enabling technologies and research topics, and typical IoT applications benefiting from edge cloud. We aim to draw an overall picture of both ongoing research efforts and future possible research directions through comprehensive discussions [31].

III. Architecture Of Iot

Architecture of IoT [24] depends on various applications of IoT. Fig. 1 shows general 3 layer / 4 layer architecture for IoT. For e.g. consider two scenario. Scenario-1, Lets reflect smart devices for effluence, wherein sensors intellect the amount of carbon monoxide, nitrogen dioxide, sound level etc. and sends these data continuously to the central database. These data will be examined by using investigative tools and gives info about sum of air effluence in that specific city to the traffic police. This info helps to take the protection when it surpasses the normal level. Here device layer designates sensors will be constantly detecting the air and sends the data over Wired or wireless communication to the database. This data will be handled and examined and final combined result will be send to the user smart phone over the Air pollution control application. Later four layers architecture is essential.

Scenario-2: Let"s study a device is devoted near the kitchen or gas cylinder with context to find the gas leakage. In this when device senses gas leakage it has to aware the surrounding directly and then has to send the message to the vender. In this case examining has to be done in the sensor layer itself.

IV. Elements Of Iot:

Important mechanisms [25] which are essential to build IoT are i) hardware mechanisms such as devices, actuators, ii) Middleware mechanisms such as database for storage and data logical tools iii) Visualization through diverse applications.

4.1 Single identification for to each smart device IoT contains of enormous number of smart devices. Each of this devices requires a unique identification for communication and also helps to control and access remote devices through internet. Ipv4 addressing supports limited number of single addressing for smart devices. IPv6 provides large set of unique address. Apart from this unique address, each of these devices also has object id. This object id is used to refer the smart device within the communication network.

4.2 Sensing devices Each object embedded with sensors continuously sense the data based on the context. Context may be sensing humidity or temperature or sound level, amount of air pollution or motion etc.

4.3 Communication Sensed data from smart devices are sent to the database through the communication technologies. This communiqué equipment may be Radio Frequency Identification (RFID), Bluetooth, Near Field Communication (NFC), Wi-Fi, ultrawide bandwidth(UWB), Z-wave, 3G, 4G and Long Term Evolution-Advanced (LTE-A).

4.4 Data storage and analytics In IoT smart devices produces large amount of data, which has to be stored in the storage device. These stored data has to be analysed to extract the meaningful information. To do this, analytics or logical tool which includes intellectual algorithm has to be established to extract the valuable info

from raw data. This analytical tool has to support interoperability with different platforms. In the IoT building middleware represents the both storage and analytical tools. A centralized infrastructure is required to support both Storage and analytical tools.

4.5 Visualization Nowadays the world has become smart with smart phones. by means of smart phones or laptops operator has to download the essential application and through which operator can cooperate with central database and get the valuable information about the actual surroundings.

V. IOT – Key Features

The most significant features of IoT contain artificial connectivity, sensors, intelligence, active engagement, and small device use. A brief review of these features is given below:

1**. AI** – IoT basically creates virtually whatever "smart", sense it improves every feature of life with the power of artificial intelligence algorithms, data collection, and networks. This can mean something as simple as enhancing your refrigerator and cabinets to detect when milk and your favourite cereal run low, and to then place an order with your preferred grocer. **2. Connectivity** – New allowing technologies for networking, and precisely IoT networking, mean networks are no longer completely tense to main suppliers. Networks can occur on a much lesser and cheaper scale while still existence practical. IoT creates these small networks between its system devices.

Sensors – IoT loses its difference deprived of devices. They performance as important tools which alter IoT from a normal passive network of devices into an active system capable of real-world integration.

Active Appointment – Considerable of today's communication with associated technology occurs through passive engagement. IoT presents a new example for active product, content, or service engagement.

3. Small Devices – Devices, as forecast, cheaper, have become smaller, and more powerful over time. IoT deeds purpose-built small devices to bring its exactness, scalability, and adaptability.

VI. Conclusions

The Internet has different radically the way we live, touching connections between people at a simulated level in numerous settings spanning from the professional life to social relationships. The IoT has the possible to add a new measurement to this procedure by allowing transportations with and amongst smart substances, thus leading to the vision of ,,,,anytime, wherever, any media, anything" transportations. This article providing a research review about the Internet of Things (IoT). Different aspects of the IoT are discussed in this paper. Work reported in literature is provided and discussed. Architecture and different elements of IoT is explained. Key Features and its applications are also described.

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The Role of Digital Marketing in Consumer Behavior

Conference Paper · February 2020

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Project A Research on Process of Interaction Between Business Intelligence (BI) and SMES View project

The Role of Digital Marketing in Consumer Behavior

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Introduction

Using the internet, social media, mobile apps, and other digital communication technologies has become a part of billions of people's daily lives. For instance, the present number of internet users in India is about 323 Million and around 3.2 Billion on this planet. Earlier people—the next generation of mass consumers—have also high levels. People also spend collective time online. For example, in the India, an over the last period of the number of hours spent online by people has more than gathered, and now averages 20.5 hours per week.

Earlier people—the future generation of mass consumers—have likewise high levels

People also spend more time online. For example, in the UK, over the last decade the number of hours spent online by grown-ups has more than creased, and now arithmetic mean 20.5 hours per week

Social media has fuelled part of this growth: worldwide there are now more than 2 billion of peoples using social media and Facebook alone now has just about 1 billion vigorous users per day clearly, peoples are exposed themselves to more and more digital and social media. This is for many purposes, within their roles as consumers as they search for information about products,1 purchase and consume them, and communicate with others about their experiences.

Marketers have recognized to this foundational shift by increasing their use of digital marketing channels.

In fact, by 2017 nearly one-third of global advertising spending is estimate to be in digital channels

Thus, the future purchaser marketing will largely be carried out in the digital settings, particularly social media and mobile.

It is there for essential for purchaser research to inspect and understand consumer behaviour in the digital environments.

This has been up-to-the-minute over the last decade, with increasing amounts of research focusing on digital consumer behaviour issues.

The works is still relatively promising, however, and more research is of course needed— particularly given the ever-changing nature of the digital/social media/mobile environments in which consumers are situated and interact with brands and each other. This article efforts to

This can include specific products or services, as well as brands as a whole.

Research Themes And Findings

Five separate investigation themes emerge in recent consumer research on digital marketing and social media. The five themes are consumer digital culture, advertising,impacts of digital environments, mobile, and online WOM and reviews.

The most popular themes are online WOM, which is enclosed by almost half of the trainings, and advertising, signified by slightly over one-quarter of the articles.

Impacts of Digital Environments

A still-emerging refrain in current years is how digital/social media environments influence consumer behaviour [21-23]. The significances can be supposed of as environment-integral (i.e., digital environments influence behaviour in those environments) or environment-incidental (i.e., digital environments influence behaviour in other, unrelated environments). It is inspiring to see how the some informational and social characteristics of digital/social environments, such as being exposed to other consumers' opinions (e.g., reviews) or choices (e.g., bids in online auctions), or even just to friends' lives over social media, can impact subsequent behaviours.

For occurrence, with respect to environment-integral significances, Lamberton et al. [21] and Norton et al. [22] considered learning from strangers in digital environments. They find that customers in inexpensive online settings infer relational difference and act destructively against unclear others (strangers) [21], and find that seeing online that others made the same choices as oneself can reduce, not increase, confidence in one's choices if others' explanations (e.g., in online reviews) are dissimilar [22]. Adopting a different perspective,

Wilcox and Stephen [23] inspected an environment-incidental response with respect to how using Facebook artificial self-control. They create that when uncovered to closer friends on Facebook, consumers afterward exhibited lower self-control in choices related to, for example, healthy behaviours (e.g., choosing a cookie instead of a healthier granola bar).

Mobile

Consumer behavior in settings is also increasingly important, as consumer use mobile devices more frequently. This is particularly interesting in shopping contexts. In an in- stock shopping setting, Hui et al. [24] studied how customers respond to mobile coupons in 8 physical stores, conclusion in a field trial that mobile offers requiring consumers to deviate from their intentional shopping paths can growth unplanned spending. In an online shopping setting, Brasel and Gips [25] attentive on shopping on mobile devices (e.g., tablets) and exactly, on how moving products (instead of clicking with a mouse) can increase feelings of emotional possession and endowment. This is a stimulating contribution because work on how consumers physically interface with mobile devices and how that influences decision making is scant but, as this article showed, important. Unconnected to shopping is work by Bart et al. [26] that cautious how mobile display ads—which are very small and carry very little (if any) information—influence customers' brand superiorities and purchase intentions. They newcomer that in countless product categories mobile display ads have no effect, but that they do lift attitudes and intentions for high-involvement, utilitarian products (e.g., financial services).

Online WOM and Reviews

WOM is the greatest-represented topic in digital and social marketing investigation, which is unexpected given the reliance consumers appear to have on socially sourced online information.

A number of sub-themes were enclosed recently. First, a stimulating set of articles Measured language properties of online WOM and/or reviews [27-33], usually showing how judgements of reviews and how important they can depend on subtle language-based properties.

For instance, Kronrod and Danziger [27] showed that symbolic (vs. literal) language in online reviews positively pretentious customer attitudes and choice for hedonic goods. Moore [28] considered descriptive language in online reviews, outcome that whether customers explained actions or reactions artificial perceived evaluation helpfulness. Hamilton et al. [29] well-thought-out negative WOM, finding that using softening language when conveying negative opinions

Recommendations For Future Research

The digital/social media customer behaviours works is fast-growing and largely focuses on marvels that are practically applicable and hypothetically interesting. Researchers have mostly considered how customers use information (e.g., online WOM, reviews) available to them in digital/social media environments. Future investigation should continue this method, although in a more long-drawn-out fashion. Consumers' behaviour's other than those related to online WOM/reviews should be considered, and other types of information originate (and inferences made) in online environments should be measured. For example, it would be stimulating to consider the complex interplay between spreader, receiver, linguistic/content, and context factors when it comes to backgrounds and significances of online WOM.

Another high-potential way for future investigation is to consider how several kinds of digital environments (including social media and mobile) impact a wide variety of customer outcomes, including psychological and economic constructs. Few trainings have done this, thoughtit is possible that a assembly of customer outcomes are influenced by the digital environments in which they are increasingly located. It is also possible that some adverse significances may be perceived, comparable to Wilcox and Stephen's [23] finding linking Facebook use to lower self-control. In adding to this, the ways that customers physically interact (i.e., interface) with digital environments need deeper examination, given what Brasel and Gips [25] found in terms of feelings of endowment when using touch-based boundaries to shop. In studying the impacts of digital environments on customers, it will also be essential to consider longer-term responses because these belongings may be subtle but cumulatively important. Thus, one-shot experimental studies should be complemented by longitudinal experiments and archival data capturing consumers' digital exposures, online social interactions, and behaviour's over time.

Finally, investigators should consider emerging important topics, particularly customer privacy issues in the situation of digital marketing and social media. Tucker [15] considered this to an extent, though a complete understanding of how consumers think about their privacy, what they need to do to keep it, and how they value (or devalue) digital media services that protect (or not) privacy is still needed.

In assumption, there has been much recent activity in the consumer behavior/psychology literature related to digital and social media marketing, and many important donations to knowledge have been made. To transfer this works forward, particularly given the fast-moving nature of numeral locations, research that

attempts to broaden our understandings of key phenomena, inspects brand-new phenomena, and develops theories in an area that lacks an established theoretical base will be most valuable.

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Networking, Applications and Advantages and Disadvantages

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Networking, Applications and Advantages and Disadvantages

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Introduction

In Modern world probability is ever changing. Data Communication and network have changed the way business and other daily matters works. Now, they highly depend on computer networks and internet work .A set of devices often mentioned as nodes connected by media link is called a Network A node can be a device which is capable of source to destination data generated by other on the network like a computer, printer etc. This links connecting the electronics devices are called Communication channels. Computer network is a telecommunication channel using which we can transfer data with other computers or electronics devices, connected to the same network. It is also called Data Network. The best example of computer network is Internet. A networking is simply a group of two or more Personal Computers that are devoted together. There are many types of networking system, but there are two most common types of networks are follows as Local-Area Networks (LANs), and Wide-Area Networks (WANs).

A local area network (LAN) is a computer network that intercommunicate computers within a limited amount of area such as a school, laboratory, university campus or office building etc. but the a wide area network (WAN) not only covers a larger environmentally area distance, but also generally involves rented telecommunication circuits.

A computer network is a digital telecommunications network for distributing resources between intersection vertex or link, which are computing devices that use a common telecommunications technology. Data transmission between intersection node is supported over data links consisting of physical cable media, such as twisted pair or fiber-optic cables, or by wireless methods, such as wirelress fidelity , microwave transmission, or free-space optical communication.

Network intersection are network computer devices that originate, route and conclude data communication.[1] They are generally identified by network addresses, and can include hosts such as personal computers, phones, and servers, as well as networking hardware such as routers and switches. Two such devices can be said to be networked when one device is able to tranfers information a with the other device, whether or not they have a direct connection to each other. In most cases, application-specific communications protocols are layered payload over other more approximation communications protocols.

Computer networks support so much application such as services, such as access to the World Wide Web, digital video, audio, transfer the use of application and storage servers, printers, and fax machines, and use of email and instant messaging applications. Computer networks may be divides in by many criteria, for example, the transmission medium used to carry their signals, bandwidth, communications protocols to organize network traffic, the network's size, topology, traffic control mechanism, and organizational intent. The best-known computer network is the Internet. Computer communication links that do not support junk mails, such as traditional point-to-point telecommunication links, simply transmit data as a bit stream. However, the overwhelming majority of computer networks carry their data in packets. A network packet is a formatted unit of data (a list of bits or bytes, usually a few tens of bytes to a few kilobytes long) carried by a packet-switched network. junk mails are sent through the network to their destination. A longer message is packetized before it is transferred and once the junk mails arrive, they are then reassembled back into their original message.

Junk mails consist of two kinds of data: control information, and user data (payload). The control information provides data the network needs to deliver the user data; for example: source and destination network addresses, error detection codes, and sequencing information. Typically, control information is found in junk mails headers and trailers, with payload data in between.

With junk mails, the bandwidth of the transmission medium can be better shared among users than if the network were circuit switched. When one user is not sending junck mails, the link can be filled with packets from other users, and so the cost can be shared, with relatively little interference, provided the link isn't overused. Often the route a junk mails needs to take through a network is not immediately available. In that case, the junk mails is sequentially and waits until a link is free.

Network Topology

A bus network: The all nodes are linked to a common medium along this medium. This was the hand over used in the original Ethernet, called 10BASE5 and 10BASE2. This is still a common topology on the data link layer, although modern physical layer variants use point-to-point links instead.

A star network: The all nodes are linked to a special central node. This is the typical layout found in a Wireless LAN, where each wireless client linked to the central Wireless access point.

A ring network: The each node is linked to its left and right neighbour node, such that all nodes are linked and that each node can reach each other node by traversing nodes left- or rightwards. The Fiber Distributed Data Interface (FDDI) made use of such a topology.

A mesh network: The each node is linked to an approximat number of neighbours in such a way that there is at least one traversal from any node to any other.

A fully connected network:The each node is linked to every other node in the network.

A tree network:The nodes are arranged in arrayed.

Advantages of Networking
1.It enhances communication and availability of information.

Networking, especially with full access to the web, allows ways of communication that would time and send files to other people wherever they are in the world, which is a large benefits for businesses. Also, it allows access to a huge amount of useful information, including traditional athority substance and timely facts, such as news and current events.

2. It allows for more convenient resource sharing.

This utility is very important, particularly for larger amount of companies that really need to produce vast numbers of resources to be shared to all the people. Since the technology involves computer-based work, it is confidentally that the resources they wanted to get across would be entirely shared by linked to a computer network which their audience is also using.

3. It makes file sharing easier.

Computer networking allows easier availability for people to share their files, which greatly helps them with saving more time and acheivement, since they could do file sharing more accordingly and successfully.

4. It is highly flexible.

This technology is known to be very adjustable, as it gives users the great chance to explore everything about crucial things, such as software without modifying their functionality. Plus, people will have the obtainability to all information they need to get and share.

5. It is an inexpensive system.

Installing networking software on your device would not have to pay too much, as you are assertive that it lasts and can beneficially share information to your equally. Also, there is no need to change the software regularly, as mostly it is not required to do so.

6. It increases cost capability.

With computer networking, you can use a lot of software products reachable on the market which can just be stored or installed in your system or server, and can then be used by various workstations.

7. It enhancement storage capacity.

Since you are going to share information, files and resources to other people, you have to certify all data and content are properly stored in the system. With this networking technology, you can do all of this without any disagreement, while having all the space you need for storage.

Disadvantages of Networking

1. It lacks independence.

Computer networking involves a process that is operated using computers, so people will be relying more of computer work, alternatively of applying an acheivement for their tasks at hand. Aside from this, they will be dependent on the main file server, which means that, if it breaks down, the system would become useless, making users idle.

2. It poses security problems.

Because there would be a large number of people who would be using a computer network to get and share some of their files and resources, a certain user's security would be always at risk. There might even be unauthorized activities that would happens, which you need to be careful about and aware of it.

3. It lacks validness.

As previously stated, if a computer network's main server breaks down, the complete system would become unusable. Also, if it has a bridging device or a central linking server that fails, the entire network would also come to a standstill. To deal with these problems, large networks should have a powerful computer to serve as file server to make setting up and maintaining the network easier.

4. It permit for more presence of computer viruses and malware.

There would be instances that stored files are corrupt due to computer viruses. Thus, network administrators should managing regular check-ups on the system, and the stored files at the same time.

5. Its light policing utilization encourage negative acts.

It has been observed that providing users with internet linking has fostered unacceptable behavior among them. Considering that the web is a minefield of interruption—online games, hilarity sites and even porn sites—workers could be induce during their work hours. The large amount network of machines could also encourage them to engage in illicit practices, such as instant messaging and file sharing, ratherly of working on work-related matters. While many organizations draw up certain policies on this, they have proven problems to enforce and even engendered resentment from employees.

6. It requires an logical handler.

For a computer network to work logically and optimally, it requires high technical skills and know-how of its operations and administration. A person just having basic skills cannot do this job. Take note that the authority to hold such a system is high, as assingning permissions and passwords can be discouraging. Similarly, network configuration and connection is very uninteresting and cannot be done by an average technician who does not have advanced knowledge.

7. It requires an high costly set-up.

Though computer networks are said to be an low cost system when it is already running, its initial set up cost can still be high depending on the number of computers to be linked. the high costly devices, such as routers, switches, hubs, etc., can add up to the cost. Aside from these, it would also need network interface cards (NICs) for workstations in case they are not built-in.

Limitation of Networking

In theory, we should say that network marketing does not require publicizing. However, in actuality, it is not possible for any producing to recommending 'brand-building' and 'brand-loyalty', in the absence of publicizing. When, therefore, network marketing is coupled with a publicizing, the advantage of lower marketing overheads may be considerably decreasing.

Because of multi-level system of marketing, sales divining is a difficult.

A insecurity associated with multi-level marketing is that dealers (who often become largest customers) may take over control of the company.

Future scope of Networking

Growing Chance – Every sector requires networking in some or the other way. In the business sector, networking is applicable from producing to business processing. As establishment and institutions invest in domains like technology, cloud computing, big data, etc they all depend on a workforce with networking skills

to make the most of this technology. Today the supply of networking workforce does not match with the demand, due to which in the future these professionals will determinine chance for the growing economy.

Automation – Technology is undergoing continuous automation. Automation plays an important role during cost reduction, productivity, performance. Automation is becoming the base of networking. Automating the configuration, deployment, maintenance, and troubleshooting has now become a part of automation. Everyday network tasks like these grow the scope of networking. There is a myth that automation might take away jobs in the near future which is not true. It will simply add skill sets to the work profile of a network engineer.

Innovation – Companies expand with the help of innovation. Due to this Innovation is no more an option for companies but an chance to grow. The change could be external for a better provision of products and services to the clients or internal for the better performance of the internal networks. If you are an innovator, you have a huge opportunity to take up your career to another level.

IV. Job Opportunities – The networking domain is vast the sub-domains like routing and switching, security, service provider, collaboration, etc. Let's consider some examples. Routing and Switching is the pillar of networking. The professionals working in this domain handle the basics of networking. Every company will require routing and switching professionals to handle their networks. Same is available in the security domain. Every network set up in companies will need security to protect their sensitive data. Hence the job opportunities in this domain multiply day by day.

You will go places all over the world – Networking transfers an international standard. It means that the world recognizes your knowledge and skills in networking. Especially, a Cisco certified professional may travel to global corporations around the globe. Networking professionals work in a lot of domains. They support small businesses, schools, industries and every place where networking is available.

Conclusion

While the age-old concept of the network is understructure in virtually all areas of society, Computer Networks and Protocols have forever changed the way humans will work, play, and communicate. Forging powerfully into areas of our lives that no one had expected, digital networking is further empowering us for the future. New protocols and standards will emerge, new applications will be conceived, and our lives will be further changed and upgrade. While the new will only be better, the majority of digital networking's current technologies are not cutting-edge, but rather are protocols and standards conceived at the dawn of the digital networking age that have stood solid for over thirty years

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THE REVIEW OF CLOUD COMPUTING SYSTEM

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THE REVIEW OF CLOUD COMPUTING SYSTEM

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ABSTRACT

This paper describes the cloud, its challenges, evolution, attacks along with the approaches required to handle data on cloud. A network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer. Clouds are generally deployed using Public, Private or Hybrid models depending upon the requirements of the user. This paper present by cloud reference model, cloud deployment model and distributed system, Service Oriented Architecture It is widely used in many organizations nowadays and becoming more popular because it changes the way of how the Information Technology (IT) of an organization is organized and managed.

Keyword: Cloud Reference Model, Cloud Deployment Model, Distributed System.

INTRODUCTION

Cloud computing is generally a concept that involves delivering services over internet. Cloud computing is a set of IT services that are provided to a customer over a network. Cloud computing is an Internet based computing, where shared resources, information and software, are provided to computers and devices. Cloud computing as distributed system has become buzz-phrase in IT field. Cloud is over sized pool of virtualized resources. Cloud computing is tend which is integrity to web 2.0.

Cloud: Cloud is just a metaphor for internet. Cloud is a pool of resources, which you keep on using according to your needs. Cloud refers to basic things we use i.e. "We have to pay for what we use". Cloud is similar to storage devices, instead of a physical device, this cloud consists of resources used for computing. The term cloud refers to network internet.

Computing: Computing is the collection of information technology that support different services that individual uses.

Cloud computing: The term cloud computing is everywhere. In simple terms cloud computing is steering and using data over internet rather than computer's hard drive. Cloud computing provides a platform where resources can be shared. Rather than steering data on personal physical systems cloud computing stores data on remote servers. Cloud computing is based on service providing models, where services are rapidly available. The goal of cloud computing is to bring information technology services in open market.

In cloud computing user's access applications, and other services via internet. Cloud computing is about online storage, infrastructure and application. Cloud computing has rapidly increasing from static clients to dynamic client.

Distributed Systems: Single can be defined as: A system that breakdown into multiple systems to perform a single task. For example- If a single institution has 2 departments then department A and department B will be having two wifi's. Since having a single Wi-Fi it slows down processes. But, as the institution is one and needs to maintain needs to be connected Wi-Fi of department A and Wi-Fi of department B will be connected via LAN to single server.

Cloud computing vs Distributed Systems
- The major difference is that cloud computing is about the infrastructure whereas distributed system is about distribution of tasks.

- Cloud computing helps to access hardware and software resources remotely through network.

- Distributed computing refers to multiple computers connected together to complete a single tasks

- Cloud computing supports services over internet. Distributed computing support communication and coordinate of computers through network to achieve a tasks.

- Distributed computing and Cloud computing are passing an important role in modern word and beneficial for business.

SOA (Service Oriented Architecture) Computing: SOA is emerging paradigm, which is changing the way software's are designed and accessed. SOA refers to collection of various services that communicate together, via a communication protocol over network. SOA computing is paradigm of distributed computing for new generation. Which simply means SOA is built on basis of distributed computing layers adding new layers according to modern generation.

SOA and Cloud computing: SOA and cloud computing have reciprocal relationship i.e. one provides computing of service and other provider services of computing. Though it is believed the combination of both many provide various opportunities. In cloud organization gets services from external organization like yahoo in SOA services can be from external or internal i.e. system-system. In cloud computing can vary within stack but in SOA services provides are software components. Cloud computing is based on paying for outcome SOA is based on paying for technology.

Utility oriented computing: Utility oriented computing is based on concept of providing computer infrastructure and resources to the clients and charge as per resource utilization. Utility refers to components or resources used in computing.

Utility oriented computing and cloud computing: Compared to services of cloud computing utility oriented computing services are straight forward. As cloud computing is use of hardware is, software is that are connected together, whereas utility oriented computing provides services that uses paying as per using services. Utility computing and cloud computing are similar concepts, though cloud computing is a broader concept.

Parallel computing: A type of computing in which multiple processes are carried out simultaneously. Parallel computing has another term called parallel processing. In parallel computing large computer are performed easily, as more than are processers distribute the work load. Parallel computing has following hardware architecture-

1) SISD(Single Instruction single data systems)

2) SIMD(Single Instruction Multiple data systems)

3) MISD(Multiple Instruction Single data systems)

4) MIMD(Multiple Instruction Multiple data systems)

Web 2.0: Web 2.0 also known as social web that refers to website that describes the user generated content. Web 2.0 allows user to interact and collaborate with one other through the use of social media. Examples-included social networking sites such as Facebook, Blogs, Wikis, etc.

Cloud reference model: Cloud service models define how cloud services are made available to the consumer. If defines a flexible and agile collaborative enterprise cloud ecosystem. Cloud services model provides some fundamental service model such as IAAS, PAAS, and SAAS. The above model are interdependent on each other. It also provide an effective way for sharing the information securely though digital customer experience. The cloud reference model provides or ensures consistence and applicability of cloud services. Here, the model PAAS is dependent on IAAS because application platform requires physical infrastructure.

PAAS deals with whole computing platforms provided as services. IAAS aims to provide the whole computing power for application domain. This model is an extension of an enterprise architecture model.
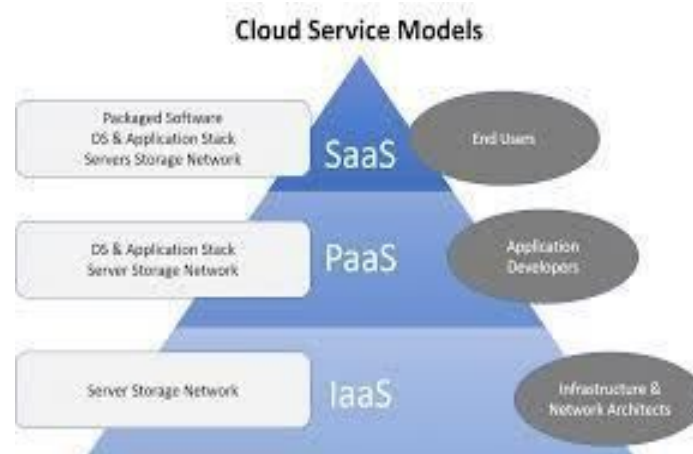
Fig-2: Cloud Service Model

1) **IAAS (Infrastructure as a service):** IAAS is a form of cloud computing that provides virtualized computing resources over internet. It is one of the three main categories of cloud computing services. In IAAS model cloud provides host the infrastructure components that resides in an on-premises data center. It deals with network access routing services and storage. The IAAS provider provides hardware and administrative services to store application. These can include detailed billing, monitoring, log access, security and clustering. Amazon web services (AWS) and Google cloud platform (GCP) are example of independent IAAS provider.

2) **PAAS (Platform as a service):** PAAS is a category of cloud computing services that provides a platform that allow customer to develop, run and manage application. It is way to rent hardware, operating system, storage and network capacity over the internet. PAAS can be deliver in three ways: a) As a public cloud service when the user monitor the software deploying and provider provides network storage and middleware. B) As a private services, software or appliance behind a firewall.

   c) As a deployed software on a public cloud a service. PAAS allows homogeneous computing environment on which to install and execute particular software or application.

2) **SAAS (Software as a service):** It is a software licensing and delivery model in which software is licensed and centrally hosted. The audience or customer of SAAS are business and components. It is a web based software and must be accessed with web browser and internet.

Cloud Deployments Models: - Cloud computing is usually describe in one of two ways. Either based on deployment model or based on service that cloud offers. Based on deployment model clouds are classified as follows into four types-
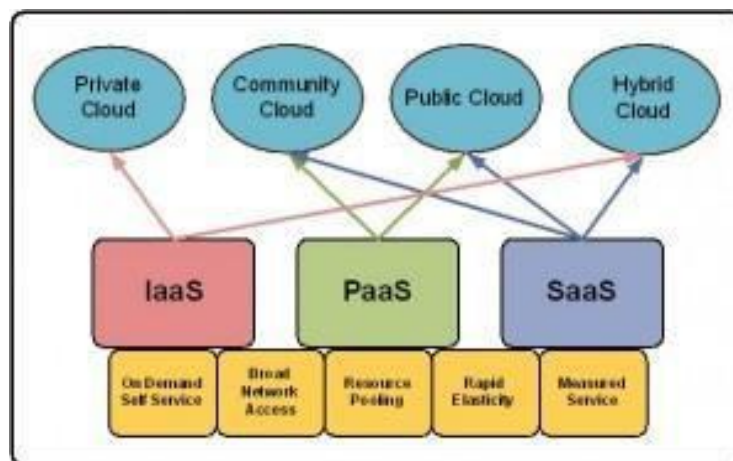
Fig-1: Cloud Deployments Models

1) Public Cloud: - As the name itself suggest the computing services which are available to the public. In public cloud, the resources and services required are provided by the third party organization. The whole computing infrastructure is located within the company premises or on premises. As public cloud use shard resources they do excel in performance, but also most vulnerable to different attacks. Due to on premise computing, the location remains separate from customer and has no physical monitor over infrastructure. Global dots offers worldwide public cloud service in data center.

Benefits
- Reduction of cost
- Highly scalable
- Improve cash flow
- University accessible
- Automatic upgrade and backup data and application

3) Private Cloud: - Private cloud are the one which are specially built for single business. For many organization and companies, private clouds are good initiative. Private cloud is on-demand pool of shared resources allocated within a public cloud environment. Private cloud provides more security than public cloud. Many medical offices, banking, institutions uses the private cloud for data control. There are two types of private cloud-

A) **On-premises private cloud-** This is also known as "Internet cloud" which is located within or inside the organization data center. Private cloud allows us to manage or enable you to pool hardware storage, network resources for cost effective dynamic and on-demand requirements. Private cloud makes provisioning an automated service request rather than manual task.

B) **Hosted virtual private cloud-** This cloud model is hosted by third-party cloud services provider. Cloud service provider builds private cloud environment and it implements, secure and manage. This approach is suggested for business organization without the use of pure public cloud infrastructure.

4) **Hybrid Cloud: -** A hybrid cloud is the golden opportunity to get benefits from both public and private clouds. A hybrid cloud is an integrated cloud services of computing resources provided by public and private cloud for performing various functions. Hybrid cloud platform either use public cloud or offsite hosted virtual private clouds for process and application. This integrated cloud provide features such as scalability, cost-efficiencies, security, and flexibility. It combines sufficiency of a private cloud with the flexibility and versatility of public cloud.

5) **Community Cloud: -** Community cloud are integration of services of various cloud to meet the specific needs of industry or business sector. In this infrastructure is shared among several organization from a common community. It can managed internally or by a third-party and hosted externally or internally. This cloud combines distributed resources from grid computing and distributed control from digital ecosystems. A criterion for cloud computing in community without dependence on cloud vendors, such as google, Microsoft.

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A REVIEW PAPER ON "IOT" & IT's SMART APPLICATIONS

Conference Paper · March 2020

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A REVIEW PAPER ON "IOT" & IT's SMART APPLICATIONS

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ABSTRACT

We are travelling in a new age of computing technology which is Internet of Things a full form for IoT. IoT is a kind of worldwide global neural network in the cloud which assigns many things. The IoT is cleverly attached devices and systems that included smart machines relating and communicating with other machinery, environments, objects and structures and the Radio Frequency Identification whose abbreviation is RFID and sensor network skills will upsurge to grab this new task. As a result, a huge amount of data is being produced, stored, and that data is being treated into useful actions that can knack and govern the things to make our lives plentiful calmer and inoffensive—and to reduce our influence on the environment. Every association such as companies and civil institutions needs up-to-date information about people. In this respect, most formations either use websites, emails or notice boards. However, in most nations internet access is accessible to people on systems and their mobile devices, so that the transferring of the information can be much easier and less costly through the internet.

Keywords: Information dissemination, Embedded System, Web server formatting, smart system.

I. INTRODUCTION

Internet of Things (IoT) term signifies a general idea for the ability of network devices to sense and gather data from around the world, and then share that data all over the Internet where it can be managed and utilized for numerous interesting purposes. The IoT is comprised in smart machines interrelating and working together with other machines, matters, surroundings and assemblies. Now a day's every individual are associated with each other using heaps of communication way. Where most general communication way is the internet so in an alternative word we can say internet which connects peoples.

The necessary idea of the Internet of Things (IoT) has been universally for approximately two periods, and has involved many researchers and industries because of its great estimated impact in improving our daily lives and society.

When things like domestic applications are connected to a network, they can effort together in collaboration to deliver the ideal service as a whole, not as a collection of independently working devices. This is valuable for numerous of the real-world presentations and amenities, and one would for instance rub on it to figure a smart house; windows can be shut automatically when the air conditioner is bowed on, or can be unlocked for oxygen when the gas oven is bowed on. The knowledge of IoT is particularly valued or persons with incapacities, as IoT technologies can provision human doings at larger scale like building or society, since the devices can equally collaborate to turn as an entire system.

Communication capability and isolated physical control main to the next step is how do I mechanize things and based on my settings and with sophisticated cloud-based processing, make things occur without my interference? That's the eventual objective of some IoT applications. And, for those applications to allocate with and motivation to the Internet to accomplish this goal, they must first become intelligent (incorporate an MCU/embedded computer with a related unique ID) then connected and finally measured. Those abilities can then enable a new class of facilities that makes life easier for their users.

The era of Internet of Things was first invented by Kevin Ashton in the year 1999 in the scenery of supply chain management. Though, in the previous period, the definition has been more inclusive casing wide range of requests like healthcare, conveniences, conveyance, etc. Though the definition of Things has altered as technology transformed, the main impartial of making a computer sense evidence without the aid of social meddling remains similar. An essential expansion of the current Internet into a Network of unified objects that not only crops information from the environment and cooperates with the physical world but also practices existing Internet standards to deliver facilities for information handover, analytics, presentations, and transportations. Motorized by the occurrence of policies allowed by open wireless technology namely Bluetooth, RFID, Wi-Fi facility and telephonic data facilities as well as entrenched sensor and actuator knots, IoT has strolled out of its start and is on the brink of altering the present static Internet into a fully joint Upcoming Internet. The Internet revolt led to the interconnection among persons at an extraordinary scale and pace. The next revolt will be the interconnection among objects to create a smart atmosphere. Only in 2011 did

the number of unified strategies on the planet pass the actual number of people. Currently there are 9 billion united plans and it is predictable to reach 24 billion devices by 2020. Now a days universally like at railway station, shopping malls, in colleges a data counter is compulsory that provides information around the train timetable, advertising offers and significant notice directly. From educational organization viewpoint, the problematic is that it requires some staff that is dedicated to that purpose and that must have up to date information about the institute and the recent happenings in the institute. The second problem is that a person needs to go in the institute at the information desk in order to get information from them. The answer of this is to use a technology and make technology accountable to answer all the queries asked by people. The utmost tool is Cell phones, which are available to nearly everybody and that is connectable to internet to download up-to-date information. If the information is not efficient over the internet, in those cases where the information is not being updated over internet, we need to call customer service center for support. Some authors planned a method that has all the information stored in its database, whenever somebody needs information they have to use that device and get related information from through that device. For this to work, the device must be available to user who needs any help or support. The educational institutes have a condition where scholars can show their presence in any chunk of the campus and might miss substantial updates such as repositioning of classes etc. Additionally, students or clienteles might not be able to know important information in-time for it to be valued to them as they might not be able to permit through those notice boards often.

Enabling technologies for the IOT
There are three kinds of technologies that let the internet of things,

i. Near-field communication and Radio Frequency Identification (RFID) - In 2000s, RFID was the leading technology. After few years, NFC developed widely in central (NFC). NFC has turn out to be common in smartphones throughout the early 2010s, with usages such as interpretation NFC tags or for access to public transport.

ii. Quick reply codes and Optical tags - This is used for low-cost classification. Phone cameras decipher QR code by means of image-processing methods. In actuality, QR advertisement movements give less outcome as users want to have additional application to recite QR codes.

iii. Bluetooth and low power - This is one of the newest techniques. All afresh releasing smartphones have BLE hardware in them. Tags originated on BLE can signal their firm at a power financial plan that lets them to function for up to one year on a lithium coin cell battery.

II. LITERATURE REVIEW
In each association, there is always an information desk that provides information, advertisement messages and many notifications to their customers and staff. The problem is that it needs some staff that is devoted to that drive and that necessity have up to date data about the offers, announcement and the society. Due to IOT we can observe many smart devices nearby us. Many people hold the view that cities and the world himself will be covered with detecting and actuation, many entrenched in "things" creating what is mentioned as a smart world. Similar work has been already done by many people around the world. In literature [10] the IoT refers to perceptively associated devices and systems to gather data from embedded sensors and actuators and other physical objects. IoT is predictable to spread quickly in the coming years a novel measurement of amenities that develop the quality of life of customers and effectiveness of initiatives, revealing a prospect. Presently this time Mobile networks formerly bring connectivity to an extensive range of devices, which can permit the expansion of new services and requests. This novel tendency of connectivity is going elsewhere tablets and laptops; to associated cars and buildings; smart meters and traffic control; with the vision of intelligently linking almost anything and anyone. This is what the GSMA refers to as the "Connected Life". The author in [11] defines the idea of sensor networks which has been made feasible by the convergence of micro electro-mechanical systems technology, wireless communications. Firstly the sensor networks applications and sensing task are explored, and according to that, the appraisal issues manipulating the design of the sensor network is delivered. Then the procedures and etiquettes developed for each layer and the communication architecture for sensor networks are drawn.

The authors in [1] industrialized an Electronic Information Desk System. Here they are consuming SMS based approach but diverse way. The system is calculated to work autonomously without the need of any human operator and when a learner or operative needs any information, they will need to send an SMS to this organization which will reply with the information compulsory by user. Many technical communities are dynamically following research topics that donate to the IOT.

Possibility of IoT in the bus transport system in Singapore. Singapore, which is precisely very advanced but still has the scope of progression in its transport system. the complete a system by using the IOT for the customer to understand and estimate different bus options in an effective manner. Subordinate research was used to forecast entrance timings of buses as well as the troop inside each bus. The literature [13] offerings a three-layered network building of Internet of Things (IOT) communication technique for high-voltage broadcast line which comprises the wireless self-organized sensor network (WSN), optical fiber compound above ground wire (OPGW), general packet radio service (GPRS) and the Beidou (COMPASS) navigation satellite system (CNSS). The function of each layer of a network, application placement, and organization of energy ingesting is deliberate. The method can encounter the needs of interconnection between the nursing center and stations, reduce the terminals" GPRS and CNSS configuration and OPGW optical access points, and safeguard the on-line monitoring data broadcast real-time and dependable under the situation of the remote region,

extreme weather and other environmental conditions. [3] Various procedural communities are energetically pursuing research topics that donate to the IoT. Nowadays, as sensing, communication, and controller become ever extra cultured and omnipresent, there is important overlap in these communities, sometimes from somewhat different viewpoints. More cooperation between the communities is encouraged. To bring the basis for declamation open research glitches in IOT, a dream for how IOT could alter the world in the distant future. Here and now in this era the IOT may be used in numerous research field in this literature those may off the record as enormous scaling, making knowledge and big data, architecture and dependences, sturdiness, honesty, security, confidentiality and human-in-the-loop.

Advantages
- Students or employee easily get important notice or information by message any time 24x7. •Within a seconds organization can change notice or information by sending SMS only. •Admin can alter the display message or notification from any place or anywhere.

Disadvantage
- If anyone needs information they have to do message and for every new information they have to send message over and over to the organization.

III. APPLICATIONS
This method is designed for a spending complex mall but it can be also used in numerous organizations like the educational Notice board system or at Railway station, Bus stand and Air-port to display the information and notification. In mall it is also used to control the moisture and temperature of the mall via central AC by consuming temperature sensors. In the Industrial group, it can be also used. E-display systems may be used to display an Emergency message in Hospitals. Some areas where IoT frequently used

i Smart cities
To make the city as a smart city to engage with the data exhaust produced from your city and neighborhood.

- Checking of parking areas accessibility in the city.

- Checking of atmospheres and physical conditions in buildings, bridges and historical monuments.

- Classify Android devices, iPhone and in general any device which mechanises with Bluetooth interfaces or WiFi.

- The capacity of the energy emitted by cell stations and Wi-Fi routers.

- Observing of vehicles and ordinary levels to improve driving and walking routes.

- Detection of nonsense levels in vessels to improve the garbage collection routes.

- Shrewd Highways with warning messages and changes according to weather conditions and unforeseen minutes like accidents or traffic jams.

ii. Security & Emergencies
- Perimeter Access Control: Discovery and control of people in non-authorized and limited.

- Liquid Presence: Liquid discovery in data centers, searching building grounds and storerooms to prevent failures and corrosion.

- Radiation Levels: In nuclear power locations surroundings dispersed measurement of radiation levels to generate leakage warnings.

- Volatile and Dangerous Gases: Discovery of gas leakages and stages in industrial surroundings, backdrops of chemical factories and inside pits.

iii. Smart agriculture

- Wine Quality Refining: Inspection soil moisture and shaft diameter in vineyards to switch the quantity of sugar in grapes and grapevine health.

- Green Houses: Regulator micro-climate circumstances to maximize the manufacture of fruits and vegetables and its quality.

- Golf Courses: Selective irrigation in dry regions to decrease the water resources essential in the green.

- Meteorological Station Network: Knowledge of weather circumstances in fields to estimate ice formation, rain, drought, snow or wind fluctuations.

- Compost: Regulator of humidity and temperature levels in alfalfa, hay, straw, etc. to evade yeast and other microbial pollutants.

iv. Domestic & Home Automation

In household by using the IOT system remotely observer and manage our home applications and cut down on your monthly bills and resource usage.

- Energy and Water Use: Energy and water source consumption observing to get advice on how to save cost and resources.

- Remote Control Applications: Exchange on and off remotely requests to avoid accidents and save energy.

- Interruption Discovery Systems: Detection of windows and doors openings and violations to stop interlopers.

- Art and Goods Defense: Observing of situations inside museums and art storerooms.

v. Medical field

- All Detection: Help for aging or restricted people living self-governing.

- Medical Fridges: Observing and Control of situations inside freezers storing medicines, vaccines, and organic elements.

- Sportsmen Caution: Energetic signs detecting in high-performance cores and stadiums.

- Patients Surveillance: Observing of situations of patients inside hospitals and in old people's homes.

- Ultraviolet Energy: Dimension of UV sun rays to notify people not to be exposed in certain hours.

vi. Industrial Control

- Machine to Machine Applications: Machine auto-diagnosis the difficult and mechanism.

- Indoor Air Quality: Observing of oxygen levels and toxic gas inside chemical plants to safeguard employees and goods safety.

- Temperature Observing: Observer the temperature inside the manufacturing.

- Ozone Presence: In food factories detecting of ozone levels throughout the drying meat process.

- Vehicle Auto-diagnosis: Data gathering from Can Bus to send real time fears to problems or provide guidance to drivers.

IV. CONCLUSION

The IoT potentials to allocate a step change in individuals" quality of life and enterprises" output. Through a broadly dispersed, locally intelligent network of smart devices, the IoT has the possible to allow extensions and improvements to important facilities in transportation, logistics, safety, utilities, teaching, healthcare and other areas, while providing a new bionetwork for application growth. A concentrated exertion is required to move the manufacturing outside the early stages of market growth towards maturity, driven by mutual understanding of the separate nature of the prospect. This market has separate physiognomies in the areas of facility distribution, commercial and charging models, competences compulsory to deliver IoT services, and the differing demands these services will place on mobile networks.

Linking those smart devices (nodes) to the web has also ongoing trendy, though at a leisurelier rate. The pieces of the technology puzzle are coming composed to accommodate the Internet of Things sooner than most persons imagine. Just as the Internet marvel happened not so long ago and wedged like a wildfire, the Internet of Things will trace every feature of our lives in less than a period.

We have previously seen the wide application of internet of things. In this exertion we will current a model of IOT based E-Advertisement system for the applications of Shopping malls & other administrations. This proposes model will substitute the advertisement system in big shopping compound like Big bazaar, Reliance Fresh etc. Even we can preserve the humidity inside the big shopping malls without any Human efforts. Also we can use this model system for the instructive group or Railway stations. This prototype model we will instrument using virtual components in Proteus 7.1 software.

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ARTIFICIAL INTELLIGENCE AND ITS APPLICATION IN DIFFERENT AREAS

Conference Paper · March 2020

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ARTIFICIAL INTELLIGENCE AND ITS APPLICATION IN DIFFERENT AREAS

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ABSTRACT

In the future, automotive machines will replace or increase human potential in many areas. AI works as a to computational tools that perform for human intelligence like that gives response, understand human requests, collect information, and communicate with the objects for response. Now day's artificial Intelligence is a known as developing as well as popular area in ICT as it has work to reduce work of the human life in many areas. Artificial intelligence has improved performance in last two decades greatly in manufacturing and services. Implementing Artificial Intelligence impacting on various fields of human life. Artificial intelligence used to solve the problems of different areas it may be science & technology, finance, medical, environmental. The system who provides this technology has increase in the quality and efficiency. This works on the current use of Artificial Intelligence technologies. This paper also gives an overview of Artificial intelligence technology and its application areas.

Keywords: Artificial Intelligence, Robotics, data science, business, Security.

I. INTRODUCTION

Artificial intelligence is consuming a vital role in the research of computer science, management and its operational areas. Intelligence is a term known as the proficiency about your subject and command and knowledge to solve complex problems. In the upcoming years Artificial intelligence machines will replace human skill in many areas. AI works on computational tools that are able to perform for human intelligence like that gives response, understand human language, collects data, and connected with the objects. Artificial intelligence is similar term like psychology but it added computation term from computer science because of its emphasis on perception, reasoning and action. It makes machines perspective and more useful. AI technologies offered many of their applications with real practical benefits. Artificial Intelligence mainly in two terms Face and Voice Recognition both terms in commonly used interchangeably in areas like robotics.

Artificial intelligence can perform certain tasks faster and better than the human being. AI perform test for develop to test that whether a particular machine can able to think or not. This test involves a human interrogator which test with a human and machine to check or test who is human and which one is machine.

II. AREAS OF ARTIFICIAL INTELLIGENCE

A. Speech Recognition: The ability to "understand" and respond to the natural language. It convert spoken language to a written form.

B. Learning and adaptive systems: The technology to adapt behaviour based on earlier experience, and to improve general rules regarding the world based on such experience.

C. Problem solving: Capacity to construct a problem in a suitable representation to plan for its solution and to find when new information is needed and how to obtain it.

D. Perception (visual): The capacity to finding a sensed scene by connect it to an internal model which show the recognize being "knowledge of the world." The result of this analysis is a structured set of relationships between entities in the scene.

E. Modelling: The ability to improve a presentation and transformation protocols which can be implement to find the behaviour and relationship in some set of entities.

F. Robots: Robots is a term used to handle the objects by perceiving, picking, moving, modifying the physically or to have an effect on freeing manpower from doing repetitive work without getting bored, distracted, or exhausted.

G. Biometrics:

Biometrics is based on human recognition may be physically or behavioural intersection.

Biometrics tools used to discover administration and controlling.

It is also used to finding out individuals in groups that are under surveillance. Currently used in market research.

III. APPLICATIONS OF ARTIFICIAL INTELLIGENCE

1- Automated customer support

Now a days it is difficult to find an online store which doesn't offer high-tech customer support, earlier days it was done through email or phone.

Traditional support channels cost businesses a whooping amount of money and wastage of human resources that can be directed toward more intelligent and creative tasks otherwise.

Artificial Intelligence gives response for simple questions like giving the status of your order and finding a particular product based on your description as per your others.

Online shopping experience has been greatly enhanced by Chatbots because of the following reasons:

• They offer quick replays as compared to human assistants, it reduces time.

• Chatbots also helps in trading opportunities.

2- Travel and navigation

Fig: No.01

In transportation industries, AI is becomes one of the important key for this industries. To gives accurate route to work or to make travel arrangements — artificial intelligence is always helps people in their day to day life.

A many people review travel tips and also reserve trips on these devices, with the help of AI- travel assistants. Chatbots is also used for the travel industry to giving services like interaction with customers for travel notifications, details about booking, and give fast response to user.

In transportation term, you can consider Google Maps AI- validate mapping, it identify road information and used it for algorithms to identify the fastest route for bike, car and by walk also. Now a days Al is everywhere it may be a business, education, technical or nontechnical areas.

3- Smart home devices

Fig: No.02

Increasing uses of AI has solidified the term "smart home". A smart home devices which you uses AI technology to adopt your behaviour so that they can modify their settings quickly to experience as smoothly as possible. Smart voice assistants are working over on these smart devices. It takes sometime to see a well-defined AI technology based home. AI capable of response to our choices in real life, it takes forward steps to bring this technology closer to the real world. There are also technology for smart lights that can change power and lights colour based on time.

4- Security and surveillance

Fig: No. 03

While arguing on the ethical aspect of implementing a broad surveillance system, you cannot avoid the fact that it's being implemented. Probably it is not possible to everyone to consistently monitor all channels with data coming from a large number of cameras at the same time, but AI technology is makes that possible.

AI technologies that mostly work on of voice recognition and facial recognition based technology that improves personalize experience.

Image processing technology implement the data science by raising the artificial intelligence.

5- Artificial Intelligence in Healthcare

Fig: No.04

Healthcare centers are using machine learning technology to make better and faster in recovery in diseases than humans. AI is a study realized to emulate human being intelligence into ICT that could assist both, the doctor and the patients in the following ways:

By providing a laboratory for the various experiments, representation and analysing medical information

By come up with novel tool to gives support for decision making and research

By adding activities in medical, software and cognitive sciences

In healthcare, artificial intelligence has already work as a game-changer, it developing every industry effectively. It may be the secure patients personal records from cybercriminals to work as helping hand in surgeries — AI is recognize everywhere.

AI-facilitate doctors to reduce their schedules, free up time and cost by streamlining processes and opening up new avenues for the industry.

6- Artificial Intelligence in business

Robotic technology is use to perform highly critical tasks which normally completed by humans. Customer relationship management platforms to uncover information on how to better serve customers. Chatbots have already been involve into websites and e-companies to provide quick and smooth service to customers.

Coordination of finance industries and AI technology is an ultimate match.

The financial sector increasingly working on real-time true reporting and processing of large quantity of significant data to make important results.

In all these parts in which artificial intelligence allowed systems excel. AI gives accurate and efficient data, chatbots, computerisation, etc are part of these processes.

7. AI in education

Fig: No.05

In automatic grading, giving tutors more period, it benefits to calculate students, adapt to their desires and also support them to work as per their concern areas.

8. AI in Autonomous vehicles: Autonomous automobiles are similar like persons, self-driving cars wants to have sensors to catch to comprehend the world all over the place and a brain to accumulate, route are based on information gathered. Autonomous vehicles are with some advanced tool to gather information like long range radar, cameras, and LIDAR. This information is not useful, unless it is processed into some form of information which can use on gathered information. This is where artificial intelligence used to follow human brain.

9. AI for robotics

Robotics can mainly use in taking care of an over age people and also allow long independence. It will be even decrease rate of traffic accidents and deaths, also enable disaster response in emergency situations.

IV. CONCLUSION

The artificial intelligence gives the ability to the machines to think practically, using concepts. From last two decades AI made huge innovation in different areas. AI plays vital role in different areas for their innovations.

This shows the basic concept of Artificial Intelligence. AI also increasingly made marketing tools to develop customer involvement easily, it helps to make reports, and it helps to generate more impactful business among others with least social involvement.

Artificial intelligence is impacting on human life and also on society with a various applications.

The more progress there is in the central field of AI technology, the more important and urgent becomes the rational, forward looking approach to the associated challenges. The researchers and developers of new technologies also carry responsibility for how their contributions will impact the world. Unfortunately, there are strong economic incentives to undertake for develop latest or new technology as fast as possible, without "losing" time for expensive risk analyses. These unfavourable conditions heighten the risk that control of AI technology and its use will slip further and further from our grasp.

The more progress there is in the central field of AI technology, the more important and urgent becomes the rational, forward looking approaches should be count on as many field as possible: in politics; in the research itself; and in general by all individuals whose work is pertinent with the issue. A fundamental prerequisite to directing AI development along the most advantageous tracks possible will be broadening the area of AI safety, so that it is recognized not only amongst a few experts but in widespread public discourse as a great (perhaps the greatest) challenge of our age.

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A SURVEY ON HUMAN ROBOT INTERACTION

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A SURVEY ON HUMAN ROBOT INTERACTION

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ABSTRACT
HRI abbreviated form of Human Robot Interaction has newly received significant attention in the academia, in laboratories, in technology, in IT corporations and over the broadcasting. Due to this, it is necessary to current a review of HRI to assist as a class to persons exterior from the field and also to endorse discussion of a unique vision of HRI inside the arena. The aim of this survey is to present an integrated behavior of HRI related problems, to find out the key aspects, and discuss challenges or problems that are possible to shape the field in the near future. However, the review shadows a review structure, the aim of awarding an articulate picture like story of HRI, a well explained and written, interesting and significant paper. Along with writing this survey, there is need to think on the descriptive side of thinking from all angles including the challenges that are faced in HRI. Also, the cross-platform applications will be studied. The survey tries to shots to include papers among domains such as universities, government, industrial labs, countries that contribute towards HRI, individuals, robotics, intellectual thinking and design.

Keywords: Artificial Intelligence, Chatbot, Computers, Application, Technology

INTRODUCTION
Human Robot Interaction (HRI) or we can say exchange of commands is a field where dedicated study happens to understand, design and evaluate robotic systems for use for or with human beings. Interaction as the word states is a communication between robots and humans. There are several ways for interaction between a human and a robot, but this also depends on the factor of whether the human and robot are in close vicinity to each other or not.

As on this we can categorize the interaction as below:

Remote interaction [1]: The interaction between robot and human happening is different space, time and location.

Proximate interaction [1]: The interaction between human and robot happening in same location or room.

Variety of applications or fields are there where human robot interaction can come in picture. To detail more on if we consider the field of education, we can have robot been present in administrative office or department acting as a super guidance interactive robot who can help students and staff to have the relative information regarding the admission process, fee structure and examination. Moreover in the field of medical there can be a robot interacting with the doctor on which medicine need to be given for a particular disease and the duration for the same. We can extend the scope as and where we need but the volume to do survey in this field is vast, hence only a basic survey can be covered in this paper and rest will be kept over for near future.

At this point of survey, presentation on basics of HRI will be detailed. Human Robot Interaction (HRI) has grabbed a boon in fast few years just to provide a simplicity in day-to-day work. These days there are robots available in market for household tasks also. For example a robot with help of instruction can cut the lawn, water the tress and much more. Another robot who can clean the home acting as a vacuum cleaner.

GENERAL OVERVIEW OF ROBOTS
The term robot was originated from the Czech word "robota" which means a forced labor who has to follow each and every instruction of human and perform the similar task. The word robot was coined by a Czech novelist named Karel Capek [3]. This was in evolution around somewhere in 1992's. This is form where the concept of robots came in picture and now till date we are in era where most of the work is done by robots or we can say most of the things are automated now. A robot can be fully automatized and can be as like a human interacting with human or we can a well programmed robot to do only pre-loaded tasks.

We can comprise a robot who has following key components inherited as below:

Sensors
A robot is designed in such a way that it can sense its environment, the directions in which it can travel. It can also detect objects or hurdles in its way.

Movement

The robot should be able to move on the edges or sides by sensing the environment. It can perform rotations and also come up with angular movements.

Actuator

When is input is been provided by sensing the environment, the actuator will help to move or act the robot accordingly representing an output been performed.

Intelligence

Of course the robot must be intelligent enough or the program must be strong enough to manipulate the actions or outputs as per the change in inputs.

Controller

This acts as a heart of any of robot. Entire working deals around this. The tracing of path and accordingly making a move happens only when the controller will give right instruction.

Size and Shape

Size and shape do matters a lot. The size of robot should not exceed and should meet the application requirements.

supplied into the robot's movement.

LITERATURE SURVEY

HRI is a field that has emerged during the early 1990s and has been characterized as:

"Human—Robot Interaction (HRI) is a field of study dedicated to understanding, designing, and evaluating robotic systems for use by or with humans " [2]

(Goodrich and Schultz, 2007, p. 204).

What is Human-robot interaction (HRI) and what does it try to achieve?

"The HRI problem is to understand and shape the interactions between one or more humans and one or more robots". [2]

(Goodrich and Schultz, 2007, p. 216).

A brief survey, dig on history and research have made the new era of HRI move to next level. The evolution of robots eased the life of humans letting all atomization take up the technology. This technology was evolved in late 20th century, it is vital to note that the belief of robot-like behavior and its inferences for humans have been around in our religion, mythology, philosophy and fiction by centuries. The word "robot" originated from the Czechoslovakian word "robota" which means labored work.

Human robot interaction is a combination of topics science fiction and academic speculation even before the existence of any robots. Majorly HRI revolves around the knowledge of human interactions or commands.

Robots are synthetic bots with abilities of observation and action in the technical world often referred as workplace by researchers. The use of this technology is been implemented majorly in industries and also for home atomization.

The new domains like medical, military, rescue, security and many more of applications indicate a closer interaction with the user. The concept of closeness here means the human and the robot as they share same workplace, they also share the tasks and implement them to achieve a goal. This is made possible only with the help of research done previously or by model theories been proved earlier.

We can improve this and take it to next level with the help of AI (Artificial Intelligence). By this we can improve the interaction with robots with help of face recognition, fingerprint sensors, gestures, emotions, expressions, so on and so forth.

APPLICATIONS

- Rehabilitation robots for assistance

- Wheelchair robots and walking robots for mentally handicapped people

- Companion robots to guide the needy humans

- Educational robots in various universities and educational institutes

- Space exploration

- Field robotics

- Home and companion robotics

- Hospitality

- Rehabilitation and Elder Care

- Robot Assisted Therapy (RAT)

In military and police, humans act as commanders, and robots are responsible for information acquisition, bomb destruction and other strategic jobs

CONCLUSIONS
Human robot interaction is an emergent field for research and implementing variety of application. The field as like others does includes many challenges and problems, but also has solution which can be dig out with high potential with positive social impact. Achievement of safe Human Robot Interaction is one of the imposing tests in the field of robotics. As every technology has and can be used for negative purpose, main moto should be the application designed should not harm anyone in any case. Hazardous robot have also been implemented successfully with "safe" robots concept.

FUTURE ENHANCEMENTS
In this growing technology world, sometimes there is a threat whether in late centuries whether the superintelligence will take over from the humans and begin to work on their own. In this era, we can take up that later it will be world working humans with machines and not "human against machines". Giving up some advance controls will make robots best teammates and better companions will permit us up to make other more complex, more meaningful, more relevant decisions. But this may also bring new challenges, dangers, threats and new questions.

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A SOFT COMPUTING TECHNIQUE AND THEIR APPLICATIONS

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ABSTRACT

Exponential development in soft computing technologies has noticeable new pointers in influential symbol, modelling examples and optimization devices for solving real time issues. With the great expansion of for computing area, a substantial amount of research efforts has been directed at the application of Soft Computing techniques in engineering. Soft Computing denotes to the science of reasoning, intelligent and deduction that identifies and uses the real world sensations of alliance, associations, and organization of various quantities under study. The methods of soft computing are currently being used successfully in many domestic, commercial, and industrial applications. This article we provides summary of the state of soft computing techniques and defines the various application to produce specification according need of current generation.

Keywords: Soft Computing, Genetic Algorithm, Fuzzy Logic, Neural Network, Vector Machine.

1. INTRODUCTION

Technological innovations in soft computing techniques have brought automation capabilities to new levels of applications. Certifiable issues need to manage frameworks which are non-direct, time-fluctuating in nature with vulnerability and high unpredictability. The registering of such frameworks is investigation of algorithmic procedures which portray and change data: their theory, analysis, design, efficiency, implementation, and application [1]. In real world, we require several difficulties which we have no way to resolve rationally, or problems which could be solved hypothetically but really intolerable due to its obligation of enormous properties and huge time required for computation [2]. Soft Computing is combination of practices that were designed for demonstrating and discovery of answers for actual world issues. It is not easy to showed or too problematic for model, precisely. Soft computing is an connotation of methods that works synchronously and proposals, in one form or another, flexible information processing competence for handling real-life undefined situations. The basic impartial is to take advantage of receipt for nebulousness, uncertainty, approximate analysis and fractional truth in order to accomplish tractability, strength and low-cost clarifications. The controlling standard is to devise techniques for calculation that prompt a satisfactory arrangement with ease, by looking for a rough answer for a loosely or decisively defined issue [3] [4]. This articles is a summary of soft computing and their methods and defines some of the usually used methods to solve composite problems with soft computing approaches.

2. BACKGROUND

The contextual of education is an significant part of our research paper. It delivers the situation and resolution of the study. Hence there is essential for contextual study that donate to make projected system.

A. What is soft computing?

"Soft computing is a group of methodologies that aim to feat the lenience for imprecision and uncertainty to achieve tractability, robustness, and low solution cost. Its principal constituents are fuzzy logic, neuro-computing, and probabilistic reasoning. Soft computing is likely to play an increasingly important role in many application areas, including software engineering. The role model for soft computing is the human mind" [5]. Soft Computing (SC) speaks to a huge change in perspective in the points of figuring, which mirrors the way that the human personality, dissimilar to show day PCs, has an astounding capacity to store and process data which is inescapably loose, questionable. Delicate figuring isn't definitely characterized. It comprises of particular ideas and systems which plan to defeat the challenges experienced in genuine issues. These issues result from the way that our reality is by all accounts loose, dubious and hard to sort. For instance, the vulnerability in a deliberate amount is because of intrinsic varieties in the estimation procedure itself. The vulnerability in an outcome is expected to the joined and gathered impacts of these estimation vulnerabilities which were utilized as a part of the computation of that outcome [6].

B. Soft Computing Techniques

Certifiable issues need to manage frameworks which are non-direct, time-fluctuating in nature with vulnerability and high intricacy. The figuring of such frameworks is investigation of algorithmic procedures which portray and change data. Soft Computing is valuable where the exact logical devices are unequipped for giving ease, investigative, and finish arrangement. Logical techniques for earlier hundreds of years could show,

and exactly dissect, just, moderately basic frameworks of material science, established Newtonian mechanics, and building. Following are the procedures which are portray in this segment:

1. Fuzzy Logic

Fuzzy logic is a method of calculating that is be contingent on "degrees of truth" more freely than customary "true or false" (1 or 0) Boolean logic on which the advanced PC is based [7].

Fuzzy logic includes 0 and 1 as excessive belongings of truth (or "the state of matters" or "fact") but also take account of the assortment of states of truth in among therefore, for illustration, the consequence of a assessment between two belongings could be not "tall" or "short" but ".38 of tallness."

The fuzzy logic works on the altitude of potential of input to accomplish the specific output.

- It can be actualized in frameworks with different sizes and capacities extending from little small scale controllers to substantial, arranged, workstation-based control frameworks.

- It can be actualized in equipment, programming, or a blend of both.

Fuzzy logic container applied as an clarification perfect for the physiognomies of neural networks, in adding to for generous a more exact clarification of their presentation.

The fuzzification border changes the crunchy input value into a fuzzy linguistic value. The guesswork train gets the fuzzy effort and the fuzzy rule base and crops fuzzy productions. The fuzzy rule base is in the form of "IF-THEN" rules involving linguistic variables. The last processing element of a fuzzy logic system is the defuzzification which has the task of producing crisp output actions [6].
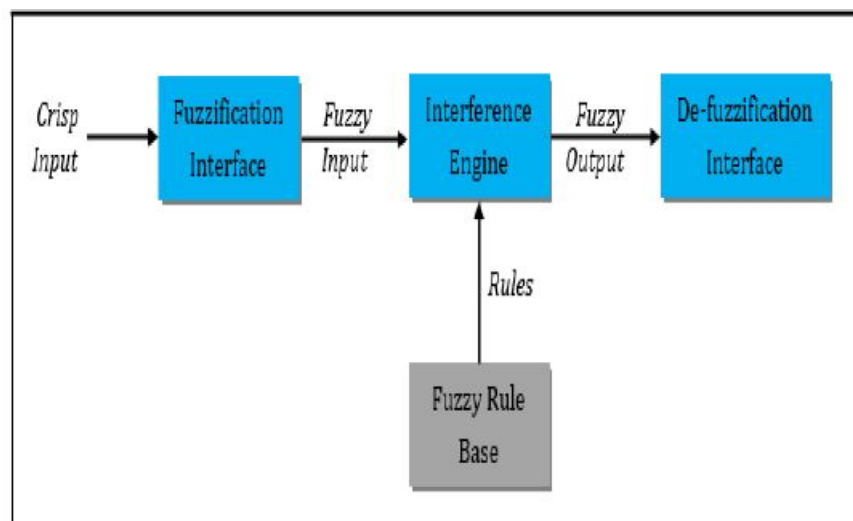
Figure-1: Fuzzy Logic System

2. Genetic Algorithm

Genetic Algorithms are invigorated by the scheme of regular resolve, which is an biological process in which more beached people will perhaps be victors in a contending domain. GA expect that the arrangement of an issue is a person, which can be spoken to by an arrangement of parameters. These parameters are known as qualities of the chromosomes and can be spoken to by string of double esteems. GAs is a pursuit system which begins with an underlying arrangement of irregular arrangements known as populace. Every person in populace is called chromosomes, which is a string of paired esteems. The chromosomes develop through progressive emphases, called ages. Amid every emphasis chromosome develop utilizing a few measures of wellness. At that point the cutting edge is made, where the new chromosomes canceled as springs, are framed by either consolidating two chromosomes from current age utilizing a hybrid administrator or altering a chromosome utilizing a change administrator. New age is shaped by willpower, in light of the wellness regards, a helping of the protectors and off-springs are rejected to keep the populace measure steady. After a few cycles the calculation joins to the best chromosome, which speaks to the ideal or sup-ideal answer for the issue [8].

The basic procedures in genetic algorithms:

- Initialization, where an underlying populace is made arbitrarily.

- Evaluation, where every individual from the populace is assessed and the wellness of the people are surveyed in view of how well they fit the coveted prerequisites.

☐   Selection, where just the ones that fit the coveted necessities are chosen.

☐   Edge, where new separate are made by combining best parts of the present persons. To the finish of this it is trusted upon to make persons that are earlier to the wanted fundamentals. The procedure is rehashed from the second step until the point that an end condition is at last come to.

3. Artificial Neural Network

Numerous drives have stood complete in making intense frameworks, some motivated by natural neural systems. Authorities from many rational orders are delineation Artificial Neural Networks (ANNs) to take care of an assortment of issues in design acknowledgment, expectation, advancement, affiliated memory, and control.

More precisely, "A neural network is a unified gathering of simple processing elements, units or nodes, whose functionality is slackly based on the animal neuron. The dispensation ability of the network is stored in the inter-unit connection strengths, or weights, gained by a process of the version too, or learning from, a set of training patterns".

Neural networks establish a mainly positive approach in machine learning which agrees knowledge an unknown orderliness for a given set of exercise examples. They can contract with overseen or unconfirmed learning tasks; hence outputs or classes for the data points might be obtainable and the network has to study how to allocate given input data properly to the correct class in the overseen case.

Artificial Neural Networks (ANN), also called connectionism, neuro-computing or parallel distributed processing (PDP), bring additional method to be applied to problems where the algorithmic and descriptive approaches are not well suitable. Artificial Neural Networks are inspired by our present information of biological anxious schemes, though they do not try to be truthful in all detail (the area of ANN is not worried with biological showing, a diverse field). Some ANN replicas may, therefore, be totally impractical from a biological modeling point of view [9]. Figure 2 demonstrates ANN structure.
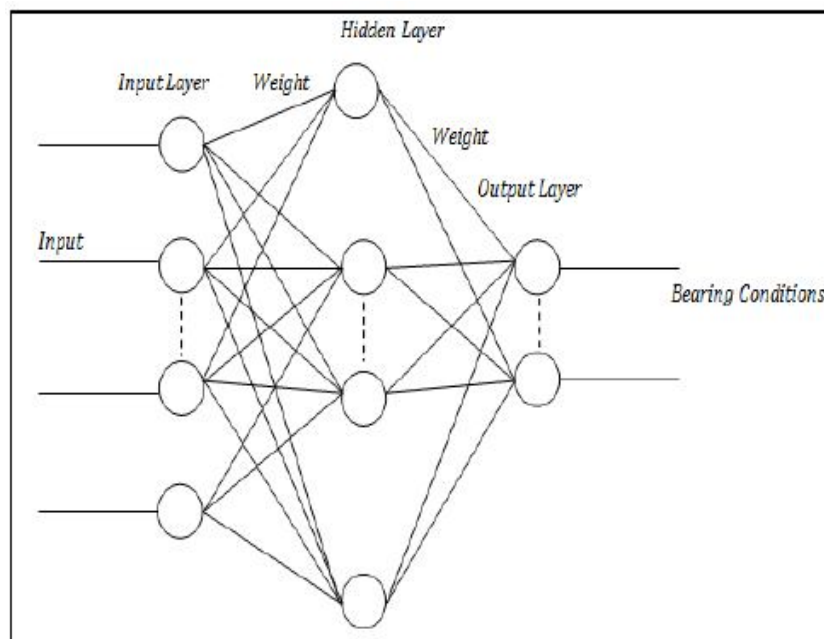
Figure-2: Artificial Neural Network

4. Support Vector Machine

A Support Vector Machine (SVM) [10] is overseen organization algorithm that splits data into classes in view of the most strained out edge between emphases in the classes. Straight SVM, the most usually applied, separates classes using a hyperspace given by $w*x-b=y*Y$ is referred to as a linear separator which is trapped between upper class margin $y = 1$ and lower margin $y=-1$. A binary SVM algorithm takes positive and negative examples of the training set and draws a hyper-plane to separate two classes [11].

The simple impression behind provision vector machine is exemplified with the example shown in Figure 3 In this example the data is expected to be linearly divisible. Therefore, there be a lined hyper plane (or conclusion border) that ruptures the points into two dissimilar classes. In the two-dimensional case, the hyper plane is simply a straight line. In belief, there are substantially many hyper planes that can separate the training data.
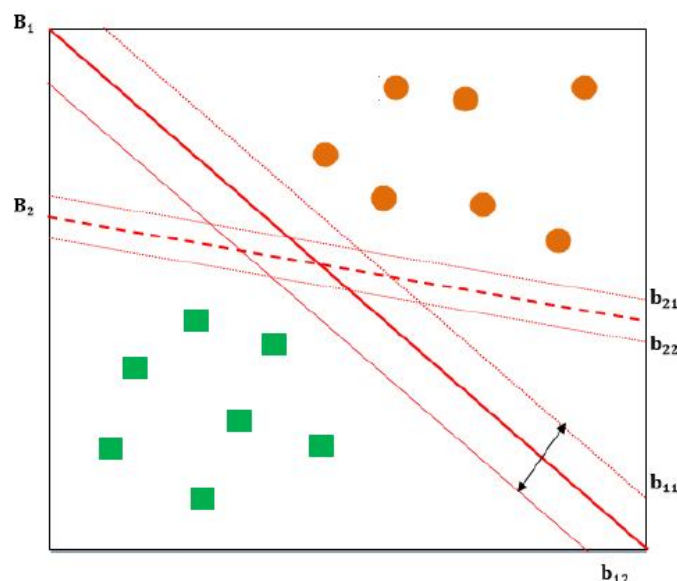
Figure-3: an example of a two-class problem with two separating hyperplanes, B1 and B2

Figure 3 shows two such hyperplanes, B_1 and B_2. Both hyperplanes can split in to the exercise examples into their particular classes without committing any misclassification errors. While the exercise time of even the wildest SVMs can be extremely slow, they are extremely exact, owed to their ability to model multifaceted nonlinear decision boundaries. They are much less disposed to over appropriate than other methods.

C. Applications of Soft Computing

Soft computing methods have curved out to be one of talented tools that can give rehearse and practical preparation. There are some applications of soft computing [12] [13]:

1. Agricultural Engineering

Agricultural engineering is the designing control that applies building science and innovation to rural generation and handling. Agricultural engineering combines the instructions of being science, common, plant science and mechanical, electrical and substance designing standards with information of rural standards.

2. Biomedical Application

Biomedical application is a plan idea to medication and science. This arena looks to close the dump among building and medicine: It combines the outline and critical thinking aptitudes of designing with medicinal and natural sciences to propel social insurance treatment, including determination, checking, treatment and treatment.

3. Crime Forecasting

Crime forecast is an arranging device that oversees wrongdoing in our general public in various way. Wrongdoing is the infringing upon of guidelines or laws for which some overseeing specialist can at last recommend a conviction. Wrongdoings may likewise bring about alerts, restoration or be unenforced. By the assistance of wrongdoing conjecture we can lessen wrongdoing in our social orders.

4. Data Mining

Data mining is a part of software engineering which is the essential process of finding designs in wide informational indexes counting methods at the journey point of fake awareness, machine learning, insights, and database frameworks. The overall impartial of the information removal procedure is to remove data from an informational collection and change it into a justifiable structure for additionally utilize.

5. Image Processing

In imaging science, image making is some kind of flag treatment for which the gen is a image, for example, a photo or video outline; the yield of picture conduct might be either a picture or an preparation of attributes or parameters identified with the picture. Most picture preparing systems include regarding the picture as a two-dimensional flag and applying standard flag handling procedures to it.

6. Industrial Machineries

Industries machineries are apparatus that comprises of at least one sections, and uses vitality to accomplish a specific objective. Machines are generally fueled by mechanical, substance, warm, or electrical means, and are much of the time mechanized. This is utilized as a part of mechanical engineering.

7. Pattern Recognition

Pattern recognition by and large plan to give a sensible response to every single conceivable information and to perform "in all probability" coordinating of the sources of info, considering their factual variety. Example acknowledgment is considered in numerous fields, including brain research, psychiatry, and ethology, intellectual science, and movement stream and computer science.

3. CONCLUSION

The bang of soft computing has been feeling gradually stronger in the modern years. Soft computing is playing more than ever significant responsibility in science and engineering, but ultimately its control may expand much farther. Intelligent systems and consequently soft computing methods are appropriate more imperative as the supremacy of computer processing devices increase and their cost is reduced. Soft Computing, or Computational Intellect, signifies a set of methods for information dispensation, useful in cases where old-style algorithmic techniques could not exists, or be too complex. This paper deal with different terminology of soft computing paradigm. Additionally, in this articles we defined numerous soft computing techniques and applications which is solely used in real time environment.

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A STUDY OF AUTOMATED DECISION MAKING SYSTEMS

Conference Paper · March 2020

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A STUDY OF AUTOMATED DECISION MAKING SYSTEMS

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ABSTRACT

The decision making process of many operations are dependent on analyzing very large data sets, previous decisions and their results. The information produced from the large data sets are used as an input for making decisions. Then the decisions to be taken in day to day processes are expanding, the time taken for physical decision making is also expanding. In order to decrease the time, cost and to increase the competence and correctness, which are the most significant things for customer fulfilment, many organizations are accepting the automatic decision making systems. This paper is about the technologies used for automatic decision making systems and the areas in which automatic decisions systems works more competently and precisely.

Keywords: automated decision making, decision making technologies.

INTRODUCTION

The ERP systems will intersect all the sections of an organization and provides the information required for all workers in different departments for making better decisions. The ERP systems contain information only about what had previously happened, it will not cover the information of the present situation and about the upcoming. ERP systems use an analytical decision management system for setting sales goals, production levels, distribution plans. The automatic decision-making schemes are used to take judgments on management problems, which are tedious. Operative management is a well-supported applicant for automated decision-making systems since it has short term focus and repetitive. To deal with different parameters at different business stages, the ERP systems use different models of analytics for better decision making. The alteration between Analytical, Descriptive and Decision models used in ERP systems for analyzing data are given below.

Automatic decision-making systems are mostly used in business analytics and informatics. The decision-making systems can be automatic by applying certain business rules which are generated and functioned by business analytics. The judgments taken by the automated decision-making systems are part of the business informatics. The ADMS is very valuable in circumstances that require solutions to repetitive problems using electronically available data. The data mandatory for the ADMS must be very obviously clarified and structured. The business problems that are applied to the ADMS must be clear and well understood. The organizations use the ADMS to manage its interactions with its customers, employees, and suppliers. Organizations use the ADMS to improve its value, through each decision that is taken. The core goal of using ADMS has five key attributes-precision, consistency, agility and the reduced time and cost of making manual decisions. There are numerous amount of methods for decision making, in common they have three steps decision identification and modeling, development of an automated system, monitoring and handling the decisions to preserve the rules and prognostic analytics up to date.

II. APPLICATION OF AUTOMATED DECISION MAKING SYSTEMS.

By learning automatic decision making systems in trades that contain banking, insurance, travel and transportation, we can understand that automated decision applications are effectively to generate useful solutions in a number of different business areas.

Product Configuration- it is one of the earliest application of ADMS. The ADMS will select a best and most proper answer based on the set of variables obtainable, which is hard to do manually. Eg) mobile phone users will be having numerous different service plans, the ADMS will find a suitable service plan for a specific customer.

Yield optimization- the airlines uses the ADMS to fix the prize of the tickets based on the obtainability of chairs and the day of acquisition.

Routing or segmentation decisions- By designing automatic sieves, some businesses are able to accomplish important development in productivity. Eg. insurance companies have recognized importance lanes to handle the insurance claims of regular consumers with good profiles.

Corporate and regulatory compliance- Many routine policy decisions such as decisive whether the person qualifies for insurance assistances.

Fraud detection- banking segments and government agencies services some automated screening to recognize credit card frauds.

Dynamic forecasting- By automating the request predicting the manufacturers are able to align their consumers estimate closely with their manufacturing and sales plan. Operative control- the ADMS are also used to intellect the physical and environment changes and replies quickly based on rules and algorithms. Eg. temperature, rainfall.

III. AUTOMATED DECISION-MAKING TECHNOLOGIES

There are various types of Automated decision-making technologies.

Rule Engines- rule engines will procedure a sequence of business rules that use provisional statements to address logical questions.

Industry-specific packages- the manufacturing exact set will produce automated decisions for queries faced by the organizations.

Statistical or numerical algorithms- these algorithms will procedure measurable data to arrive at its target. Eg) approval of the loan amount.

Workflow Applications- the workflow applications are software programs that allows information-intensive business procedures. After taking a decision the workflow system will pass the rest of the file through the essential steps. Eg) loan processing.

Enterprise systems- enterprise systems are software applications that computerize, connect and achieve the information movements and transaction procedures in the organizations. The automated decision systems in the initiatives will be used only in indefinite procedures. Decision making is the process of taking a particular action in reply to the problems faced by the organizations. Good decision will result in the sequence of actions that help the organization to be operative, the opposite is its converse. The growth or the failure of the organization be contingent on the decisions made by its associates. The decision-taking systems have four main phases:

Intelligence- searching for situations calling for decision making.

Design- discovering, developing and analyzing certain decisions. This will make the procedures to understand the problem, to produce solutions and testing of solutions for possibility.

Choice- choosing another or decisions from those variables available.

Review- Inspection of choices made previously. This model was later combined by George Huber into the distended model of the whole problem-solving operation.
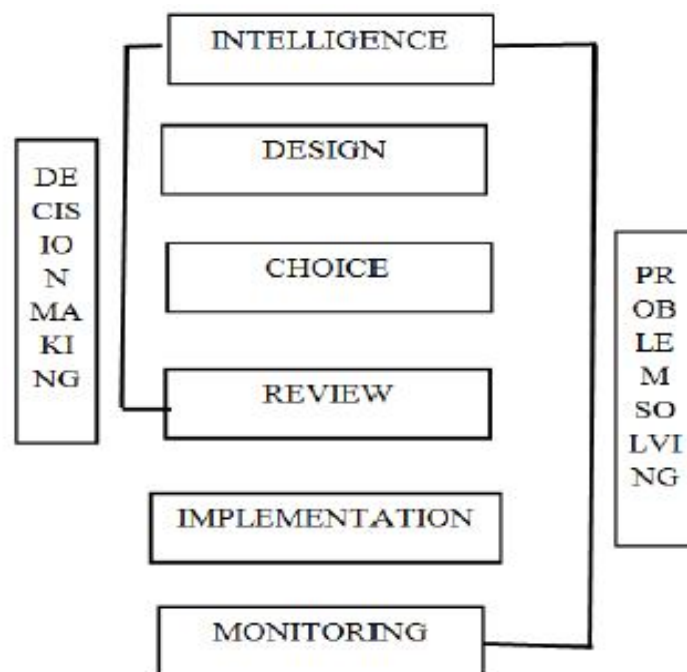
Figure 1

An expanded model of the entire problem-solving process

Though the computerized systems deliver accuracy, flexibility and prompt decisions for administrators, there are some problems that are handled by organizations. The lack of knowledge about the specifications, restraint, and variables of the systems is the biggest problem faced by the organizations. If the knowledge about the systems is not well understood by the organizations, then the systems will not provide the solutions expected by the executives. The Automatic decision-taking system must be calculated in such a way to inform the administrator to handle the decision making procedure if it lacks the essential data to make consistent decisions. The problem handled by the organizations about the computerized decision-making system is to find the expert persons who are able to build and sustain the automatic systems. Even though the automatic decision-making systems are improved and used universally and it has more advantages over manual decisions, it has particular restraints and many businesses fail to overlook those restraints and to maintain them consequently. Therefore, the corporations must carefully oversee the systems which they are applying and they must appreciate the solutions that are given by the systems.

IV. VARIOUS GRADES OF AUTOMATION IN DECISION MAKING SYSTEMS

Inexact decision-making tracks, the decision-making schemes are only partially automated and it alerts the operators where manual decision making is essential. The automatic systems directors the operators, using the information composed and such systems make willpowers through the decision-making process, while avoiding the terminated pathways and in some cases, the automatic systems will deliver a final decision. The automatic systems may also guide the operators when a manual decision is necessary by meeting and providing applicable information for the operators to take an accurate decision. In some cases, the system may gather and store the applicable information, and records the causes of the outcome touched by manual decisions. Automatic systems can be used in diverse ways in the organizational decision-making system. For example;

- To take the decision.

- To mention a decision to the physical decision-maker.

- To guide an operator through significant facts, regulation, and policy, closing off inappropriate paths as they go.

- It can be used as decision sustenance systems, providing valuable information for the decision-maker during the decision making procedure.

- It can be used as a self-assessment tool, providing preliminary assessment for individuals or internal decision-makers.

The decision making with a partially automated system model used in lending libraries.
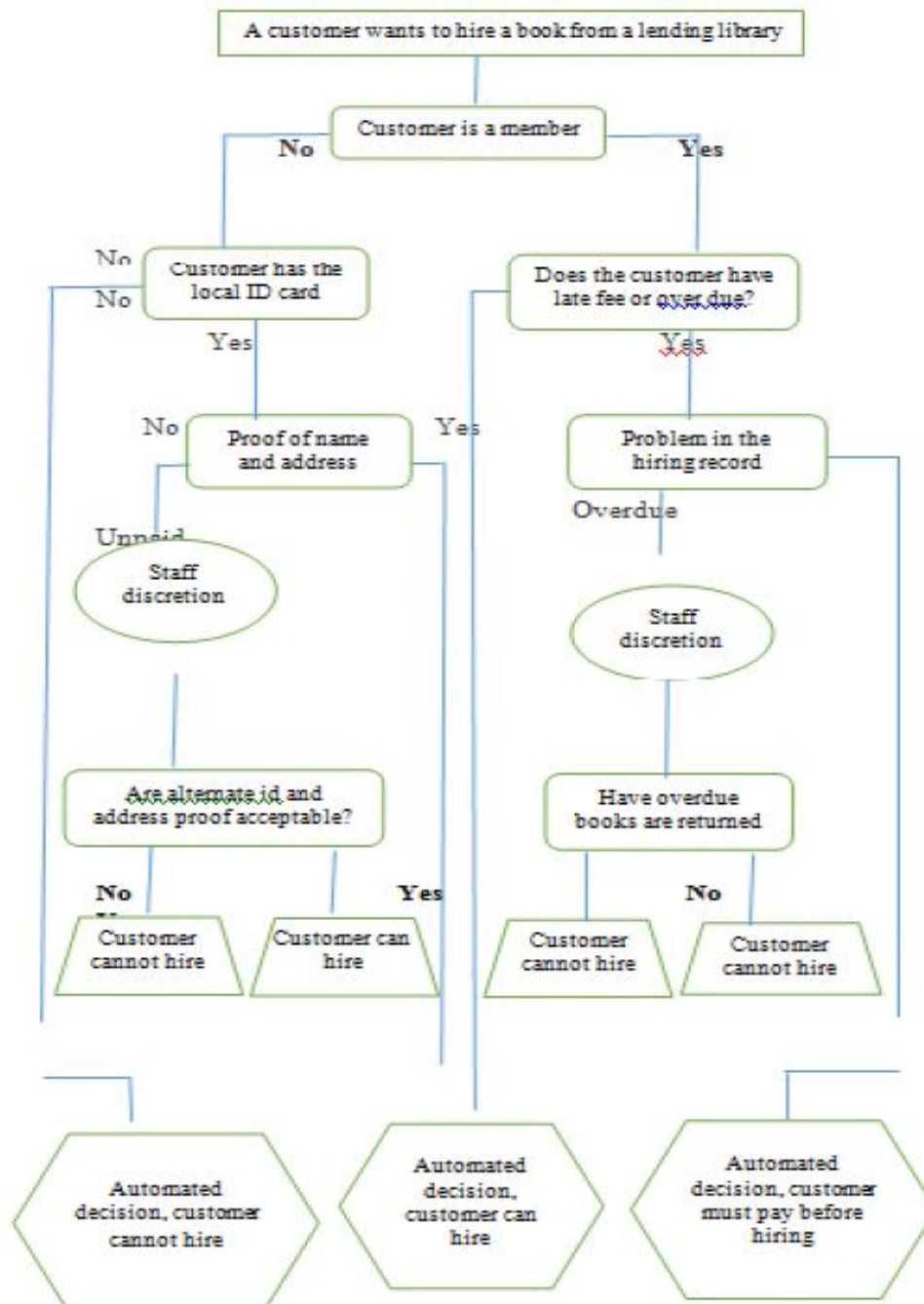
V. CONCLUSION

The more data that occur, there is more the possibility for automation. The organizations can take Operative decisions only if it covers correct, timely and pertinent information. The Management information system simplifies the administrations scheduling, control, and working functions to be carried out adequately by providing the exact and appropriate information needed to ease the decision-making process and MIS also helps the decision makers by providing wide range of options for making their preferred choices. This confirms that whatever the selections are occupied by the decision makers, the results will be positive. Many decision makers tend to use management information system while taking tough business decisions. The decision making system focus on decision making whereas management information system focus on information. The management information system goals only on effortlessly structured data but decision making system targets on structure as well as semi structured data.

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Resource optimization in ubiquitous system

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RESOURCE OPTIMIZATION IN UBIQUITOUS SYSTEM

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ABSTRACT

Mobile Computing defines that a device which permits the flow of transmission data from one computer to another by never been connected to the Physical link layers.

Due to the wide usageof the mobile devices and variety of the applications,

mobile cloud computing becomes a needed part for mobile system or devices, due to reliable and portable processing of data and storage take place outside of the mobile device.

It is useful in manners to save battery as well as computation power of the mobile devices which is acritical issue in high power mobile devices.

Mobile cloud computing provides mobile clients, a service where they can be use cloud services on their mobiles devices and it perform computations.

As mobile cloud computing is still in previous stage of the development and it is useful to building up thorough understanding about existing models as well as future trends.

The main purpose of this survey is to analysed and point out the main challenges and risks involved in the mobile cloud computing as well as occur new trends in this field area.

Keywords:Mobile cloud computing; virtualization; personal cloud.

1. INTRODUCTION

Now a days, it is easy to access information from anywhere at any time by this rapidly changing technology.

In the near future,millions peoplecarry a portable palmtop or laptop computer.

Distributed information infrastructure can also easily accessible from virtually any place and time, the term known as "information superhighway."

A wide variety of information servers (bothproprietaryand public) are accessible to mobile computers.

We had already seen the beginnings of this with the rapidly growing popularity of Internet across a computer users.

As the mobile infrastructure develops, it will become what is referred to as the "first wireless mile" or "wireless on-ramp" for the information superhighway.

In some applications, mobile computers themself may contain data, or data may be stored on smart cards (flash-memory).

Communication issues include communication properties, protocols, data formats and concrete technologies as well as ad hoc networks and infrastructure networks. Hardware include mobile devices or device components.

2. MOBILE CLOUD COMPUTING ARCHITECTURE AND OFFLOADING

Mobile Cloud Computing (MCC) is known as a system where both data processing and storage happens outside the mobile device.

Mobile Cloud Applications transfer the data storage and computing power away from the mobile devices and into one centralized and powerful computing platforms located in clouds, which are then obtained from the wireless connection based on a thin native client.

Mobile devices deal with many problems or challenges during regular using of devices like battery life, storage and bandwidth.

Mobile Cloud Computing gives advantages to user as to use infrastructure, platforms and software by cloud providers elastically, in on-demand and at low cost. Mobile cloud computing provides mobile users with data storage and processing services in the cloud, eliminating the need to have a powerful device configuration (e.g. memory capacity , CPU speed, etc.,), as all resource- exhaustive computing can be performed within the cloud.

MCC consists of mainly four types of the cloud computing resources:

- Cloud of Distant mobile

- Cloud of Distant immobile

- Proximateentities of mobile computing

- Proximate immobileentities ofmobile computing

- Fusion

The following diagram showing the framework of mobile cloud computing& its architecture:
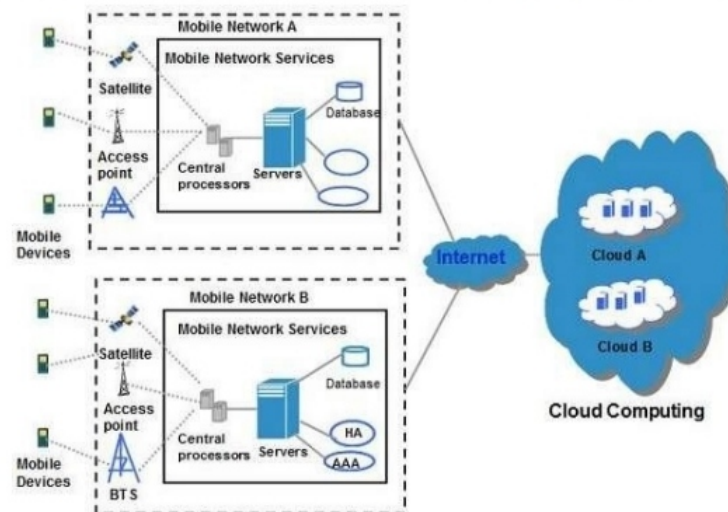
Fig-2: Mobile computing Architecture

- Mobile applications increase a ratio of remote processing and extending battery lifetime.

- MCC give mobile users to store and access large data on the cloud. Mobile applications aren't constrained by the storage capacity of the device.

MOBILE CLOUD COMPUTING FEATURES
Mobile computing is a term that, generally refers to a different devices that allow people to access data and information from anywhere.

Sometimes known as "human-computer interaction," mobile computing transfer data, voice, and video over a network via a mobile device.

Fig-4: Features

- Connectivity: You can access all sources at any times.

- Social Engagement: You can contact with a variety of users through the Internet.

- Personalization: You can use your mobile computing for your individual needs.

➢ **Why use mobile computing**

Mobile data communications has become a vehemently debated issue. The feeling of wanting to know or learn about something makes paging, circuit-switched and packet-switched networks has become one of the issue for debate and the development of newer technology networks is adding fuel to the fire.

For Estate Agents

Estate agents work at home and also out in the field. With mobile computers they can be more productive. Therefore, mobile computers allow them to allot more time to clients.

- **In courts**

  In courts there is use of the mobile computing which is for the defence guidance it uses or taking mobile computer.

- **In companies**

  Managers can use mobile computers in, say, and different and difficult presentations to major customers. They can use the latest market share information from mobile computer.

GENERATIONS OF MOBILE COMPUTING

➢ **First Generation**

First generation is based on Personal mobile cloud. Some of the Advantages/features are that all the services are maintained and which is Deployed in datacentre of the MCC.

Scalability is also one of the very big benefit and feature of this system. Contents of mobile and application data are work at a time so this feature is related to synchronization.

Mobility feature is also strong point of this system. Following figure explains the first generation of the personal mobile cloud.
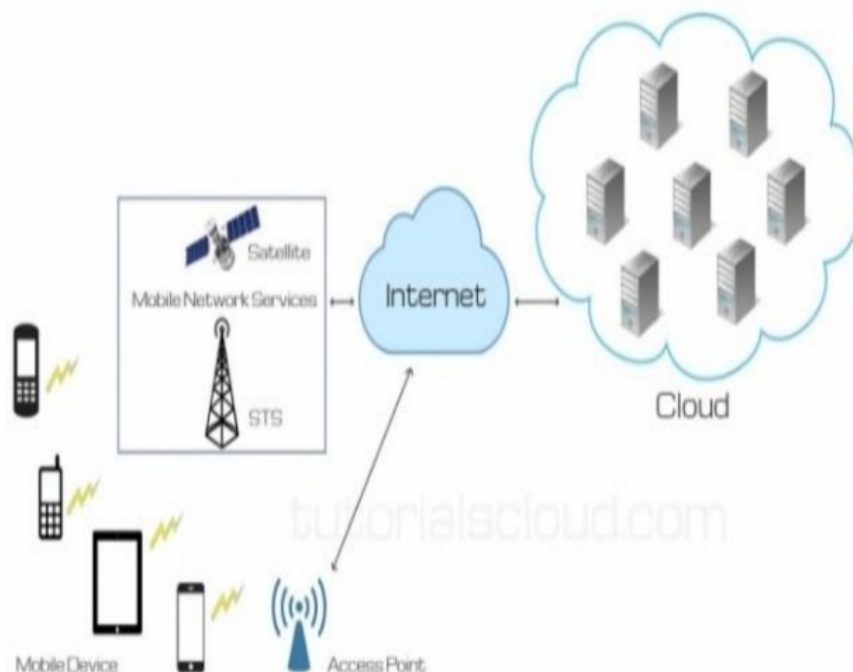
Fig-4: First generation

➢ **Second Generation**

Second generation is based on Cloud- Mobile Cloud Infrastructures. In this system, all the services are maintained and deployed in the datacentre of the MCC. One of the new and ssatisfactory features of the second generation is that the On-demand service. This feature showing us that the services,contents and data are providing to the mobile cloud on demand. Second generation system also provides scalability. The complete architecture of second generation is shown in below fig-5

Fig-5: Second generation

➤ Third Generation
As per the survey of the Virgin Media Business CEO,the progressin the mobile data use has been led to increase shifts. Third generation consist of four layers.

- Computing cloud layer.

- Network layer.

- Mobilecloud layer

- Mobile Layer

Fig-6: Third generation

ISSUES AND CHALLENGES IN MOBILE CLOUD COMPUTING (MCC)
➤ Security issues
Mobile computing is fair share of its security concept as any other technology. Due to its errant nature, it is difficult to monitor the proper usage.

Users might have various intentions on how to use this privilege. The copying and unethical functions like hacking, industrial surveillance, pirated, E-Commerce fraud and virus destruction are some but the few problems faced during uses of mobile computing.

Another big trouble in mobile computing is credential verification. As another end user share username and passwords, it causes as a major threat to security. This being a very critical problem, most clients are very resistant to implement mobile computing to the dangers of misrepresentation.

The issue of identity theft is very difficult to survive or eradicate. Problemwith unauthorized access to information and data by theft or hacker, is also a massive problem.

Outsiders or other people gain access to get vital data from companies, which is a major block in rolling out mobile computing services.

No company wants to lay open their secrets to hackers and other intruders, who will in turn sell the valuable information to their competitors. It's also important to take the necessary provision to decrease these threats from taking place. Measuredly they includes following,

- Engaging theprofessional personnel.
- Protected hardware and software installation.
- Analysing and developing the sound, is very effective policies to the mobile computing.
- Executing proper access rights and authorities.

Fig-7: Challenges

These are just some ways to help from preventing threads. Since information is very much important, all possible measures should be assessand implemented for safeguard purposes.In the absence of such solution, it is possible to find out unknown threats which are causing irrefutable harm. These may be in terms of personal status or economicpenalties. In such cases, it is very easy to be different use in different unethical practices.

If these factors aren't correctly worked on, it might be an avenue for constant threat. Various threats still remain in implementingthis kind of technology.

TRENDS IN MOBILE CLOUD COMPUTING

Mobile cloud computing, web and social networking have given more and more attention in recent years. There are still meaningful security challenges in and during the development of cloud infrastructure, web and mobile terminal devices.

This special issue will focus on state-of-the-art research paradigms on security or vulnerability aspects in social networking, Web and cloud computing, particularly on advances in mobile computing technologies and associated areas. Moreover, this issue will highlight on the research challenges and issues in the mobile cloud computing security

MODELS

1] Performance Enhancement Model

Main intention of this model is to improve performance by using the cloud resources. Applications are offloaded on high performance cloud where counting takes less time. Here are some useful models

⚓ Clone Cloud

Clone Cloud enhances mobile applications by off-loading part of the server from mobile devices on to clone's devices. It is designed to provide a service platform for mobile devices.

The process paying the cost and may be worth it for sending the execution code from the mobile to the cloud and vice versa. The computation is required to find the performance metric

2] Energy enhancement model

These type of models mainly focus on decrease the energyconsumption of smartphones by using cloud resource efficiently.

Counting that takes time are performed using cloud by reducing overhead of applications.
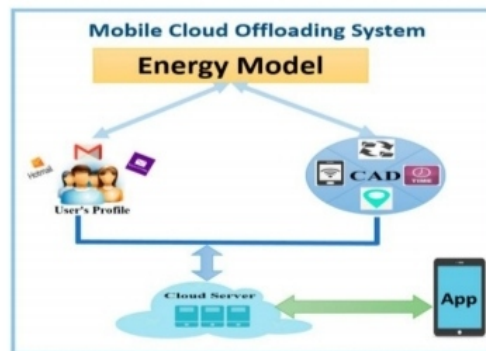
Fig-8: energy model

3] Hybrid Application Models

Hybrid models are prepared to achieve multiple objectives such as performance and energy efficiency. Multiple objectives are achieved using one model because these types of models are more suitable.

Fig-9: Hybrid model

CONCLUSION

This research presents a survey on MCC and shows the trends and challenges are in MCC. Mobile applications are evolving day by day with the increasing manner which is use of the mobile phones.

Mobile usage has been highly increased so users want to do all the functionalities on the mobile device.

With the help of the cloud computing the new opportunities are displays or emerging or in this system in researching area. Computations are grow up day by day in fields like commerce, science as well as technology.

In the recent days MCC is focusing on enhancement of mobile limitations and make it more powerful using virtualization techniques.

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A Review on Impact of Smartphone Usage

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Introduction

The wireless revolution was concocted in the year 1880 by Alexander Graham Bell and Summer Tainted when first time the photo phone was created [1]. Originally phone was globally used for communication. Later few features are added which is useful for day to day life such as FM radio, massage service, etc. Almost a decade ago, smartphone jumped in market which change the whole world. Now the smartphone market is growing and become the unstoppable. Everyday there is number of smartphone throwing. Deliver better feature than other. Product can't be stable in market because every day it get new competition of new and well once. Mobile phones became the basic need of human being. Digital world become easier and less time consuming, to handle this manageable gadget is smartphone. Better features and pocket friendly cost are the fascination of the smartphones. Smartphones are available in approximately Rs. 2000 to lacs and more. Digitizing the banking system, educational system is less time consuming and more popular in generation. Every technology comes with it's advantages and disadvantages. Smartphones are making are work easy and portable but it also have some adverse effect on living being and atmosphere.

2. Evolution Due To Smartphone

Wireless communication makes the world associated. The best intermediate for it is mobile. Mobile means handy communication or can say wireless communication. We can carry mobile all over because of its compact design, lightweight, and portability. More last few decades mobile become smarter that it can simplify many works and help the human in a more accurate way. This smart device we now know as 'Smartphone.' The smartphone is beneficial in many fields such as education, banking, and finance, agriculture, communication, social, marketing, etc. Traditional education is limited to classrooms, books, and libraries. Attending the lectures in the classroom, carrying heavy books, visiting the library for supplementary stuff is the traditional way. But now due to digitization, virtualization and the smartphone's world of knowledge is open to everyone. Books are now available online as we can download it for free or very less amount. The vast library of the book is available irrespective of language, field, author, type, etc. Carrying a heavy book is not a good option. Some times books are not available physically to particular geographic locations. But now with online book books are available on the internet and we can use it without any geographical constraint. digital book are easy and very much portable to carry with the support of smart devices. The online classroom is where lectures are recorded as audio or video and available to a student who is not able to travel or present in a particular geographical location. Many other kinds of stuff of education such as calculator, compass, dictionary are also provided by smartphones. Communication was the main goal initially behind launching the mobile. The Internet make the world smaller. Low prices for communication and data subscriptions are attracting the customer. Communication is not limited to audio or massages but now we can video call a person and only one but can call multi[le person called as video conferencing. Similarly, we can conference the audio call and multiple participants can add who is at a different geographical location. Now we can not only pass the massages but also multimedia like audio, video, documents, etc. Social media is the most attractive platform for every generation but especially for the young generation. People can socially be connected via the internet. Social media and the OTT platform become the new language for entertainment.

OTT platforms are growing rapidly such as Netflix, Amazon, iTunes, etc. Songs, movies, and other entertainment stuff is available on a smartphone so we anytime anywhere can start our entertainment with our smartphone. The era of digitization also make banking and finance sector digitized. Now we can use banking facilities online with online banking using smart devices more preferably smartphones. Transferring the money, balance checking is digitized with saving the time to go to the bank and perform the task as well as reduce the usage of paper with is very good for the environment. We can carry many financial documents very easily in the smartphone with the help of the smart wallet.

Marketing is growing with smartphones as we can buy anything from online marketing websites or applications. Buying and selling become portable easy and convenient with the help of the smartphone. In the agriculture field, may mobile application is available for farmers for the betterment of land and their knowledge. Weather forecasting is easily available. A farmer can sell their product directly in the market without any middle parties. Many videos or information is available about product, farming techniques. All these features are available in a smartphone which is easy to understand with different local language support and better understanding user interface. Also, the smartphone is a portable and low-cost solution.

III. Adverse Effect Of Mobile

Every technology has more or fewer drawbacks. Mobile became the basic need, but this need is becoming our addiction which is not at all good. Addiction of mobile degrading the human physically, psychologically, economically and socially. The wireless device contains some radiation which has a frequency range of 3 kHz to 300 GHz. Wireless device such as smartphones, computers, wireless router (WiFi), etc. These gadgets contain radiation which may cause many diseases. These devices generate harmful radiations which can cause too many harmful diseases such as Brain Tumour, Male Infertility, and effect on the fetus, Alzheimer's disease, Ear Hearing Impairment, asthma, insomnia, high blood pressure, rheumatoid arthritis leukemia, birth defects, Immune system, and Heart trouble.[8] Radiations are also shown up of some symptoms which are: headache, sleep disruption, tiredness. In serious cases, DNA damage can also happen because of radiation produced by wireless devices like which given off by mobile phone devices during the receiving and sending process of the data.[8]

The psychological effect is difficult to detect in early stage. This happened due to the excess use of smartphones. A user becomes addicted to a smartphone to the extent that he/she forgets the real world and starts living an imaginary world. Sometime customers may go to depression mostly because of social media. Social media show the world very fascinating. Depression may cause mental illness and some times suicide. Smartphone also changes or manipulate the mind-set, this sometimes leads to criminal mind-set. Games are also affecting human psychology. There are many cases of depression and suicide just because of excess gaming. A smartphone is now an easy and convenient way for banking but with banking, a major issue is a raise that is 'security'. Is mobile devices are secure enough? The data that is stored in your mobile device is must be protected with legal antitheft or antivirus. Data can be a steal from devices. There are many ways such as a virus that may break the firewall or corrupt the data, malicious inside that leak or altered the data that is shared or stored. Many cases are registered for fraud. This fraud can be done via stealing your data or by fake calls that asked for your personal information. Banking or other passwords that stores some sensitive information. Many of customer faces the fraud messages or scams. When mobile is steal or lost the major concern is the data that is present in the mobile. This all factors of smartphone security may lead to major economic fraud. Human is social animal. But smartphone is breaking that social connectivity in humans. Every public place most of the public is on smartphone. Conversations become less, emotional connectivity is missing. Mobile main aimed was communication but social media and other platform decreases that communication. Call prices and data subscription prices are decreased and become pocket friendly but social connectivity and awareness is also decreasing.

IV. Outcomes

1. A smartphone is a better device to carry and access documents easily.
2. Smartphones proved many features of communications like video call, conference call from anywhere anytime irrespective of the geographical location.
3. A smartphone is an alternative to many devices such as calculator, scientific calculator, compass, weather forecast, laptop, storage device, radio, mp3/mp4 player, etc.
4. Costumers are more interested in features rather than price.
5. Smartphones and the internet allow working from a smartphone.

As per the requirement, internet speed is increasing. From 3G to now 4G and WiFi is a new medium of internet. Usage of the smartphone during driving and walking has increased the lead to a more number of accidents.

- Increasing the frequency of the internet causes many diseases.
- Smartphone usage caused many psychological diseases.
- Antivirus and antitheft software make customers assured about security while using the smartphone.
- Antivirus and antitheft gives the confidence to use net banking and other third party services.

V. Conclustion

Digitization and compact, portable design of smartphone it is very simple and convenient way to carry many documents and books. Many work can be done using smartphone without being physically present to the location such as billing banking, etc. Communication and transfer of data became very easy. Smartphone has many advantages but excess gaming, social media decrease the concentration and memorizing power in humans. Students are distracting due to other application of smartphone than the educational and social purpose. Many diseases are accruing due to radiation of smartphone. Many financial frauds are done. Smartphone is a gat invention of the generation but we have to know the limits of this. Use the smartphone a needed and legal usage.

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CYBER CRIME & CYBER LAW'S IN INDIA

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CYBER CRIME & CYBER LAW'S IN INDIA

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ABSTRACT

As it's know that this is the era where maximum of the things are thru usually over the internet starting from online big business to the online deal. Meanwhile the web is considered as universal stage, anybody can access the assets of the internet from anyplace. The internet technology has been by means of by the rare people for criminal events like illegal access to other's network, swindles etc. These illegal crimes or the offense related to the internet is named as cybercrime. In order to break or to penalize the cyber criminals the term named as Cyber Law was familiarized. We can state cyber law as it is the chunk of the legal methods that deals with the Internet, World Wide Web, and with the legal topics. It shields a wide area, surrounding many subtopics as well as liberty of expressions, access to and use of the Internet, and online security or online privacy. Generally, it is referred as the law of the web.

Keywords: Internet, Unauthorized access, Cybercrime, Cyber law, Cyberspace, Punish, Network

I. INTRODUCTION

The brainchild of Computer has made the life of humans calmer, it has been using for several purposes beginning from the individual to big organizations thru the globe. In simple term we can term computer as the machine that can stock and operate/process data or instruction that are trained by the user. Most computer handlers are using the computer for the specious purposes either for their individual benefits or for other's benefit since eras [15]. This contributed for the birth of Cybercrime. This has directed to the meeting in events which are unlawful to the society. We can define Cybercrime as the crimes keen using mainframes or computer network and typically gross over the cyber space chiefly the Internet [3]. Now arises the term Cyber Law. It doesn't have a static definition, but in a humble term we can clear it as the law that rules the cyberspace. Cyber laws are the laws that oversee cyber area. Cyber Crimes, digital and electronic signatures, data securities and solitudes etc. are understood by the Cyber Law [4]. The UN's General Assembly suggested the first IT Act of India which was grounded on the "United Nations Model Law on Electronic Commerce" (UNCITRAL) Model [5].

II. OBJECTIVE

The main goal of our paper is to range the knowledge of the crimes or violations that take place over and done with the internet or the cyberspace, alongside with the laws that are forced against those wrongdoings and offenders. We are moreover trying to emphasis on the security in cyberspace.

III. CYBER CRIME

Sussman and Heuston primarily projected the word "Cyber Crime" in the year 1995. Cybercrime cannot be termed as a single definition, it is best well thought-out as a group of acts or behaviors. These deeds are founded on the material crime object that disturbs the computer data or structures. These are the prohibited acts where a digital device or material system is a tool or a goal or it can be the mixture of both. The cybercrime is also identified as electronic crimes, computer-related crimes, in elevation technology crime, data age crime etc. In simple word we can explain "Cyber Crime" as a crime that takes place above electronic communications or data systems. These sorts of crime are essentially the prohibited activities in which a processor and a network are intricate. Due of the expansion of the internet, the sizes of the cybercrime happenings are also growing because when binding a crime there is no longer a need for the bodily present of the criminal. The rare characteristic of cybercrime is that the prey and the criminal may never come into straight contact. Cybercriminals often choose to function from countries with absence or weak cybercrime laws in order to cut the chances of finding and examination. There is a saying amid the people that cybercrimes can only be stubborn over the World Wide Web or the internet. In reality cybercrimes can also be resolute without ones participation in the cyber space, it is not essential that the cybercriminal should persist existing online. Software privacy can be used as an example

The cybercrime is grown from Morris Worm to the ransomware. Many countries counting India are at work to terminate such corruptions or outbreaks, but these attacks are endlessly changing and disturbing our nation.

IV. CYBER LAW
Cyber Law seized natal in order to take switch over the crimes dedicated over the internet or the cyberspace or via the uses of computer assets. Explanation of the legalized issues that are linked to the uses of communication or computer technology can be named as Cyber Law.

Cyber law shows a very vital role in this new era of technology. It is significant as it is worried to nearly all facets of doings and dealings that take place whichever on the internet or other communication devices. Whether we are alert of it or not, but each act and each response in Cyberspace has some lawful and Cyber permissible views [14].

One must have the following information in order to stay alert about the cybercrime:
- Single should recite the cyber law carefully.

- Basic information of Internet and Internet's safety.

- Recite cyber crime's cases. By interpretation those cases one can be conscious from such crimes.

- Important application from reliable site can be used for guard of one's delicate information or data.

- More or less key opinions of the Information Technology (IT) Act 2000 are as follows:

- E-mail is now measured as a legal and lawful form of communication.

- Digital signatures are agreed as permissible validity within the Act.

- Act has set natal to new occupations, to businesses to issue digital certificates by flattering the Certifying Authorities.

- This Act lets the government to issue notifications on internet over e-governance.

- The interaction between the organizations or between the business and the administration can be done over internet.

- Speaking the issue of safety is the most significant feature of this Act. It announced the concept of digital signatures that confirms the individuality of a discrete on internet.

- In case of any damage or harm done to the firm by offenders, the Act delivers a remedy in the form of cash to the company [15].

Cyber Law took birth in order to take control over the crimes committed through the internet or the cyberspace or through the uses of computer resources. Description of the lawful issues that are related to the uses of communication or computer technology can be termed as Cyber Law.

- Bridging multi-jurisdictional boundaries;

- Retaining and preserving evidence;

- Acquiring appropriate powers;

- Decoding encryption;

- Proving Identity;

- Knowing where to look for evidence;

- Tackling the tools of crime and developing tools to counter crime;

- Rethinking the costs and priorities of investigations;

- Responding to crime in real time;

- Coordinating investigative activities;

- Improving training at all levels of the organization;

- Developing strategic partnerships and alliances;

- Improving the reporting of electronic crime;

- Enhancing the exchange of information and intelligence;

- Acquiring. Developing and retaining specialist staff; and

- Avoiding „tech-lag‟ (or getting access to cutting edge technology).

- Bridging multi-jurisdictional boundaries;

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- Acquiring. Developing and retaining specialist staff; and

- Avoiding „tech-lag‟ (or getting access to cutting edge technology).

V. CYBER LAW IN INDIA
Resulting are the sections under IT Act, 2000

1. Section 65- Stand in with the computers source booklets whoever purposely or knowingly abolish, hide or modify any computer's source code that is used for a processor, mainframe program, and CPU system or workstation network.

Punishment: Any individual who includes in such crimes could be penalized up to 3 years custody or with a fine of Rs.2 lakhs or by way of both.

2. Section 66- Riding with computer system, data modification etc. whoever with the determination or purpose to cause any damage, harm or to abolish, erase or to change any data that exist in a public or any individual's computer. Reduce its usefulness, standards or moves it injuriously by any means, binds hacking.

Punishment: Any creature who comprises in such crimes could be punished up to 3 years captivity, or with a fine that may cover upto 2 lakhs rupees, or both [14].

3. Section 66A- Distribution violent messages through any communication facilities

- Any data or communication sent via any communication services this is invasive or has intimidating characters.

- Any information that is false or is invalid and is sent with the finale goal of irritating, troublesomeness, hazard, abuse, barrier, wound, illegal intention, hostility, disgust or ill will.

- Any mail or electronic post sent with the end objective of causing irritation, trouble or misinform or to cheat the address about the source of the messages.

Punishment: Any single found to pledge such crimes under this section could be send to prison for up to 3years of custody along with a fine.

4. Section 66B- Getting lifted computer's resources or communication devices unfairly getting or retentive any stolen processor, CPU's resources or any communication plans meaningfully or having the aim to believe the same.

Punishment: Anyone who encompasses in such crimes could be pronounce judgment on either account for a term that may cover up to 3 years of captivity or with a fine of rupee 1 lakh or both.

5. Section 66C- Classify theft Using of one's digital signature or one's PIN or any other unique ID of any individual is a crime.

Punishment: Any being who include in such crimes could be condemned either with a account for a term which may stretch up to 3 years of custody along with a fine that may spread up to rupee 1 lakh.

There are numerous other sections in the IT Act, 2000 amongst them a few vital sections are as follows:

Offences	Sec. under IT Act, 2000
Damage to Computer, Computer System etc.	Section 43
Power to issue direction for blocking from public access of any information through any computer's resources.	Section 69A
Power to authorize to collect traffic information or data and to monitor through any computer's resources for cyber security	Section 69B
Un-authorized access to protected system.	Section 70
Penalty for misrepresentation.	Section 71
Breach of confidentiality and privacy.	Section 72
Publishing False digital signature certificates.	Section 73
Publication for fraudulent purpose.	Section 74
Act to apply for contravention or offence that is committed outside India.	Section 75
Compensation, confiscation or penalties for not to interfere with other punishment.	Section 77
Compounding of Offences.	Section 77 A
Offences by Companies.	Section 85
Sending threatening messages by e-mail.	Section 503 IPC
Sending defamatory messages by e-mail.	Section 499 IPC
E-mail Spoofing.	Section 463 IPC
Web Jacking.	Section 383 IPC
E-mail Abuse.	Section 500 IPC
Criminal intimidation by anonymous communications	Section 507 IPC
Online sale of Drugs.	NDPS Act
Online sale of Arms	Arm Act

VI. CONCLUSION

The growth and propagation of a freshly developed technologies begin star to run many cybercrimes in latest years. Cybercrime has develop great dangers to mankind. Security against cybercrime is a vibrant part for societal, social and safety aspect of a country. The Government of India has endorsed IT Act, 2000 to pact with cybercrimes. The Act more study the IPC, 1860, the IEA (Indian Evidence Act), 1872, the Banker's Books Evidence Act 1891 and the Reserve Bank of India Act, 1934. Any part of the ecosphere cybercrime could be created transient national boundaries above the internet creating both technical and lawful complexities of examining and impeaching these crimes. The international consistent efforts, direction and co-operation amongst various nations are compulsory to take action on the road to the cybercrime. Our main tenacity of scripting this paper is to range the content of cybercrime amongst the communal people. At the conclusion of this paper "Cyber Crime and Cyber Laws of India" we need to say cybercrime can never be approved. If anybody drops in the victim of cyber-attack, kindly take a step forward and record a case in your adjoining police station. If the criminals won't get penalty for their action, they will at no time stop.

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CYBER CRIME: A CHANGE IN THE WHOLE THING

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CYBER CRIME: A CHANGE IN THE WHOLE THING

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ABSTRACT

Internet in today's era, is considered as a wonderful gift in the form of a tool. This tool keeps everyone engaged in lot many things. There arises a question as this tool helps provide a vast ocean of knowledge and experience, for whom is this tool been invented. Answer for this a bit ambiguous. Hence there is a rise in victims in the spreading pool of criminals who potentially and skillfully pilot the Internet. Internet habitually known as Web is a situation that is immaterial and vibrant. This research paper claims that Cyber Crime or in other words e – crime offers a new method of business and Up-to-the-minute Criminals. This paper discovers an outline of Cyber Crimes, the cybercrime culprits and their inspirations. Also it will also interpret in detail the different types of cybercrimes, and sole tasks and answer issues which may come across during the hindrance, finding, examination and also drawn the diverse section of IT Act 2000 of India also planned new facility in IT Act 2000.

Keywords: Cybercrime, Hackers, Crackers, Child Pornography, Viruses, Worms, Trojans, Cyberstalking, Cyber Law, India, IT Act 2000.

I. INTRODUCTION

The Internet has changed each and everything. It distressed our ideas of how things should be, how countries should be ruled, how companies should be track, how teachers explain and children study and even how housewives style new recipes. It combine up our theoretical framework of what we think we distinguish about the world, about apiece and about ourselves. It is redemptive, thrilling, stimulating and frightening all at the same time. To a mainstream of the people, the Internet leftovers secretive, hostile, unintelligible and scary. Along with the extraordinary development of the Internet has come the growth of cybercrime chances. As a consequence of rapid acceptance of the Internet worldwide, computer crimes comprise not only equitation and rapid, but now also contain blackmail, child pornography, currency valeting, scam, software plagiarizing, and business spying, to name a few. Law implementation officials have been irritated by the incapacity of deputies to keep cybercrime legislature ahead of the speeding technological curve. At the same time, lawmakers face the need to equilibrium the opposing interests between individual rights, such as confidentiality and free speech, and the need to defend the honesty of the world's public and private nets. Further confusing cybercrime implementation is the area of Legal Authority. Like pollution controller rule, one country cannot by himself efficiently pass laws that lengthily address the problem of Internet crime without teamwork from other nations. Law implementation agencies round the world are working together to grow new partnership, new forensic practices and new replies to cybercrime in order to safeguard security on the Internet. Due to its global scopes and borderless nature, novel and ground-breaking responses are vital to the issue of cybercrime or e-crime or computer crime. Though, this paper contends that e-crime, and particularly "hi-tech crime", speaks a new method of business that will require an important example shift in policing.

II. BACKGROUND

What actually defines Cybercrime is the question? Some of the individuals who are experts trust that cybercrime is nothing but a regular crime stanch by a high tech processers where computer is moreover a tool or goal or together and other specialists view that cybercrime is a new class of crime needing a complete new legal outline to speech a sole nature of developing technologies and the single set of experiments that old-style crime do not deal with such as authority, global cooperation, determined and the strain of identifying the committer.

III. TYPES OF CYBER CRIME

A computer is a crucial tool for nearly all cybercrimes. Nevertheless, as more devices are allowed to interconnect with the Internet, the hacker's store of tools is likely to enlarge. A computer can be the goal of the crime, the tool used in the crime, or may contain indication of the crime. The dissimilar uses of computer drive consequences to the criminal acts. When a computer is the goal of the crime, the criminal area is to snip information from, or cause harm to, a computer, processer system, or mainframe network. Pony-trekking, cracking, spying, cyberwarfare and malevolent computer viruses are common forms of corruptions that target the computer. The committers may be adolescent, scholars, expert or the extremists.

A] Malicious Code – Viruses, Worms and Trojans

Viruses

A virus is a package that alters other computer programs. These alterations safeguard that the infected program duplicates the virus. Not all viruses cause harm to its server. A virus is classically blowout form one computer to another by e-mail, or septic disk. Though a virus cannot pollute another computer until the database is performed. A common way of virus performance is when a computer user is deceived into initial a file criticized to an e-mail, thinking the file is a inoffensive program coming from a friendly basis.

Worms

A worm is impartial program that duplicates itself. A worm can breeze its way through a network system deprived of the need to be involved to a file, distinct viruses.

Trojan Horses

A Trojan Horses is an acquitted looking computer program that comprises hidden functions. They are overloaded onto the processer's hard drive performed along with the steady program. Nevertheless, unseen in the innocent program is a sub-program that will accomplish an illegal function. A Trojan horse is the best communal way in which viruses are presented into the computer systems.

B] Denial of Service

A Denial of Service ("DoS") is an dose or interruption designed for use in contradiction of computers linked to the Internet whereby one user can reject service to other genuine users simply by inundating the site with so abundant traffic that no other circulation can get in or out.

C] Cyberstalking

Cyber stalking is when a person is trailed and followed online. Their confidentiality is attacked, their every move observed. It is a form of nuisance, and can disturb the life of the prey and leave them feeling very scared and endangered. Pestering or being 'followed' are glitches that many people, particularly women, are acquainted with. Sometimes these problems (pestering & irritation) can happen over the Internet. This is recognized as cyber stalking.

D] Financial crimes

This would include duplicitous, credit card deceptions, money legalizing etc. To cite a fresh case, a website obtainable to vend Alphonso mangoes at a off-the-cuff price. Disbelieving such a deal, exactly few people replied to or complete the website with their credit card numbers. These people were really sent the Alphonso mangoes. The word about this website now blowout like wildfire. Thousands of people from all over the country replied and ordered mangoes by giving their credit card numbers. The holders of what was later established to be a fake website then escaped taking the many credit card numbers and continued to pass enormous amounts of money much to the humiliation of the card holders.

E] Cyber pornography

This would embrace pornographic websites; pornographic fortnightlies produced using processors (to print and publish the material) and the Internet (to download and communicate pornographic movies, pictures, texts etc).

F] Sale of illegal articles

This would contain sale of sedatives, arms and animals etc., by posting data on websites, sale websites, and communiqué boards or simply by using email message.

G] Online gambling

There are masses of websites; all held on servers overseas, that bid online gaming. In fact, it is whispered that many of these sites are actually faces for money valeting.

H] Intellectual Property Crimes

These comprise software piracy, patent breach, emblems defilements, robbery of computer source code etc.

I] Email spoofing

A fooled email is one that seems to initiate from one source but in reality has been sent from alternative source.

J] Forgery Counterfeit

Currency notes, stamp price and income stamps, mark sheets, etc can be bogus using classy computers, printers and scanners. External many colleges across India, one discoveries hawkers petitioning the sale of false mark sheets or even certificates. These are made using computers, and high quality scanners and printers. In fact, this

has becoming a thriving business connecting thousands of Rupees being assumed to student gangs in altercation for these bogus but reliable looking certificates.

K] Cyber Offence
This occurs when offence takes place with the help of processors and / or the Internet. E.g. someone publishes offensive matter about someone on a website or sends an e-mails comprising offensive information to all of that person's friends.

IV. UNIQUE CHALLENGES
The tasks of the digital phase and for the examination of cybercrime or computer crime are many and varied as follows:

Bridging multi-jurisdictional boundaries

- Retaining and preserving evidence;

- Acquiring appropriate powers;

- Decoding encryption;

- Proving Identity;

- Knowing where to look for evidence;

- Tackling the tools of crime and developing tools to counter crime;

- Rethinking the costs and priorities of investigations;

- Responding to crime in real time;

- Coordinating investigative activities;

- Improving training at all levels of the organization;

- Developing strategic partnerships and alliances;

- Improving the reporting of electronic crime;

- Enhancing the exchange of information and intelligence;

- Acquiring. Developing and retaining specialist staff; and

- Avoiding „tech-lag‟ (or getting access to cutting edge technology).

1) Linking multi-jurisdictional limitations

2) Retentive and preservative evidence

3) Gaining proper powers

4) Interpreting encryption

5) Verifying Identity

6) Significant where to look for proof

7) Attempting the gears of crime and evolving tools to pledge crime

8) Reconsidering the costs and urgencies of soundings

9) Replying to corruption in real time

10) Organizing investigative activities

11) Refining training at all levels of the society

12) Emerging planned companies and unions

13) Refining the journalism of electronic crime

14) Improving the talk of information and intellect

15) Obtaining. Increasing and retentive specialist staff

- Bridging multi-jurisdictional boundaries;

- Retaining and preserving evidence;

- Acquiring appropriate powers;

- Decoding encryption;

- Proving Identity;

- Knowing where to look for evidence;

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- Avoiding „tech-lag‟ (or getting access to cutting edge technology).

V. CYBER LAWS IN INDIA
Approximate highlights of the Act are as listed below

- Chapter-II of the Act exactly specifies that any subscriber may validate an electronic record by attaching his digital signature. It further more states that any person can confirm an electronic record by usage of a public key of the subscriber.

- Chapter-III of the Act specifics about Electronic Governance and delivers inter alia between others that where any law delivers that information or any other matter shall be in script or in the typewritten or

published form, then, nevertheless anything contained in such law, such obligation shall be thought to have been satisfied if such data or matter is reduced or made available in an electronic form; and Available so as to be practical for a succeeding reference.

- ☐ Chapter-IV of the supposed Act gives a scheme for Rule of Certifying Establishments. The Act imagines a Controller of Certifying Authorities who shall achieve the function of exercise management over the activities of the Certifying Authorities as also placing down values and circumstances governing the Certifying Authorities as also agreeing the various forms and satisfied of Digital Signature Certificates. The Act knows the need for identifying foreign Certifying Authorities and it further details the several necessities for the subject of license to matter Digital Signature Certificates.

- ☐ Chapter-V of the act bounces the idea of safe electronic records and protected digital signatures

- ☐ Chapter-VI of the act stretches the rules, guideline, purposes & technique of the certifying authorities

- ☐ Chapter-VII of the Act details about the arrangement of things connecting to Digital Signature Certificates. The responsibilities of subscribers are also preserved in the said Act.

- ☐ Chapter-VIII of the act dialogs about the liabilities of the subscribers.

- ☐ Chapter-IX of the said Act speak about consequences and settlement for various offences.

- ☐ Chapter-X of the Act says of the formation of the Cyber Regulations Appellate Court, which shall be an appellate body where pleas against the instructions passed by the Adjudicating Officers, shall be favored.

- ☐ Chapter-XI of the Act speaks on numerous wrongdoings and the said crimes shall be examined only by a Police Officer not under the rank of the Deputy Superintendent of Police. These crimes include fiddling with computer source documents, reproducing of information, which is indecent in electronic form, and hacking.

VI. CONCLUSION

Criminal conduct on the Internet or on cybercrime, offers as one of the chief tasks for the forthcoming to India and International law implementation. As ICT convert even extra universal, facets of electronic crime will nose in all forms of criminal performance, even those stuffs presently regarded as additional old-style crimes. It is previously featured in numerous international crime linking drug trading, persons rustling, violence and currency cleaning. Digital signal will become more ordinary, even in old-style crimes and we must be ready to deal with this new experiment. Law implementation activities around the world are waged together to advance new companies, new criminological practices and new retorts to cybercrime in order to safeguard safety and security on the Internet.

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Influence of Gis in Tourism Management System

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Influence of Gis in Tourism Management System

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Introduction

In traditional method, an individual goes to visit a place where they may have never been before. So they would go and talk to the localities in-order to find the information about the tourist spots and the way to get there. While communicating to the localities an individual may face a basic, know problem of speaking in different languages i.e. it is possible that the localities may not know to speak and/or recognize the language you are trying to communicate in with them. [6] So to overcome this problem a new business area is developed (i.e. tourism agencies) focusing on tourism and travelling for tourists. Here's an individual becomes a guide(agent) for tourists and the agent would do all the required arrangements (tourist spots, best route, place to stay and etc.) for the tourists and gets paid for it. Here the tourism agencies would itself have to find the tourists spots, best route, and etc. before making a package for the tourists and for this they would require all the information about the place and have to analyse everything, also by considering the weather. In addition, for collecting, analysing, storing, displaying, etc. the agent needs a good software, which would simplify this work largely. Therefore, here is the concept of using GIS geographic Information System for tourism. [10]

what is GIS?

Geographic Information System is an "Information System" that stores all the information about the geography of all the places around the world and visualizes this geographic information on a map as a data to an individual.

Components of GIS: Hardware, Software, Data and People, and the types of GIS statistics are Raster Data and Vector Data. The geographic records are described explicitly in phrases of geographic coordinates (i.e. Latitude and Longitude or some coordinates) or implicitly in terms of postal code, avenue cope with, and so forth. GIS has the capacity to translate implicit geographic records into an express map location. [4]

How GIS works: Visualizing Data- The geographic information this is saved within the databases are displayed inside the GIS software program. Combining Data- Layers are combined to shape maps of choice. The Query- To search the price in the layer or creating a geographic query. [9] Using GIS in tourism Management Company, the company can easily collect the information of the places to visit for tourists, can store this information as their data for future use, can analysis this data as required and can display this data gathered after analysing in a map format for better understanding for the tourists. GIS maps is commonly used by visitors and vacationers to finalize their region to go to on the idea of the unique appeal of that vicinity and its culture and is used by the tour's and journey organizations for their clients (vacationers).

The concept of TGIS

The most basic reason of tourism is that tourists leave their residence in search of novelty. Most of the journey records and statistics have geographical attributes, which gives a foundation for the establishment of TGIS. The complete description of this concept is as follows: On the premise of geographic statistics database for tourism, TGIS makes use of strategies and idea of statistics technology and system engineering to collect, replace, manipulate, display, question, analyse the cartographic output tour records. It is the tour provider machine that places enter controls and applications into one machine. [3] The research objects of TGIS is those records and information which are associated with the tourism geographic information, including transportation's, lodging's, enjoyment, purchasing and subculture traits and functions. The ultimate **goal of TGIS:** to offer correct, timely and handy services to meet the unique needs of various customers. The improvement and layout of TGIS need to be guided with the aid of the regulations of tourism enterprise and must be regular with the exploring idea of tourism planners that very well considers the tourism economics,

advertising, awesome, psychology and other factors in order that it could meet the necessities of an extensive variety and forms of purchasers. [2] Therefore, with the tremendous growth of the web, a broad spectrum of tourism information is already spread/distributed over various web sites. To fulfil the visitor request for an extensive records series it is far inevitable to make gathered information from exceptional resources available. Besides this problem, tourists are also confronted with differences regarding information of tourist places, etc. presented on different web sites. [5] The solution to this problem is using maps to represent information in an effective and creative way so that it would be easy for the tourist to understand about the place before planning to visit that place. Maps are the herbal means of indexing and presenting tourism related statistics. Travellers are using maps to navigate for the duration of their travels and for making ready their routes. Moreover, maps exploit the two dimensional abilities of human imaginative and prescient and gift the facts in a compact and "easy to study" way. One of the example of this solution is the maps installed in Malls at each floor representing the names of shops and the path to get there, customers at mall can go and read the map as it is easy to read and understand.

Benefits Of Gis For Travels And Tourism

Following are some of the benefits offered by (GIS) Geographic Information System to travels and tourism region:

Visualization of Tourist Spots

Travels and Tourism is one of the extensive and important industry that unfolds over all nook of the world. When you are visiting to a brand new place's it is the duty of the travels and tourism enterprise holder, to welcome their visitors by way of making them go to each travellers spot. However, for that we want to know the traveller spot of that vicinity. Therefore, in such cases GIS maps are very beneficial. GIS maps facilitate in marking and finding out the visitor area and thru GIS customers can visualize the ones spots they are planning to visit.

Tourist Location

GIS helps in locating the traveller region to the travels and tourism enterprise holders and their clients. With the assist of GIS they are able to visualize the vicinity without problems at the same time as sitting at domestic and can even plan a tour to it, with the proper planning of your tour.

Route Planning

So, if you were planning a tour to a new state, then how would you be travelling there? How are you going to reach there? and etc. Therefore, for that we need not only navigation but also proper and efficient route. In such cases, GIS maps are very useful, as they permit you to in making the proper path for your excursion. With the assist of GIS, you may plan your route via making the quality efficient routes and may pick certainly one of them that is greater possible to you.

Accommodation

Travelling to a new venue, this is so exhilarating however, you get caught in terms of the food and live, which means approximately your accommodation. GIS maps allow you to out with this foremost problem. As we recognize, now we are able to look for the resorts and eating-places of any venue very effortlessly over Maps. Hence, you do now not want to worry about the lodging facility. All you want to do is just use GIS maps and get the high-quality lodging facility to live in step with your options, which is close by to the traveller spots you will visit.

Cultural Events and Special appeal

We tour to explore new locations and the way of life and special appeal of that place. So, for finalizing your excursion you can use GIS maps. GIS maps, typically used by the travellers and tourists to finalize their vicinity to go to on the premise of the unique attraction of that place and its culture. With GIS possible effortlessly look for the cultural activities and precise attraction furthermore; the enterprise holders also can replace such locations in the map. These are the some primary advantages, which GIS presents to Tour and travels enterprise.

If you recognize any other such benefits of the GIS for excursions and travels industry, do allow us to know via commenting below within the remark box of GIS for travels and Tourism enterprise. [8]
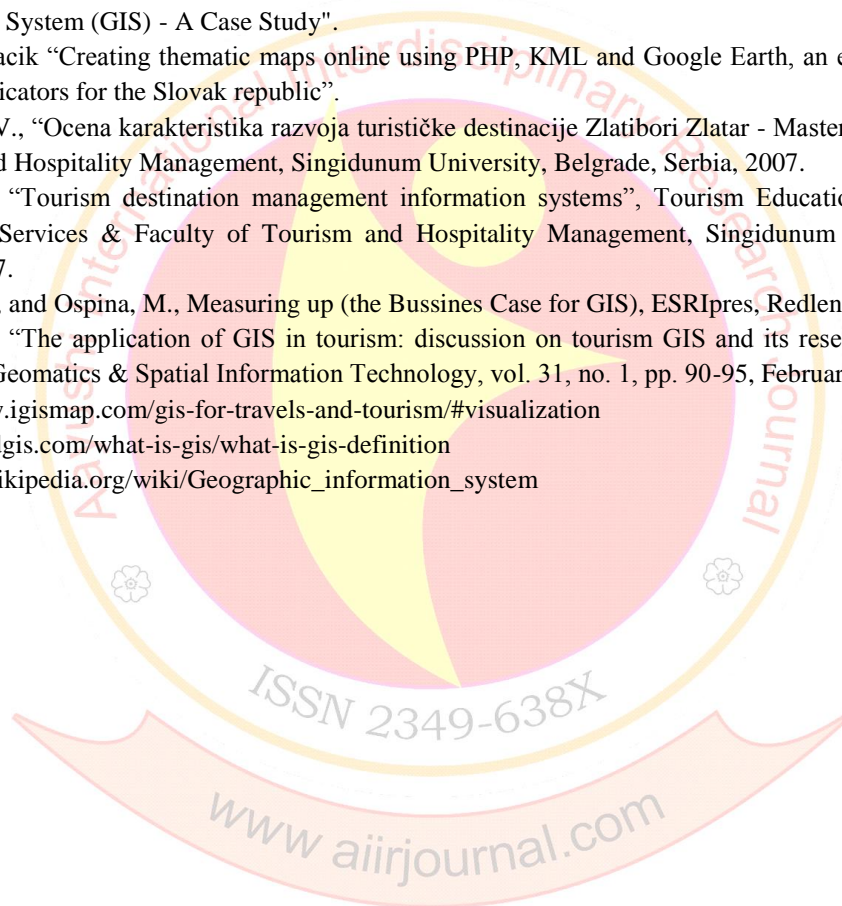
Conclusion

The development of tourism no longer simplest needs its personal facts control and change, however also adapts to the monetary improvement and statistics wishes of the entire society. The GIS applied to the tourism management is the inevitable call for tourism control and tourism development. The development of modern information generation continuously gives new demanding situations to tourism control. In this case, it's far a completely crucial trouble that the way to make complete use of the GIS inside the tourism management to make tourism control better adapt to the desires of Information development. It needs an ongoing in-intensity discussion and research. [7]

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A Study of Data Storage Security Issues in Cloud Computing

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A Study of Data Storage Security Issues in Cloud Computing

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I. Introduction

Cloud computing is the combination of many pre-existing technologies that have matured at different rates and contexts. The purpose of cloud computing is to allow all users to take benefit from all these technologies. Many organizations are move towards cloud because it allows the users to store their data on clouds and can access at anytime and anywhere. Data breaching is a possible way in cloud environment, since data from various users and business organizations lie together in cloud. By uploading the data to the cloud, the data owners transfer the control of their data to a third person that may raise security problems. Cloud user are place their confidential or sensitive data, it includes personal health records, emails and government sensitive files.
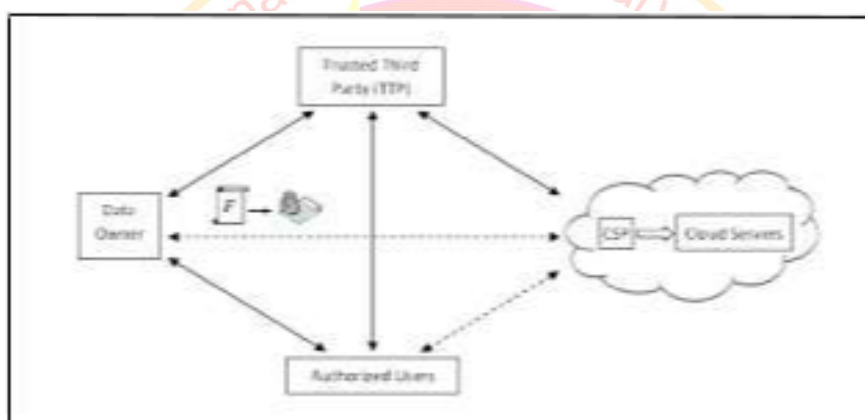
CLOUD DATA STORAGE MODEL

A simple solution is to encrypt the data before uploading onto the cloud. In cloud computing the data are not visible to external users and cloud administrators but has the limitation that plain text based searching algorithm are not applicable. In this paper, we will discuss the security flaws in data storage and the mechanisms to overcome it.

II. Cloud Storage

In cloud computing cloud storage is the primary user. Cloud storage as a storage of the data online in the cloud. The cloud computing does not provide control over the stored data in cloud data center. The cloud service providers have control over the data, they can perform any malicious tasks such as copy, destroying, modifying, etc. Distributed data center include a cloud storage system, which is typically use cloud-computing technologies and offers some kind of interface for storing and accessing data. When storing data on cloud, then the data is stored in a particular place with specific name.

There are four main types of cloud storage:

Personal Cloud Storage:
It is also called as mobile cloud storage. In personal cloud storage individual data is stored in the cloud, and he may access the data from anywhere.

Public Cloud Storage:
It is the enterprise and storage service provider are separate and they have not any cloud resources stored in the enterprise's data centre. Public cloud storage fully manages the cloud storage provider.

Private Cloud Storage:
It is the enterprise and cloud storage provider are integrated in the enterprise's data centre. In this storage, the storage provider has infrastructure in the enterprise's data centre that is typically managed by the storage provider. Private cloud storage helps resolve the potential for security as well as performance.

Hybrid cloud storage:

It is a combination of public and private cloud storage, where some critical data resides in the enterprise's private cloud while other data is stored and accessible from a public cloud storage provider.

III. Characteristic Of Cloud Computing : There are the five characteristics of cloud computing: ->

- The first characteristics is on-demand self-service, which means a consumer of services is provided the needed resources without human intervention and interaction.
- The second one is broad network access, where resources can be accessed from anywhere through a standard mechanism by thin or thick client platforms such mobile phone, laptop, and desktop computer.
- Third one is Resource pooling which means the resources are pooled in order for multi-tenants to share the resources.
- The fourth one is Rapid elasticity which means that resources are dynamically increased when needed and decreased when there is no need.

IV. Encrypted Data Storage for Cloud

Data in the cloud is placed anywhere, it is important that the data can be encrypted. We are using the secure co-processor as part of the cloud infrastructure to enable efficient encrypted storage of sensitive data. The secure co-processor is tamper resistant, one could be tempted to run the entire sensitive data storage. Pushing the entire data storage functionality into a secure co-processor is not feasible due to many reasons.

Another issue is that the software running on the SCP must be totally trusted and verified. This security requirement implies that the software running on the SCP should be kept as simple as possible. We can encrypt the sensitive data sets using random private keys and to alleviate the risk of key disclosure.

V. Security and Privacy Issues in Data Storage

Cloud Computing allows the users to store their data on the storage location maintained by a third party. Once the data is uploaded into the cloud the user loses its control over the data and the data can be tampered by the attackers. The attacker may be an internal (CSP) or external.
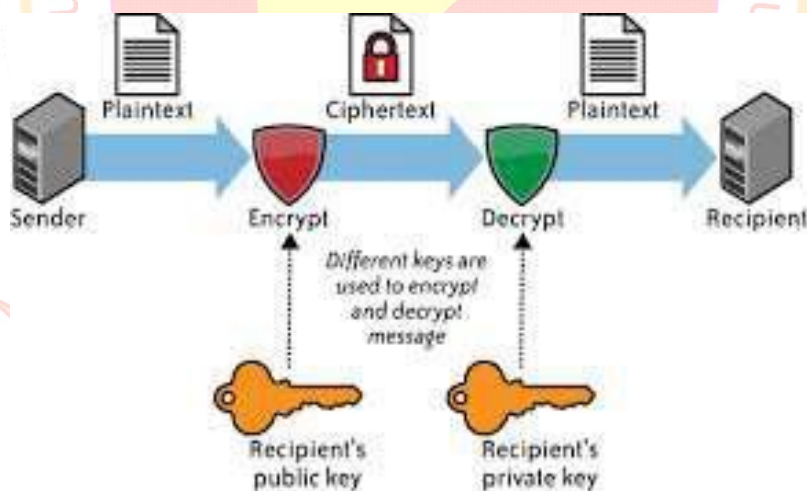

DATA SECURITY AND STORAGE

The protection of information arises the following challenges:The security and privacy issues related to data storage are *confidentiality*, *integrity* and *availability.*

A. Confidentiality

The major dispute in cloud computing is confidentiality. Data confidentiality means accessing the data only by authorized users and is strongly related to authentication. In another way confidentiality means keeping users data secret in the cloud systems. As we are storing the data on a remote server and transferring the control over the data to the provider here arises the questions such as:

For ensuring confidentiality, cryptographic encryption algorithms and strong authentication mechanisms can be used. Encryption is the process of converting the data into a form called cipher text that can be understood only by the authorized users. Blowfish is a fat and simple encryption algorithm.
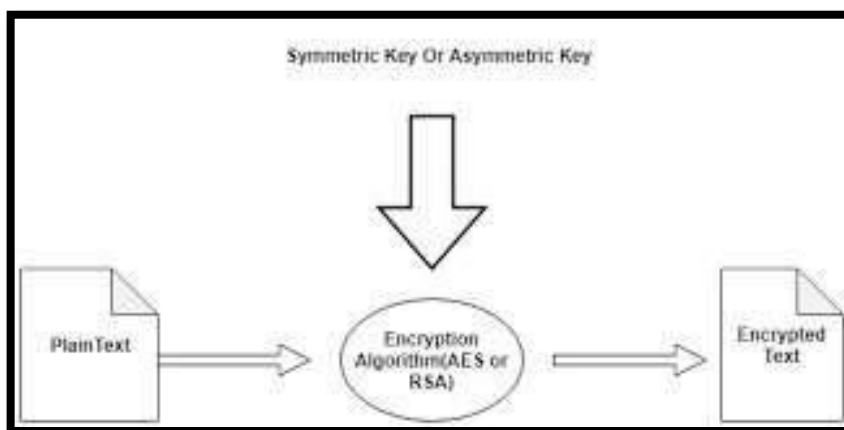
B. Integrity

Another serious problem faced by cloud computing is integrity. Integrity of data means to make sure that the data has not been changed by an unauthorized person or in an unauthorized way. It is a method for ensuring that the data is real, accurate and safeguarded from unauthorized users. As cloud computing supports resource sharing, there is a possibility of data being corrupted by unauthorized users. Digital Signatures can be used for preserving the integrity of data. The simple way for providing integrity is using Message Authentication Code (MAC).

C. Availability

Availability refers to being available and accessible to authorized users on demand. The aim of availability in cloud computing systems is to ensure that its users can use them at any place and at any time.

VI. Contractual and Legal issues

After moving to cloud computing environment, there are many issues in geographic regulatory law, performance assurance, contract enforcements, etc. The issues are comes under the legalities, Service Level Agreements and data location in data centers.

Service level agreements

The Service Level Agreement (SLA) can be described as a protocol, it specifies set of conditions and terms among user and Cloud service provider. The SLA should specify the following: Actions that CSP will taken when data breach happened, remedial actions and performance level at minimum level.

Legal issues

The legal issues arise because that the presence CSP resources in geographically conflicting various legal jurisdictions. If the user is migrated to one geographical to other, an issue will occur because of different legal jurisdictions. For a movement data is distributed over a various data center, those are owned by CSP those have different laws and security guidelines. This scenario may takes into the serious issue in cloud computing.

VII. Data backup

The data backup is an important when accidental and/or intentional disasters. The CSP has to perform regular backups of stored to ensure the data availability. In fact, the backup data should be keeping with security guidelines to prevent malicious activities such as tampering and unauthorized access.

VIII. Conclusion

Cloud computing enables users to store their data in remote storage location. But In cloud computing data security is major threat. Due to this many organizations are not willing to move into cloud environment. To overcome this, confidentiality, integrity, availability should be encapsulated in a CSP's Service-Level Agreement (SLA) to its customers. Effective auditing mechanisms also can be used for providing data integrity.

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A REVIEW PAPER ON BIG DATA AND HADOOP

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A REVIEW PAPER ON BIG DATA AND HADOOP

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ABSTRACT

In this universe of information the term BIG DATA has followed with new scenarios and challenges to deal with the huge amount of data. BIG DATA has became a place of great significance and is becoming the option for new researches. To find the valuable information from huge amount of data to administrations, we need to investigate the data. Expertise's in data examination is essential to get the information from formless data on the websites in the form of texts, images, videos or social media posts. This paper presents an summary on Big Data, Advantages and its possibility for the future research. Big Data present prospects as well as challenges to the researchers. An overview on prospects to healthcare, technology etc. is given. This paper gives an outline to Hadoop and its components. This article also emphases on application of Big Data in Data Mining.

Keywords: BigData, Hadoop, MapReduce, HDFS, Data Mining

I. INTRODUCTION

BIG DATA is a ambiguous topic and there is no exact meaning which is followed by everyone. Data that has extra-large Capacity, comes from Variation of sources, Variation of formats and comes at us with a great Speed is normally refer to as Big Data. Big data can be structured, unstructured or semi-structured, which is not managed by the predictable data management techniques. Data can be produced on web in several forms like texts, images or

Videos or social media posts. Where situation of increase the huge amount of data in an cost-effective and well-ordered way, parallelism is used [1]. So Velocity, Veracity, Volume and Variety these are main features of Big Data.

Fig-1: 4v's of BIG DATA

Volume means measure of data or big amount of data produced in every second. Mechanism produced data are examples for these features. Currently data volume is rising from gigabytes to petabytes [2]. 40 Zeta bytes of data will be generated by 2020 which is 300 times since 2005 [3]. Another feature of Big Data is speed that is inspection of flowing data speed is the speed at which data is produced and handled. For example social media posts [2].Variation is another important feature of big data. It states to the type of data. Data may be in different format such as Text, numerical, images, audio, video, social media data [2]. On twitter 500 million tweets are sent per day and there are 300 million active users on it [3].Reliability means ambiguity or accuracy of data. Data is vague due to the discrepancy and incompleteness [2]

II. CHALLENGES AND OPPORTUNITIES

Around 900 million web pages on Internet given that information about Big Data. Big Data is the next big mechanism after Cloud [11]. Big data comes with a lot of opening to deal in health, education, earth, and industries but to deal with the data having large capacity using traditional prototypes becomes very problematic. So we need to look on bigdata challenges and design some calculating prototypes for well-organized examination of data [13]

A. Challenges with Big Data: [12]

1) Heterogeneity and In completeness: If we want to examine the data, it should be organized but when we deal with the Big Data, data may be organized or un organized as well. Heterogeneity is the big challenge in data Examination and predictors need to manage with it. Consider an example of patient in Hospital. We will create each rec996+ord for each medical test. And we will also make a record for hospital halt. This will be changed for all patients. This assignment is not well planned. So management with the Various and imperfect is necessary. A good data examination should be applied to this.

2) Scale: As the name pronounces Big Data is having large size of data sets. Handling with large data sets is a big problem from decades. Earlier, this problem was resolved by the computers getting previous but now data volumes are becoming enormous and processors are static. Universe is moving on the way to the Cloud technology, due to this variation data is produced in a very high rate. This high rate of growing data is becoming a challenging problem to the data authorities. Hard disks are used to store the Data. They are slower I/O performance. However now Hard Disks are swapped by the secure state drives and other technologies. These are not in slower rate like Hard disks, so new storage system should be planned.

3) Appropriateness: Additional challenge with size is speed. If the data gatherings are large in size, longer the time it will take to inspect it. Any method which deals efficiently with the size is likely to accomplish well in term of speed. There are situations when we needed the examination results rapidly. We take a one example, there is any cheat in corporate, It should be inspected before the deal is completed. So some new method should be thoughtful to meet this challenge in data analysis.

4) Secrecy: Secrecy of data is another big problem with big data. In some countries there are strict acts about the data secrecy, for example in USA there are strict acts for fitness records, but for others it is less powerful. For example in social media we cannot get the private posts of users for emotional analysis.

5) Human Cooperation: In malice of the advanced computational replicas, there are many designs that a computer cannot notice. A new technique of harnessing human cleverness to solve problem is crowd-tracking. Wikipedia is the best example. We are dependable on the information given by the unfamiliar person, however most of the time they are correct. But there can be other people with other purposes as well as like providing false information. We need technical model to handle with this. As humans, we can look the appraisal of book and find that some are positive and some are negative and come up with a conclusion to whether buy or not. We need methods to be that intelligent to decide.

B. Opportunities to Big Data: [14]Now this is time to Data Revolution. Big Data is providing so many prospects to business organizations to develop their business to higher profit level. The technology like big data is singing an important part of each field like economics, health, Education, banking, and corporates as well as in government.

1) Technology: Nearly each top business like Facebook, IBM, yahoo have accepted Big Data and are exploiting on big data. Facebook manages 50 Billion photos of customers. Each month Google manages 100 billion quests. Since these stats we can say that there are a lot of scenarios on internet, social media.

2) Government: Big data can be used to grip the difficulties handled by the government. Obama government exposed big data research and growth creativity in 2012. Bigdata exploration played an important part of BJP winning the elections in 2014 and Indian government is put on big data analysis in Indian constituency.

3) Healthcare: Rendering to IBM Big data for Healthcare, 80% of homeopathic data is shapeless. Health care organizations are familiarizing big data technology to get the whole information about a patient. To increase the healthcare and low down the charge big data examination are necessary and certain technology should be improved

4) Science and Research: Big data is a current topic of research. Various scientists are working on big data. Around so many articles being accessible on big data.

5) Media: Media is using big data for the advertisings and marketing of products by targeting the interest of the user on internet. For example social media posts, data predictors get the number of posts and then examine the attention of user. It can also be complete by getting the positive or negative evaluations on the social media.

III. HADOOP FRAMEWORK

Hadoop is open any one software used to process the Big Data. It is very famous used by administrations/researchers to analyze the Big Data. Hadoop is influenced by Google's structural design, Google File System and MapReduce. Hadoop procedures the large data sets in a spread calculating environment.

A. Hadoop contains of two main mechanisms:

1) Storing: The (HDFS)Hadoop Distributed File System: These are dispersed file system which brings responsibility taking and measured to run on creation hardware. HDFS brings high amount entree to application data and is suitable for requests that have vast data sets. HDFS can stock data over thousands of servers. HDFS has master/slave construction [5]. Files added to HDFS are separated into fixed-size masses. Mass size is configurable, but avoidances to 64 megabytes.
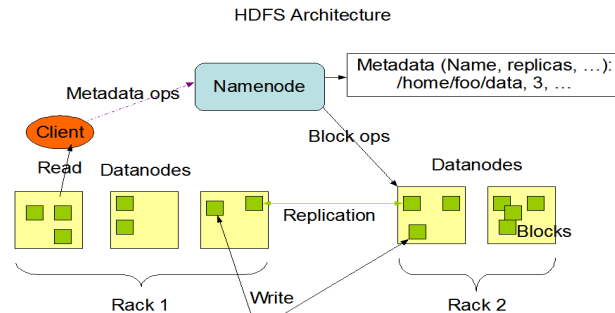
Fig-2: HDFS Blocks

2) Processing: MapReduce [4]: It is a software project classical presented by Google in 2004 for effortlessly writing applications which procedures enormous volume of data in equivalent on huge bunches of hardware in responsibility. This functions on huge data set, separations the problem and data sets and run it in equivalent way. Two utilities in MapReduce are as following:

a) Map –The Map function continually runs first naturally used to filter, transform, or parse the data. The outcome from Map develops the input to Reduce.

b) Reduce –The Reduce function is elective normally used to encapsulate data from the Mapfunction.
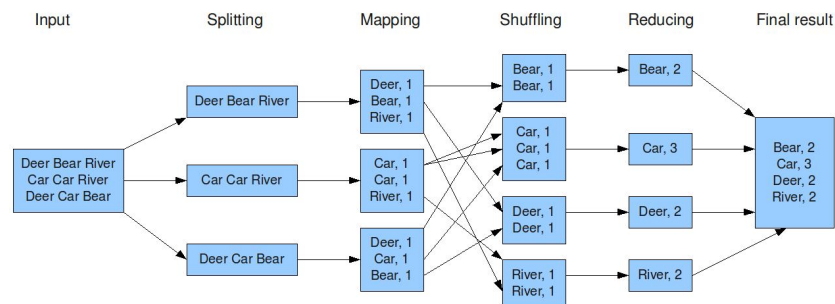

Fig-3: Map Reduce Processing

IV. USES IN DATA MINING

Big Data is very useful for Specialized Organizations as well as to the investigators to notice the data strategies in bigdata sets. Take out valuable information from vast amount of big data is called as Data Mining. There is vast amount of data on web in form of text, numbers, social media posts, images and videos. To examine this data to get useful information for security, health, education etc., we need to present new data mining method which is effective. There are numerous Data mining methods which can be used with big data, some of them are:

A. Arrangement Analysis: It is a organized process for gaining important information about data and metadata. Organization can also be used to bunch the data.

B. Group Analysis: It is the procedure to identify data sets that are similar to each other. This is done to get the similarities and variances within the data. For example clusters of consumers having similar favorites can be directed on social medial [6].

C. Evolution Analysis: Evolution Analysis is also called as inherent data mining mostly used to mine data from DNA sequences. But can be used in Banking, to forecast the Stock exchange by previous years' time series Data [7].

D. Outlier Analysis: Some explanations, documentations of substances are done which do not make a design in a Data Set. In medical and banking problems this is used.

V. LITERATURE REVIEWS

Anupam Jain, Rakhi N K and Ganesh Bagler studied Indian Recipes and discovered that the presence of certain spices makes a meal much less likely to contain ingredients with flavors in common. Jain and others chose an online website TarlaDalaa.com and downloaded more than 2500recipes for their research. 194 different ingredients were found in these recipes. Then they studied Network of links between these recipes. They found that Indian cuisine is characterized by strong negative food pairing that even higher than any before. According to them, "Our study reveals that spices occupy a unique position in the ingredient composition of Indian cuisine and play a major role in defining its characteristic profile". "Our study could potentially lead to methods for creating novel Indian signature recipes, healthy recipe alterations and recipe recommender systems," conclude Jain and mates [8,9].Vidyasagar S. D did a survey on Big Data and Hadoop system and found that organizations need to process and handle petabytes of Data sets in efficient and inexpensive manner. According to him if there is any node failure then we can lose some information. Hadoop is an Efficient, reliable, Open Source Apache License. Hadoop is used to deal with large data sets. Author explained its need, uses and application. Now days, Hadoop is playing an important role in Big Data. Vidyasagar S.D concluded that "Hadoop is designed to run on cheap commodity hardware, it automatically handles data replication and node failure, it does the hard work –you can focus on processing data, Cost Saving and efficient and reliable data processing"[10].

VI. CONCLUSION

In this review paper, an summary is delivered on BigData, Hadoop and applications in Data Mining. 4 V's of Big Data has been discussed. The summary to big data encounters is assumed and many scenarios and applications of big data has been considered. This paper defines the Hadoop Framework and its mechanisms HDFS and Map reduce. The Hadoop Circulated File System (HDFS) is a dispersed file system deliberate to run on produce hardware. Hadoop plays an important role in Big Data. This paper also emphases on current research he sin Data Mining and some literature reviews have also been considered.

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E-LEARNING: A SUCCESS MODEL

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ABSTRACT
The paper has observation and a vast experience achieved from development and delivery of online quantitative methods in the field of Business undergrads. Variety of issues pop-up during development of online courses from which an inspiration evolved in form of a model which is advanced to discuss the question of how to make the design, develop it and delivery it for successful e-learning initiatives based on concepts of a user information systems development pattern. The advantages of using the projected model for e-learning successful assessment is validated through almost four cycles of research. Conclusions from our practical study help to confirm the value of an action research policy for encouraging e-learning success. The paper moves with the conclusion on the merits of the model been put forth to further understanding on of how to define, how to assess, and promote e-learning success.

Keywords: Quantitative, Business undergrads, E-learning, Development, Initiatives, Successful assessment

I. INTRODUCTION
With today's modern era, the media of exchange of information has changed rapidly. All the communication happens over internet. Lot of research is done over as to let know –

The Study been conducted by Pew Internet and American Life Project found on June 2005 that 137 million Americans as to correct 68% of American grown person use the Internet. More about 94 million American people use the Internet for daily activities as chatting, surfing some information, e-mailing, reading news, getting latest updates on weather forecast, messaging and online banking. Online and internet has brought histrionic changes in the field of education as well. Report states as on 2003, 100% of primary and secondary schools in the U.S.A. had Internet access. Later on schools started training on the internet courses with the help of computer based instruction. Post this rest of the schools took initiative to take up the courses and enroll for the same. Most of the schools have registered for the courses and have prepared the plan to take up to next level. For same online courses having well organized and full stack knowledge are also been prepared. Statistics give us the growth of e-learning since 1990's till 2002:

ƒ 14% growth of the country's public 4-year organizations accessible distance learning progressions (from 78% in 1997-98 to 89% in 2000-01); [1]

ƒ A 123% growth in employments in college-level, credit-granting distance education progressions (from 1.3 million in 1997-1998 to 2.9 million in 2000-2001; with 82% of the 2.9 million at the undergraduate level in 2000-2001); [1]

ƒ A 45% growth in the percentage of associations using asynchronous Internet-based technologies as the most used distance learning technologies (from 60% in 1997-98 to 87% in 2000-01). [1]

All these statistics provide a very strong suggestion that Internet based developments have altered traditional in class education to a new way of learning called as ink-less class or e-learning, definite by the Instructional Technology Council (ITC, 1998) as well as the National Center for Education Statistics (Waits and Lewis, 2003) as the process which will deliver all the required or enquired information to the remote areas via use of Internet, intranet/extranet, audio, video, radio, satellite broadcast, pen drive, interactive/smart TV,CD-ROM. supplied into the robot's movement.

II. LITERATURE SURVEY
What are the major factors that contribute success in e-learning? There are many attempts been made to address this query have stemmed in a large volume of circumstantial studies measuring the success of e-learning initiatives on various measures such as learning benchmarks (Pittinsky & Chase, 2000), learning styles (Byrne, 2002), learning environment (Jung et al., 2002), learning outcomes (McClelland, 2001; Motiwallo & Tello, 2000; Teh, 1999), teaching practices (Savenye, et al., 2001; Owston & Wideman, 1998) and cost-benefits (Smith, 2001; Lawhead et al., 1997) [2]. Some of these studies are guidelines or "best practices" of e-learning that are developed from case studies (Byrne, 2002; Smith, 2001; Pittinsky & Chase, 2000; Lawhead et al., 1997) [3]. The most comprehensive guidelines are Pittinsky & Chase's 24 benchmarks in seven areas: institutional

support, course development, Chase, 2000) [4]. The remaining of the studies tried to discover a variety of factors and overriding variables that might cause an impact on the factors of success of e-learning. As a result, it is difficult to understand and separate the success factors of e-learning as there is an absence of agreement of what all factors constitutes success of e-learning. These apparently varied and confused opinions of best evaluation of e-learning are not astonishing given that research in this area is at its developmental stage with the recent acknowledgement of the educational potentials of Internet-based technologies. There is a need to combine and frame a full and complete model for evaluating e-learning. Another push back of these studies is that success measures are derived from assessing the results of the development effort only. There is also a need to enlarge the perspective of learning success from a result to a procedure perspective. This clubs together the main objective of this paper which needs to be addressed.

III. E-LEARNING SUCCESS MODEL

The proposed research paper proposes the implementation and use of an e-learning success model to take up with the design, development and delivery of e-learning creativities. Our e-learning success model is modified from DeLone and McLean's info systems success model (DeLone and McLean 2003) [5]. Composed from past works on info systems success there are six scopes of success factors which can be named as system quality, information quality, package superiority, use, user satisfaction and net benefit are known and merged into an overall success model. Not only did DeLone and McLean's model succeed in getting together a combined view of info systems achievement, but their prototypical also supported graft a procedure method to info structures success. DeLone and McLean (2003) recognized 16 experiential educations that cleansed provision for the families among the six dimensions of success factors. In addition, Rai et al., (2002) directed a confirmatory factor study and estimate of fit indices for the model. Their empirical evidence gave weight to the explanatory power of the model and authenticated the importance of using a multi-construct dependent measure of information systems success. The strength of viewing e-learning initiatives' development from an information systems viewpoint is supported by identifying that both of these efforts are fired by a common goal to attach a new growing ocean of technologies to meet the needs of their users.

In count, an alike journey has been undertaken by information systems researchers on their tries to identify factors that add to information systems success. Associated philosophies and information collected since the early 1980's can be helpful in causal to the chase of achievement in e-learning. Accordingly, a second objective of this paper is to inspect the applicability of an information systems success model to e-learning initiatives' development and assessment. [5]

Our success model of e-learning overt the process tactic to measuring and evaluating success. The model also includes success metrics developed exactly for the e-learning context being examined. The process method suggests that the complete achievement of e-learning creativities be contingent on the accomplishment of success at each of the three stages of e-learning systems development that is designing, delivery and result analysis. Achievement of the project phase is appraised along three achievement factor scopes which are quality of system, quality of information and quality of service. Success of the delivery stage is estimated along one success factor that is use of it. Lastly, feat of the output stage is evaluated along two success dimensions that stand like the user satisfaction and internet benefits. Victory of system design is essential to the victory of system delivery which in turn marks the success of system output. The success of system output however, has an influence on the success of following system delivery linking system delivery and final result stages.

IV. APPLICATIONS

- Giving the best customer service training by using e-learning

- Use of e-learning tools in sales training

- For effective use of online customer training

- E-learning solutions which can be utilized for safety training

- Industries can plan for new product customer training

- Making use of e-learning tools in healthcare training

- E-learning modules for educational training

- Provision of an online and communicating platform for students and staff for knowledge sharing on various different topics

- Platform for staff to make resources and sell them to earn money

- Can have Secure login portals to students and staff for seeing their course materials

- Medium and Q&A section for improving communication among staff and students

- A way for the students to purchase different course materials online

- A platform which supports languages such as English, Japanese & Spanish

V. CONCLUSIONS

This paper on research of success of e-learning changes us a step nearer in connecting the influence of Internet-based technologies to improve learning. We established the applicability of an e-learning success model to take the designing, development and distribution of e-learning through four action research cycles. A main contribution of this research is in advancing our understanding of on how to describe, measure and endorse e-learning success. To this end, success in e-learning is defined as a multi-faceted construct that can be measured along six sizes including quality of system, quality of information, quality of service, use of, satisfaction of user and internet benefits occurring in three stages. The complete achievement of e-learning can then be assessed for each dimension. A low mark for any success length means a deficiency in that area and efforts can be keen accordingly to correct the shortage. Though the findings of the current study are strained from one scholar quantitative methods course, there is no aim to hesitate that the e-learning success model future here cannot be applied to other self-controls and graduate level of courses as well. In count, to extend the current student-centered viewpoint, a lengthy e-learning success model is projected that gives gratitude to the role that students, teachers and institution play in creation of e-learning a success. Upcoming testing and validating of both the planned and the extended model will be valuable to the continued development of this important research area.

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PRACTICE & BARRIERS OF LEARNING WITH ICT FROM TEACHERS' PERCEPTIONS

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ABSTRACT

In this digital age, ICT use in the classroom has become significant for giving students prospects to learn with a greater pace and with technology to be with the world outside. Despite lots of budgeting and accommodation of funds; there are several barriers regarding appropriate use of Information and Communication Technologies. Therefore, it becomes important to study the issues related to the use of ICT so that these barriers can be removed and learning can become more effective. Therefore, the main resolution of this study is to analyses teachers' perceptions and blockades faced in using ICT tools in classrooms for learning. A qualitative research plan was used to assemble the information randomly from government school teachers of 10 schools of Delhi. Total main topics and barricades originate to be vital in using ICT tools by teachers were: restricted suitability and network connection, restricted technical support absence of authentic training, inadequate time and lack of training capability. This study delivers clear picture of possible barricades encountered by the teachers in using ICT in learning process. This study also helps in making appropriate changes in the school and classroom organization so that ICT can be better incorporated in the learning process.

Keywords: ICT, learning, teacher, barriers

INTRODUCTION

Education plays a very important role for societies. For every nation proving its population, the quality education is a foremost goal. In this era of technology and science; Process of learning changed a lot over time. From blackboard to smart boards, from notebooks to tablets. From computers to laptops etc. technology and science is everywhere. Information and communication technology is an inevitable part of most of the institution these days (Zhang& Aikman, 2007). Due to increasing importance of ICT in society it becomes important to identify the possible barriers and barriers for improving the quality of learning. Even though teachers acknowledge the importance of ICT in schools, they come to an end encountering barriers in adding technology into learning procedure (Balanskat, Blamire & kefala, 2006).

LITERATURE REVIEW

Barricades in exhausting ICT in education and learning Assimilating ICT into education and learning is a difficult procedure and some that may encounter a number of problems are recognized as "barriers" (Schoepp, 2005). The following are some of key barriers that have been recognized in the literature concerning teachers use of ICT tools in classroom.

Limited accessibility and network connection

There are number of studies that talk about the barriers faced by the teachers in incorporating ICT tools in the classroom's learning process research indicates some reasons for absence of access to technology. The unapproachability of ICT resources is not always merely due to unavailability of the hardware and software or further ICT materials in the schools. It may be the result of one number of factors such as poor resource organization, inappropriate software, poor quality hardware or lack of personal access for teachers. The barriers related to the accessibility of new technologies for teachers are widespread. Unfortunate access is one of the key barricade for ICT furnished learning, lack of access includes many things such as lack of access and lack of adequate material (Empirica's, 2006). Pelgrum (2001) explored practitioners' opinions from 26 nations on the main problems to ICT proposal in schools. There are barriers like insufficient number of software's, insufficient units, slow speed of systems, old systems and insufficient access to internet (Toprakci, 2006). Moreover, insufficient computer resources impede to technology use in the classrooms and it is one of the greatest barriers in integrating ICT into learning process (Albirini, 2006).

School with limited technical support

Unless and until good technical resources and school and classroom organisation would not be according to the ICT requirements these obstacles cannot be removed. (Lewis, 2003). Pelgrum (2001) found that in the view of primary and secondary teachers, one of the highest barricades to ICT use in education was lack of technical knowledge. In Sicilia's study

(2006), technical difficulties were establish to be a major obstacle for teachers. These technical obstacles included waiting for websites to open, failing to link to the Internet, printers not printing, Malfunctioning PCs, and educators needing to work on old PCs. "Technical barricades obstructed the smooth delivery of the lesson or the normal flow of the classroom activity" (Sicilia, 2006, p. 43).ICT integration in coaching desires a technician and if one is unavailable the absence of technical support can be an problem. Due to this deficiency of technical support or unsuitable lack of technical support ICT combination in learning procedure in schools is suffering.

Lack of effective training
The barriers most habitually denoted to in the literature is absence of functioning teaching (Albirini, 2006). Due to lack of effective raining teachers are unable to use ICT in the learning process.

Also, there were not sufficient training openings for teachers in using ICTs in a school environment (Pelgrum, 2001). In this regard there is a need to review teacher training curriculum. One of the highest three barriers to teachers' practice of ICT in training was the lack of preparation (Beggs, 2000). These were period for training, educational preparation, skills training, and an ICT use in primary teacher training. Consistently, recent research by relating to several subjects concluded that deficiency of training in digital knowledge, absence of educational and didactic training in how to use ICT in the laboratory and lack of training regarding technology use in particular subject areas were Problems to using new skills in classroom practice. Some of the studies reported similar reasons for failures in using educational technology: the weakness of teacher training in the use of computers, the use of a "delivery" instruction style instead of investment in modern technology , as well as the Lack of qualified teachers to use the technology confidently .Given that informative training to educators, instead of simply training them to use ICT tools, is an central issue argue that if instructors are to be unfair of the value of consuming ICT in their coaching, their preparation should focus on the educational questions.

Limited time
Many recent studies indicate tat the teachers want to use ICT tools in their classroom bur the school time table does not allow the teachers time. Fixed time tables and short periods work as barriers for using ICT into learning process. A significant number of researchers known time boundaries and the suffering in preparation of sufficient computer time for classes as a barricade to teachers' usage of Technology in their instruction. The most common barriers reported by all the teachers was the lack of time they had to explore the different internet sites, plan technology educations, or look at numerous aspects of educational software (sicilia, 2006).found that the problem of lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks, with some of the respondents Precisely stating which features of ICT require more time.

These contain the time needed to discover Internet advice, make Instructions, discover and repetition using the technology, transaction with technical problems, and receive satisfactory training.

Lack of teachers' competency
Lack of teachers' competency is directly related to the teachers' confidence. Several teachers lacked the skills and knowledge to practice computers and were unenthusiastic about the variations and integration of additional learning related with passing computers into their teaching practices. Present studies have shown that the level of this barrier diverges from nation to nation. In the developing countries, research Reported that teachers' deficiency in technical capability is a main barrier to their acceptance and adoption of ICT (Pelgrum, 2001). Another worldwide survey conducted by Pelgrum (2001), of nationwide illustrative samples of schools from 26 countries, found that teachers' lack of information and skills is a serious difficulty to using ICT in primary and secondary schools.

Objectives of the study
 To explore the barriers faced by the school teachers in using ICT tools for classroom learning.

 To identify school teacher perception in implementing ICT tools for learning in classroom.

Rationale of the study
According to Legatum Prosperity index 2017 India ranked 92 among 142 countries. Education is one of the vital resource in the development of a nation. Developing countries like India is still facing the barriers of proving the quality education at different level. Although the government has started various programmes for improving quality of education, quality is education is still missing on grass root levels of education. If looking at school education, technology is still missing in the process of learning. National Policy on ICT in School Education 2012 talks about improving excellence of school tutoring and wonderful potential of ICT for improving quality of education. This study focuses on identifying barriers and perceptions of teachers in using

ICT tools in the classroom for learning. The study gives clear view to the policy makers and curriculum designers for devising ways to overcome these barriers.

METHODOLOGY

Research Design

In this research, measureable procedure was used to collect and analyses the data obtained from all the respondents. A questionnaire was established and finalized previously being spread to the directed group of respondents. The questionnaire was designed specifically to address research objectives with respect to teachers' insight on use of ICT tools in schools and the barricades the face in integrating ICT into classroom learning.

Sample and sampling techniques

Sample include school teachers the sample was selected through random sampling from government schools. 10 schools were nominated through suitable sampling and school teachers were selected over purposive selection.

Tools

The study used the questionnaire for data collection form the sample. The questionnaire had open -ended questions with respect to barriers for integrating ICT tools into learning process.

Procedure for data collection

Data collection defines the process for collecting data by the Investigator. The questionnaire has been distributed to the teachers. They were given one week to fill in the questionnaire and return it to the researcher. All of the participants volunteered themselves in the research. Some questionnaires were with lost information that the details could not be used as a influence in this research. Finally, 100questionnaires were returned to the researchers for data analysis.

RESULTS

Perceptions related to the use of ICT tools in the classroom foe teaching and learning were found as follows:

- ✓ Students concentrate more on their learning

- ✓ Students work harder

- ✓ Classroom climate become more productive

- ✓ Classroom climate become less disturbing as students engage more in their work

- ✓ Students feel more autonomous in their learning

- ✓ ICT facilitates collaborative work among the students

- ✓ Students understood more easily what they learn Barriers in implementing ICT tools in teaching and learning were found as follows

- ✓ Insufficient number of computers

- ✓ Insufficient number of internet connected computers

- ✓ School computers out of order and needing repair

- ✓ Lack of adequate skills of teachers

- ✓ Insufficient technical support for teachers

- ✓ Insufficient pedagogical support for teachers

- ✓ Lack of adequate content and material for teachers

- ✓ Lack of content in national language

- ✓ School time organization

- ✓ School space organization

- ✓ Most parents not in favor of ICT

- ✓ Pressure to prepare students for exams and tests

- ✓ Too difficult to integrate ICT use into curriculum

- ✓ Unaware of benefit to use ICT in the classroom

DISCUSSION &ANALYSIS

This study is related to identifying perceptions of schoolteachers in implementing ICT tools in the learning process in the classroom. furthermore, it also examines the barriers in using ICT tools for learning.Based on the study the findings indicate that teachers' perceptions were based on ICT's advantages on the learning process. Here also findings reveal that using ICT enables classroom environment more interactive as students participated more when teachers use ICT tools for the teaching. Students actively engage in the discussion. Teachers also said that integrating ICT provides students greater space for learning at their own pace. As students can adjust the slides according to their level of competence. ICT also provides enough space for the students who are differently. A student with hearing impairment can use audio based material for his or her learning.

CONCLUSION

Incorporating ICT tools into the laboratory will give operative products. As the findings suggest that students concentrate more on their learning, students are keener to work hard and ICT helps students understand more easily. Moreover, it gives scholars more autonomy used for their knowledge. But for this to be accomplished administrators should demonstrate the importance for technology integration by providing incentives to teachers (Bitner & Bitner, 2002). Further, school organisation has to make complex sets of changes for ICT to be meaningfully support student's learning (Light, 2009).

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ROLE OF ICT IN HIGHER EDUCATION

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ROLE OF ICT IN HIGHER EDUCATION

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ABSTRACT

Education is a very informally concerned with activity and quality education has traditionally been related with strong teachers having high degrees of individual contact with learners. ICT has become an integral part of today's teaching learning process. Effective use of technology can inspire students, make our classes more active and stimulating and renew teacher interest as they learn new skills and techniques. The role of ICT in higher education is becoming more and more significant and this importance will continue to raise and develop in 21st century. The use of ICT in education not only progresses classroom teaching education process, but also delivers the facility of e-learning. The acceptance and use of ICTs in education have a positive impact teaching, learning and research. The use of ICT will not only enhance learning environment but also prepare next generation for future lives and careers .This paper highlight the various impacts of ICT on higher education and explores various potential future developments.

Keywords: Information and Communication Technology, ICT initiatives, Higher Education

INTRODUCTION

According to Dr. Babasaheb Ambedkar (Bombay ,Legislative council Debate,27 July,1927), " The university is an equipment whereby education amenities are provided to all those who are intellectually capable of using those facilities to be the best advantages but who cannot avail themselves of those facilities for want of funds or for other handicaps in life". The people in university education shape the behavior; minds and the social and human values of the student community. Effective use of technology can motivate students, make our classes more energetic and motivating and renew teacher eagerness as they learn new skills and techniques. Technology is also serving the students to understand any intellectual notions clearly. ICT has become an integral part of today's teaching-learning process. The integration of ICTs in teaching in general and teacher education in specific is the need of the day. The use of ICTs can make considerable changes both for teaching and preparation mainly in two ways; firstly, the rich representation of information changes learner's perception and understanding of the context. Secondly; the vast distribution and easy process access to information can change relationships between teachers and teachers. ICT can also provide powerful support for educational innovation. In the last few decades, we have seen an increasing number of youngsters gaining access to higher education. This marvel reproduces a trend at a global level ,which is largely due to the democratization and development of societies, the improvement of living conditions and structures ,the demand for a more highly qualified performance both in professions and citizenships we have, therefore witnessed a change both in terms of quality as well as quality in the student population ,reflected in the gradual loss of the elitist and official atmosphere of higher education through the admission of individuals from all communal classes(Soares and Almeida,2002). "The emancipatory and transformative abilities of the ICT in higher education in India has helped the evolution of a country's obligation of higher education through part-time and distance learning schemes. It can be used as a tool to overawe the matters of cost, less number of teachers and poor quality of education as well as overcome time and distance barriers."(MC Gorry, 2002)

REVIEW OF RELATED LITERATURE

Ozdmemir and Abrevaya (2007) asserted that ICT is reducing the cost per students and expanding the enrolments and makes the provisions for employers and supports enduring learners. Lalitbhushan S Waghmare, et-al (2014) studied "Role of Information and communication technology in Higher education: apprentices viewpoint in country medical schools". They decided that there is a need to predict the role of technology in education and take suitable events to equip the stakeholders for passable and best application of the same. Uttam kr Pegu studied "Information and communication technology in higher education in India: challenges and opportunities" (2014). The study revealed that ICT enabled education will ultimately lead to the democratization of education and it has the potential for transforming higher education in India. Mahisa, Anju studied "The role of ICT in higher education in India" (2014) .The study exposed that ICT play energetic role as a strong agent for change among many educational practices.

Major ICT initiatives in Higher Education Various initiatives in the recent past portrayed the significant role that ICT plays in the realm of higher education development. Numerous projects have reduced the costs, and it also has enlarged transparency. India has taken up main ingenuities in terms of content distribution and furthering education through Information and Communication technology. For example Gyan Darshan was launched in 2000 in broadcast educational programs for school kids, university students and adults. Similarly Gyan Vani was another such important step with broadcast programs contributed by institution such as IGNOU and IITs .Under the UGC country wise classroom intiative, education programs are broadcast on Gyan Darshan and Doordarshan national channel every day. E-Gyankosh which aims at preserving digital learning resources is a knowledge repository launched by IGNOU in 2005.Almost 95% of IGNOU's printed material has been digitized by uploaded on the repository. The national programme for technology enhanced learning (NPTEL) propelled in 2001 is another combined initiative of IITS and IISC which education over technology. Sristi, the society for research and initiatives for sustainable technologies and institutions is facilitating the use of ICT for strengthening the capacity of grass roots inventors, innovations and entrepreneurs busy in preserving bio variety and developing ecofriendly solutions to local problems.

BENEFITS OF ICT IN HIGHER EDUCATION
Use of ICT in education presents a unique occasion to solve assembly of challenges rapidly as well as at low rate. Here is an overview of advantages of an ICT:-

1.1 Inspiring Factor:-
The internet can act as a motivating tool for many students. Young people are very captivated with technology. Educators must capitalize on this interest excitement and enthusiasm about the Internet for the purpose enhancing learning. For already enthusiastic learners, the internet provides them with additional learning activities not readily available in the classroom.

1.2 Fast communication:-
The internet promotes fast communication across geographical barriers. Students can join cooperative projects that include students from different states, countries or continents.

1.3 co-operative learning:-
The internet facilitates co-operative learning, encourages dialogue and creates a more engaging classroom. For example, a LISTER V for our class will allow students to get involved in class discussions through e-mails in a way not possible within four walls of classroom.

1.4 Locating Research resources:-
Apart from announcement, research is what takes many people to the internet. There are many properties on the internet than the school library can provide.

1.5 Obtaining varied writing skills:-
If students are mandatory to publish their work on the internet, they have to develop hypertext skills. These services help students gain knowledge in non sequential writings.

RECOMMENDATIONS
The quality of programs as measured by fitness for purpose should continue to grow, if the stakeholders perceive the various educational programs as meeting their needs and expectations. ICTs serve to deliver the means for events to realize the possible in human resources. Furthermore, satisfactory funds must be providing to initiate, grow, indorse, review and implement ICT policies in the educational sector to bring about an development on ICT application, through computer apprentices courses taught in vigerian tertiary institutions. In this period of economic recession, the price of ICT equipment and materials will continue to the astronomical. It develops highly authoritative for all shareholders of education to entice industrial formations, politicians, big businessman and entrepreneurs, non-governmental organizations and the community at large to assist the institutions in the provision of ICT equipment and materials and well finished computer laboratories.

CONCLUSION
ICT play vital role as a strong agent for change among many educational practices i,e conducting online exam, pay online fees, accessing online books and journals. Thus ICT in Higher education improves teaching learning process, provides the facility of online learning to thousands to thousands of learners who cannot avail the benefits of higher education due to several checks, such a time, cost, geographical location etc. Once again ICT serve to provide the means for much of this activity to realize the potential it holds.

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ROLE AND APPLICATIONS OF ICT IN DEVELOPMENT OF RURAL AREAS

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ROLE AND APPLICATIONS OF ICT IN DEVELOPMENT OF RURAL AREAS

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ABSTRACT

India is a tremendously varied country with a number of differences and divides and rural-urban divide is on among many such divides. About 68% of the Indian populace lives in rural regions and is reliant on mostly on a harassed agricultural economy. The rural-urban share is as much a socio-economic and political divide as it is an environmental one. Rural areas signify a traditional, unskilled or semi-skilled, deficiency troubled and mostly agricultural dependent population. India being a developing nation can't rely on its urban manufacturing and facilities sector by yourself and rural areas must see development.

ICT can be an informal set of tools that can performance as a originator for the independent and maintainable development of rural India. ICT can be used in e-governance i.e. regulation, capacity building, and policymaking thus, leading to the contribution of rural people in democracy and judgment making. It can be used in disaster management and early warning systems at this period of time when the whole world is facing challenges from climate change. Environmentally sustainable farming solutions and information about the market price volatility can be made available to rural farmers in real time. Not only in the farming segment but ICT can be used also for social and administrative growth.

ICT can assist in the financial presence and hence in justifying food subventions. This presently is being indorsed under JAM (Jandhan Aadhar Mobile) trinity. ICT is expected to help in removing identity frauds, wastage, leakage and delays in the PDS system. BPL populace can be knowledgeable over SMSs about the entrance of food ounces. This will ensure accountability, transparency and grievance redressal.

ICT can also be used as an significant base for political improvements not only in urban but also in rural regions. It can bring rebellion by cashless transactions thus saving the time of people and reducing chance costs. It can become a tool for women authorization by endorsing their products worldwide through e-commerce. ICT is confidently a armament to battle rising challenges in urban regions and hereafter, making them for an unpredictable global change.

Keywords: ICT, Capacity Building, E-Governance, Cashless Transactions, Agrarian Economy, etc.

INTRODUCTION

Urban region is a geographic region that has limited homes or other constructions and is situated outside Town and Cities. More Than 68% of Indian Populace alive in urban regions and is dependent on cultivation. They get their living by making and preserving the crops. Their primary source of wealth is cultivating the land.

ICT (Information and Communication Technology) is a set of tools that are used in rural areas for the development of villagers and farmers. ICT include Computer Hardware, Computer Software, Radio, Television, Mobile Phones, Digital Camera, Wi-Fi, Projectors and other application Software's that are used for exchanging and sharing information with each other.

ICT delivers a stage in which all the growers/villagers can get their living effortlessly

Without degenerative of their time, harvests and other crops. Agriculturalists who do not have proper information of farming of harvests, pits, and spraying should suffer from many intimidations from poor Earths, Lacks and Vermin.

ICT provide a mechanism in which all the government Sponsored Schemes made for farmers

/Villagers should be implemented So that farmers can avail full benefits of such arrangements i: e PMMY(Pardhan Mantri Awas Yojna) , PMMY (Pardhan Mantri Mudra Yojna), KCC(Kissan Credit Card) ,SGSY,SC/ST/OBC and DRI (Differential Rate of Interest).With the help of ICT farmers can avail credit services from the bank/economic organizations with a very low rate of interest to improve their goods and humanizing the harvests.

ICT can assistance in commercial Presence and hence in justifying of food subventions. ICT deliver online Job card confirmation and establish seminars/camps to alert the agriculturalists/Villagers for the same. ICT used a

procedure/application called JEO-TAGG which is used to evade the deceit in expenses of MGNREGA and SBM.

ICT can act as tool for women empowerment by promoting their products worldwide through E-Commerce. ICT deliver all the banking services i: e Mobile Banking, E-Banking, E-Billing and other mobile Applications such as PAYTM, Airtel Money, State Bank Buddy, JKBank Mpay for the agriculturalists, So that their time and cash saved and all the dealings /Renews should takes place at their homes without visiting to the Bank.

ICT deliver general info of weather conditions and environment change to agriculturalists during their period of harvests So that best instrument for vermin, Scarcities, Cloud Burst, and other natural disasters should be framed and implemented.

ROLE OF ICT IN RURAL DEVELOPMENT

As our country is a emerging country and more than 68% of populace exist in in urban regions so we must emphasis on it. Since this is the digital age and to implement the Digitalization we must use some skill. ICT (Information and Communication Technology) plays an significant part in overall growth of urban regions by improving the farming business and providing numerous facilities at the door steps and allowing the farmers to avail all the facilities, schemes and policies framed by the government. The ICT helps in organizing numerous exercise and consciousness sites by using Slide Projectors/picture performance to conscious the villagers/Agriculturalists alive in urban regions about the good timing for pits sowing, weather change, pests, minerals and fertilizers. ICT also deliver the next amenities to agriculturalists in urban areas:

ICT provides the online services to check the food and gas subsidies.

ICT deliver the online confirmation of works selected/completed under

MGNREGA arrangements via digital cameras and numerous mobile applications so that no   fake payments are released.

ICT provide the online transaction to farmers/Villagers over Business Journalists in the villages without visiting the Backing Organizations.

ICT is used to deliver the E-Governance facility.

ICT is used to deliver the E-Learning Facility to improve overall teaching learning process.

ICT also deliver the radio facility in which numerous government Policies /services will be announced as the ignorant villagers, agriculturists and farmers are familiar of radio listening during working.

ICT delivers the info to villagers in their local language so that maximum number of persons conscious of and avail the welfares.

ICT acts as an important tool for women empowerment by promoting their products worldwide through E-Commerce.

ICT also helps in removing the individuality robberies and deceptions, expenditure, leakage, and delays in public distribution system.

With the use of ICT the land for building construction is properly checked i: e whether the land is earthquake prone or not.

With the use of ICT, BPL public can be knowledgeable through SMS, s about the Influx of food ounces.

With the use of ICT, E-PDS scheme is resulting to remove the individuality deceptions.

ROLE OF ICT IN FORESTS

ICT plays a vital role in protecting forests. With the use of ICT CCTV cameras connected in which there is a general control on deforestation, trafficking of Lumbers and Kindling's and Infringement of forest lands. ICT provides GPS System which help in tracking paths in dense forest areas.

ROLE OF ICT IN EDUCATION

The use of PCs and internet for ornamental the excellence of teaching by making learning more pertinent to life has been seen as perfect by instructive institutions. The persons alive in urban areas are now in the age of electric media. Handling of big amounts of information and interactive the same to the agriculturalists/villagers alive in urban areas is the biggest need at this time.

ICT is not limited to PCs or internet. ICT range from the use of FM radio to the use of satellite for communication. With the use of ICT, the education will be more operative and learning will be more new. With the help of ICT, the scholars get the online education materials, lectures, records from all over of the world within no time. For this, ICT has been considered as an real tool for teaching, learning and making instructive procedure more expressive.

ROLE OF ICT IN HEALTH
ICT can play a vital role in improving health care for peoples living in rural areas and providing various medical facilities at their doorstep without visiting very high and costly Hospitals. With the use of ICT, Doctors/Physicians working in rural hospitals are able to diagnose the patients using his Medical Training and Internet Connection. By using ICT a neonatologist who transmits CT Scans, Ultrasound, ECG and other medical images by e-mail to various other Doctors around the world to help in diagnosing and treating premature newborns who helped him to save various lives.

By giving crisp and more composed methods for getting to, conveying and putting away data, ICT can help bridge the information divides that have emerged in the health sector in developing countries between health professionals and the communities they serve.

With the expansion of databases and other applications, ICT also offer the competence to develop health system efficiencies and avoid medical errors. ICT is used to deliver the E-health Facility. With the use of ICT, Patients are also inform through the SMS /e-mail that there medical test reports are ready.

ROLE OF ICT IN AGRICULTURE
ICT in agriculture offers an extensive collection of solutions to some agricultural challenges. It is an developing field concentrating on the improvement of agrarian and rural growth through better info and message procedures. E-Agriculture contains the overall outline, change, assessment and operation of creative methods to utilize ICT in rural space, with vital concentrate on agricultural.

The use of ICT as a tool of interference in farming is becoming progressively general.

Many mobile applications intended and industrialized in area language to break the literateness fence and bring the information in most simple manner. With the use of ICT, the chasing of cattle's is easier. Each cattle is tagged with the use of RFID (Radio Frequency Identification) knowledge for easier ID, provided that access to applicable data such as bearer's site, name of Breeder, source of livestock, sex and date of drive. This also delivers development in regulatory illness outbreaks in cattle. Adaptable agricultural is a part of E-Agriculture and dense remote devices have provoked the making of progression managements and application that are utilized inside the urban esteem Series in the shaped nations. In farming, mobile technology is more usually used to supply facilities for creators and dealers.

In farming the use of worldwide positioning system delivers welfares in geo-fencing, map making and measuring. With the use of GPS, farmers/villagers can crop simple yet highly precise digitized map without the help of mapmaker.

To stop an animal from itinerant into farmhouses and destroying valuable harvests was to tag the animals with a device that directs a text message when it marks a geo-fence.

With the use of SMS and GPS, the animals can wander freely and the establishments are warned whenever they are near the farmhouse. Geographic information systems (GIS) are lengthily used in agriculture particularly in precision agricultural. By using GPS on tractors, the whole procedure from flattening the field to establishing the seed to watering the harvest has been much more effective. GPS based applications are being applied for nurture spacing, field mapping, earth exploring, tractor way and earth examining. GIS is used in decision making such as what to vegetable and where to herbal using past data and sample.

ROLE OF ICT IN WEATHER CHANGE
With the use of ICT, climate estimating offices use mass media to notify persons on weather updates. It also alert the persons about the weather dangers, numerous checking devices such as climate satellites, climate radars and wind profilers are used to monitor the climate and weather system that may affect the rural areas. Earth simulators are used to model climate change and weather conditions. In various rural areas, where flood is major concern of farmers, some mobile services are used for flood management.

These mobile services are used for weather information. ICT helps agriculturalists by notifying them about the use of flood water for harvest manufacture through simple text messages. The text messages also caution the

agriculturalists about the flood events which would help them make their arenas and direct on how to alleviate flood injury. ICT also helps for tragedy management, release processes and providing early notices.

FUTURE SCOPE OF ICT

Holiday business is the sector that has option of being helped from ICT.ICT can be an significant medium for emerging travel market and educating local livings. ICT will play an significant role in bringing both gender equality to minimize the rising gender gap.

ICT will also deliver women new occasions that include maintainable living and financial authorization. Social networking sites obtain lot of care and by using social media tools to connect with persons crossways the world and the businesspersons/women's indorse their business worldwide by saving time and money.

ICT can play a role to allow communication and interface using mobile telephony, to development cooperation with wider networks of investors towards actions, through social networking tools. ICT should also devise a device or strategy to conscious the peoples about the new knowledges for their upliftment and healthier upcoming as many peoples in urban regions still unaware of the latest knowledges.

By adopting the internet of things and Big data Analytics in agriculture i:e RFID, Remote

Sensing, GPS, and GIS, the information needed for refining land and water use can be composed. Agriculturalists can accomplish extra welfares by joining enhanced operation of composts and other soil amendments, determining the economic the threshold for treating bother and wildflower plagues, and defensive usual resources for upcoming use. Agriculturalists and farming facility providers can envisage even further developments as GPS continues to update.

CONCLUSION

ICT is a set of tools that can act as a springboard for the democratic and sustainable development of rural India. ICT can be used for social, economic and potential development with particular emphasis on helping poor and meaningful people and communities. ICT can be used in egovernance, e- commerce, e-learning, eagriculture, e-pds, capacity building, policy making and decision making. ICT advancement incorporate many sorts of

Substance and managements, spreading from broadcast communications, for example, voice information and media administrations to particular applications, for example, managing an account, training or wellbeing to the usage of electronic government.

The objective of ICT is to utilize strong minimal effort advancements that can be accessible for poor and low pay groups the world over. ICT similarly uses progressive mobile phones about the rank of harvests and water system outline remotely. ICT can similarly use for making drives.

ICT helps in refining literateness rates by using mobile phones and SMS and by giving disabled people a influential tool in their fight to gain employment. ICT deliver numerous opportunities in education and employment through training to unskilled women's /farmers. ICT tools are developing as an area of cumulative interest. ICT helps in financial presence and hence in justifying of food subsidies. Rural peoples are most important properties of India and the Indian economy is the agricultural one, so effective use of ICT can bring rural communities closer to global economic system to further improve social and economic benefits. ICT is surely a weapon to fight growing challenges in rural areas and hence preparing them for an unpredictable global change.

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Acceptation of Big Data and Analysis of Student Achievement in Higher Education

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Acceptation of Big Data and Analysis of Student Achievement in Higher Education

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Introduction (Big Data)

Big data is a combination of analytical, semi structured and indeterminate data collected by Institution that can be stored for information and used in machine learning projects, anticipating modelling and other advanced analytics applications. for instant education chief, one ongoing protest is to provide a quality learning experience for students while keeping the price of teaching affordable. Using the appropriate data, in the proper way, can help institutions and leaders keep up with this current challenge. As Universities of higher education collects large amount of data about their students, and as students' record databases have widen more elaborated and available – we are entering a new span of using data to advance the student success, streamline processes, and more adequately handle assets. Once the data is figure out it ensures better student placing processes, exact admission budget, and early warning systems that identify and assist students at-risk of failing or dropping out.

Objectives

The main goal of this paper is to help the Individual Learners to identify their Flaw and Achievements, to help Mentors to properly identify their Coaching Practices and to help the Administrators to identify Confinement, progress and Achievement factors of the Organization.

Analysis in Higher Education

Education Academic analysis will be a crucial part of the future. It covers all the activities in higher education involving administration, research, resource allocation and management. Big data influence big hope for higher education some of which are pursuing to be achieved while rest are the areas to be analysed. It is for the sake of the several assets provided by the big data analysis. The higher education scanning and assessment are upper class and can be mostly split into two categories. The first category is to present the quality of education and teaching through information technology and the second category is nothing but the main frame of higher education forming a clear-cut relation among schools, teachers and association. Institutions are competing in analytics not because they can – Nowadays current business is flooded with data and data crunchers, but also because they should. Many organizations including institutions of higher education are awash with a lot of data and it has pinched interest in analysis. Quantitative analysis and statistical analysis have become prominent in analysis and big data research techniques.

The Big Data analysis lifecycle can be splited into the following nine phases.

- Business Case Calculation
- Data Recognition
- Data Recovery & Filtering
- Data Abstraction
- Data Authorisation & Cleansing
- Data Gathering & Representation
- Data Analysis
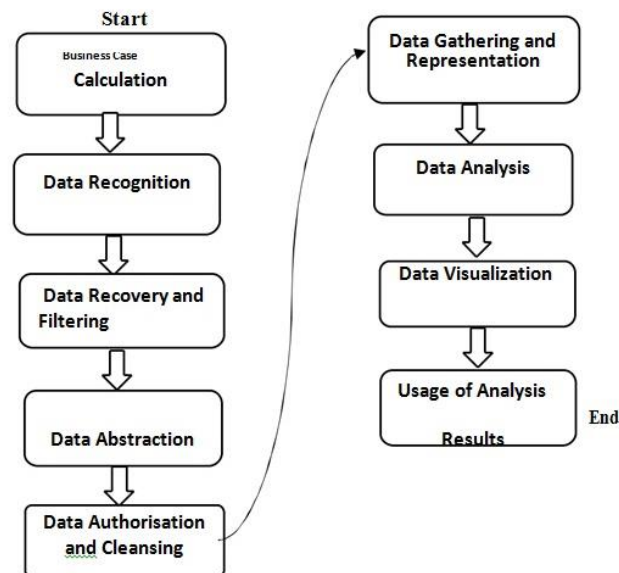- Data Visualization
- Usage of Analysis Result

Fig: BIG DATA ANALYSIS LIFECYCLE PHASES

The Data Analysis phase shown in above Figure is dedicated to carry out the physical analysis task, which commonly involves one or more types of analysis. This phase can be constant in nature, especially if the data analysis is exploratory, in which case analysis is duplicated until the convenient Arrangement or Interrelationship is disclosed

IV.Conclusions

It is found that data and analysis can help Educational Institution to a better understanding among themselves, learned and proper knowledge of their own institutions. It's Important to build the strong university of the future. All Institutions should consider recommending an appropriate learning analysis system to Boost students support and Achievement. Big Data Analysis is a trend that will boost extensively in the coming span and will have a vast brunt on any educational institution due to the many asset. Institutions should diagnose appropriate big data analytics gadget to accumulate the benefits from the giant bulk of data and how Big Data Analytics gadgets.

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Introduction

Decision support mentors are in employment or decision support systems (DSS) are executed in order to support supervisory in an institute. This assumes that the way in which decision-making actually takes place in the reminder is implicit. There are various prototypes of management. characters with a background in measurement would commonly are exposed to rational decision-making policies, like Simon's (1977) four-step call model that comes with aptitude, design, miscellany and review This process is often convoyed by the calculation of the subjective expected utility (SEU) or alternative tactic of level routes to make straightforward electing the best preference. It has been detected that the amount produced of decision support assignments, often packaged as decision support structures, are not used to support decision-making in the way that was future. This could imply some consistency between the administrative route that is being false or modelled and the way decision-making occurs in practice. In order to test assumptions about decision-making and the use of decision support know-how, the texts on decision-making was malicious and compared to the way that a number of managers make decisions in run through.

The red-top starts with the introduction of few theoretic models of decision-making. Ahead this, the results from seminars with a few plain decision-makers on the topic of decision-making are discussed. A comparison is done between the imaginary models and the scope to which they reflect the actual practices and sophisticated about decision-making by the decision-makers. Subsequently, general insights gained from the dialogs are shortened, such as on the topic of the process of decision-making and how to influence other decision-makers. Other topics that collect particular devotion are the use of technology in decision-making and the routine of order sustenance tools.

Various models of decision-making

Different visions and ideas of decision-making may be initiate in the collected works. The succeeding list of visions, auxiliary theories and simulations is based upon classes provided by Keen and Scott Morton (1978), Huber (1981), and Das and Teng (1999). Das and Teng's list is, by the situation, a meta-classification. The last two items point out in the list below, namely naturalistic decision-making and the multiple angles methodology, are relatively new and did not perform in the revealed categorisations 2 few models of supervisory.

Various sights and theories of decision-making may be establish in the mechanism .Das and Tang's list is, by itself, a meta-classification. The last two items mentioned in the list below, namely lifelike decision-making and the multiple perceptions methodology, are relative The behind list of views, supporting notions and models is based upon categorizations provided by Keen and Scott Morton (1978), Huber (1981), and Das and Teng (1999).Das and Teng'sly new and did not appear in the bring up labelling.

The rational model

The balanced manager view assumes a balanced and totally informed decision-maker ("economic man") as labelled by neoclassical microeconomic theory around the middle of the preceding century. The process of balanced executive comprises a number of steps, such as those given by Simon (1977):

Intelligence: finding instances for making a decision;

Design: inventing, evolving and analyzing possible courses of action;

Choice: selecting a specific course of action from those offered; and

Review: evaluating past choices.

In traditional or flawless reasonableness, methods of decision analysis are used to accord numerical standards or services to each of the alternatives during the "choice" phase. The alternative with the highest value (or maximum subjective expected utility) is selected. When using the rational model in this fashion, it is expected that managers [11]:

"know of all possible alternatives;

know the significances of applying each alternative;

have a well-organized set of partialities for these significances; and

have the computational ability to compare imports and to determine which is chosen."

The model of bounded rationality

The "amuse," process-oriented view is predicated essentially on Simon's (1979) work on confined reasonableness, admitting that the balanced manager doesn't always have complete information, which optimal choices are not always compulsory. Rendering to Simon (as quoted by Chase et al. (1998)), "The soul normal act is formed by a

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clippers whose two edge are the gathering of task environments and therefore the computational abilities of the actor." These scissors cut the problem space into a much smaller area that is viable to search. Bounded reasonableness is considered by the activities of searching and satisficing. Alternatives are searched for and evaluated chronologically. If an alternative satisfies certain implicitly or explicitly stated minimum conditions, it is said to "satisfice" and the search is done. The process of searching might be made easier by the identification of monotonies in the task environment. Although Simon has been highly acclaimed for the idea of bounded reasonableness, it still describes (albeit constrained) normal behavior. For this reason, variety of researchers, like

Huber (1981) and Das and Teng (1999), don't differentiate between perfect and bounded reasonableness in their classification of decision-making models.

The instrumentalist view

The logical instrumentalist view involves a step-by-step process of incremental actions and keeps the strategy hospital adjustment. Under Lindblom's (1959) disjointed instrumentalism ("muddling through") marginal, feasible changes are made, performing from the established order to unravel existing problems rather than towards the goals. Another investigators describe a process of "spoiling with a purpose" [6].

The administrative procedures view

The administrative events view seeks to understand decisions as the output of standard operating procedures invoked by administrative subunits. March (1988) contributed to this theory. Huber [7] named this vision the "program model," representing that the results are pre-programmed in current procedures as well as the routinized thinking of the people involved. Das and Teng (1999) mention to it as the "avoidance mode" which views executive as a systematic process aimed at maintaining the status quo at the cost of invention. On the further hand, krabuanrat and Phelps (1998) amend this view during a positive light, exactly because the use of codified administrative experience.

The political view

The political opinion sees executive as a personalized trading process, driven by the agendas of participants rather than rational processes. People differ on the administrative goals, values and the similar information. The executive process never ends, but remains a continuous battle among different coalitions. After one group wins a round of the battle, other parties might recover or become even more determined to win the next round. Influence and power is employed in a deliberate manner and to further self-interest. The aim of the unions are defined by self-interest rather than by what is good for the administration as a whole. Select (1981) is one of the key contributors on politics and power in decision-making.

TRIPARTITE: DECISION-MAKING

While the court regularly exercises its statutory power to get skilled medical help, its decision-making is predicated on a three-way legal model, instead of a medical model. court selections square measure created by three-member panels, consisting of a member illustrative of staff, a member representative of employers, and a impartial vice chair.18 Panel members square measure lay adjudicators, within the sense that they're not appointed for his or her medical experience. However, in the course of their adjudicative activities, panel members are frequently exposed to healing evidence and theory, and develop expertise in assessing and weighing such evidence, and in directing further medical and scientific investigations. The tripartite structure provides the Hearing with a number of advantages in decision-making. While all adjudicators are required by law to render impartial decisions, representative members contribute a practical viewpoint and experience in the workplace, as well as a familiarity with issues of current concern to their communities.

The Tribunal's Members' Code of Specialized Responsibility19 helps certify that the Board gets the full benefit of this tripartite structure. Members are committed to deciding each case on the real merits and justice based on the law and the evidence received in that case. They are also committed to approaching appeals with an open mind and to discussing issues fully with their panel colleagues. Considerable time is spent in assembly and in the drafting process trying to resolve issues of concern to all members. Where agreement is not possible, a dissent explaining the reasons for variance is written.

The panel members' commitment to these standards has produced a working environment where all three members fund to a decision as adjudicators, not as partisan advocates. The Tribunal refers towards this form of tripartism as "collegial tripartism".

Models and Modes of Decision-Making

Authoritarian schemes of decision construction say how judgments ought to be made if the decision producer requests to survey certain moralities of rationality (e.g., the attitude of transitivity). These schemes are part of controlling skill. They provide formal rules and procedures for structuring and processing the relevant information and, thus, provide support in complex decision situations. Descriptive theories aim to show how societies essentially make resolutions. Since the rational capacity is narrow, or at least is not everlastingly used capably, actual judgments are often suboptimal equaled with the decisions approved by strict schemes? The first eloquent model of decision assembly under incredibility was

offered by Edwards in 1954. The subjective equivalent utility (SEU) model assumes that folks attempt to maximize their subjectively expected utility. The SEU of an option is that the sum of the utilities of its consequences, weighted by the subjective probabilities of their occurrence. The choice maker is assumed to settle on the choice with the very best SEU value. In 1979, Kahn man and Tversky proposed prospect theory (PT) as an updated version of the SEU model. The idea sticks to the idea that decisions are determined by the values and probabilities of their consequences but takes under consideration the various observations of decision-making behaviors that don't concur with the SEU model. PT has convert identical persuasive, particularly within the economic and medical domain. In 2002, Kahn man was awarded the Nobel Award in financial side, primarily for this theory (Tversky had died in 1996). The essential elements of PT are the worth function and therefore the decision weight function. With reference to the worth factor, PT assumes that folks mentally code the potential outcomes of options in reference to a point of reference , that is, the established order or the aspiration level. Outcomes above the point of reference are coded as gains and outcomes below the point of reference are coded as losses. Gains and losses are evaluated consistent with a worth function that has two properties. First, the function is concave over gains and convex over losses; that's, additional gains please less, and extra losses hurt less. Second, the function is steeper over losses than over gains; that's , a loss of $100 hurts quite a gain of $100 pleases With reference to the probability factor, PT assumes that subjective possibilities of outcomes are transformed into weights that represent the importance of the occurrence of the result . As an example, many of us weigh the transition from a 0.99 probability to certainty (1.00) as heavier than a transition from a 0.41 probability to a 0.42 probability. PT provides explanations for variety of empirical phenomena that always are considered as irrationalities or anomalies, particularly in economics. Examples include the finding that preferences aren't invariant with reference to their description (i.e., framing effect) and therefore the finding that investors sell winner stocks too fast and hold loser stocks too long (i.e., disposition effect).An alternative theory, image theory, was proposed in 1990 by Beach. Image theory has become very popular in super vision and business schools. Beach assumed that people apply an optimizing policy like the one proposed in PT, only under very special conditions. More regularly, people survey whether a new route is attuned with their objectives and policies (called images) and accept and instrument the route if that is the item. If the option is not compatible and violates important features, other options are searched and explored. When people are confronted with a number of options, they first screen out the ones that are discordant with goals and plans, and only if more than one option remains do they try to identify the optimal one.

Other researchers have also pointed out that in real life, optimizing judgment assembly is the allowance quite than the instruction. Features of the problem and the situation are often more important than the potential consequences of a decision. For instance, the behavior of managers in organizations is strongly determined by rules. The decisions of consumers are often determined by affects. In ethical conflicts, decisions are primarily determined by basic ideals, such as morality and ''do not harm,'' irrespective of the consequences.

Still another approach focuses on what is called naturalistic decision making, indicating the process by which people use their experience to make decisions in complex and dynamic environments, regularly above stage burden and involving high risks (e.g., pilot decisions on the flight deck). For such positions, in 1993, Klein suggested a blame clued-up decision prototypical that encompasses respect of cue forms that hints to rescue of a rejoinder route. Ongoing valuation of single possibilities is measured distinctive, and the first option that contests the decision producer's goals and the situational controls is picked.

Models of directorial resolution constructing describe decision making by both single and multiple actors in a logistic perspective. The normative sensible (classical) model adopts that the association follows a computational value-maximizing decision-making scheme. The model's efficacy is limited to a lesser set of conditions with explicit appearances (e.g., goals can be described in quantitative terms); consequently, alternative models were developed based more on the actual behavior of decision makers in organizations. For request, the (communication) logistic model centers on the partial information-processing aptitude of decision producers and advances an effect satisfying scheme. In tally, the waste can typical apprehends of societies as ''organized anarchies'' (e.g., having shifting goals). Universities are considered the prototype of such organizations that do not follow one specific decision-making strategy. Outcomes result from the variable participation of their various members and groups in constantly changing tasks. All of these models differ in their ability to crumble with altered units of improbability and encounter among interests.

Methods

Decision researchers use a variety of calculable and qualitative techniques to survey how people make decisions. Experimental studies in the lab usually ask participants to make judgments about values and importance as well as about uncertainties and risks, to make choices among given options, and to evaluate options, search for information about options, or distribute goods. Return times, eye arrangements, and further negotiating data (including verbal reports) are also used as methods of the information-processing activity of participants. Outside of the lab, the inquiry form is the dominant method, where either decision problems are presented by the researcher, and applicants provide the required

responses (e.g., apprentices in a oration) or decision positions retire and the canvasser observes and histories partakers' behavior (e.g., pilots in a field).

Conclusion

Approximately 50 years ago, the study of decision making started with lab tryouts examining how people make choices among monetary risks. Ever since then, the scope of educations has been stretched very, reflecting the aggregate importance of appreciative and successful decision making in our humanity as well as the evolution of methodology and model assembly within the inquiry municipal. However, the extension of the field has also eroded the idea of a general theory of decision making in favor of situation and domain-specific models and realistic research on the conditions under which the various modes and schemes are being applied.

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The Impact of Social Media on Academic Performance of Selected College Students

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The Impact of Social Media on Academic Performance of Selected College Students

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Introduction

Today the Internet has taken a hard place in people's lives. It is very difficult to imagine a young man who at least once a day did not check for updates in social networks and did not leaf through the news lines. The modern real world needs us to stay in touch and keep side by side of the latest news and trends. However, does this trend influence the performance of the students?

When social media such as Facebook, YouTube and Twitter etc. become visible, our world was divided into online and offline. Social media are online skill stages that help to connect people composed far and near. It is used to physique connection among people [18]. With their help, we can communicate with each other, even on various continents, listen to music, read books, look at photos and much more. Social media have significantly basic our lives and tightly tied to ourselves [17].

During the time expended determining those for connections, youngsters go into various connections and get the chance to speak with a relatively boundless number of individuals and quality gatherings, with an extensive range of identities, take in a significant measure of stories, have the opportunity to trade possibilities and talk about matters important to them. Therefore, operators of social networks, in greatest belongings, are a representative of the younger generation.

International Journal of Advanced Information Technology (IJAIT) Vol. October 2018 According to the scientists, social networks are particularly unsafe for youngsters, as they form a bad impression that love and friendship are easy to overcome and just as easy to destroy [5]. In adding, young people who are acquainted with the fast stream of Internet life, the truth may seem to be disproportionately dull, and they can have a go at, making it impossible to "restore" it by making foolish activities. Some are factions of the use of social media. They claim that the latter provide access to knowledge and help students exchange information rapidly. Others contemplate that students' use social media primarily to communicate about everything except studies and that they only distract students from the learning process. The use of social media by students helps to have access to basic the information as quick as possible [18].

Many universities and schools around the world check the access to social networks within its buildings. They excuse this by helping students concentrate on their studies. On the other hand, they reject students the occasion to use the numerous materials available on these resources, such as scientific videos on YouTube [8].

The background of study is the one of the colleges in eastern province of Saudi Arabia, the Jubail University College (JUC). JUC is an associated of the Royal Commission for Jubail& Yanbu. It was recognized in 2006 to achieve the aims of the Royal Commission, in developing human resources and to provide the Saudi manpower with high education and training so that they can appropriately manage the Kingdoms' growing economy in its numerous sectors [7]. The purpose of this study is to find out the impression of social media on academic performance of selected college students. To reach this, existing studies will be analysed, as well as survey among defendants will be directed. Respondents are the sixty (60) students who are aggressively using social media.

Concepts And Literature Reviews

To shack bright on the both, positive and negative sides of using social media in over-all, as well as discover its possessions on students' academic performance, present studies were revised.

Studies instigate out that academic result of students who spent most of their time cooperating using social media are positive because they were able to share and create ideas and thoughts related to their studies. They also use these sites for having a fun as these social media sites are helpful in their academic work [3].

A comparable study exposed that online social media had enhanced the communication between the faculty member and students which enable the communication of the correct information and recover understanding and the expansion of the ideas and the courses. Based on the information composed, it is visible to say that the use of the social media during the lecture time is not recommended [1].

Mensah &Nizam [10] decided in their study that social media stands have an important effect on students' academic performance in Malaysia tertiary institutions. Nevertheless, among the six variables used in their study, time suitability and health dependence have a stronger significant impact on students' academic performance. This is because time management plays an important role in determining the success and failure of an individual. Thus, students who deficiency time management can easily decrease prey to the bad impact of social media.

Likewise, health and dependence, students who are occupied with social media stages ends up skipping meals which has health impact.

Another study shows that students who are not only pretentious by social media, employees and employers too. A U.K. firm released a study showing that people who use Facebook, Twitter and other social networks while at work abstracts a heavy cost on their employers [14].

According to Kolan and Dzadza [8], the nature of social media as a useful domestic but a dangerous master and a two-edge foil has been exposed in the conclusions of the study. In the face of the benefits that students can bind from social media networks such as sharing of information, building relationship, contribution in group discussion, there is to some extent addiction and interruption of attention caused by the use of social media which could have serious moments on the academic life of students. One of the undesirable effects of social media is piracy. The primary motivator for Australians of all ages illegally downloading movies and TV shows is that it is free 13].

According to Landry [9], social media a tool that could be used for good or bad, it all depends on the person. Social media has its sheets of good and bad. Yes, it is easier to remember the bad rather than the good but, social media sites have twisted occasions for people all over the world.
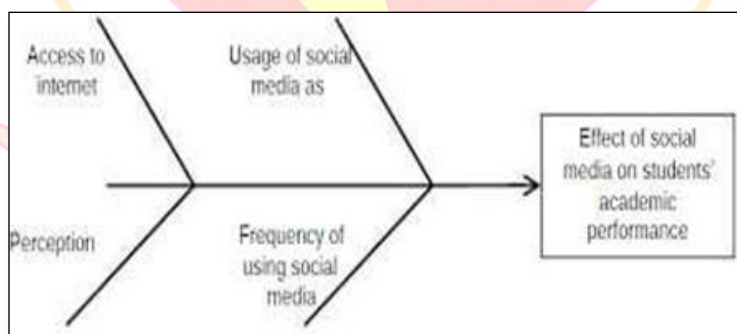
Conceptual Paradigm

Figure 1: Paradigm of the study

International Journal of Advanced Information Technology (IJAIT). October 2018 The model of this study approved the Shikawamodel, also known as fishbone diagram. Skikawa model is fundamental diagram developed by Kaoru Ishikawa that shows the causes of an exact event [19]. The variables of social media that may affect the students' academic performance are: access to internet; usage of social media; their perception on social media; and their incidence of using it. Through these variables, the current study will recognize the impression of using social media to the academic performance of the defendants and will be able to draw references that may improve the learning process and reduce the bad impact of social media.

Statement Of The Problem

This paper objects to find out the both positive and negative power of social media on students' academic performance. Specifically, it sought to answer the following:

What is television and why students use it?

How much time prepare students put on using social media?

What is the effect of social media on students' academic performance?

The present study that will evaluate the outcome of social media on students' academic routine supposes the following:

Students use social television to interconnect and study.

On regular, students occupy at least on hour a day for social media use.

The impact of social media on academic routine could be both positive or negative at the same time.

Scope And Delimitation

The study was steered to evaluate the effect of social media on students' academic performance. Sixty (60) students who are aggressively using social media are the accused of the study. It was directed during the summer semester of academic year 2017-2018. The study limited only on variables of social media that the investigators expected that has properties of defendants' hypothetical presentation. These variables are respondents 'access to internet, usage, awareness on social media, and their occurrence of using it.

Significance Of The Study

Social networks are fetching more popular among university students and are a new way of expenses free time and serve as a discrete channel for finding the required information, both educational and entertaining. Therefore, it is urgent to examine the question of what outcome social networks have on their users, in specific, how the use of social networks touches the academic success of students. This study will discover this information, giving the researchers an occasion to explore and improvement new knowledge. Furthermore, it can be used for future studies.

Research Design, Sources Of Data, Instrumentation And Data Collection, And Tools For Data Analysis

The study used the measurable as well as qualitative methods of research. Expressive research design was applied to gain correct profile of situation [16].

To support the study, information relevant to the study were gained from both primary and secondary data. Primary data were developed from the accused of the study, sixty students accused. On other hand, secondary data were obtained from previous studies, words, books, documents, and electronic materials related to the existing study.

The gadget for data collection was the review questionnaire, observations, review of previous studies and analysis. To fold data for the three research questions, survey, review of works and analysis were used. Survey surveys were floated to the respondents. It is a tool comprising several questions to gather information from the accused. The review questionnaire contains clear and simple questions that enable the accused to provide exact information. Each item in the survey questionnaires are intended to answer the research sub-problems. Google Form was used to create the questionnaire for the respondents. Google Forms are remarkable tool that is free and powerful, it is model for anyone who needs to pucker information about nearly anything. Google Forms is suppressed within Google Drive right under the word processor, database and performance apps [21].

The data that were composed were collected, matched and tabularized. These data were obtainable in graphs were analysed and interpreted for the readers to appreciate better the results obtained. To determine the suitable sample size, Slovin's formula was used [6]. There are 71 students aggressively using social media that are members of section's WhatsApp group. Slovin's formula is written as:

n = N / (1 + N e2)

Where:

n = number of models

N = total people

e = error tolerance (0.05)

thus, n = N / (1 + N e2)

=71 / (1 + (71x ((0.05) 2)) = 71 / 1.1775 = 60.3

To answer the three research questions, statistical tools were recognized. For first and second research question, aside from fiction evaluation, mode was used. For the third research questions, typical weighted mean was utilized.

The collected data were used to analyse the impact of social media on students' academic performance.

Conclusion, Recommendation And Direction For Future Research

Based on the discoveries, social media becomes an important part of the student's full life, took up most of his extra time. The time spend by the accused on social media stressed that the impact on their academic routine ends up negative.

So, the social media, which also has a acquainted name as a social networks or web, chooses students as its possible dead. All kinds of computer technologies, mobile phones have suggestively expanded the scope of both positive and negative factors of the divine and intellectual development of the younger generation.

Thus, it can be absolute that social media have a dual outcome on the student achievement, and it is necessary to slant teenagers' use of social networks with ultimate responsibility. In no case should we forget about the negative consequences that extreme social infatuation could have. Based on the finding and expectations drawn, the following endorsements are hereby offered: Organizations should focus on making pleasant things useful - promoting social networks as a tool not individual for communication and entertainment but also for learning.

Social networks should allow their users to of your own accord restrict attendance on certain days, for example, to students during a session.

Finally, students themselves must realize all the potential harm from extreme use of social networks, and responsibly approach the learning process and academic results.

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A Review on Best Practices in Mobile Application Development

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A Review on Best Practices in Mobile Application Development

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Abstract

Now-a-days there is a fast growth in mobile application development in industries. There are numerous challenges like acceptance of GUI, understand ability of the facilities delivered, compatibility with varying Smartphone architecture, ease of navigation, aesthetics and flow of controls and menu, portability, security, reliability, etc. that are to be considered with seriousness in order to avoid any kind of vulnerability or failure. Mobile applications are of great importance as they are providing various features which are of great use for us like-use of navigation for finding particular location, online shopping, online movie tickets booking, etc. There are various challenges that are to be faced during these applications development. In this paper, we will focus on covering up all those challenges and the best practices that can be performed in order to tackle those challenges.

Keywords: Mobile application, Mobile Application Development, development challenges, best practice.

I. Introduction

Nowadays users are expecting from their mobile phones to function almost similar to that of desktop computer systems. But due to the complex methodologies of mobile application development, it makes it more challenging than the desktop computer system. Mobile Application Development is a process of building up application software for mobile phone devices & for doing so development environment with specialized integration is used which are Android Studio or Eclipse is required. But while doing this, there are various parameters like OS, Processing Power, memory, compatibility, etc. are to be considered firstly. These apps should be interactive, easily downloadable through various platforms such as Google Play Store and iOS App Store.

There are various challenges like reliability, availability, security, robustness, and usability which are of major concern while developing and deploying an application. There is a scarcity in the methodology adopted w.r.t the advancement in mobile application development due to a lack of research methods and analysis of challenges that might occur during the mobile application development process.

V. Rahimian and R. Ramsin[1] look through the challenges in mobile application development by considering the current state of mobile development techniques. Leigh Williamson listed unique challenges for Mobile Application Development like- form factors, user input technology, usability, and user interaction designs [2]. Similarly, J. Dehlinger & J. Dixson found 4 major challenges for mobile application development engineerings. These challenges were found by them while the creation of universal users interfaces while trying to enable software reusability via various platforms, while context-aware designing a mobile app and in agility balancing and requirement uncertainty[3].

This research paper focuses on the challenges faced during mobile application development & ultimate practices to overcome those challenges.

Best Practices In Mobile Application Development

There should be more focus on "what not to do" rather than "what to do" while developing an application. Some of the challenges are discussed in this paper along with their best practices in order to overcome those challenges.

A. Improper Resource Estimation

It occurs is the beginning phase of mobile application development. If the business is not aware of required requirements and resources, it will easily deviate. It is considerably challenging for few developers to analyse these requirements and resources.

BEST PRACTICES-There should be proper business plans and logics to be discussed in a and recorded according to customer's requirements and feedbacks. This approach requires proper and better user communication, partial resource operations and repetition of assessments to be followed in each interval of time.

B. Scheduling of Time and Cost

Due to low budget and funding there are many mobile apps projects which became unsuccessful. Many people think that developing a mobile application is not that costly, but it actually depends upon the application and its feathers. A developer working on a lower or limited budget tends to deliver a low quality product. This is similar w.r.t time too. If a developer isn't given a proper time for developing an application, there is a high chance of getting an incomplete or poor quality product. BEST PRACTICES-Proper plan should be made according to the appropriate time and cost over each activities to be executed. All the features or enhancements to be made are to be noted and accordingly necessary plans are to be made.

C. Selection of Target User

Before developing mobile application, a group of target user is to be considered. Lack of analysis and foresight will make the application to be of lower value in the market. According to the target user interest the application is to be made. If there is lack in this selection, the development is already going in the wrong direction.

BEST PRACTICES-Users feedback is the best way to overcome this challenge. This will enable us to not all know the target user but also will tell us which feathers the target users are interested in. This will help us to know the features to be needed in our application.

D. User Interface

User interface is one of the important things in mobile application development. The front end design should be compatible with all the devices screen resolution. Generally a developer forgets about user interface and focuses moreover the features to be needed. This makes the application hard for user to understand and handle, which indirectly reduces its value in the market.

BEST PRACTICES-Developers team should avoid using too many resources, rather analyse those resources and build up a simple and clear design for the mobile application.

E. Performance vs Battery Life

Performance and Battery life is one of the main challenges for developers while developing mobile application. Developers generally focuses on better performances of an application, which generally ends up with mobile getting heated up due to lots of power consumptions because of application performances. This generally lets to user's switching better and similar application which reduces the power consumption and heating of mobile phones.

BEST PRACTICES-Developers needs to consider the battery life applicable for most of the devices. According to that battery life, application performance should be decided, rather than just focusing over the performances and ignoring devices battery life.

F. Memory Space

More the feathers, more the application size increases. Developers generally try to implement and integrate multiple features in one application, avoiding the main objective features. This lets to maximization of application size and application occupying lots of devices memory space.

BEST PRACTICES-The best way to overcome this challenge is to focus over the main objective features of an application, rather than adding too many features into it. While updating of an app, the old data should be completely replaced with the new data, rather than keeping unwanted old data attached to the new updated application which results in increase in application memory space.

G. Security & Privacy

Importance of security and privacy is increasing day-by-day. There is a chance of device being used by an unauthorized user. This is the a bit challenging as there are many devices along with its operating system. Developers generally end up making the privacy terms and conditions complex to user understanding. Data transmission as well as servers of application should be preserved and protected for securing user data.

BEST PRACTICES- Privacy terms and conditions should be displayed to the user in proper and simple designs, using simple language, make it easy to access. Data transmission and servers of an application should be protected using appropriate security measures and guarantee user's accountability.

H. Data Synchronization and Access

Mobile devices are good enough to access data, either from the application or from the browser. Application built should be created which can keep track of data being accessed from application database and should understand the connection being built via database. If the connection is disconnected, it should be able to reconnect to its last existing data and update the application data accordingly.

BEST PRACTICES-Proper synchronization of data is necessary when we are dealing with application data being send via network. Encryption is the best possible way to overcome this challenge along with proper synchronization of data in order to update and access the application data.

I. Methods for Providing Input

It is difficult to provide an input via a keypad to the user. Also not many users are good with using keypad keys efficiently. Hence providing a method for an input is not that easy challenge to deal with. BEST PRACTICES-We can enable user to give proper input via using a touch gesture rather than keypad. This will make it easier and attractive for the users to use the application easily and efficiently.

J. Problems in Testing

It is challenging for developers for testing mobile application because of various operating systems, platforms, it makes it very difficult to perform testing. Various factors like VPN dropping, wireless network connectivity, and application altering process are also to be considered while testing. It is necessary to find whether there is any problem with hardware of the device or with the network connectivity of that device by testing all of these above factors.

BEST PRACTICES-Testing is to be performed in every phase of development in order to avoid errors or problems in further phases. Testing should be performed on every platform and also in different locations for different browsers verifications. If all of these factors are accomplished we can say that the app is ready and effective for deployment process.

III. Conclusion

Mobile applications nowadays offer various functionalities that it has become a part of our life. There is a tremendous rise in mobile application which makes it more challenging to make a bug free, efficient, user friendly and useful application. Developers should follow all the best practices discussed in this paper in order to overcome the challenges. This paper has discussed real challenges and best practices generally occurred to mobile application developers. If this best practices are properly implemented for the given set of challenges, it will provide a best product from it.

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