5th Student Conference
On
Recent Trends in Computer
Science & Applications

Editorial Team

Prof. Manisha Patil

Prof. Mahendra Suryavanshi

Prof. Ninad Thorat

Prof. Nadaf B. G.

Prof. Tejashree Phalle

Prof. Jyoti Shrote

Prof. Madhavi Avhankar

Prof. Poonam Pawar

Prof. Vaishali Dhokchawle

Indira College of Commerce and Science

Pune - 411033, Maharashtra, India

© Editorial Team

First Published: 2018

Published By:
Indira College of Commerce and Science
89/2 A, "DHRUV",
New Mumbai Pune Highway,
Tathawade, Pune-33,
Maharashtra.

India
Tel: 020-66759502
Email: principal@iccs.ac.in
www.iccs.ac.in

Printing by:

Success Publications
Radha Krishna Apartment, 535, Shaniwar Peth,
Opp. Prabhat Theatre, Pune - 411030.
Contact - 9422025610, 8390848833, 020-24433374, 24434662
Email- marketing@sharpmultinational.com
Website- www.sharpmultinational.com

ISBN: 978-93-88441-31-5

No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical including photocopying, recording or by any information storage and retrieval system, without permission in writing from author.

ADVISORY COMMITTEE

- **Dr. V.S. Kharat**
  Professor and Head, Department of Mathmatics, SPPU.

- **Dr. Vikas Humbe**
  Department of Computer Science, SRTM University, Nanded.

- **Dr. Sagar Jambhorkar**
  Asst. Professor, Defence Officer, NDA, Khadakwasala, Pune.

- **Dr. Shivanad Gornale**
  Associate Professor, Department of Computer Science, Rani Channamma University, Belgaum, Karnataka.

- **Dr. B.V. Dhandra**
  Professor, Symbiosis Institute of Computer Studies and Research,
  A Constituent of Symbiosis International University, Pune-16.

- **Dr. G.M. Magar**
  Associate Processor and Head, Department of Computer Science, SNDT Women‟s University, Mumbai.

- **Dr. Hegadi Ravindra S**
  Professor and Director of Computer Application School of Computational Sciences Solapur University, Solapur.

- **Dr. Ranjit Patil**
  Vice Principal and Head Department of Computer Science, Dr.D.Y.Patil A.C.S College ,Pimpri.

- **Dr. Vilas Wani**
  Head Department of Computer Science, Waghire College, Saswad Pune.

- **Dr. Prashant Mulay**
  Head Department of Computer Science,AnnasahebMagar College, Hadapsar Pune.

OBJECTIVE OF THE CONFERENCE

The purpose of the conference is to provide opportunities for students from an assortment of places to meet and to discuss current research in the field of computer science and applications and computational mathematics.

Computer Science is the theoretical study of computation, its implementation and practical application. However, even a cursory glance at a Computer Science book will convince the reader that its application lies at the heart of the subject. The link between Computer Science and application is fundamental and pervasive, continually motivating new concepts and research.

SCOPE

The scope of this Conference is to provide a National Level Platform for students to share their research ideas and results.
The areas of interest include, but are not limited to:

Computer Science and Applications:

- Data Mining and Warehousing
- Databases
- Cloud Computing
- Software Project Management
- Soft Computing
- Image Processing/ Pattern Recognition
- Software engineering & Software Testing
- Learning Technologies
- Computer Graphics and Computer Vision
- E-Commerce and E-Business
- Networks/ Network Security/Mobile Computing
- Cyber Law and Cyber Security
- Algorithms & Programming Languages
- Web Technologies
- Operating systems
- Augmented Reality and Virtual Reality

ORGANIZING COMMITTEE

Chief Patrons:
Dr. Tarita Shankar, *Chairperson, Indira Group of Institutes.*
Prof. Chetan Wakalkar, *Group Director, Indira Group of Institutes.*

Patrons:
Dr. Janardan Pawar, *Principal, ICCS.*

Conveners:
Prof. Manisha Patil
Prof. Mahendra Suryavanshi
Prof. Ninad Thorat
Prof. Nadaf B. G.

Co-Conveners:
Prof. Tejashree Phalle
Prof. Jyoti Shrote
Prof. Madhavi Avhankar
Prof. Poonam Pawar
Prof. Vaishali Dhokchawle

CHAIRPERSON'S MESSAGE

Technology in our daily life is no longer a subject of voluntary application. If one desires to keep up with the fast pace of urbanized life, one simply can no longer deny the influence of technology in our way of living. Even as recently as the early part of the twenty-first century, we may not have expected the technology age to be so heavily dominant in our lives. And from the looks of it, it seems it can only become more intensive and extensive in the coming years. In domestic life, for example, computers have taken over household security and conveniences – remotely controlled security apparatus, or mobile phone controlled appliances are a case in point. The picture of computer technology's dominance in corporate life is even more pervasive – with every branch of manufacturing, engineering, medicine, construction or the service sector – be it banking, hospitality, education etc. caught in the all-pervading embrace of technology. Our dependence on Computers rises with more and more applications becoming remotely manageable.

I am happy that ICCS has organized the fifth conference for student on RTCSA which I believe is an important event that will go a long way in familiarizing the student and academic community with the developments in the area of Computer Science and applications.

I wish the Conference all success.

Dr. Tarita Shankar
Chairperson & Chief Patron,
Indira Group of Institutes,
Pune, India.

GROUP DIRECTOR'S MESSAGE

Dear Participants,

Congratulations to Dr. Janardan Pawar and his IT Team for organizing the Student Conference "Anveshan" on Recent Trends in Computer Science and Applications for the fifth year. Conferences such as this go a long way in getting the best from academia and industry to come together and share cutting-edge research and discuss the emerging trends that will impact the industry. The journal published thereafter will contribute to the creation of knowledge in the said faculty and will remain a source of learning for the students, academic and industrial community.

Prof. Chetan S. Wakalkar
Group Director & Chief Patron,
Indira Group of Institutes,
Pune, India.

INDEX

CINEMATIZED SEARCH

Akanksha Sadlapur
S.Y.B.Sc (Comp.Sci)
akankshasadlapur28@gmail.com

Akanksha Shrivastav
S.Y.B.Sc (Comp.Sci)
akanksha3339@gmail.com

Indira College of Commerce and Science, Pune.

ABSTRACT:

This paper basically presents a new way of web search, a more efficient and easier way that would make searching effortless. ***Cinematized Search*** *is a kind of image based searching technique. This technique allows the user to see the world in a whole new way. This paper also discusses about designing of a gadget by using this technique for visually impaired that would make their lives easier. This gadget is a combination of simple components brought together in building of '****Smart Glasses****'*

KEY WORDS:

Cinematized Search, simple components, gadget, Smart Glasses.

INTRODUCTION :

This technology is all about knowing the world that we see around or through a camera in a much improved and informative way. In our day to day life we come across many things which we are unaware, we generally search about on various browsers, where we are usually expected to type a word to get the information about it. But what if we don't have specific words for what has to be searched. Here the CINEMATIZED SEARCH comes into the view. The Cinematized Search is all about searching using image. This way of searching is more efficient and simpler than usual searching.

CINEMATIZED SEARCH :

The Cinematized Search is image based searching technique. It depends on the image recognition, the image captured in the device camera is processed to get the information. The image from the device camera is analysed by the AR(Augmented Reality) application. To accomplish this need a graphic engine and processor that will change the image to real time, while still anchoring the physical world around you. It turns the physical world around you into an encyclopaedia.

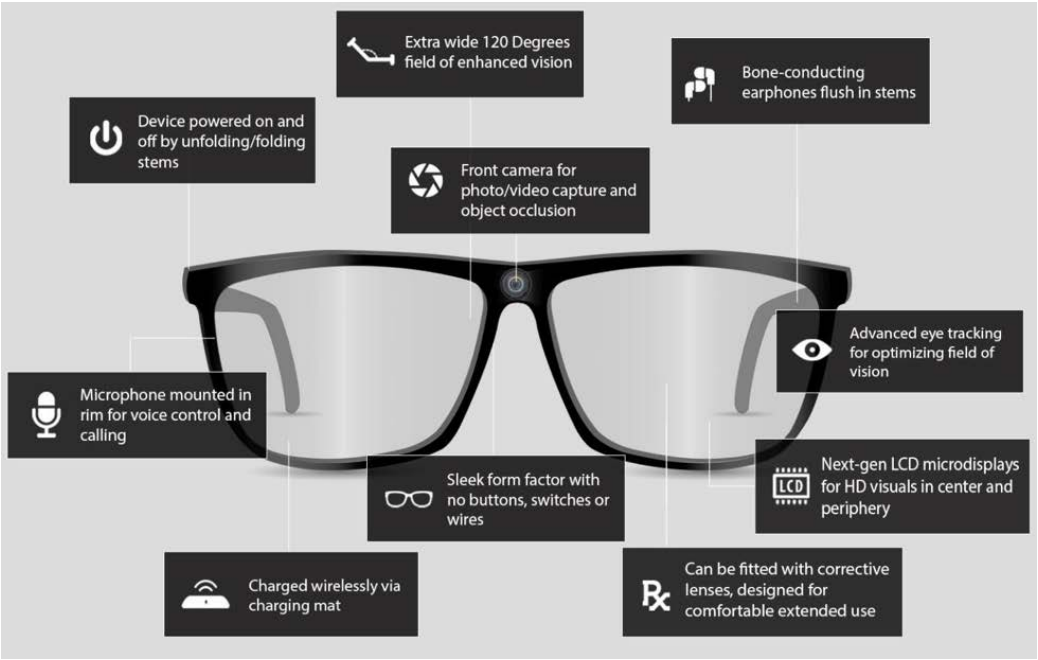
In this technology the camera is projected towards the objects about which the information is needed.This image is then sent to the graphic engine of the device and is processed which then gives back the information about the same. This device will respond to the user verbally. It will also interact with the user according to his/her need.

For example :If you see a red flower and your curious to know about the flower then basically you will first find for a search engine to know about the flower .but here you need to give a specification of the flower but only knowing the colour of the flower is not enough information for the search engine. Here Cinematized Search gives a better platform for search as just by pointing the camera towards the red flower, would first of all give the name of the flower. And then according to your curiosity all your questions

about it would be answered, and would respond to you to according to your choice i.e. either verbally or on-screen display.

CINEMATIZED SEARCH - BOON TO VISUALLY IMPARED

This technology can be of huge importance in the life of visually impaired individual if precisely used. It is all about designing a smart glasses provided with features which is obtained by combination of various small devices working simultaneously. This device is embedded with camera, pair of ear-phone, microphone, blue-tooth, and a cell-phone i.e. easy to handle providing internet and blue-tooth connectivity in which the app and processor needed for Cinematized search would be in-built.



Here the camera is placed on either right hinge, and the pair of ear-phones suspended on both the temples, and a microphone placed on the left hinge.

Working: The smart glass wore by the visually impaired would be wirelessly connected to the cell-phone in their pockets. The process would start with the individual by switching ON the device by pressing a button given on the smart glass. Now the camera would start recording and will sense the environment aroundit, and is now ready to respond to any instruction from the user.

For Example:

This technology provided visually impaired individuals to use various application in the cell-phones that common people use, just as if they asks for weather information then the device responds verbally to him/her with the temperature would even help them recognise any object in front of them..

NEEDS:

1) It enhances our experience within the real world using digital information.

2) According to the latest reports about 781 million adults all over the world are still illiterate, for whom typing is not possible here this technology (Cinematized Search) would help them out.

3) The Smart Glasses will reduce the efforts made by visually impaired. Giving them the opportunity to use various phone applications that normal people use.

CONCLUSION:

1. This technology provides keypad less searching.

2. It gives the user huge virtual world to explore where the mind is the only boundary.

3. Smart Glasses would prove boon to the lives of visually impaired

4. Is of great help to illiterates.

REFERENCES:

1] https://en.wikipedia.org/wiki/Augmented_reality

2] https://www.informationvine.com

3] https://youtu.be/HprQbTlYHuQ

4] https://youtu.be/PEejIaDTCwQ

NUMEROUS DIMENSIONAL LINKED LIST: CONCEPT, BENEFITS, USES.

Kashid Vishal Dattatray T.Y.Bsc
Kawade Sairaj Sopan T.Y.Bsc
Joshi Chaitanya Shrikrishna T.Y.Bsc
Indira College of commerce and science, Pune, Maharashtra

Abstract:
There are various types of linked list like singly linked list, doubly linked list, which are having one dimensional structure. So, we have proposed linked list having numerous dimensions. The proposed linked list will have different dimension you can use it as per our use. The advantage of proposed system are efficient utilize memory and faster access data. Because the structure of node having six different pointer pointing to nearest nodes. Due to high efficiency storage and faster data access, the proposal system we can used in database, in security purpose system to store the different passwords in each node and linking them, in stack and queue implementation also we can use it.

Keywords*:* Singly Linked List, Doubly Linked List, Numerous Linked List.

Introduction:

Data structure is an efficient way of organizing the data so that your program becomes efficient in terms of Linked list. Till this date we are mostly using the singly and doubly linked list. The singly linked list is one directional linked list which means we are having only one pointer which having an address of next node. Similarly we have the doubly linked list, it is bidirectional linked list which having two pointers having an address of next node and previous node. Both the linked list having some advantages or disadvantages. To overcome the disadvantages of singly and doubly linked list we are proposing the multidimensional linked list. In that we are using the more than two pointers for specific purpose based on the application. Multidimensional linked list has extra overheads of additional pointers.

A) Numerous Linked List:

In this linked list we are having six pointers and we traversing those pointers in a particular way for connecting those node to form a 2d array and 3d array. As we know in static 2d and 3d array there is to many limitation are faced by the user as we have to declare the first size of the array and after that we can't increase the size of array. So we are using the multidimensional linked list to overcome this problem.

In the multidimensional linked list we are performing 2D and 3D array by dynamically. For that we are using multiple pointers in the node structure as shown the bellows structure.

```
struct node
{
    int data;
    struct node *next;
    struct node *prev;
```

```
    struct node *up;
    struct node *down;
    struct node *front;
    struct node *back;
};
```

The node of given structure looks like a 3D cube as it has six pointers. The *next node pointer pointing to next node, *prev node pointer pointing to previous node, *up node pointer pointing to upper node,*down node pointer pointing to down node,*front node pointer pointing to front node,*back node pointer pointing to back node.

B) Algorithm:

Step 1: Accept number of rows and columns.

Step 2: Accept how many matrix to be connected to form a cubical structure or simple 2D structure.

Step 3: Declare pointers pointing to head node.

Step 4: Use more than one loops for creating the nodes to form a particular 1D or 2D or 3D structure.

Step 5: According to loop condition first simple row (1D array) is formed by using *next,*prev pointers and others pointers goes to NULL as shown in figure-1.

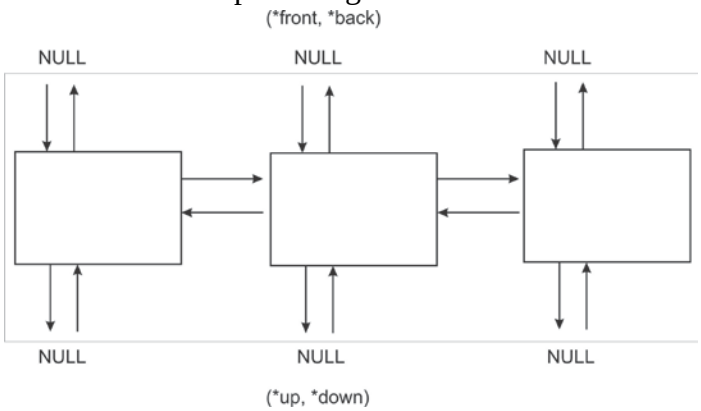


Figure-1: 1D structure of multidimensional linked list

Step 6: If connecting another row to form a 2D structure then due to another loop, the formed row is connected to another row by *down and *up. The *front,*back goes to NULL pointers as shown in figure-2.

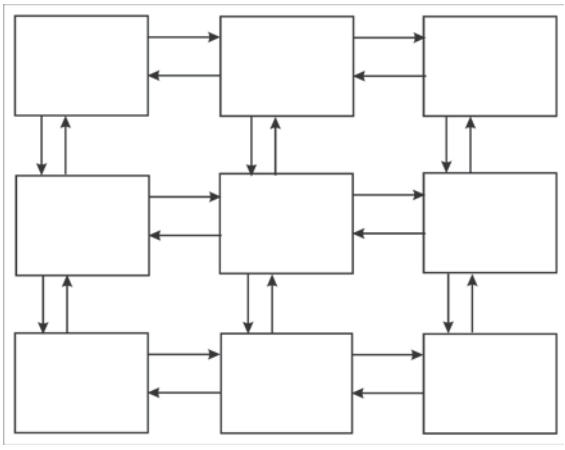


Figure-2: 2D matrix using multidimensional linked list

Step 7: The simple 2D matrix as shown in figure-2 get formed. If user want to connect more matrix then another loop get executed if not then another pointer i.e. *front and *down get initialize to NULL.

Step 8: To connect other matrices, they can be connected by *front and * back pointers by specific conditions given in each loop as shown in figure-3.

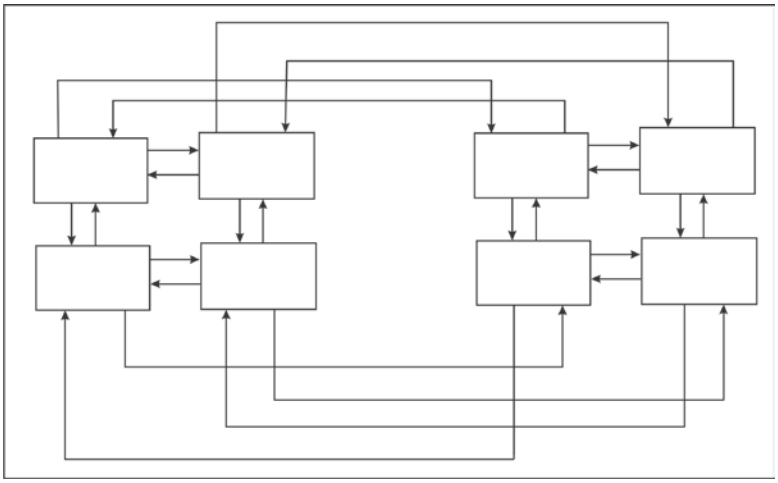


Figure-3: Multiple 2D matrices are connected with each other using multidimensional linked list

Step 9: if matrix is not connected with another matrix then it is a 2D array otherwise 3D matrix is created.

Step 10: The outermost nodes some pointer having a specific NULL pointer.

Advantages of Multidimensional Linked List:

1. Using it we can store the large data in dynamic way.
2. The stored data we can access in very easy way and data access speed is high.
3. Using it we can construct 1D,2D and 3D array.

Uses:

1. This Linked List can be used in Database for example to store the table and to display the table.
2. We can use it in Security System. Like storing the password in different nodes. We can use it as per the use in different way.
3. We can use for the Stack and Queue.

Disadvantages of Multidimensional Linked list:

1. Every node of MLL Require extra space for an each pointer.
2. We having a many pointers pointing to Head pointer therefore extra space are required.

Conclusion:

Through this research we conclude that we can construct multidimensional array (i.e. 1D, 2D, 3D) using linked list. Multidimensional linked list allow storing large amount of data. This data can be accessed in easy manner and in a fastest way. This linked list

structure we can use in many different applications to avoid from the wastage of memory. Due to this linked list structure the whole memory is gets utilized.

References:

1] AnkitDalal, AnkurAtri, "An introduction to Linked List" International Journal of Research (IJR) Vol-1, Issue-10 November 2014 ISSN 2348-6848.

2] Devishree Naidu, AbhishekPrasa"Implementation of Enhanced Singly Linked List Equipped with DLL Operations: An Approach towards Enormous Memory Saving" International Journal of Future Computer and Communication, Vol. 3, No.2, April 2014.

3] Jikuan Hu, Weiqing Wang, "Algorithm Research for Vector-Linked List Sparse Matrix Multiplication", Wearable Computing Systems (APWCS), 2010 Asia-Pacific Conference.

THE HIDDEN WEB : DEEP WEB AND DARK WEB

Saurabh Kate **Nikhil Kadekar** **SayamKarnavat**
F.Y.Bsc F.Y.Bsc F.Y.Bsc
Indira College of commerce and science, Pune, Maharashtra

ABSTRACT

Many believe a Google search can identify most of the information available on the Internet on a given subject. But there is an entire online world – a massive one – beyond the reach of Google or any other search engine. Policymakers should take a cue from prosecutors – who just convicted one of its masterminds – and start giving it some attention.

The scale of the Internet's underworld is immense. The number of non-indexed web sites, known as the Deep Web, is estimated to be 400 to 500 times larger than the surface web of indexed, searchable web sites. And the Deep Web is where the dark side of the Internet flourishes. While there are plenty of law-abiding citizens and well-intentioned individuals (such as journalists, political dissidents, and whistleblowers) who conduct their online activities below the surface, the part of the Deep Web known as the Dark web has become a conduit for illegal and often dangerous activities.

KEYWORDS

Dark Web, Deep Web, Command and Control Servers,Surface Web,TOR (a web browser),IP2.

INTRODUCTION

Before we get into the underworld of the deep web, let's quickly navigate through the finer points of The World Wide Web (WWW).WWW is an information space where documents and other web resources are identified by URLs, interlinked by hypertext links, and can be accessed via the Internet. The World Wide Web was invented by English scientist Tim Berners-Lee in 1989. He wrote the first web browser in 1990. The World Wide Web is now commonly known as the Web.

The World Wide Web was central to the development of the Information Age and is the primary tool billions of people use to interact on the Internet.

Web pages are primarily text documents formatted and annotated with Hypertext Markup Language (HTML). In addition to formatted text, web pages may contain images, video and software components that are rendered in the user's web browser as coherent pages of multimedia content.

Embedded hyperlinks permit users to navigate between web pages. Multiple web pages with a common theme, a common domain name, or both, may be called a website. Website content can largely be provided by the publisher or can be interactive where users contribute content. Websites may be mostly informative, primarily for entertainment, or largely for commercial purposes.

LAYERS OF INTERNET

In 2005, the number of Internet users reached 1 billion worldwide. This number surpassed 2 billion in 2010 and crested over 3 billion in 2014. As of July 2016, more than 46% of the world population was connected to the Internet. While data exist on the number of Internet users, data on the number of users accessing the various layers of the web and on the breadth of these layers are less clear.

Surface Web. The magnitude of the web is growing. According to one estimate, there were 334.6 million Internet top-level domain names registered globally during the second quarter of 2016.10 This is a 12.9% increase from the number of domain names registered during the same period in 2015. As of February 2017, there were estimated to be more than 1.154 billion websites. As researchers have noted, however, these numbers "only hint at the size of the Web," as numbers of users and websites are constantly fluctuating.

Deep Web. The Deep Web, as noted, cannot be accessed by traditional search engines because the content in this layer of the web is not indexed. Information here is not "static and linked to other pages" as is information on the Surface Web. As researchers have noted, "it's almost impossible to measure the size of the Deep Web. While some early estimates put the size of the Deep Web at 4,000–5,000 times larger than the surface web, the changing dynamic of how information is accessed and presented means that the Deep Web is growing exponentially and at a rate that defies quantification."

Dark Web. Within the Deep Web, the Dark Web is also growing as new tools make it easier to navigate.16 Because individuals may access the Dark Web assuming little risk of detection, they may use this arena for a variety of legal and illegal activities. It is unclear, however, how much of the Deep Web is taken up by Dark Web content and how much of the Dark Web is used for legal or illegal activities.

HOW TO ACCESS THE DEEP WEB AND DARK WEB

The Dark Web can be reached through decentralized, anonymized nodes on a number of networks including Tor (short for The Onion Router) or I2P (Invisible Internet Project). Tor, which was initially released as The Onion Routing project in 2002 was originally created by the U.S. Naval Research Laboratory as a tool for anonymously communicating online.

Tor "refers both to the software that you install on your computer to run Tor and the network of computers that manages Tor connections." Tor's users connect to websites "through a series of virtual tunnels rather than making a direct connection, thus allowing both organizations and individuals to share information over public networks without compromising their privacy." Users route their web traffic through other users' computers such that the traffic cannot be traced to the original user. Tor essentially establishes layers (like layers of an onion) and routes traffic through those layers to conceal users' identities. To get from layer to layer, Tor has established "relays" on computers around the world through which information passes. Information is encrypted between relays, and "all Tor traffic passes through at least three relays before it reaches its destination." The final relay is called the "exit relay," and the IP address

of this relay is viewed as the source of the Tor traffic. When using Tor software, users' IP addresses remain hidden. As such, it appears that the connection to any given website "is coming from the IP address of a Tor exit relay, which can be anywhere in the world."

While data on the magnitude of the Deep Web and Dark Web and how they relate to the Surface Web are not clear, data on Tor users do exist. According to metrics from the Tor Project, the mean number of daily Tor users in the United States across the first two months of 2017 was 353,753— or 19.2% of total mean daily Tor users. The United States has the largest number of mean daily Tor users, followed by Russia (11.9%), Germany (9.9%), and United Arab Emirates (9.2%).

What bad stuff goes on in the Deep Web?

The Deep Web offers a certain level of anonymity that makes people in it more inclined to engage in illegal activities. The various transactions in it, including the makeup of prominent goods and services traded, very well paint a picture of what people would do if the secrecy of their identities was guaranteed.

We can't fully vouch for the authenticity of the goods and services discussed here, except for the fact that the sites advertising them do exist and account for the different transactions that go on in the Deep Web. We'll cite several noteworthy examples to give you a better understanding of these dubious activities.

Bitcoin and money-laundering services

On its own, Bitcoin is a currency designed with anonymity in mind. As a result, it's frequently used when purchasing illegal goods and services. While all Bitcoin transactions are anonymous (as long as you don't link your wallet code to your real identity), they are fully public. The fact that every transaction in the Bitcoinblockchain is publicly available means investigators can examine them. Tracking money as it moves through the system is thus doable, and quite difficult.

Sites like WeBuyBitcoins exchange real cash for Bitcoins at competitive exchange rates compared with equivalent nonanonymous services that exist in the Surface Web. Criminals who are willing to take on more risk for potentially greater rewards can take another option—buying counterfeit currency using Bitcoins.

Stolen accounts for sale

Buying and selling stolen accounts are most definitely not restricted to the Deep Web. They are very common practices across criminal underground forums that exist on the Surface Web.

As in the Surface Web, prices vary across sites but more mature offerings (like stolen PayPal account credentials) do tend to fetch high prices. Accounts like these are generally sold in one of two ways—as "high-quality" verified accounts with their exact current balances or in bulk (a certain number of unverified accounts that normally come with a guarantee that at least a certain percentage are valid). The first category is normally seen as more expensive because they come with a greater likelihood of return on investment (ROI) for a buyer whereas the second is significantly cheaper.

Passports and citizenships for sale

Passports and IDs are unique, powerful documents, and fake ones, even more so. They act not only as a form of identification for crossing borders (including ones buyers could normally not easily cross) but also for everything from opening bank accounts, applying for loans, purchasing property, and much more. It's no surprise then that they're a valuable commodity. There are quite a few sites on the Deep Web that claim to sell passports and other forms of official IDs at varying prices from country to country and seller to seller.

Leaked details: Government, law enforcement, and celebrities

Among hackers and, to a certain degree, online gamers, it's typical for groups of like-minded individuals to come together in loosely formed or close-knit groups. Due to the nature of the activities they carry out, it's very common for rivalries and fallings out to occur among competing groups. When this occurs, it's common practice for one group to attempt to "dox" the other. Doxing is the act of researching and broadcasting an individual's personally identifiable information (PII), which, in hackers' case, "unmasks" a rival, essentially linking his/her real-world identity to his/her online one. The means to do this vary but they normally combine accessing publicly available data, social engineering, and direct hacking.

For example, one site—Cloudnine—lists possible dox information for public figures including:

- Several FBI agents
- Political figures like Barack and Michelle Obama, Bill and Hillary Clinton, Sarah Palin, U.S. senators and others
- Celebrities like Angelina Jolie, Bill Gates, Tom Cruise, Lady Gaga, Beyoncé, Dennis Rodman, and more

Assassination services

Perhaps one of the most worrying services on the Deep Web, one that anyone would be very foolish to advertise on the Surface Web, are hit men or assassins for hire. Several such services exist on the Deep Web. Even the sites that advertise them acknowledge the highly secret nature of their business. One site, for example, clearly states that as all contracts are private, they can't offer proof of past work or successes or even feedback from previous clients. Instead, they ask users to prove upfront that they have enough Bitcoins for the job with the help of a reputable escrow service. Only when a hit man has carried out the assassination and provided proof will the funds be released.

Government Use of the Dark Web

Because of the anonymity provided by Tor and other software such as I2P, the Dark Web can be a playground for nefarious actors online. As noted, however, there are a number of areas in which the study and use of the Dark Web may provide benefits. This is true not only for citizens and businesses seeking online privacy, but also for certain government sectors—namely the law enforcement, military, and intelligence communities.

CONCLUSION

The deepweb, particularly darknets such as TOR, represents a viable way for malicious actors to exchange goods, legally or illegally, in an anonymous fashion. In this paper, we conducted an analysis of different networks that guarantee anonymous and untraceable access to deepweb content. At present, the main network that shows commercial activities for cybercriminals is TOR. While the deepweb has proven to be very functional for hosting botnets' command-and-control (C&C) servers and trading merchandise such as drugs and weapons, traditional cybercrime goods (i.e., malware and exploit kits) were less popular. Sellers suffer from lack of reputation caused by increased anonymity. Somehow, being untraceable presents drawbacks for a seller who cannot easily establish a trust relationship with customers unless the marketplace allows for it.

REFERENCES

1] Barre, Todd J. "Bitcoin: A Pedagogical Guide for the College Classroom." Journal of Education for Business (2015): 335-39. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

2] Eddy, Max. "Inside the Dark Web."PC Magazine 1 Feb. 2015: 102-15. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

3] Extance, Andy. "Bitcoin and Beyond."Nature 526 (2015): 21-23. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

4] Kushner, David. "The Dark Net."Rolling Stone 5 Nov. 2015: 50-57. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

5] McCormick, Ty. "The Darknet: A Short History." Foreign Policy Jan. 2014: 5-10. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

6] Van Hout, Marie Claire, and Tim Bingham. "Responsible Vendors, Intelligent Consumers: Silk Road, the Online Revolution in Drug Trading." International Journal of Drug Policy(2013): 183-89. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

7] Weimann, Gabriel. "Going Dark: Terrorism on the Dark Web."Studies in Conflict and Terrorism39.3 (2015): 195-206. Academic Search Premier [EBSCO]. Web. 11 Jan. 2016.

FUTURE BELONGS TO RED TACTON

Sayali Sawant
SY.B.Sc (Comp. Science)
sawantsayali1999@gmail.com
Indira College of Commerce and Science

ABSTRACT:
Now a day's electronic devices become smaller and lower in power necessities, and that they are less costly. We've got begun to adorn our bodies with personal data and communication appliances. RedTacton could be a technology that uses the surface of the frame as a high speed and safe network transmission path. Therefore during this paper we have a tendency to be explaining the distinctive new practical options and large potential of RedTacton as a personality's space networking technology.

KEYWORDS:
Red Tacton, networking, communication

INTRODUCTION :

RedTacton Technology was introduced by Nippon Telegraph and phone Corporation (NTT). TACTON- that means "action triggered by touching" associated RED - it's an auspicious color in line with Japanese culture for heat. it's a technology that uses the surface of the frame as a secure, high speed network transmission.

WHAT IS RED TACTON?

Red Tacton technology is associate electronic future wherever data may be accessible whenever and where required at our finger tips. a number of the communication system that's needed to produce this immediate access to data are going to be Incorporated into our apparel. Red Tacton could be a new Human space Networking technology that was introduced by Nippon telegraph and phone Corporation (NTT's) that uses the frame surface could be a high speed and safe network transmission path. Red Tacton could be a Break-through technology that allows reliable high-speed dynasty for the primary time. within the past, infrared Communications (IrDA), Bluetooth, frequence ID systems (RFID),and different technologies are projected to resolve the "last meter" property downside.

1. RedTacton uses the minute field of force emitted on the surface of the frame. it's utterly distinct from wireless and infrared.
2. A transmission path is made at a locality of the frame that comes to bear with a RedTacton transceiver. Physically separating ends the contact and so ends communication.
3. Using RedTacton, communication starts once terminals carried by the user ar joined in many combos in line with the user's natural, physical movements.
4. Communication is feasible mistreatment any body surfaces, like the hands, fingers, feet, face, legs, skin or body. Red Tacton works through shoes and covering further

FEATURES OF RED TACTON:

RedTacton Technology has 3 main practical features:

1. **Touch :**
   Touching, sitting, walking, stepping, absorbing and different human movements may be the used as triggers for unlocking or lockup, beginning or stopping the instrumentation, or getting knowledge.
2. **Broadband & Interactive:**
   Information measure doesn't deteriorate even with duplex operations and conjointly synchronous access by several users. Duplex, interactive communication is feasible at a most speed of 10Mbps. this {can be} as a result of the transmission path is on the surface of the body; transmission speed of red tacton doesn't deteriorate in full areas wherever many of us can communicate at identical time.
3. **Any media :**
   Additionally to the frame, there ar numerous conductors and dielectrics also can be used as transmission media. Conductors and dielectrics may additionally be employed in combination.

WORKING:

RedTacton takes a distinct technical approach. rather than reckoning on magnetism waves or light-weight waves to hold knowledge. RedTacton mistreatment weak electrical fields on the surface of the body as a transmission medium as shown in figure.

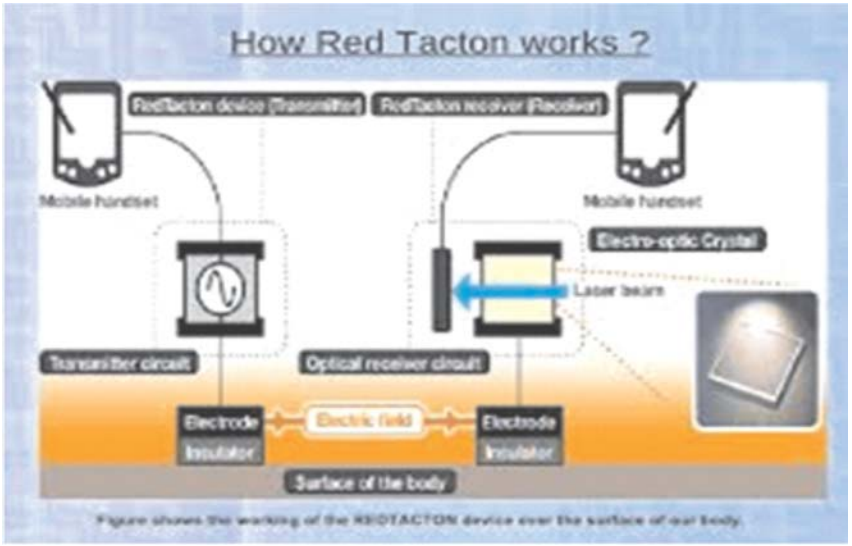


Fig. diagram of RedTacton operating

The RedTacton transmitter induces a weak field of force on the surface of the body.

The RedTacton receiver senses changes within the weak field of force on the surface of the body caused by the transmitter.

RedTacton depends upon the principle that the optical properties of associate electro-optic crystal will vary in line with the changes of a weak field of force.

RedTacton detects changes within the optical properties of associate electro-optic crystal employing a optical maser associated converts the result to an electrical signal in an exceedingly optical receiver circuit.

MECHANISM OF COMMUNICATION WITH RED TACTON:

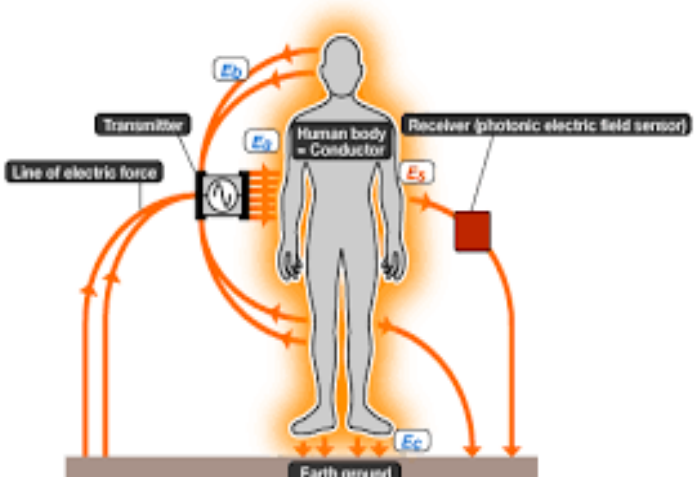


Fig.communication with RedTacton

The present field of force evoked on the surface of the frame dissipates into the planet as shown. Therefore, this field of force is exceptionally faint and not stable. The photonic field of force detector developed by NTT allows weak electrical fields to be measured by police work changes within the optical properties of associate electro-optic crystal with a shaft of light.

APPLICATIONS:

RedTacton has wide selection of applications, in those a number of the applications ar as follows:

1. One to at least one Services
2. Elimination of human error
3. Marketing Applications
4. Personalization of Mobile Phones
5. Personalization of cars
6. Conferencing System

ADVANTAGES:

1. Red Tacton doesn't need the conductor to be in direct contact with the skin.
2. High-speed communication is feasible between any 2 discretionary points on the body.
3. Body-based networking is safer than different broadcast systems, like Bluetoothwhich have high vary of concerning 10m.
4. Network congestion because of fall in transmission speed in multiuser environments is avoided.
5. Superior than Infrared technology
6. Superior than Wi-Fi.

DISADVANTAGES

1. It has no compelling applications that aren’t already out there.
2. It is expensive.

CONCLUSION:

This technology undoubtedly stands out with perfection, once transfer of information is quick, possible and additional significantly reliable. So, in few years from currently everything goes to be this super technology. And, finally I conclude, "FUTURE BELONGS TO RED TACTON"

REFERENCES:

[1] http://www.Red Tacton.com/en/index.html
[2] http://www.ntt.co.jp/news/news05e/0502/050218.html
[3] http://en.wikipedia.org/wiki/Red Tacton
[4] http://www.ntt.co.jp/RD/OFIS/active/2005pdfe/pdf /h_ct02_e.pdf
[5] http://www.taipeitimes.com/News/biz/archives/200 5/03/20/2003247076
[6] http://www.physorg.com/news3153.html
[7] http://www.oppapers.com/essays/Red Tacton/16639

COMPARATIVE ANALYSIS OF MICROCONTROLLERS

Harish S. Rane FyBsc (CS)
Anushka D. Shinde FyBsc (CS)
Shweta. S. Shinde FyBsc (CS)
Indira College of Commerce and Science

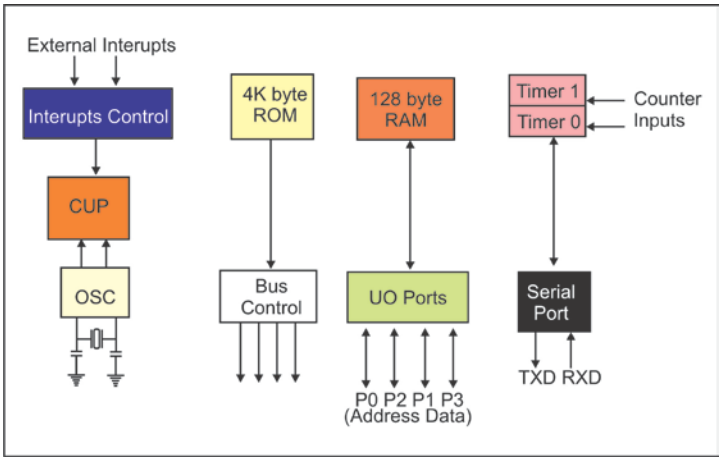
Abstract:
The present paper describes the design of microcontroller. This project contain three parts microcontroller-8031, 8051 and 8052. In this we represent the comparison between microcontroller-8031, microcontroller-8051 and microcontroller-8052. The entire system is based on microcontroller that makes the control system easy.

Keywords:
Microprocessor, Random access memory , oscillator ,clock, logic ,AVR

Introduction:

Microcontroller is a brain of any circuit system. To perform any function microcontroller are programmed. According to necessary information they take decision and give output First microcontroller was developed by TI engineers Gary Boone and Michael Cochran in 1971.The result of their work was the TMS one thousand which became commercially available in 1974.It consist of combination of Read Only Memory ,Right memory, Processor and clock on one chip and was targeted at embedded systems. Most microcontroller at this time had concurrent variants. One of had EPRON program memory, with a transparent quartz window in the lead of package to allow it to erased by exposure to ultra-violet light, often use for proto typing. The other was either a mask program ROM from the manufacturer for large series , or a PROM variant which was only programmable one's .Sometimes this was signified with the designation OTP. Intel was developed the first microcontroller 8031, microcontroller 8051 and microcontroller 8052.In 1993 the introduction of EEPROM memory allowed microcontrollers to be electrically erased quickly without an expensive package as required from EPROM, allowing both rapid prototyping, and in - system programming. By 2017-18, 32-bit MCUs are expected to account for 59% of microcontroller cells.

BLOCK DIAGRAM:



Uses of microcontroller:

- The die from an Intel 8742, an 8- bit microcontroller that includes a CPU running at 12 MHz, 128 bytes of RAM, 2048 bytes of EPROM, and I/o in the same chip.
- Used as two AT mega microcontrollers.
- Microcontrollers are used in automatically controlled product and devices such as automobile engine system, implantable medical device, office machines, remote control.

Features of Microcontroller:

It has Boolean processor with 17 instructions, 1-bit accumulator, 32 registers and up to 144 special 1 bit-addressable RAM variables. Division, multiplication and comparison this type of instructions can give due to 8051 microcontroller. Dual 16-bit address bus it can access 2×2^{16}memory locations. In this 128 bytes of on-chip RAM, Four 8 bit bi-directional input and output port bit addressable. Their is UART port.

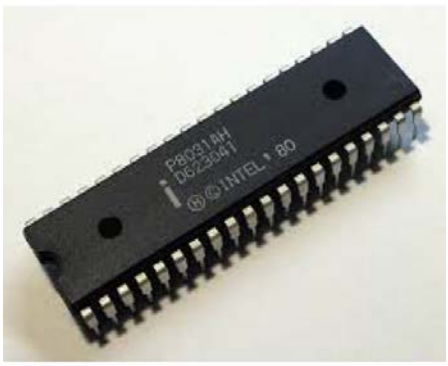
The original 8051 core ran at 12 clock cycles per machine cycle, with most instructions executing in one or two machine cycles. With a 12 MHz clock frequency, the 8051 could thus perform1 million one-cycle instructions per second or 500,000 two-cycle instructions per second.

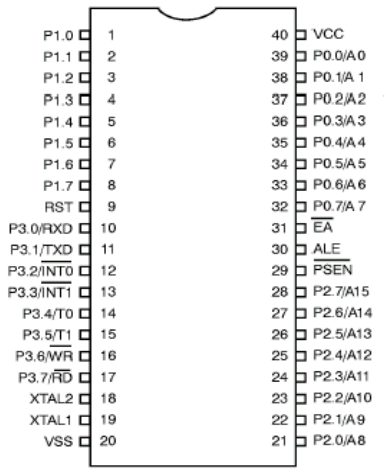
Microcontroller-8031:

The generic 8031 architecture sport a Horvard architecture, which contains two separate buses for both program and data. So, it has two distinctive memory spaces of 64K X 8 size for both program and data. It depends on an 8 bit central processing unit with an 8 bit Accumulator and another 8 bit is register as main processing blocks. Other regions of the architecture include few 8 bit and 16 bit registers and 8 bit memory locations.

Every 8031 device has some amount of data RAM built in the device for internal processing. These area are used for stack operations and temporary storage of data.

This base architecture is supported with onchip peripheral functions like I/O ports, timers/counters, versatile serial communication port. So it is clear that this 8031 architecture was designed to cater many real time embedded needs.

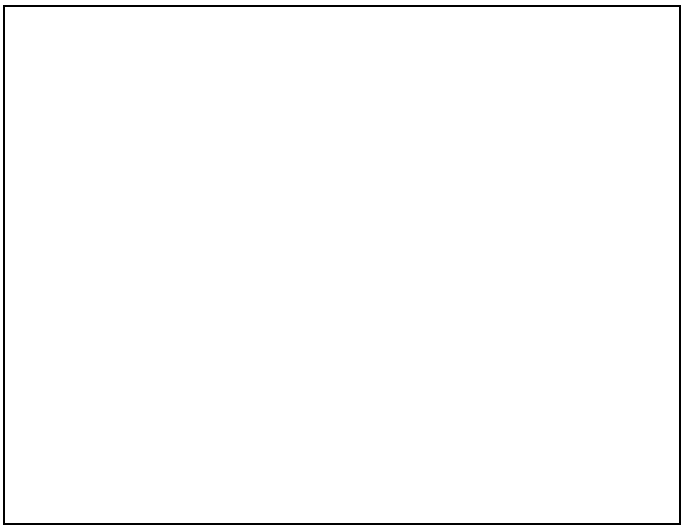


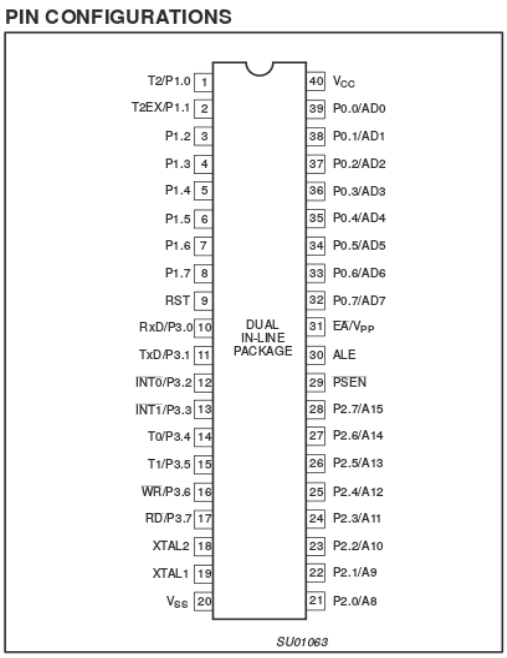


Microcontroller-8051:

8051 is an 8-bit family of microcontroller developed by intel in 1981. This microcontroller was also called as "system on a chip" .It has 128 bytes of RAM, 4Kbytes of ROM, 2 Timers, 1 Serial port, and four ports on a single chip. The microcontroller-8051 is commonly known as intelMSC-51. 8051 is a single chip microcontroller series developed by Intel. It is an example of complex set computer and has separate memory spaces for program instructions and data. It has Harvard architecture.

The 8051 architecture provides many functions central processing unit (CPU), random access memory (RAM), read-only memory (ROM), input/output (I/O), interrupt logic, timer in only one piece. The architecture of this system bus connects all the support devices to the CPU.





Microcontroller-8052*:*

It is an 8-bit microcontroller and belongs to Atmel's 8051 family. MC8052 has 8KB of Flash programmable and erasable read only memory and 256 bytes of RAM. MC8052 has anbearing of 1000 Write cycles which means that it can be erased and programmed to a maximum 1000 times.

It is a little bit more powerful microcontroller, sporting a number of few additional features which the maker may make use of:

1. 256 bytes of Internal RAM
2. A third 16-bit timer, capable of a number of new operation modes and 16-bit reloads.
3. Additional SFRs to support the functionality offered by the third timer.

The MC8052 has 4 different ports, each one having 8 Ip/op lines providing a total of 32 I/O lines. These ports can be used as output DATA and orders do other devices, or to read the state of a sensor, or a switch. Most of the ports of the MC8052 have dual functio meaning that they
can be used for two other functions.

COMPARISON BETWEEN 8051 8031 AND 8052:

Feature	***8051***	***8031***	***8052***
Rom(bytes)	***4k***	***0***	***8k***
Ram(bytes)	***128***	***128***	***256***
Timers	***3***	***2***	***2***
I/O pins	***32***	***32***	***32***
Serial ports	***1***	***1***	***1***
Interrupts	***6***	***6***	***8***
Watchdog timer	***No***	***Yes***	***No***

Conclusion:

According to me 8052 is best out of 8031 and 8051 . Since it is more advanced and better architecture and working than 8051 and 8031.It is the superset of the 8051 microcontroller.It added 128 bytes more of internal RAM and another 16 bit timer.

Reference:

[1] The 8051 microcontroller and embedded systems, Microcontroller basics and Microcontroller project using the basic stamp.

FUTURE OF CRYPTOCURRENCY IN INDIA AND SECURITY ISSUES

Kshitija Mane
S.Y.B.Sc (CS)
kshitijamane210@gmail.com

AishwaryaManekar
S.Y.B.Sc (CS)
aishwaryemanekar999@gmail.com

Indira College of Commerce and Science, Pune

Abstract:
Cryptocurrency is digital money. The main advantage of Cryptocurrency is secure, potentially stable virtual currency. Nowdays we seen the crypto network growing at a rapidly. A cryptocurrency exchange allow for hundreds of millions of citizens of the India to become part of the crypto economy. Crypto currency is the decentralized. According to the Indian government if people use cryptocurrency and certain caution then no lawful protection for these currency. Recently SEBI formed Committeeon Financial and Regulatory Technologies (CFRT) which recommended that is difficult to regulate transactions involving cryptocurrencies to ensure that India's public issue norms are not breached. In cryptocurrency AKA encryption cryptography method used. The cryptocurrency will be have bright future and this currency give new identity that is" One World One Currency". The objective of this paper is find out the future of cryptocurrency and study security issues related to the cryptocurrency

Keywords*:*
Cyber Security, Bitcoin, Cryptography, Decentralized.

Introduction:

When it comes to cryptocurrencies and Bitcoin technology research is an important aspect. In 2009 by Pseudonymous developer Satoshi Nakamoto was created the first decentralized cryptocurrency and Bitcoin. Crytocurrency is known as digital assets. Trading is the buying, selling, holding at cryptocurrencies such a Bitcoin (XBT), Etherum (ETH), Litecoin (LTC) and amongst others. The aim with generating a profit from long term, short term or medium fluctuations in their prices.

What is Cryptocurrency?

Cryptocurrency was born in the Second World War for secure communication. Cryptocurrency is a digital currency. It is combination of cryptography and currency. Thecryptography is used for the only security purpose. For cryptocurrency internet is require Cryptography is process of convert the legible information into an unbreakable code.

How Does Cryptocurrency Work?

Cryptocurrency is available for general public. By using cryptocurrency method transaction is easy. Forthat transaction public and private keys used for security purpose. The international transaction easy with cryptocurrency because its function is not under any central bank. No any other third person involved like any bank.

What is bitcoin?

Bitcoin is digital currency introduced in 2009.Bitcoins is virtual coins, physically not present.at the time of use of bitcoin for valid ID proof Permanent Account Number(PAN) or AdharNumber compulsory.

Future of Cryptocurrency

Cryptocurrency has the potential to be the world's currency in future there will not require specific currency for every individual country all the time. With the cryptocurrency difficult to regulate, which is not centralise, that anybody can use and that eliminates the exchange rates across the world makes the future of the world by being centralized currency across the world.

Security issues related to cryptocurrency

1) Error in user address: There is also risk of loss osinformation. When an error is made because of recipient address there may be loss money. For example, in the case of ethereum, if the recipient address of the some digits is entered wrong by mistake then will be deducted from account.

2) Loss of wallet file: One of the major problems in the cryptocurrencies is the loss or due to hard disk crash the theft of local wallet files get lost or other interruptions. Due to these problems, it is generally advised to store the local passwords in paper wallet or backup hardware wallet.

3) Cryptocurrency is new in market .so, people not aware about of how to use cryptocurrency. many of the companies and website does not accept cryptocurrency.

Suggestions of cryptocurrency:

some precautionary measures for cryptocurrency holders and crypto-investors are given below,

1) Avoid following suspicious links to an internet bank or web wallets and always verify a web wallet addresses.

2) To recover lost account passwords prepare a secondary option and other details as well as keep them as private and safe.

3) Before transacting, always double check the recipient’s addresses the entered amount as well as details of transaction fees and other charges.

4) Crypto-investments are risky. so common practices must be followed while investing like a strong mind-set to deal, diversified investment, conscientious of the providers.

5) Use crypto currency paper wallets of hardware wallets is advised.

6) use good antivirus programs to protect the devices and computers used to access crypto-wallets and other activities involving cryptocurrencies.

TYPES OF CRYPTOCURRENCIES

SR	NAME	SYMBOL	PRICE(USD)
1.	**Bitcoin**	**BTC**	**7,130.0**
2.	**Ethereum**	**ETH**	**725.11**
3.	**Ripple**	**XRP**	**0.71223**
4.	**Litecoin**	**LTC**	**129.29**
5.	**Cardano**	**ADA**	**0.32525**
6.	**Stellar**	**XLM**	**0.333700**
7.	**Bitcoin Cash**	**BCH**	**896.69**

COMPARISION OF BTC AND ETH

Analysis Type	Weight	Result-BTC	Result-ETH	Impact On Portfolio
Regression	5%	300% Growth Over 5 Years	506% Growth Over 5 Years	0% to BTC 5% to ETH
Monte Carlo Compared Words	40%	56 (wins)	42 (wins)	23.5% to BTC 16.5% to ETH
Monte Carlo Expected Looses	25%	38 (losses)	46 (losses)	15.5% to BTC 9.5% to ETH
Monte Carlo –Avg expected Return	30%	42% (return over the next 5 years)	20% (return over the next 5 years)	30% to BTC 0% to ETH
Total	100%			69% to BTC 31% to ETH

Conclusion:

Bitcoins are one of the greatest innovations of man. The banks are trying to use the blockchain technology and the government has not authorized Bitcoins, it has decided to introduce its own cryptocurrency named “Lakshmi”. This information was revealed by RBI’s executive chairman Sudarshan Sen who also mentioned that the committee proposed this idea is in the process of research.

References:

1] cryptocurrency(http://en.wikipedia.org/wiki/cryptocurrency)

2] http://www.irjet.net

REVIEW OF LEGAL AND ECONOMIC ASPECTS OF BITCOIN IN INDIA

Sonali Dipak Kulkarni
S.Y.B.Sc (CS)
Sonali1909kulkarni99@gmail.com

Sayali Shivaji Kute
S.Y.B.Sc (CS)
sayalikute1999@gmail.com

Indira College of Commerce and Science

Abstract:
Bitcoin is a virtual currency and decentralized management without involving any another intermediary. The government and any institutions can't controlled Bitcoin payment system. It is very safe, fast and easy to send money one party to another party. In case of fraud and error payment are difficult to reverse. Some countries like Canada, Australia and Germany have legal use to earn income rules on Bitcoin. It relies on Cryptographic algorithms. It is abbreviated BTC and is power by peer-to-peer network and open source base. this present paper focuses on legal and economic aspects and technology used in Bitcoin andits applications. The aim of this paper to know about the legal positions of Bitcoin in various countries. Bitcoin transactions are executed stored in public ledger called Block chain. This process verified by the Bitcoin mining. There is no physical Bitcoin and no any Bitcoin files. In India the finance minister during his budget speech on February 01, 2018 has cleared that the cryptocurrencies are not recognized as legal tender in India.

Keywords:
Bitcoin, Block chain, Bitcoinwallet, legal cryptocurrency

Introduction:

Bitcoin is launched in 2009 called as white paper was published by the unknown person Satoshi Nakamoto. In traditional online payment system transactions are verified by the financial institutes through block chain, Bitcoin transactions are verified by the nodes and recorded in public distributed ledger, Cryptographic Algorithm are involving in implementation of complex scheme. using wallet software on a personal computer we send and receive Bitcoin electronically for a normal fee. User installed a Bitcoin wallet in his computer or mobile phone, it will generate Bitcoin address. User must require run free software on his computer to translate Bitcoin. Bitcoin technology is controlled by some rules knownas consensus rules.

How Bitcoin works:

Users can produce a private currency using a platform which is provided by a sources software. It is based on encryption technology. The system provides a new amount of bitcoin units. To obtain them, network supporters, i.e. miners, to compete solve mathematical problems with a random component. These problems are hard to solve, but it is easy to verify correctness of the solution. In the on tests, the competitors coming with the correct solution receive the new issued amount of bitcoin units. Broadcasted solutions for the whole network, they are automatically verified by other members.

Bitcoin as Payment System:

Bitcoin used to operate a retail payment system with no need for trusted intermediaries to expose customers to financial risk by being prone to financial crises. The established business model of intermediating electronic payments can be characterized as a two-sided market, where a payment service provider links payer and payer. It is a low-cost alternative. With respect to cost, bitcoin payments can currently be made at minimal or no financial cost to the two parties engaged in a payment transfer. The roles of banks tryingto established payment operators in the Bitcoin system. Instead of a concentrate intermediary, the payment transfer is operated by miners following the procedures of the Bitcoin protocol. Bitcoins are stored in the Bitcoin wallet. Which is a randomly generated string of numbers, it consists of two parts: the public key and private key. Bitcoin wallet is consist of two parts the first half is known as public key and the second half of the Bitcoin wallet is known as privet key. The public key is known to allusers, but the private key is known only to the wallet owner. Only the owner can access the private key.

Economic Impact of Bitcoins:

The day November 8 , Prime Minister Narendra Modi announced that Rs 500 and Rs 1,000 banknotes would cease to be legal tender. bitcoin was priced at about Rs 52,000 on Unocoin and Zebpay. The surge in interest for the e-currency came as it evolved as an alternative and safe investment option. On the Google Indians' search for the keyword "Bitcoin" was more after note ban. In November 2013. In the committee of United States Senate discussion held on virtual currencies, in this it cleared that bitcoin is a legal means of exchange with the online payment systems in both centralized and decentralized it offer legitimate financial services.

Legal Position of Bitcoins in India:

The RBI Deputy Governor R Gandhi warned against crypto-currencies on March such as "Bitcoin pose potential financial, legal, customer protection and security-related risks," Gandhi said. "Payments by such crypto-currencies are on a peer-to-peer basis

and there is no established framework for recourse to customer problems, disputes, etc. Legal status is definitely not there". As per the Foreign Exchange Management Act in 1999 the currency is defined as "all currency notes, postal notes, postal orders, money orders, cheques, drafts, travelers cheques, letters of credit, exchange bills and promissory notes, credit cards orsuch other similar instruments, as may be notified by the Reserve Bank". According to the definition, RBI has the rights to include bitcoins in the definition of Indian currency. In India other than "Indian currency" is known as "foreign currency", and regulated by foreign exchange laws. Bitcions can also be governed by foreign exchange laws.

The Finance Minister Arun Jaitley reiterated In the Union Budget of India 2018, that the crypto currencies are not recognized as legal tender. During speech, the Finance Minister said, “The Government does not consider crypto-currencies legal tender or coin and will take all measures to eliminate use of these crypto-assets in financing illegitimate activities are as part of the payment system”. However, He also added that the government would try and explore the block chain technology, which drives bitcoin as well as other crypto-currencies. The recognition of block chain technology for future use indigital economy was received positive reactions from the industry.

Conclusion:

In India the finance minister during his budget speech on February 01, 2018.He has cleared that the cryptocurrencies are recognized as not legal tender in India. Various government has that issue of the tax notices to the investor of the cryptocurrencies and has also warned its people to be aware while investments in digital currencies. Thus the bitcions are illegal tender in India. If the Government of India legalizes Bitcoins then it will have various impacts on increasing trade volumes also on the Bitcoin activities in India by significant margins that allows Bitcoin startups to address concerns over security but the risks pertaining to the use of Bitcoin and eventually work towards improving reliability of its infrastructure. On the other sides, the technological innovations that are associated with bitcoins with the other cryptocurrencies may be inspired innovation in payment systems and other applications.

References:

1. M. Hammami, *"Bitcoin and Blockchain mechanism,"* 3 March 2017. [Online]. Available: https://www.researchgate.net/publication/315766868.
2. B. W. Christian Beer, *"Bitcoin – The Promise and Limits of Private Innovation in Monetary and Payment Systems,"* 28 January 2015. [Online]. Available: https://www.researchgate.net/publication/271473884
3. L. L.-T. R. J. M. Macdonald, *"TheBlockchain: A Comparison of Platforms and Their Uses Beyond Bitcoin,"* 3 February 2017. [Online]. Available: https://www.researchgate.net/publication/313249614
4. *S. Nakamoto, ""Bitcoin: A Peer-to-Peer Electronic Cash System”*, 2009, Available: www.bitcoin.org

IOT IN AGRICULTURE

Silvi Sabu Lukose
S.Y.B.Sc. (Computer Science)
Indira College of Commerce and Science, Pune
silvisabu21@gmail.com

Abstract:
Nowadays there is a huge enhancement in technology, techniques and different tools are available in agricultural sector. There is a need to divert to new technology to improve efficiency, productivity, global market and to reduce human intervention, time and cost. This new technology is named as Internet of Things. IoT is the network of devices which transfer the information without any human involvement. Therefore, to gain higher productivity and to obtain smart farming, IoT works in synergy with agriculture. This paper focuses on the contribution of IoT in agriculture that leads to smart farming.

Keywords:
Internet of Things (IoT), Efficiency, Productivity, Smart Farming.

Introduction:

Farming has become more significant and popular due to the enormous growth in technologies. A variety of techniques and tools are available for development of farming. According to the UN Food and Agriculture Organization, in a way to feed the increasing population of the Earth, the world will have to produce 70% more food in 2050 than it did in 2006. Farmers and agricultural companies are diverting towards Internet of Things (IoT) for analytics and greater production capabilities to meet this demand. Internet of Things (IoT) plays a big role in obtaining huge global market, increasing productivity and ideas about recent trends in crops.

Today, many agricultural industries are turning to IoT technology towards smart farming to enhance productivity, efficiency, global market and other features like minimised human intervention, time and cost, etc. As the technology is advancing, it ensures that the sensors are getting smaller in size, complicated and economic. The networks can be easily accessed globally so that the smart farming technology is achieved with full pledge. By focusing on encouraging innovation in agriculture, smart farming is the answer to the problems the agricultural industry is presently facing. All this can be done using IoT devices and mobile phones. Farmer can monitor his agricultural sector as well as can get required data or information.

Internet of Things (IoT)

The Internet of Things (IoT) is the most important and efficient technique for the growth of solutions to the problems. The evolution of IoT is from a variety of building blocks which includes a lot of software's, network components, sensors, and other electronic devices. This also makes the data more effective. IoT permits to interchange data without human involvement over the network.

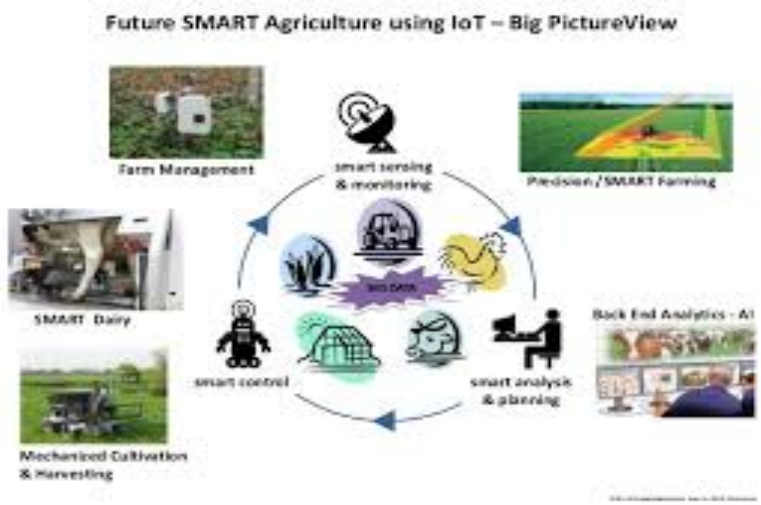
In Internet of Things (IoT), things can be represented in a natural way like sensor, like car driver, like normal human being, etc. An IP address can be assigned to these things, so over a network it can transfer data. According to a report by Garner, there was a 30% rise in the number of connected devices at the end of the year 2016 as compared to 2015. He further says that, by 2020 this number will rise to 26 billion. The IoT technology is more coherent due the following reasons:

1.) Minimum Human Involvement/Efforts
2.) Access is Faster
3.) Connectivity Globally through any device
4.) Enhanced Communication
5.) Management of time is efficient

IoT in Smart Agriculture

The main backbone of India's Economical growth is the agriculture. The climatic change is the most important barrier that arises in traditional farming. The climatic change has number of effects like less rainfall, most intensive heat waves and storm, heavy rainfall, etc. Due to these changes in climate, there is a decrease in productivity to a major extent. The environmental consequences like changes in life cycle of plants seasonally are also raised by the climatic change. In order to minimize the barriers in the field of agriculture and to increase productivity, there is a requirement to use inventive technology and techniques called as Internet of Things. Today, the Internet of Things is turning towards the agriculture industry, allowing the farmers to compete with the huge challenges they face. Using IoT, farmers can get a large information and knowledge about recent technology and trends.

At a Compound Annual Growth Rate (CAGR) of 13.8%, the smart agriculture is expected to reach $18.45 billion in 2022. According to an estimate given by BI (Business Intelligence), at a CAGR of 20%, 75 million IoT devices will be shipped for agricultural uses in 2020. Since IoT devices can be used to monitor temperature, soil acidity level and other variables, these devices can be of great help in enhancing the production and yield in agriculture sector. Apart from this, smart agriculture will be useful in monitoring health and livestock productivity as well. IoT sensors have a capability to provide farmers with information about rainfall, crop yields, soil nutrition and pest infestation which are very valuable in terms of production and offer approximate data which can be used to enhance farming over time. Great changes can be brought to the agricultural supply chain and for a smooth flow of agricultural logistics critical technology can be established by IoT, with its real time, accurate and shared characteristics.



The main advantages of using IoT for enhanced farming as follows:

1. IoT can be used for efficient water management with no wastage of water using sensors.
2. IoT can be helpful for continuous monitoring of land so that at an early stage precautions can be taken.
3. It makes farming more efficient, increases productivity, reduces time and reduces manual work.
4. To observe the growth of crop, crop monitoring can be easily done.
5. Farmer can sow seeds according to soil level by easily identifying soil management such as moisture content, pH level, etc.
6. The diseases occurred in plants and crops can be recognized by sensors and RFID (Radio Frequency Identification) chips. RFID tags send information to the reader which are further shared across the internet. Crops can be automatically protected from coming disease when the scientist or farmer access this information from a remote place and takes necessary actions.
7. In the global market there will be increase in crop sale. Without restriction of any geographical area, farmers can easily get connected to the global markets.

Different types of IoT applications in agriculture as well as IoT sensors for agriculture in general are:

1] Observation of climatic conditions

By combining various smart farming sensors, one of the most popular smart agriculture gadgets are the weather stations. They collect various data from the environment and send it to the clouds as they are located all over the fields. The collected data is used to choose the proper crops, take required measures to improve the or capacity (i.e. precision farming), and also to map the climatic conditions.

IoT devices used for such type of agriculture are all METEO, Pycno and Smart Elements.

2] Greenhouse Industrialization :

Besides sourcing environmental data, the conditions to match the given parameters can be automatically adjusted by the weather stations. Particularly, a similar principle is used by greenhouse industrialization systems.

GreenI Q, Growlink and Farmapp are also some of the IoT agriculture product offering such capabilities among others.

3] Management of Crops :

Crop management devices are one of the elements of precision farming. Thus, like weather stations, they should be placed in the field to collect information from temperature to crop farming and overall crop health.

Semios and Arable serve as good representations of how they can be applied to real life.

4] Management and Observation of Cattle :

Similar to crop management, there are certain IoT agriculture sensors which can be attached to animals on the farm to keep track on their log performance and health. Temperature, health, activity and nutrition insights on each cow as well as to obtain collective information about the herd we can use the smart agriculture sensors (collar tags) called SCR by Allflex and Cowlar.

5] End to End Farm Management Systems :

The so-called farm productivity management systems can be represented by a more complex approach to IoT products in agriculture. A number of IoT devices and sensors are installed on the premises as well as powerful dashboard with analytical capabilities and in-built accounting (reporting) features.

FarmLogs and Cropio are represented by similar solutions.

In addition to the list of IoT agriculture use cases, some important opportunities include logistics, storage management, vehicle tracking (or even automation), etc.

When peculiar applications improve farm productivity by analyzing weed, crop, pest varieties and soil, and also offer valuable response for agricultural decisions, the quality of life of the small farmers can be improved noticeably.

	Smart Farming Applications
Camera	It bestows pictures of leaf health, lighting brightness, chlorophyll measurement, and ripeness level. It is also used for measuring Leaf Area Index (LAI) and measuring soil organic and carbon makeup.

GPS	It issues location for crop mapping, disease/pest location alerts, solar radiation predictions, and fertilizing.
Microphone	It supports with predictive maintenance of machinery.
Accelerometer	It helps determine Leaf Angle Index. Also used as an equipment rollover alarm.
Gyroscope	It diagnosesequipment rollover.

Conclusion:

In our country a vital role will be played by farming in the next few years. Thus smart farming is needed. To enhance smart farming IoT will be helpful. In order to improve time efficiency, crop monitoring, water management, control of pesticides and insecticides, etc IoT will have to work in different domains of farming. It also helps to gain smart farming, minimizes human efforts and simplifies techniques of farming. With respect to these features, smart farming, with a single touch and minimized efforts can help grow the market for farmers.

References:

1] https://www.mouser.in/applications/smart-agriculture-sensors/

2] http://www.businessinsider.com/internet-of-things-smart-agriculture-2016-10?IR=T

3] https://easternpeak.com/blog/iot-in-agriculture-5-technology-use-cases-for-smart-farming-and-4-challenges-to-consider/

4] Deeksha Jain, P.Venkata Krishna and V.Saritha, “A Study on Internet of Things based Applications”, 2012.

5] Jim Chase: The Evolution of the Internet of Things. White Paper, Texas Instruments, September, 2013.

E-COMMERCE AND E-BUSINESS

Bibave Kunal Shrikrushna
F.Y.BBA(CA),
Indira Collage Of Commerce And Science.

Abstract
This study of E-commerce and E-business tells that the both are quite similar to each other. The both are work on individual terms and conditions, also they work on the business strategies given by the managements. E-commerce and E-business both are work on the internet on world wild area. In this study both of them facing same problem, they can't be able to reach customer face to face because of it they don't know the customer is satisfied or not the only way to know is the feedback but some time feedback is not reach to the company on time or customer not get feedback from the company. The one of important problem for them is the satisfaction of the customer. Hacking is the main problem for all who use the internet. The security of information of customer is most important thing for the company they can't lose the information in any cost. In the world of growth of hacking it is need of security provided to the all information of customer, it causes lost costumers trust for company.
Keywords:E-commerce, E-business, Online business.

Introduction

E-Commerce, or the short for "Electronic Commerce" is the process of selling and buying which done via the web or the internet. Unlike the physical store, in E-Commerce, there is no need for the buyer and the seller to meet with each other in order to do the whole selling and buying process. E-Business or Electronic Business refers to the use of internet, extranet, web, and intranet to conduct businesses. E-Business is quite similar to E-Commerce, but it is more than just a simple act of buying and selling products and services online.

Study of E-Commerce and E-Business

After studying the both of E-commerce and E-business are based on strategy and they work on them. E-commerce is the source of buying and selling things on internet or on the online services. Electronic commerce technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange, inventory management systems, and automated data collection systems. Now day research clearly show that electronic commerce, commonly referred to as e-commerce, presently shapes the manner in which people can shop for products from online. The some countries have a rapidly growing market and characterized by a population that becomes wealthier. Retailers have some countries launched own language websites as a mean target to country population. Secondly, there are predictions of increased mobile purchases and an expanding internet audience. E-commerce has become an important tool for small and large businesses worldwide, not only to sell to customers, but also to engage them. E-commerce markets are growing at noticeable rates.

The growth of online market is expected by 56% in 2015–2020. In 2017, retail e-commerce sales worldwide amounted to 2.3 trillion US dollars and e-retail revenues are projected to grow to 4.88 trillion US dollars in 2021. For a long time, companies had been troubled by the gap between the benefits which supply chain technology has and the solutions to deliver those benefits. However, the emergence of e-commerce has provided a more practical and effective way of delivering the benefits of the new supply chain technologies. E-commerce helps create new job opportunities to people they don't have job due to information related services, software app and digital products. It also causes job losses. In the process of e commerce the main thing is the satisfaction of customer, for improvement of the company the satisfaction of the customer is required. The satisfaction of the customer company should give the best service to customer, best quality product.

Online Business or e-business is any kind of business or commercial transaction that includes sharing information across the internet. E-business is mainly use for the online transactions. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses, while e-business refers to business with help of the internet.

When organizations go online they want to fix own strategic management fix their own strategic and work on it. In security matters a lot the company try to give the best security to customers and secure data. Therefore it is important for e-business systems to be fully protected against these risks. A many of people have access to e-businesses by the internet than would have access to a traditional business. The Customers, suppliers, employees, and other people use e-business system daily and they don't want to lose information at any cost. Hackers isone of the great threats to the security of e-businesses. The loss of customers information is the make trust issue between customer and company, hacker can use customers information for the wrong use. Some times company is also have the bank details, so company want to secure all information they have.

In the e-commerce and e-business common thing is faced is hacking of the information of the customer, bank details. It is the responsibility of the company to secure the information. Because of the non-secure it causes the hacking or liking the information. In the liking the data of is the loss of company is fix.

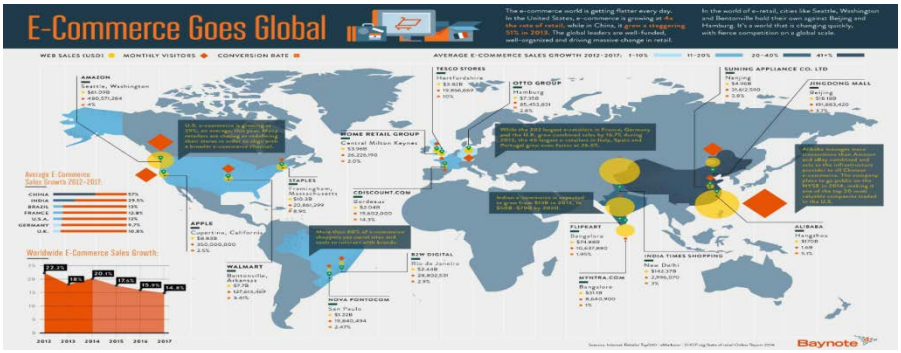


Figure-1:E-commerce goes global on the all over world.

Conclusion:

By the studying topic it is necessary to the company's satisfaction for customers is very necessary for them. The company can give the best service to customers, best products and the feedback service should be improved. The feedback is main thing is that helps to company improve the service.To secure the customers data from the hackers. Use the best coding languages, beat operators for secure severs. Securing the data is the first priority of company.

References:

1] Wienclaw, Ruth A. (2013) "E-Commerce." Research Starters: Business

2] Beynon-Davies P. (2004). E-Business. Palgrave, Basingstoke

OPERATING SYSTEM ANDROID AND IOS

Odayanparkal BrijithBabu
F.Y.B.Sc
(Computer Science)

Niharika Batra
F.Y.B.Sc
(Computer Science)

Shannan Bagade
F.Y.B.Sc
(Computer Science)

Indira College of Commerce and Science

Abstract

This research paper deals with the concepts related to operating system, android and iOS. Through this, we had made efforts to find the exact need of the mobile os and the things related to this os. This paper shows the comparative study between android and iOS. The survey in the sample population deals with many other objective rather than the branded os. In addition, to it gives many aspects for buying a mobile os and this paper sparkles the light on what factors should one buy a mobile os.

Keywords

Android, iOS, os, mobile, privacy, security.

Introduction

The early used non-smartphones had only the feature of communication. It didn't had great feature as such in android and iOS. But the users used to claim that the battery quality was excellent than now-a-days. Mobile phones have evolved dramatically.

1. **iOS**

iOS is mobile operating system developed by Apple Inc. for it hardware. It is unveiled in 2007 for iPhone and launched in June29, 2007.Written in C, C++, Objective-C and Swift. And Available in 40 languages. The iOS kernel is the XNU kernel of Darwin. There are various version of iOS from which the most recent version is iOS 12 and released in September 17, 2018. It is second most popular operating system after Android.

2. **ANDROID** Android is mobile operating system developed by Android Inc. It is unveiled in 2007 and launched in September 2008. It is based on modified version of Linux kernel and other open source software. Written in Java, C, C++ and other languages. And available in 100+languages.There are various version of android from which the latest version is 9'pie'launched in August 2018. It is most popular operating system.

Objectives

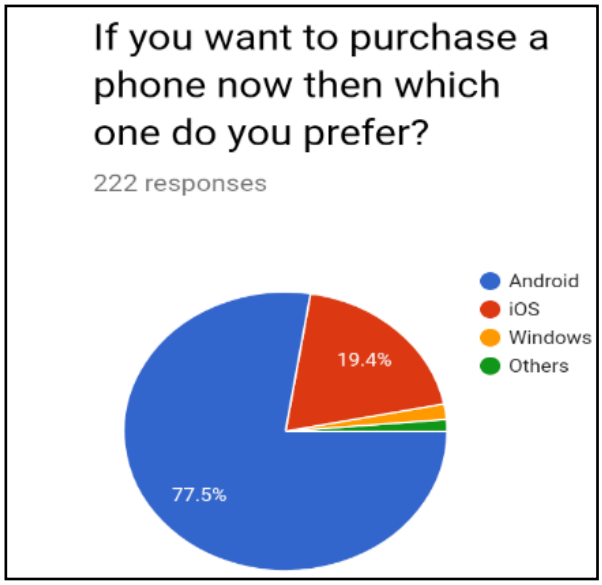
The following are the objectives behind this research:

- To study the most procure os.
- To study the comparative expenses of the mobile os.
- To study the comparative Privacy and Security of the mobile os.
- To study the comparative Experience of the mobile os.
- To study the comparative Technical issues.

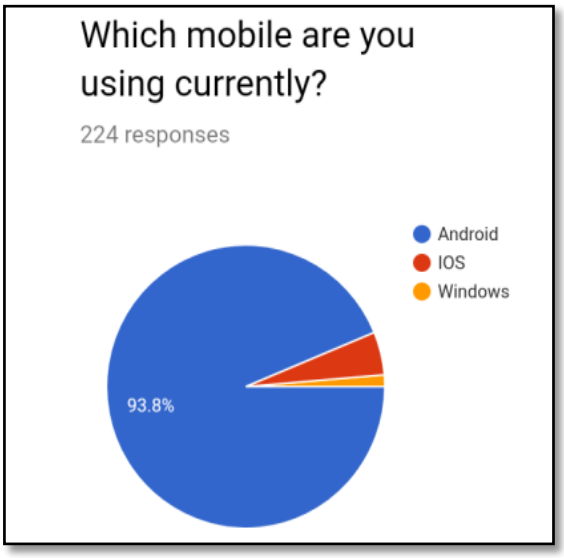
- To research on pros and cons of os.

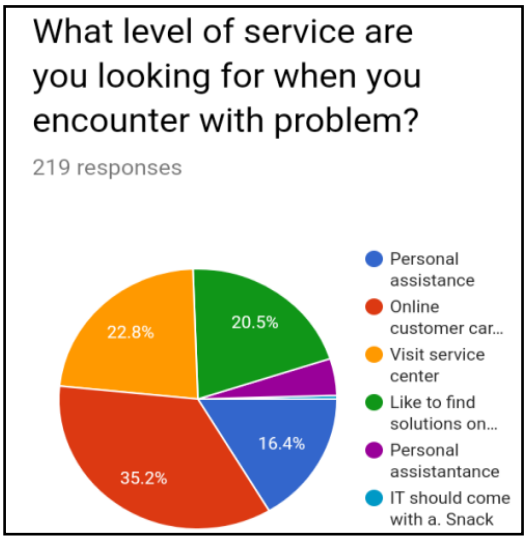
Analysis

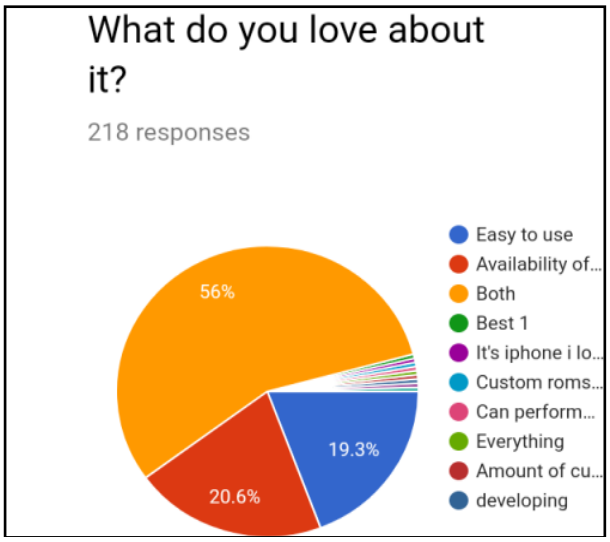
According to a survey conducted through the Google form http://docs.google.com/forms/d/1-5Z5qZvgh4D3tKvXrM8O0OcfOG8ZqsxraqnnZ8edit of over 224 people the following review is stated :



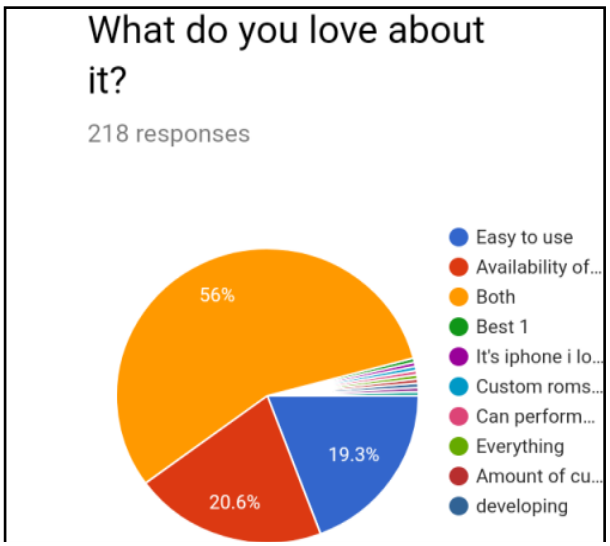
Near around 93.8% people own an android phone while the rest have iOS and other mobile phone. Maximum people have an android system based cell phones5.1%uses iOS and 1.1% uses windows out of the sample. If user gets a chance to exchange their phone they prefer switching to any latest android cell phone.77.5% goes for android 19.4% goes for iOS.



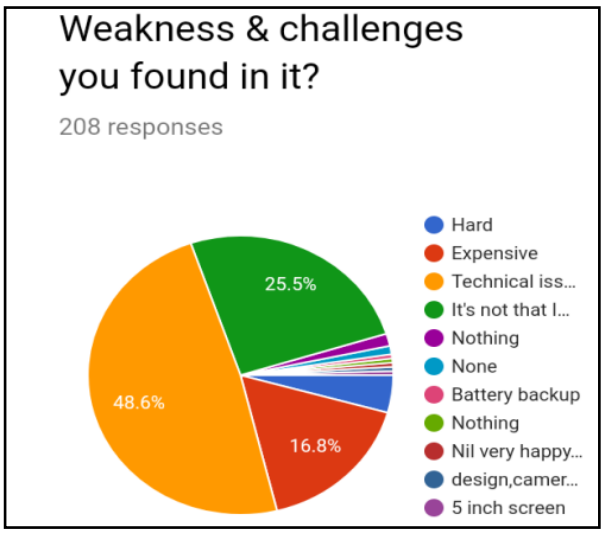




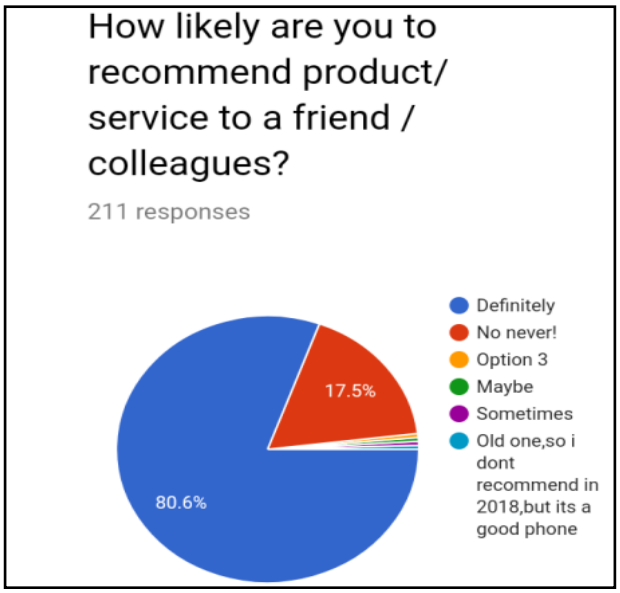
The research says that people loves most about the mobile osi.e. 56% of people like their mobile phone because it is easy to use and due to availability of apps.



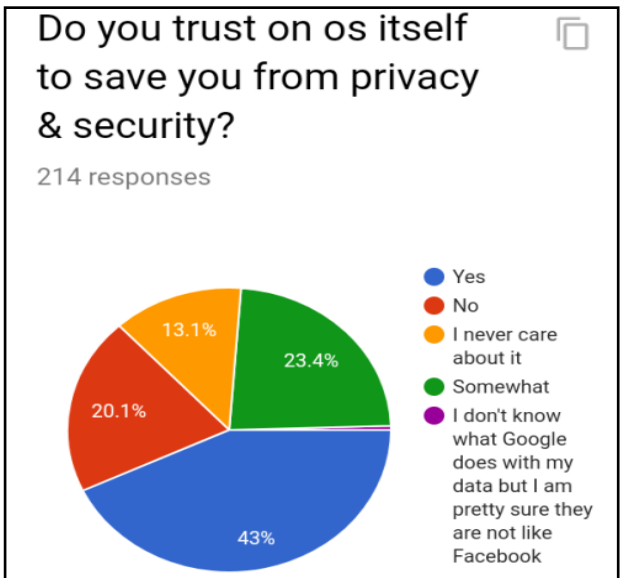
The major aspects of buying their phone are: 40.5% says worth of buying, 23.4% says due to privacy and security and also price matters equally along with it. The research says for level of service to encounter the problem that 35.2% of people are looking for online customer care. Whereas 22.8% of people would like to visit the service care.



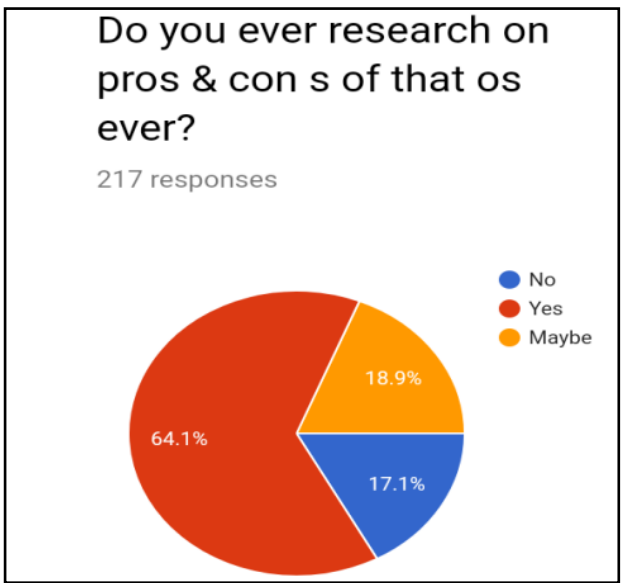
48.6% of the sample says that the weakness about their mobile os is technical issues which includes display, battery, useage and many more.



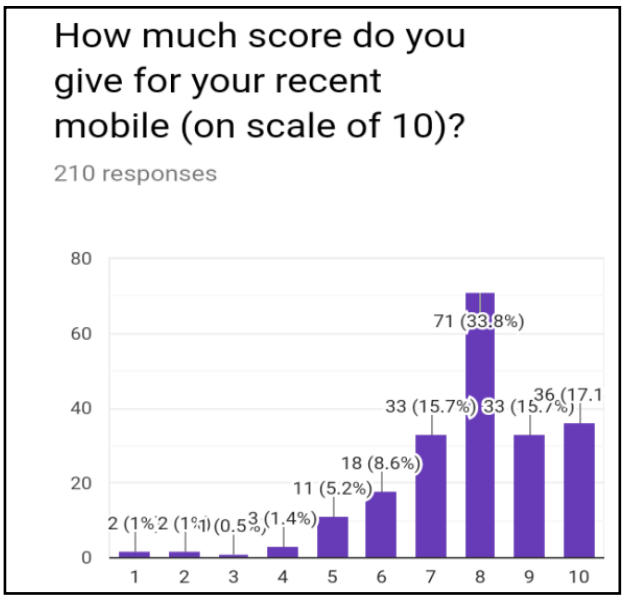
Most likely over 80.6% people suggest currently using mobile phone to their colleagues and friends. Advertisement on television and newspaper highlights and increases the sale of cell phones.



Security and privacy is the most demanded feature in mobile phones.ios phone provides with the most compatible security systems. While android phone has features such as fingerprints, face recognition, patterns application encryption and much more. Also iOS restricts to only particular applications which forms the major base of security in iOS systems.43% of people accepts that their os is secured.



Most likely over 17.1% people are not aware about the pros and cons of their mobile os.64.1% are aware of pros and cons.



Research says that around 65 % of people are highly satisfied with their mobile phone that they have. Whereas only 5% of people are not satisfied with the functioning of the mobile phone that they have.

Conclusion:

By this survey we can point out the advantages and disadvantages of the mobile OS. Advantages are helpful applications, easy to use, availability of anything anywhere by a click. Disadvantages are technical issues, customer care and more apps more lack of time.

References:

1. Android application development-Pradeep Kothari
2. Android programming for beginners-John Horton
3. Head First android development: A Brain-Friendly guide by David Griffiths and Dawn Griffiths
4. https://www.androidauthority.com/develop-android-apps-languages-learn-391008/
5. https://www.android.com

CRYPTO CURRENCY

Auti Pranjali **Gavande Ritu**
pranjali.auti@iccs.ac.in ritu.gavande@iccs.ac.in
Indira College of commerce and science, Pune.

ABSTRACT :
For most of history, humans have used the commodity currency. Fiat currency is a more recent development, first used around 1000 years ago, and today it is the dominant form of money. Crypto currency is nothing but a new experimental kind of money. It is neither fiat money nor commodity money. The crypto currency experiment may or may not ultimate succeed, but it offers a new mix of technical and monetary characteristics that raise different economics questions than other kind of currency. In this paper we explain what the crypto currency is and begins to answer the new questions that rise. It investigates the user's expectations of the future of crypto currency. It also explores the user confidence of dealing with crypto currency in a time that using such Virtual money is not fully controlled and regulated.

KEYWORDS:
bit coin, anonymity, censorship resistance, crypto currency, cryptography, open source.

INTRODUCTION

There is no doubt that era of information and communication technologies have created many golden opportunities in several aspects. A crypto currency is a digital asset designed to work as a medium of exchange that uses cryptography to secure its transactions to control the creation of additional units, and to verify the transfer of assets. A crypto currency is difficult to cuntertiet because of this security feature. A defining feature of crypto currency and arguably its most endearing allure is its organic nature. It is not issued by any central authority rendering it theoretically immune to government manipulation. The crypto market is still dominated by small investors who don't have the knowledge or data for fundamental analysis.

By using a crypto currency users are able to exchange value digitally without third party oversight. Crypto currency works on the theory of solving encryption algorithm to create unique hashes that are finite in number. Combined with a network of computers verifying transactions users are able to exchange hashes as if exchanging physical currency.

TECHNICAL VIEW

Crypto currency is the name given to a system that uses cryptography to allow the secure transfer and exchange of digital tokens in a distributed and decentralized manner. These tokens can be traded at market rates for fiat currencies. The first crypto currency was bit coin, which began trading in January 2009. The two major innovations that bit coin introduced and which made crypto currencies possible where solutions to two long standing problems in computer science: the double spending problem and the byzantine general problem.

ARCHITECTURE VIEW

Decentralized crypto currency is produced by the entire crypto currency system collectively at a rate which is defined when the system is created and which is publically known.

I. Block chain-The validity of each crypto currency coins provided by a block chain. A block chain is a continuously growing list of records called blocks which are linked and secured using cryptography.

II. Time stamping-crypto currencies use various time stamping schemes to prove the validity of the transactions added to the block chain ledger without need for the trusted third party.

III. Mining-mining is the validation of transactions. For this effort successful miners obtain new crypto currency as a reword.

IV. Anonymity-bit coin is pseudonymous rather than the anonymous in that crypto currency within the wallet is not tied to people but rather to one or more specific keys.

USE OF CRYPTOCURRENCY

1. Low cost money transfers
2. A censorship resistant alternative store of wealth
3. Invest in innovative early stage startups
4. Get paid to post content
5. Rent out spare hard drive spare to the cloud
6. Make private transactions
7. Travel the world

CONCLUSION :

Crypto currency is an impressive technical achievement but it remains a monetary experiment. Even if crypto currencies survive, they may not fully displace fiat currencies. As we have tried to show in this article, they provide an interesting new perspective from which to view economic questions surrounding currencies governance, the characteristics of money, political economy of financial intermediaries, and nature of currency competition.

REFERENCES:

1] Bitcoin: A New Global Economy. (2015, August 4). Retrieved July 2016, from BitPay, Inc. Website: https://blog.bitpay.com/bitcoin-a-new-global-economy/

2] Bovaird, C. (2016, June 24). Bitcoin Rollercoaster Rides Brexit As Ether Price Holds Amid DAO Debacle. Retrieved June 2016, from CoinDesk Website: http://www.coindesk.com/bitcoin-brexit-ether-price-rollercoaster/

COMPARATIVE STUDY OF RECENT MOBILE PROCESSOR

Khan Zubair
zubair.khan@iccs.ac.in

Sayeed Siddiqui
sayeed.siddiqui@iccs.ac.in

Abstract
Nowadays, User pay much attention to a phone specification there are number of way to judge Mobile Performance and one of them is to examine processor. The processor act as the primary co-ordinating component of the Mobile System. The data or other function on RAM will access by CPU called by operating system which is then read and executed by processor .In this Research Paper, We are going to compare top 4 mobile processor such as Apple A11,the Qualcomm Snapdragon 845, The MediaTek Helio x30 and the Samsung Exynos 9810

Keywords : Mobile Processor , The Apple A11, The Qualcomm Snapdragon 845, The MediaTek Helio x30,Samsung Exynos 9810.

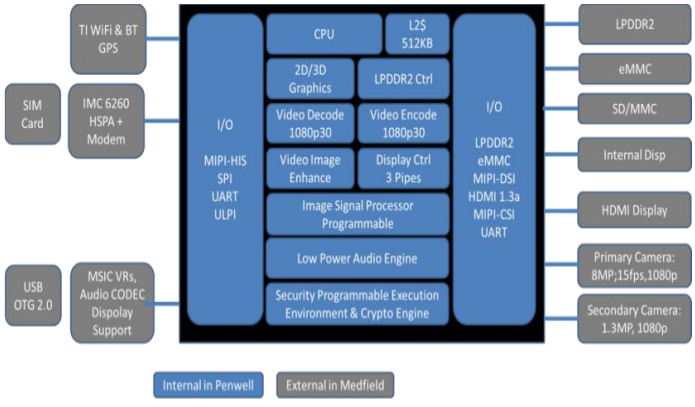
Introduction

As we all know, The Processor is the brain of any devices. Faster microprocessor mean more powerful, If processor is more powerful than it run software application much faster. All Mobile phone have different kind of processor which is integrate into the main cell phone chip, or be a separate computer chip the speed of processor is measured in MHz and GHz. There are number of factor which affect the speed of operation of a processor. A mobile processor is based on the principle of system on chip design to support application, which are running in a mobile phone operating system. Some company manufacture their own mobile application processor while some mobile company purchase their mobile application processor from the processor manufacturer.

For Example : Apple use their own manufacturer processor such as A11 and Android uses processor such as Qualcomm Snapdragon, Samsung Exynos, MediaTek Helio and many more.

Processor is now used in wide area such as in Tablets, Readers, Netbooks, Gaming Console, Automotive Navigation Devices, etc.

Mobile Phone Processor Architecture



Different Mobile Processor

In today market when it come to know detail of hardware specification mobile processor play a vital role in success of a product. To know about processor, It is not very necessary to know the working of mobile processor. Mobile processor is changing everyday with new and more powerful processor come into picture as compared to previous, So we are going to compare the latest mobile processor which is used in much of the devices.

1) Apple A11:

The Apple A11 is a 64-bit ARM based system on a chip (SOC) which is designed by Apple Inc. and manufactured by TSMC. It was first appearance in IPhone8, IPhone 8 plus and Iphone X which were introduced in September 12 2017. The main feature of A11 processor it has two high Performances Cores Which are 25% faster than the Apple A10 processor and Four high efficiency cores which are up to 70% faster than the energy efficient cores in the A10.

The max CPU clock role of Apple A11 processor is 2.39GHz and minimum features size is 10nm.it has instruction set of two cache namely L1 and L2 of such 64kb and 8mb respectively. Apple 11 is a successor of A10 and have GPU of 3 Cores.

This chip feature with camera related In movement including Apple-design ISP (Image Signal Processor) fast low light autofocus multiband image noise reduction. It also features with to protect the face ID used to unlock the secure way and data handle 600 billion operation per second.

2) Qualcomm Snapdragon 845:

The Qualcomm Snapdragon 845 processor is a high speed SOC for smartphones and manufactured in 10nm LPP FINFET at TSMC integrates 4x kryo 385 core (Cortex 875) at upto 2.8 GHz (max) for performances and 4x at kryo 385 cores at 1.8 GHz (max) for efficiency. It has level 3 cache of 2Mb and 8 number of cores. The main features of Snapdragon 845 is x20 LTE Modem, Adreno 850 GPU. It also support 64 bit secure processing unit such as Biometric Authentication(Fingerprint, ,Voice, Face user and app data protection and more such as connectivity, AqSHC audio, etc.

3) MediaTek Helio x30:

MediaTek is very well known processor in the US or Europe. The Helio x30 designed is composed of 3 individual clusture of CPU core. x30 is powered with powerVR 7xt-MT4 GPU and it support display upto 3840x2160. The x30 support camera upto 32Mp single camera and 16Mp dual camera. It can captures 4K HDR Video. X30 is the first chipset from MediaTek that of a 10nm design. It offer upto 35% increase in performance and 50% boost in power when compared to x20 processor which is predecessor of x30 due to 10nm. The fabrication cost reduced tremendously which increases manufacturing and efficiency.

4) Samsung Exynos 9810

Exynos comes with high performances core clocked at upto 2.9GHz and accompanied by another quadcluster of efficient core that will go easy on your battery. LTE modem that enables download upto 1.24Gbps and 200Mbs of uplink interval network based deep learning and most important real time out of photography in high resolution and brighter pictures in low light.

It is probably coming in upcoming Samsung brand S9 and S9+. It has top quality features such as it is octa core 64 bit with 10nm finFET 2nd generation. It support display resolution of 4K UHD (4096x2160) or (3840x2400) 60fps. It also support graphics API with upto 4K recording i.e. 120 fps. It provides with great security such as Samsung knox, Security Processing Unit, DRAM Encryption. It also support Adapter fast charging and wireless charging.

Conclusion:

With the recently development of mobile processor, We come to know that the evolution of processor is changing dramatically day by day when we see 2 years back and now it completely different story.

It is not easy to compare the processor as we come to know each processor has their own features compared to other processor, but we try our best to compare all the processor, So we came to the point that all processor is powerful in their own way and what matter is how the development of processor will go on upcoming release of Apple, Qualcomm Snapdragon, Samsung Exynos will surely bring drastic change in the future.

References:

1. https://en.wikipedia.org/wiki/Mobile_processor
2. http://www.qualcomm.co.in/products/snapdragon
3. https://www.samsung.com/semiconductor/minisite/exynos/products/mobileprocessor/exynos-9-series-9810
4. https://en.wikipedia.org/wiki/Apple_A11
5. https://www.mediatek.com

AUGMENTED REALITY AS FUTURE OF THE EDUCATION

Priti Chavan **Prachi Bhosle** **Minal Amrutkar**
Indira College of Commerce and Science, Pune.

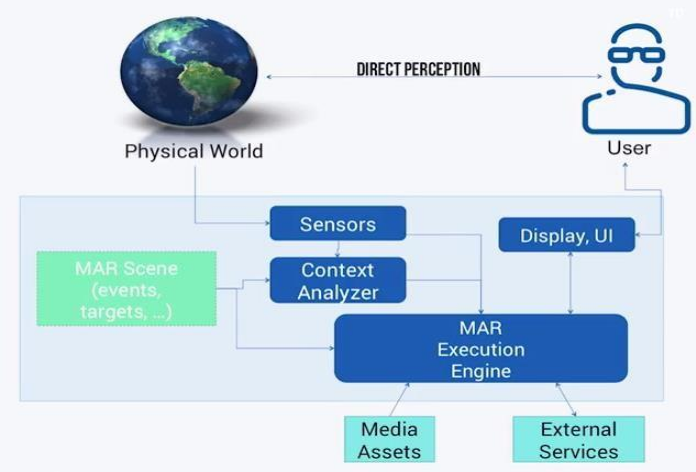
ABSTRACT:
Technical, economic and social progress is pushing educational systems to restructure and modernize. Every society creates an education system. According to their nature and level of socio-economic development. Education transforms and directs the life of society, determines the strategy and realistic conditions of society, turning a "society of today" to "society of tomorrow", and generates new thinking of citizens with an of the meaning of life. Education acts as a development tool for the society which is crucial for the state.
Augmented reality (AR) technology allows supplementing the image of the real world with various virtual objects of computer graphics, and also combine images obtained from different sources of the computer environment. AR is adding additional content to the real world. The technology of augmented reality is already used in various types of human activities, for example, advertising, military development, tourism, games, entertainment, etc. Moreover, education is considered as one of the most beneficial fields for development of AR.
KEYWORDS:
Augmented reality, Virtual reality, Scientific Visualization.

INTRODUCTION:

Education plays crucial role for the society and development of the country. The development of the education in the state is strongly connected to the quality of life and prosperity. In many economically developed countries state remains the primary entity holding the education system and defining the strategic direction and modernization. Nowadays, digital citizens are strongly connected and dependent one-Governance, e-society, and e-learning.

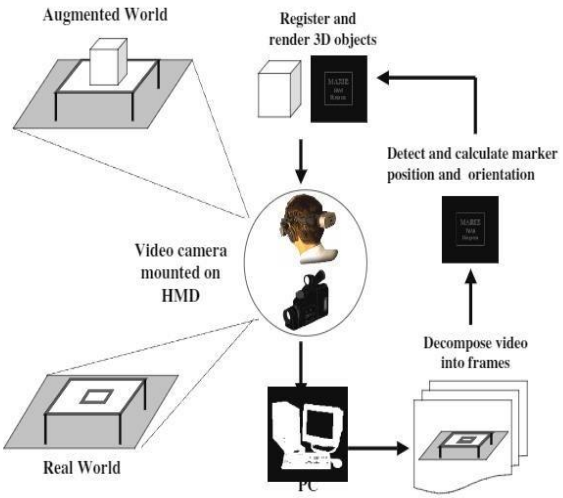
Overview of Augmented Reality Technology

It is impossible to over estimate progress and development of the society. Human computer interaction (HMI) and the information came to the for front. The appearance of the computer has changed dramatically the way people live.



Mixed and Augmented Reality Reference Model

Augmented reality is a future of the education. Nowadays, the technology of augmented reality is rapidly developing and progressing. We can see the use of the AR technology in various fields such as advertising and promotion, architecture, gaming, navigation, medicine, military arts, etc. Never the less, usage of augmented reality applications in the education is at the early development stage. Technology and its effect on the society provoke a lot of discussions and opinions. Melvin Keansburg in his publication for the annual meeting of the Society for the History of Technology said: “Technology is neither good nor bad; nor is it neutral”. Technology interacts with the society on different levels and it can have different results when introduced into different contexts or under different circumstances the combine’s technical and educational part of AR in thee-learning field is published by the University of Sussex: "Multimedia Augmented Reality Interface for Elearning (MARIE)". During the research project called the Virtual Interactive Teaching Environment, the MARIE system that combines computer-generated information and computer-human interaction technologies were taken into consider at which is possible to observe in Mainly we can see that architecture of the AR system.



Architecture of the Augmented reality system 30below

CONCLUSION:

The problem of education is well-known and a lot of steps have been made for solving the issue. During centuries a lot of things have changed. People got new technologies around them the internet, e-books, mobile phones, laptops but never the less pupils have difficulties with learning.

Augmented technology that allows supplementing the image of the real world with various virtual objects of computer graphics, and also combine images obtained from different sources of the computer environment. AR is adding additional content to the real world. It is an enormous tool that can enrich the future of the education. It can help to see and interact with the things from a different perspective during the study process.

REFERENCES:

1. https://www.researchgate.net/publication/277287908_Introduction_to_augnmented_reality

2. https://www.researchgate.net/publication/269464134_A_Survey_of_Augmented_Reality

RECURSIVE CAPTURE AND RECRUIT: A OPTIMIZED BOTNET PROPAGATION AND APPLICATION IN DDoS

Aditya Sanjeev Kulkarni
Email: - kul.aditya1@gmail.com
Indira College of Commerce and Science.

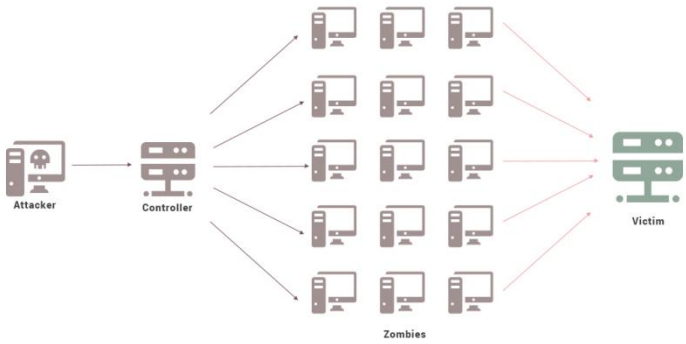
ABSTRACT :-
Botnets, networks of compromised and remotely controlled computers (bots) are widely used forcyber-attacks. Botnets are one of the main reasons of growing number of unsolicited emails (SPAM), identity and confidential data theft attacks and many other internet criminal and evil-minded activities. It is a weapon used in cyber warfare as brute force attacks to perform Distributed Denial of Service (DDoS) attacks over the internet. Brute force is a simple but does give power to the bot masters. In this paper we discuss howa little piece of code can be such a powerful weapon and an algorithm for botnet generation by using compromised servers as bots. Using the proposed methodology botnets creation will become easy due to recursive capture.
KEYWORDS:-
Botnet, DDoS, vulnerability, malware, exploitation, Privilege Escalation

INTRODUCTION:-

Botnets are network of interconnected, remotely controlled compromised computers, infected by a malware program or bot. The Bots are programs or codes that have characteristics of Trojans, worms and other viruses. At an early stage of organizing a botnet, hackers are seeking unprotected, outdated computers, directly targeting known operating system and specific software vulnerabilities or targeting poorly educated computer users. Depending on program type, all known malware distribution methods are used with purpose to infect as many computers over the internet as possible. Nowadays most popular way to distribute the malware used in botnet are using email attachments, exploiting known browser vulnerabilities and direct penetration to vulnerable systems of end users.

General Profiling:

In Cyber Attacks as it is not feasible for hackers to engage all friend community for attacks such as DDoS, etc. botnets are the solution for this problem. Botnets are configured such that when the attacker commands all networked compromised devices start attacking/responds to the command all at the same time. This creates a real time Cyber Army.



The DDoS attacks either requires an internet connection with Bandwidth more than 10 GB which is not practically and economically feasible. So, the hackers compromise small vulnerable devices all over the internet with different IP's and different Bandwidth which all together can serve a Bandwidth more than 10 GB.

But rather than Capturing small vulnerable devices all over the Internet. I have proposed a 'Recursive Capture and Recruit' methodology which targets the Vulnerable servers. As servers have more bandwidth and have fast processing speed. This cannot be done directly. So, to Justify the algorithm some pre-execution methodology is discussed further. This Algorithm can reduce the time required to create a Botnet and Improve the efficiency. This Algorithm can be used to create an effective botnet which further can either be used as an offensive methodology or Defensive measure by configuring them with IDS, IPS and Firewalls which will get triggered in Intrusions and will start to kill the Intruder with DDoS as Higher Bandwidth is achieved.

1. **Stage I:** *Pre-execution Methodology*
   - **I.** Deploy 1 own server 'Commander'
   - **II.** Try Compromising Vulnerable servers directly.
   - **III.** If not succeeded: Then capture one of the Client in the local network of the Vulnerable Servers.
2. **Stage II:**
   - **I.** If Server gets compromised directly. Go to step IV.
   - **II.** If a machine in the Server's local network gets compromised go to Step III.
   - **III.** Perform privilege escalation.
   - **IV.** Establish a connection to our commander.
   - **V.** Perform Vulnerability scan for network devices.
   - **VI.** Compromise the routers with appropriate exploit.
   - **VII.** Capture as many as possible clients in the network.
   - **VIII.** Establish a Botnet
3. **Stage III:**
   - **I.** Perform DDoS on target
   - **II.** Test for attack success using a genuine client.
   - **III.** Generate the detail Report.

   If used as an offensive measure, Then Execute Stage IV.
4. **Stage IV:**
   - **I.** Delink the Botnet Servers
   - **II.** Clean-up the systems

By the conventional ethics of a Security researcher, report the vulnerability to respective owners of the vulnerable systems. If used as a defensive measure report the incidence to the Cyber cell if any lawful help needed.

Intention of this methodology is to achieve optimised botnet by least efforts.

For security against this capture, the servers should follow following measures:

- Proper network configuration
- All Applications updated
- Changing default passwords
- Stopping unwanted services
- Blocking unused ports
- Installing good IDS, IPS ad Firewalls

The Server LOGS must be frequently monitored. Increasing bandwidth of the servers. Protecting all servers according to OWASP Stated top vulnerabilities.

Word of CAUTION:

Execution of DDoS is Illegal and against the conventional ethics of Cyber Security. This should only be executed if you are authorised to do so. This should be performed under controlled environment.

Goals:

I. Effective Botnet

II. More effective vulnerability assessment.

III. Effective if used as an offensive security

CONCLUSION:-

Proposed methodology has an ability to generate an effective and minimised Botnet. This botnet can be used as an offensive and defensive measure. This botnet is optimised for attacks likeDDoS. This is the emerging threat for an organisation which can lead it for immense losses. Hence the Servers must be update and properly configured, and constantly monitored.

REFERENCES:-

1. M. Bailey, E. Cooke, F. Jahanian, J. Nazario, and D. Watson. The Internet Motion Sensor: A Distributed Blackhole Monitoring System. In Proceedings of the Network and Distributed Security Symposium, San Diego, CA, January 2005.

2. E. Cooke, F. lahanian, and D. McPherson. The zombie roundup: Understanding, detecting and disrupting botnets. In Proceedings of Usenix Workshop on Steps to Reducing Unwanted Traffic on the Internet (SRUTI '05), Cambridge, MA, My 2005, Principles and practices", Fourth Edition. Pearson Prentice Hall, (2006):, USA.

3. G. Dieter: “Computer Security", Second Edition. John Wiley & Sons, (2005), UK.

CLOUD COMPUTING: THE TRENDING TECHNOLOGY

Piyush Vijay Ingale
Dr. D. Y. Patil Arts, Commerce &Science College, Pimpri, Pune

Abstract:
Cloud computing is the recent trend in IT world. Cloud computing has the capability for development of parallel computing, distributed computing, grid computing and virtualization technologies. Cloud computing is an emerging model of business computing. Cloud computing is in high demand today, because of the advantages such as high computing power, less cost of services, high performance, scalability, reliability, accessibility and availability.
In this paper, we had focused on the challenges and issues of cloud computing. We identified several challenges from the cloud computing adoption perspective. However, security and privacy issues present a strong barrier for users to adapt into cloud computing systems.
Keywords: *Cloud computing, issues, virtualization, challenges, adoption*

Introduction:

Cloud computing supports the development of parallel computing, distributed computing grid computing, and is the combination and evolution of Virtualization, Utility computing, Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS). To users, cloud computing is a Pay-per-Use-On-Demand mode that can conveniently access shared IT resources through the Internet. During the trend analysis there are found many issues and the security level's problems and solutions for that. Different types of attack which is performed on the private cloud also important issues and problems for organizers and companies. Security is the most problematic issues in Cloud. Security of cloud is in terms of threats, vulnerabilities and impact. That is show that improving security of cloud will increase accuracy, prevention of data loss and improve privacy.

Literature Review:

1) Cloud Computing :

A Survey on its limitations and Potential Solutions (Mohammad Manzurul Islam, Sarwar Morshed and Parijat Goswami)

These paper describes that small to medium enterprises are adopting cloud computing faster than larger size enterprises. That raises a debate whether this cloud computing technology will penetrate throughout the IT industry or not. The SMEs are adopting cloud computing for the low implementation cost of total IT infrastructure and software system whereas the large enterprises are relying on their own infrastructure for data security, privacy and flexibility to access their own infrastructure. There are several limitations of cloud computing and presented the ongoing potential solutions towards those problems.

Cloud computing is widely adopted by the SMEs for its low cost in spite of having such problems. On the other hand, large enterprises tend to rely on their own infrastructure rather than depending on cloud vendor. Since researchers are working to overcome the barriers of adopting cloud computing

2) **Cloud Computing Issues and Benefits Modern Education (D. Kasi Viswanath, S. Kusuma & Saroj Kumar Gupta)**

They says that Cloud computing, a rapidly developing information technology has brought new change & opportunities to IT industry and in the field of education. E-learning platform brings a brand new concept & is a kind of network information learning mode & also known as online learning to guide education. E-learning emphasizes on the technology to transform & guide education. E-learning system will use the cloud computing that introduces efficient scale mechanism. Building cloud-based e-learning system opens up new ideas for the further development of e-learning.

3) **A Survey Paper on Security in Cloud Computing (Krutika, Rutvij, Vahida)**

Cloud Computing uses a network of remote servers hosted on the internet to store, manage and process data, rather than a local server or a personal computer. Cloud computing provides services on demand. In the recent time, Cloud Computing is highly demanded service because of the advantages like high computing power and scalability. The most trending topics till May 2016 were related to security in network, security in data storage, big data, privacy and private data, reduce time and reduce cost.

4) **Cloud Computing :**

Opportunities for Integration with the Next Generation Network (Thomas, Geoff, Julian, Jens, Tatiana, Stephan, Ian)

Carrier-grade networks of the future are currently being standardized and designed under the umbrella name of Next Generation Network (NGN). The goal of NGN is to provide a more flexible network infrastructure that supports not just data and voice traffic routing, but also high services and interfaces for third party enhancements. Telecom operators are expecting that grid enabled services can improve their internal network operation as well as enrich the services they offer to their customers.

Cloud computing has recently become a popular area, but presently lacks standards or perspectives for interoperability, although there are signs this is slowly changing. Interoperability between systems can only be achieved when there are clear standards for interfaces and an environment that supports multiple implementations of architectural components. The lack of a widely agreed-upon grid architecture, encompassing software, hardware, and services, impedes the development of a consistent set of standards.

5) **Cloud Computing :**

Research Issues, Challenges, Architecture, Platforms and Applications (Santosh Kumar and R. H. Goudar)

We identified several challenges, cloud computing initiatives could affect the enterprises within two to three years as it has the potential to significantly change IT. Cloud computing can provide infinite computing resources on demand due to its high scalability in nature, which eliminates the needs for Cloud service providers to plan far ahead on hardware provisioning. Based on the investigation security and privacy concerns provided by companies nowadays are not adequate, and consequently result in a big obstacle for users to adapt into the cloud computing systems. Hence, more concerns on security issues, such as availability, confidentiality, data integrity, control, audit and so on, should be taken into account.

Conclusion:

The research conducted a systematic analysis of various fields in cloud computing. It provides interpretation and implication of the most recent finding. Initially, it is related to security in network, security in data storage, big data, privacy and private data, reduce time and reduce cost which is referred in our study. It also addressed challenges and issues of cloud computing. In spite of the several limitations and the need for better methodologies processes, cloud computing is becoming a hugely attractive paradigm, especially for large enterprises.

References:

1. https://www.researchgate.net/publication/312521486_A_Survey_Paper_on_Security_in_Cloud_Computing_A_Bibliographic_Analysis
2. http://www.engpaper.com/cloud-computing-2018.htm
3. http://www.ijfcc.org/papers/95-F0048
4. https://globaljournals.org/GJCST_Volume12/3-Cloud-Computing-Issues-and-Benefits-Modern
5. https://pdfs.semanticscholar.org/2fd2

WEBSITE DEVELOPMENT OPTIMIZATION USING Xampp/PHP

Sahil Tamboli
BBA (CA) -III
Shri Shahu Mandir Mahahvidyalaya

Abstract:
This research paper discussing the various useful tools and techniques that are used in a development of a website. We also discuss about the procedure follow in a website, mostly focused on a local host named Xampp tool. Next, we compare different development frameworks web application. In addition, we discuss life cycle model and framework development of web application. In this report, various review papers result also included for understanding of problems can be facing by the users. This Paper tells about the technologies used in this development, PHP and explained in result its functionality with Xampp with screenshots. It is hoped it will gives a useful framework for guiding the process.
Keywords : *Navigation, Impressive, Effective, Xampp, Development*.

INTRODUCTION

Website Development is like house building, before house building process, we ask to an architect about plan, building permit, oversee a survey of geological and license from city. All things must have to see in the website development requirement, designing, documentation, appropriate server and programming language etc. Most necessary things for a website is selecting a programming language. Mostly web design using HTML and CSS. For web designing not necessary high level knowledge of HTML. We can say features like as webpage formatting, designing, page layout techniques, graphics, multimedia, images and functions of multipage website should be including. After programming language to see the layout of webpage should a test server. The reason behind is developer is using programming language, if will be the expert of language but still running often these mistakes cannot be found, there is a need to execute server side codding to see the preview by a test server. This paper discussing about the test server using in a website development named Xampp and PHP language

Website Development Process :

Various Steps consider in Website Development Process:

- Analysis
- Specification
- Design & Development
- Content Writing
- Codding
- Testing& Security

- Promotion
- Maintenance & Update

Analysis:-

Firstly, better understand the website requirement creation, including website Design and Website looks and feels, the Web pages uses, website content and for suggestion and discussions, a proper space available on a web site for easily approachable.

Specification:

Predicated on Requisite, prepare a draft designation of Web pages to be developed include the sitemap and a flow of various process **Design & Development:** Invention and Development is a significant role plays in Web Development. Graphical looks and feel according to most impressive and efficient way, Graphical elements required for design are appearing more impressive, for this use colour and image. Design of web pages, computer graphic includes navigation mock-up, template content and placeholders.

Content Writing:

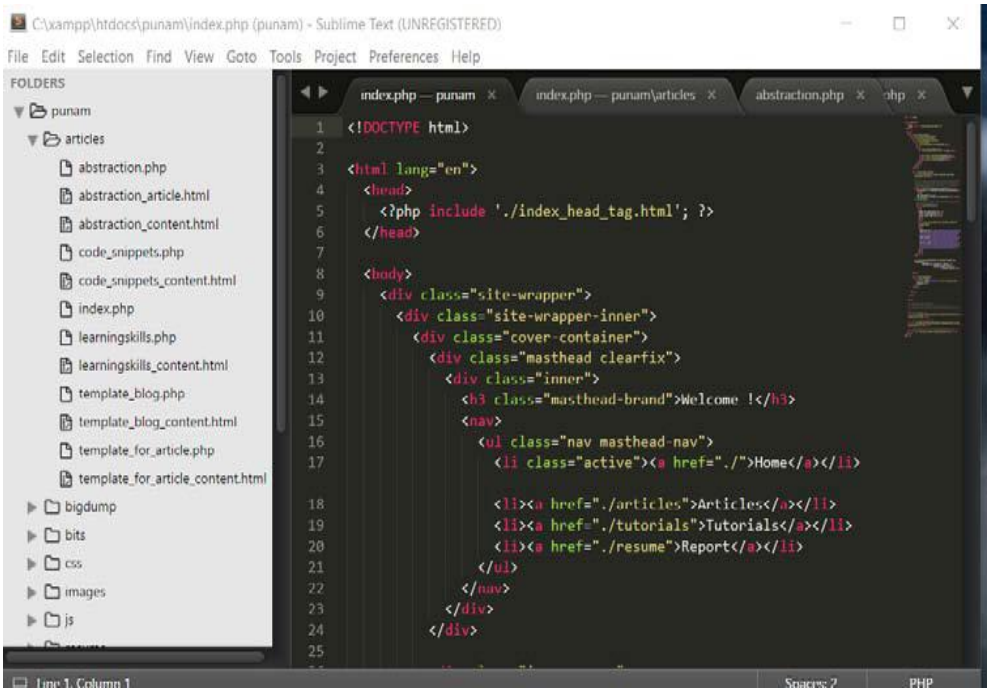
Writing of contents is a significant part of development of web pages and plays an important and necessary step in optimization Engine, a well-defined or easy content is utterly necessary to fall in internet site users. Content written by a more professional requires more pure, easy and accurate content.

Coding:

Coding start of a Web Pages in CSS, HTML, PHP, Java scripts and other technologies of WWW (world wide web), for drawing of the graphic and text contents, we look code of web page consistently like as webpage design. Coding of a web page is loading fastly search engine and index give us rank very quickly. Every web page of a website takes a unique title, unique meta tags as keywords and descriptions. We can create links of internal with keywords of website to explore the search engine ranking and navigation. In this way improve the website quality code by using techniques and to ols according to website standards.

Index Code:

For website design, we have written code into PHP language, each create index page that contains details and design of a website front look and every icon name with hyperlinks. These things we can see in Home page of a website and code stores in the index file for easily understanding of that code we can take view on the screenshot.



Testing& Security:

Testing as well play an important role in website development, testing is done for browser compatibility, broken links and can check the speed of loading pages, and loading speed of images.

We can also check validation of HTML code, validation of CSS, checking of spelling and build alterations to rectification of mistakes and can perform test of functional on processes of websites like payment, postal services, registration, etc., these checks as per requirement. When testing done website hosted on a web server and uploaded.

Promotion:

The advancements are likewise a necessary step for website to awareness of the peoples. To become more impressive, we can do website promotion that is listed below:

1. E-mails
2. Social media
3. Web logs
4. Articles
5. Blog

Maintenance & Update:

For better operation of the world's cyber site, monitor the website time to time. We make update periodically needed as per the requisites. Even maintenance of website is required, when any visitors keep updated. Whatever changes in the information comes from contact, any additional articles added and other links added in the website added. We offer maintenance support on the website according to time.

RELATED WORK:

Kaminietal :

This paper also describe the use of mean stack for communicate with IOT (internet of things) devices. JavaScript is used as scripting language for client-side programming that runs in any supportive browser.

Bonny Alex Ninan, et al.:

The goal of this paper to examine the usage of applying the social networking technologies in Education Institutes.

According to M. Taylor, et al.:

Proposed work on "A User Center Website Development Approach" in this paper identify the user requirements for the website, that is a need for knowledge of the various requirements, after it design of website and necessary techniques used. Basically, website features depend on the various type of website users. Mainly those techniques used in this type of website comes under the user centered design of website.

Parasuraman, etal.:

Proposed servqual a clear and pure or widely used like for measuring quality of service. Theservqual core is the paradigm disconfirmation, the dissonance generated that is, when the perceived quality services separate from requirement of the customers. The received quality service passes the user's need, it is considering user expectations received high quality service; other hand, the received quality service is bad as compared to user requirement, then it will consider by customer that received quality service id bad.

RESEARCH METHODOLOGY:

Methodology and way used for a website development is different for different user, most ideas say the right way of website development is developed by the developers as per the requirement in own approach.

Main requirement of most of websites is requirement cannot have changed according to time and cost and another thing is that we need a web server space and cost to store the website on the web-server, files cannot store at on the server of local. When an incipient website project, and understand the requisites overlooked some critical feature we authentically need, or didn't designate enough something about the source information.

Today all work comes screeching to a halt as the developer asks to renegotiate the contract, integrate a transmutation order. In this work, we are using to use a Xampp for local host, Xampp Provide us a perfect outlook of website of a local server from which we see performed approach on one local server. For this performance, we used PHP language to code our site content and different icon what we want on our site looks, it works like CSS and HTML for content and design of the site. Those icons we want on the front as several pages title, for these titles we have an index file and in index file we give the link of file, where we add content of those files. Xampp read all the files and convert it into CSS and HTML format, it can convert HTML, CSS and Java -Scripts and provide to client result in same format. The work is about to generate rules that will

be effective and increase the accuracy of work. In these files, we can edit as per requirement according to time as we want in outlook of site. Requirement will easily change and we can view the look of site on our local server, as purpose of security also high, Chances of risk will be minimum.

CONCLUSION:

We are trying to develop a website using Xampp tools for local web server. For website design, we will use the PHP and HTML language and for more interactive way we will use CSS Scripts. In Xampp, we will have anhtdocs folder and store the folder where, we will have website code scripts and we can open these scripting languages in sublime text. So, at last we have a website that can open in local host in system and outlook can see in local web server. Developer can easily change into code according to the requirement after looking on the local host preview. Another point is security features also included, another system we cannot see it without htdocs folder and updation also not possible.

BIBLIOGRAPHY:

1. https://www.executionists.com/definition-document-samples
2. http://cty.jhu.edu/ctyonline/courses/computer_science/intro_web_design.html.
3. http://www.dwuser.com/education/content/why-you-need-a-testing-server-and-how-to-do-in

SKIMMING OF CARDS AND ITS PREVENTION

Suraj Ganage **Akash Hagir** **Dinesh Chormale**
suraj22ganage@gmail.com Akashhagir7777@gmail.com dinesh.chormale@gmail.com
Indira College Of Commerce And Science Pune, Maharashtra

Abstract:
In this paper we are going to present the idea how to avoid frauds done by card skimming in the near future .Card skimming is a big threat to card users which have credit ,debit or ATM cards.
The act of using a skimmer to illegally collect data from the magnetic strip of credit card ,debit card or ATM card .This information ,copied onto another cards the magnetic strip, Is then used by an identity theft to make purchase or withdraw cash in the name of the actual account holder.
Skimming works by replacing a card reader like an ATM with a device which reads the cards with magnetic strip .The counterfeit reader records all of the data on the credit, debit or ATM card as it passes through the skimmer.
Keywords: *Complexity, Stealing, Frau , Prevention .*

Introduction:

A magnetic stripe card is a type of card capable of storing data by modifying the magnetism of tiny iron-based magnetic particles on a band of magnetic material on the card. The magnetic stripe, sometimes called swipe card or magstripe, is read by swiping past a magnetic reading head. Magnetic stripe cards are commonly used in credit cards, identity cards, and transportation tickets. They may also contain an RFID tag, a transponder device and/or a microchip mostly used for business premises access control or electronic payment.

Card fraud begins either with the theft of the physical card or with the compromise of data associated with the account, including the card account number or other information that would routinely and necessarily be available to a merchant during a legitimate transaction. The compromise can occur by many common routes and can

usually be conducted without tipping off the cardholder, the merchant, or the issuer at least until the account is ultimately used for fraud. A simple example is that of a store clerk copying sales receipts for later use. The rapid growth of credit card use on the Internet has made database security lapses particularly costly; in some cases, millions of accounts have been compromised.

Stolen cards can be reported quickly by cardholders, but a compromised account can be hoarded by a thief for weeks or months before any fraudulent use, making it difficult to identify the source of the compromise. The cardholder may not discover fraudulent use until receiving a billing statement, which may be delivered infrequently. Cardholders can mitigate this fraud risk by checking their account frequently to ensure constant awareness in case there are any suspicious, unknown transactions or activities.

The 8 Different Types of Card Fraud

- The first category, **lost or stolen cards,** is a relatively common one, and should be reported immediately to minimize any damages.
- The second is called **"account takeover"** — when a cardholder unwittingly gives personal information (such as home address, mother's maiden name, etc.) to a fraudster, who then contacts the cardholder's bank, reports a lost card and change of address, and obtains a new card in the soon-to-be victim's name.
- The third is **counterfeit cards** — when a card is "cloned" from another and then used to make purchases. In Asia Pacific, 10% to 15% of fraud results from malpractices such as card skimming but this number has significantly dropped from what it was a couple of years prior, largely due to the many safety features put in place for payment cards, such as EMV chip.
- The fourth is called **"never received"** — when a new or replacement card is stolen from the email, never reaching its rightful owner.
- The fifth is **fraudulent application**— when a fraudster uses another person's name and information to apply for and obtain a credit card.

- The sixth is called **"multiple imprint"**— when a single transaction is recorded multiple times on old-fashioned credit card imprint machines known as "knuckle busters".
- The seventh is **collusive merchants** — when merchant employees work with fraudsters to defraud banks.
- The eighth is **email order/telephone order (MO/TO) fraud,** which now includes e-commerce, and is the largest category of total payment card fraud in Asia-Pacific, amounting to nearly three-quarters of all fraud cases. The payments industry is working tirelessly to improve card verification and security programs to prevent fraud in so-called "card-not-present" transactions online or via email order and telephone transactions.

Here are four of the most likely ways that your credit or debit card can be skimmed:

1. **ATMs** – An ATM skimming device is used and fits over the real ATM card reader slot. ATM users do not know their information is being intercepted as their card is inserted into the false reader.
2. **Gasoline Pumps** – This skimming device is installed inside a gas pump in minutes and is not visible to users. A gas pump key can fit pump housings in multiple stations, allowing for quick and easy access.
3. **Handheld Devices** – Someone can take your credit card and quickly record the information with a swipe on these small devices. Think about it, when you send your credit or debit card off with a restaurant server, it's one of the only times your card is out of your sight and not in your possession.
4. **Keystroke Loggers** – This device can be attached to public-use computers, like those found at the library, or credit card point-of-sale devices to record passwords and other personal data. They can also be downloaded onto your computer as malicious spyware.

Credit card fraud precautions:-

General precautions:

Here are some recommendations for credit card holders:

- Never write a PIN-number on a card.
- Never store the written down PIN-number together with a card. Memorize the number and never write it down.
- Sign the back of all cards.

- Never lend a card to another person.
- Never give anyone the PIN-number. No one (bank employees, cashiers) have the right to demand it.
- Do not leave a card unsupervised.
- Report lost credit cards to your bank immediately.
- Check statements for unauthorized charges, especially if you have used the card while travelling overseas.

Safety precautions at a cash dispenser (ATM)

- Try to use ATMs in an isolated location to reduce the chance of robbery or someone seeing the PIN-number you have entered.
- Do not allow anyone to see your PIN-number.
- Make sure you have everything after finishing a transaction. After finishing, you should have: a card, money and a receipt.

Safety precautions on the Internet

- Do not give your personal and credit card information to unfamiliar sites. Try to keep your purchases limited to the major online retailers.
- Make sure the site is using SSL encryption.
- Contact your bank immediately if you feel you have become a victim of online credit card fraud

Conclusion:

This paper provides an overview of payment card fraud which began with payment card statistics and the definition of payment card fraud. It then described various methods used by identity thieves to obtain personal and financial information for the purpose of payment card fraud. Next an overview of fraud types was given.

Finally, prevention and detection techniques including data mining solutions were discussed. As more and more of the financial and other data are digitized, the opportunities for payment card fraud will continue to increase exponentially. Furthermore, the thieves are also getting more and more sophisticated and learning new fraudulent techniques. They are also trained to bypass the defensive mechanisms imposed. That is, the adversary will learn the patterns utilized by the solutions and attempt to develop methods to thwart the solutions. Therefore, in addition to the technological solutions, we also need to learn the behaviour of the adversary. Appropriate game theoretic strategies have to be investigated so that we can win the games against the thieves. Ultimately, we need to develop and integrate solutions that will use data mining, risk analysis, game theory and adversarial learning so that we can be one step ahead of the thieves, hackers.

References:

1. ATM_awareness_guide.pdf

2. https://newsroom.mastercahttps/asia-pacific/2014/10/28/8-different-types-card-fraud/

3. https://www.thebalance.com/how-credit-card-skimming-works-960773
4. https://in.pcmag.com/software/48978/feature/how-to-spot-and-avoid-credit-card-skimmers
5. https://www.lifewire.com/how-to-avoid-credit-card-skimmers-2487770
6. https://krebsonsecurity.com/all-about-skimmers/
7. Counterfeit Card and Skimming Prevention - Banking and Payments
8. https://www.bpfi.ie › personal-customer

A STUDY OF THE CYBER SECURITY IN INDIA

Vishal Keshav Mastud
Shri Shahu Mandir Mahavidyalaya
(B.B.A -C.A)

Abstract:
Guidelines and policy to prevent and safeguard of internet users from cyber-crimes. The Internet is a global system of interconnected computer networks that use the standard Internet Protocol Suite (TCP/IP) to serve billions of users worldwide. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail. Through internet and WWW, anyone can access information at anytime and anywhere but the data which is available online can be targeted by third person in a way of hacking, phishing, etc. to harm the computer and information stored in computer or available online. This type of happening is Called cyber-crime. Cybercrime always involves some degree of infringement on the privacy of others or damage to computer-based property such as files, web pages or software. This paper is completely focused on cybercrime issue, trends and problem faced by Indian users and how cybercrimes can be minimized by formulating effective cybercrime laws in India. The paper also includes Indian cybercrime Statistics, cybercrime cells all over India and many more latest news. National level agencies can develop security.

Introduction:

The threat of terrorism has posed an immense challenge in our everyday life. Terror attacks in major cities, towns and tourist resorts across the globe have demonstrated the inadequacy of the state mechanism to address the challenge. The nations are attains many major counter strategies to cope up the challenges. However, most of the attempts are designed as conventional method which might be effective in conventional terror attacks. However, there are limitations when it comes to a terror attack of an unconventional nature have demonstrated the inadequacy of the state mechanism to address the challenge.

The nations are attains many major counter strategies to cope up the challenges. However, most of the attempts are designed as conventional method which might be effective in conventional terror attacks. However, there are limitations when it comes to a terror attack of an unconventional nature. Information technology (IT) has exposed the user to huge data bank of information about everything and anything. Terrorism related to cyber space is popularly known as “cyber terrorism”. Thus articles is structured as given below:

1. **Definition of cyber terrorism and cyber crime:**
   Cyber crime is a crime related to computer and computer technology. The computer may have been used in a commission of a crime or it may be a target. Cyber crimes

may affects a country's national security and financial condition. The types of crime are hacking, copyright infringement, child pornography and child grooming.

Findings of the Study:

TOOLS OF ATTACK

Cyber terrorists use certain tools and methods to unleash this new age of terrorism. The tools of attacks are : 1) Hacking : It is the most popular way used by a terrorist. It is a generic term used for any kind of unauthorized access to a computer. Hacking are related to packets snipping, tempest attack, password cracking etc. 2) Trojans: Programs which pretend to do one thing while actually they are meant for doing something different, like the wooden Trojan horse of the 12th century BC. 3) Emails: Somewhere viruses and warms are attached themselves to a host program to be injected. Emails are used for spreading disinformation, threats and defamatory stuff. 4) Computer virus and warms: A computer virus is a type of malicious software program ("malware") that, when executed, replicates by reproducing itself (copying its own source code) or infecting other computer programs by modifying them. 5) The computer warm is a term related to computers which is a self contained programming or a set off programs i.e. able to spread functional copies of itself. able to spread functional copies of itself.

IV. HOW INDIAN NATIONAL SECURITY IS AFFECTED BY CYBER TERRORISM AND CYBER ATTACKS:

India started to use information technology in many public sectors like Income Tax, Passport Service, Bank, Visa etc. in terms of e-governance. Sectors like police and judiciary are to follow. The travel sector is also heavily reliant on this. Full computerization in this sector has also brought in concept of e-commerce.

OUR CONCERNS:

Its a big concern to us that most of the Indian citizen does not know how to use modern technology at all. Lack of awareness and culture of cyber security at individual as well as institutional level. India does not have trained and qualified man power to increment the counter measures.

SOME RECOMMENDATIONS:

Some recommendations are given below:

1. Need to sensitize the common citizen about a danger of cyber terrorism. CRT-IN should engage academic institutions and follow an aggressive strategy
2. Join efforts by all Govt. agencies including defence forces to attract qualified, skilled personal for implementation of counter measures

Conclusions:

There is a growing nexus (Connection) between the hackers and terrorists. The day is not far when terrorists themselves will be excellent hackers. That will change the entire landscape of terrorism. common vision is required to ensure cyber security and prevent cybercrimes. The time has come to prioritize cyber security in India's counter terrorism strategy.

Bibliography:

1. Warren G. Kruse, Jay G. Heiser (2002). Computer forensics: incident response essentials. Addison-Wesley. p. 392. ISBN 0-201-70719-5.
2. Halder, D., & Jaishankar, K. (2011) Cyber crime and the Victimization of Women: Laws, Rights, and Regulations. Hershey, PA, USA:IGI Global. ISBN 978-1-60960-830-9
3. Halder, D. & Jaishankar, K. (2011) Cyber crime and the Victimization of Women: Laws, Rights, and Regulations. Hershey, PA, USA:IGI Global. ISBN 978-1-60960-830-9

A NEW APPROACH TO SORT DOUBLY LINKED LIST USING QUICK SORT

Shrushti Jagtap **Harshada Katakar**
shrushti.jagtap@iccs.ac.in harshada.katkar@iccs.ac.in
Indira college of Commerce and Science

Abstract:
Sorting of elements is the most basic task in the computer science. As quick sort is highly efficient because of its fast nature and its structure, it is widely used. This paper proposes a new approach for sorting of doubly linked list based on the concept of quick sort which is a divide and conquer algorithm where an pivot element plays an important role. For evaluating the performance of proposed work, we compared our algorithm with quick sort.
Keyword: *quick sort, mid, doubly linked list.*

Introduction:

Sorting of data items is an important aspect of computer science as it is required in most of the applications starting from simple user applications to complex software.
Data items can be easily sorted since we have different sorting techniques which works efficiently but the problem arises when large amount of data has to be sorted and especially with the speed of sorting. Talking about quick sort where the pivot element plays an important role, many attempts are made to select the pivot element in different ways in order to improve its efficiency.

Quick Sort:

Quick sort uses a divide and conquer algorithm that sorts the data elements by dividing a large array into two sub lists.

Doubly Linked List:

A doubly linked list uses dynamic memory allocation for storing the data items along with address of its previous node and next node.

Space Complexity:

Space complexity of an algorithm is total space taken by the algorithm with respect to the input size. Space complexity includes both auxiliary space (extra space or temporary space used by an algorithm) and space used by input.
Space complexity includes stack (array, etc), heap (object creation etc) contribute to space complexity of program, it also includes memory required by recursion.

Proposed Work:

In our algorithm we try to sort the first element of the list at the beginning itself and further the elements are compared with this element say middle element or the first pivot element placed and then after the comparison the elements are either stored in its

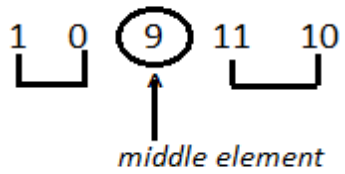
left side or in right side accordingly, further the sorting is applied over the left half and right half of middle element thereby which reduces the number of swaps taken by original algorithm. We are also dealing with its space complexity which is compared with the complexity of the original quick sort.

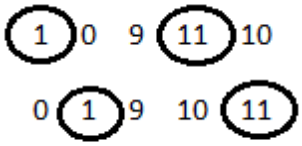
Algorithm:

Step 1: Start.
Step 2: Accept each element one by one. [Position of first element is fixed].
Step 3: For the remaining elements, check the value of elements with mid (first element).
If (element value<mid) then element will get stored at left of mid then go to next step.
Step 4: if (element value>mid) then element will get stored at right of mid.
Step 5: After accepting all values we get two lists. All elements less than mid are at left of mid. All elements greater than mid are at right of mid.
Step 6: Apply quick sort on every sub-lists and so on.
Step 7: Stop.

Performance Evaluation:

- **List with 5 elements considered:-**
  9 0 1 11 10
- **Using original quick sort:-**
  Total number of swaps: - **3**
- **Using proposed sort:-**
  The list is 9 0 1 11 10 the it will be,
  Initially Sorted as:-
  1 0 9 11 10





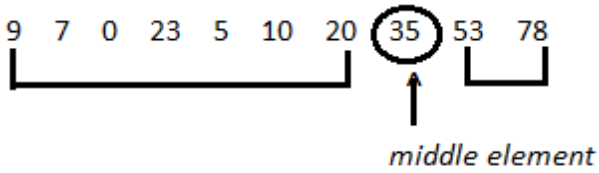
Therefore the sorted list is: - 0 1 9 10 11
Total number of swaps: - **2**

- **List with 10 elements considered:-**
  35 20 10 5 23 0 53 7 78 9
- **Using original Quick Sort:-**

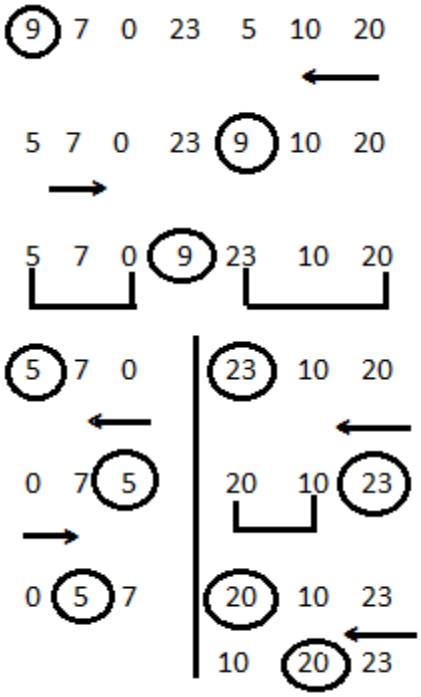
Therefore total number of swaps: - **13**

- **Using Proposed Sort:-**

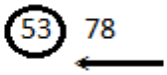
  The list is: - 35 20 10 15 5 23 0 53 7 78 9 will be,
  Sorted as:-



- *Sorting left half:-*



0 5 7 9 10 20 23 is Left Half.
Right part is:-



Therefore the sorted list is: - 0 5 7 9 10 20 23 35 53 78
Total number of swaps: - **6**

Number of elements	Number of swappings in quick sort	Number of swappings in proposed algorithm
5	**3**	**2**
10	**13**	**6**

Theoretically Calculated Space:-

We are comparing the static array with dynamic doubly linked list. We have considered,

Array size(N)=100000, No of elements entered= n, No of variables used in original program=k_1 No of variables used in modified program=k_2

Space allocated for array=200000

Space utilized by array= nx2

Space allocated and utilized by doubly linked list= nx8

Space allocated for original program= 200004

Space utilized by original program= nx2+k_1

Space allocated and utilized by modified program=nx8+k_2

For array of size 100000, the modified program consumes less bytes as compared to original program for maximum of 24999 set of data elements entered in the array. Hence this maximum count varies according to the array size.

n	Array size	Linked List size	Original program size	Modified program size
10	200000	80	200004	86
100	200000	800	200004	806
1000	200000	8000	200004	8006
10000	200000	80000	200004	80006
15000	200000	120000	200004	120006
24500	200000	196000	200004	196006
24999	200000	199992	200004	199998

Conclusion:

As the number of swappings are concerned, the proposed algorithm is performing better by reducing the swaps and we have also implemented the code which sorts the data set as per the new algorithm. In situations where the data set is not fixed, linked list is more efficient to use than arrays. As we are also dealing with it's space complexity our proposed algorithm consumes less space as compared to original algorithm till a certain count of data elements.

Bibliography:

1. Data structures through C in depth. Author : S.K.Srivastava Deepali Srivastava [First Indian Edition 2003].
2. Data structures using C. Author : M.Radhakrishan V.Srinivasan [First Indian Edition 2001].
3. Dong, P: improved quick sorting algorithm and recursion. Journal of Anyang Tech. (June 2008)
4. Ge ,JM: Quick sort of an improved algorithm.Computer Era(August 2008)

ROBOTICS IN ARTIFICIAL INTELLENENCE

Manish Bonde
FyBsc(CS)
manishbondemb@gmail.com

Ankur Brahma
FyBsc(CS)
ankurbrahma10@gmail.com

Indira College of Commerce and Science Tathawade Pune.

Abstract:

A robot is a mechanical intelligent agent which can perform task on it's own, or with guidance. As on date robotic application has been successfully implemented for industrial, outer space, medical, military, applications which made human work easy. In this paper an attempt has been made how artificial intelligence has been used for next generation robots, which are autonomous, Dragon Runner in military, Articulated Robots in industry, Cyber knife in medical, Dextre in Outer Space. In practice a robot is usually an electro-mechanical machine which is guide by computer and electronic programming. The research paper includes the study of robotics. In this paper we have mentioned a brief definition of robotics. We have also mentioned some part regarding the history of robotic. In this paper there are some applications based on robotics regarding various fields. We have also added some information based on artificial intelligence in robotics and next generation in robotics.

Keywords:

Robotics, AI

Introduction:

Robotics is the study of robot. A robot is a mechanical intelligent agent which can perform task on it's own, or with guidance. In practice a robot is usually an electro-mechanical machine which is guide by computer and electronic programming. Robot can be autonomous or semi- autonomous and come in those two basic types.

1. Those which are used for research into human like system, such as **ASIMO** (Advanced step in innovative mobility) and **TOPIO** (A playing robot which can play tennis), as well as those into more defined and specific role.
2. Nano and Swarm robot which are used to make or move things or perform menial or dangerous task such as Industrial robot or mobile or serving robot.

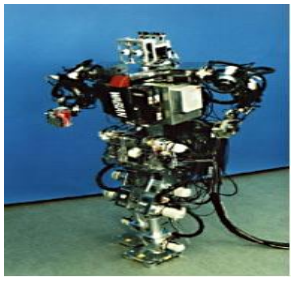
Brief history of robotics:

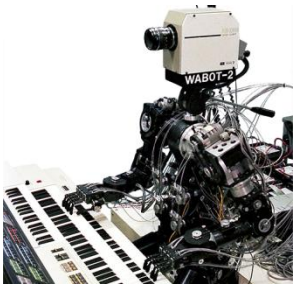
The history of robots has its origin in ancient world. The modern concept began to be developed with onset of Industrial Revolution, which allows the user of complex mechanics, and the subsequent introduction of electricity. In early 20^{th} century, the notion of a humanoid machine was developed.

In Indiana lokapannatti in 11^{th} -12^{th} century tells the story of king Ajatashatru of magadh, who gathered some of buddha's relic and hid them underground stupa. The relics were protected by mechanical robots known as **"bhuta vahana yantra"**.

In **1939** a humanoid robot known as **Elektro** appeared at the world fair. Seven feet tall and weighing 256 pound (120kg), it could walk by voice command speak about 700 words, smoke ,blow up balloons ,and move its head and arms.

The development of humanoid robot was advanced considerably by Japanese robotic scientists in 1970s.in 1967 WABOT robot was made. And at the same time in 1972 WABOT-2 was made which had some more advanced features than WABOT .In WABOT-2it had sensors in it and it can walk with lower limbs and also can transport things.





In 1994 one of most successful robot assistant for surgical appliances was cleared by FDA. The robot named **Cyberknife** was invented by John. R. Adler and was first installed at stand ford university in 1991.Cyberknfife is now used in medical science for treatment for brain tumour or spine tumour.

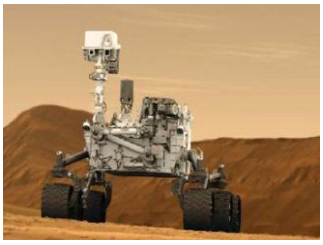
In 1999 SONY introduced the **AIBO**, a robotic dog capable of interacting with humans it was the first model released in japan. At the same time in the year 2000 the most advanced humanoid robot named **ASIMO** was launched. This robot could run, walk, communicate with humans, recognise faces and interact with environment too.

ROBONAUT-2, was the latest generation of the astronaut helper, which has launched into space station aboard space shuttle discovrey on STS-133 mission in 2011.it was the first humanoid robot. On 25 October 2017 at the future investment summit in riyadh, a robot called **Sophia** and referred to female pronoun was granted Saudi Arabian citizenship, becoming the first robot to have a nationality.

Robots and application of robots:

There are many applications of robotics in human life among which these are the major fields in which Robotics are used widely.

OUTER SPACE – robots are playing a very important role in outer space exploration. The robotic unmanned space craft is used as a key of exploring stars and planets. Sojourner marse explore was the most famous robot used in outer space. On 10 June and 26 June 2003 two robots named **Spirit** and **Opportunity** were launched in mars these robots landed on mars on 4th Jan and 25th Jan 2004. Spirit and Opptunity were solar powered robot with six wheel including motors .they had robotic arms that contained mossbauer spectrometer to investigate the mineriology of rocks and soil in mars it also had alpha particle X-ray spectrometer for analysing element found in rock and soil.



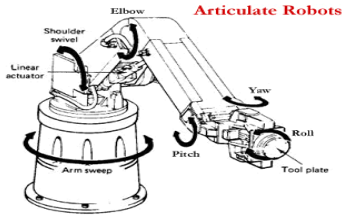
MILITARY APPLICATIONS:

In today's time army robots is also an important factors which is researched and developed day by day. Many research are been made in robotics industry for making robots which are used for army or military people. Mobile robotics play an increasingly important role in military matters, from patrol to dealing with potential explosives. These mobile robots consists of sensors which can detect explosive bombs. There are other robots which carry ammunitions with it which are called as war robot these robot helps the army to carry there weapons from one place to another.

There are robotic missiles which can detect the location of exploding and can get exploded. Some of the military robots name are mentioned below.

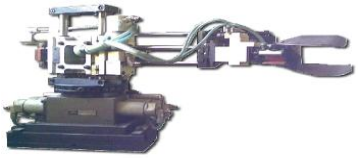
ACER, Atlas (robot), Battlefield Extraction-Assist Robot, Dassault Neur On (French UCAV), Dragon Runner, MATILDA, MULE (US UGV), R-Gator.

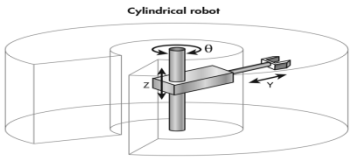
INDUSTRY- From the beginning of industrial revolution robotics and automation becomes the most important part of manufacturing. Robotic arm which are able to perform multiple task such as welding, cutting, lifting, sorting and blending are used in fabric. Most commonly used configuration of industrial robot are.



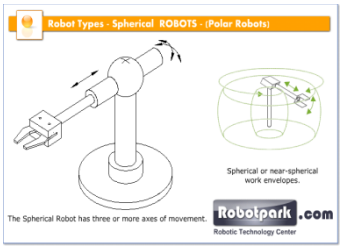
1. **Articulated Robot-** An articulated robot is one which is uses rotatory joints to access its work space.

2. **CYLINDRICAL COORDINATE ROBOT-**These robots have three degrees of freedom and move linearly along X and Y axes with a cylindrical work envelope.

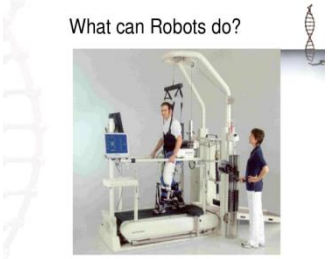


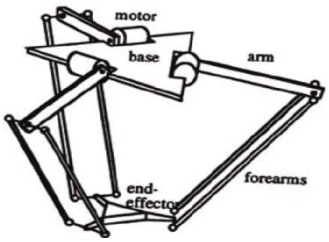


3. **SPHERICAL COORDINATE ROBOT-**The spherical arm also known as the polar coordinate robot arm has one sliding and two rotational motion aroun a vertical post and around a shoulder joint.



4. **DELTA ROBOT-** A delta robot consist of three arms connected to the universal joint at the base. The key design feature us the use of parallelogram in the arms which maintain the orientation o the end effort. The delta robot has popular usage in picking and packing in factories.





HEALTH SERVICE- There is also some robotic technologies which are been used in medical science too. Under development is a robotic suit that will enable nurses to lift the patient without damaging their back. Scientist in japan have developed a power - assisted suit which will give the nurses the extra muscle they need to lift the patient and avoid back injuries.

Artificial intelligence in robotics:

Robotics and Artificial Intelligence is a general term that implies the use of a computer model or replicate intelligent behaviour. Research in AI focuses on the development and analysis of algorithm that learns or performs intelligent behaviour with minimum human intervention. This technique is applied in a broad range of problems that arises in robotics e-commerce, medical diagnosis gaming, mathematics and military planning.

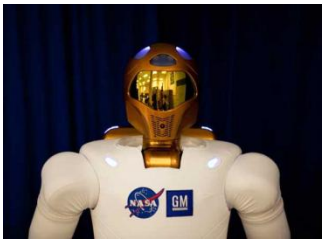
How does AI works in robotics?

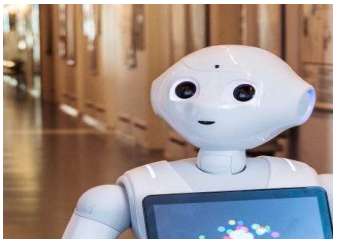
Artificial intelligence makes it possible for a Robot to learn from experience, adjust to new input and perform human like task. Most of these AI technologies which are used in many fields like self-game playing robots, automatic self-driving car etc. Most of the AI technology are based on algorithms used on those robots.

Next generation in robotics:

It's quite common for humans especially those who work in manufacturing to tie a knot, strip the casing off a cable, insert a pin in hole or use a hand tool such as a drill. They may seem like simple tasks, but are really very complex and involve extremely fine finger and hand motions. The Conversation Though robots are getting more and more involved in factory work and in a wide range of other types of jobs – including in the service industry and health care – their dexterity is not nearly as impressive. Since people first brought them to work in automotive factories more than 50 years ago, we have built robots that can weld, paint and assemble parts quite well. Today's best robotic hands can pick up familiar objects and move them to other places – such as taking products from warehouse bins and putting them in boxes. Human hands are excellent at those tasks and much more. To even come close to rivalling what our hands are easily capable of, robot hands need better agility, reliability and strength – and they need to be able to sense more accurately and move even more finely than they do now, to figure out what they're holding and how to grip it best. For robots to be able to work alongside humans, we'll have to figure out how to make robots that can literally lend us

a hand when our own two are not enough Another milestone will be developing methods for robots to figure out what motions they need to make in real time, including sensing what's going on in their hands at each moment. If a robot hand can detect changes in objects it is handling, or manipulate items while holding them, they could help with those common manual tasks like knot-tying and wire-stripping.





Algorithms in robotics:

An algorithm is an unambiguous specification of how to solve problems. An algorithm can perform calculations, data processing and automated reasoning task.

As modern robot deals with the real world problems in dynamic and open environment challenges arises in the area of robot control to overcome these challenges the method of algorithm is used.

Algorithm helps to decide the motion of the robots and it also helps us to operate a robot systematically. There are many such algorithms which are been used in different fields in robotics some of these are listed below.

Types of algorithms in robotics

- DESede
- Deeptammer
- Adaptive neurofuzzy inference
- Electromyography Regulation

Algorithms used in robots in different fields

Sr. No.	Names of robot	Fields of robot	Algorithm used
1	Dextre	Outer space	DESede
2	Dassult neuron	Military	Deeptammer
3	Articulated	Industry	Adaptive neurofuzzy inference
4	Rehabilitation	Medical	Electromyography Regulation

Conclusion:

The purpose of the paper is to provide a review of robotics and artificial intelligence in robotics. The paper shows that robotics is been adopted by range of industries including Outer Space, Medical, Automobiles, Military and Medical. The technology has been shown yield significant benefit and improved productivity. The paper provides useful insight into next generation of robotics.

REFERENCES:

1. Artificial Intelligence Third Edition by: Elanie Rich, Kevin Knight, Shivashankar B Nair.
2. Introduction to Artificial Intelligence by: Patterson.
3. Robot Programming First Edition by: Hughes/Hughes.
4. The Rise of the Robots: Technology and the Threat of Mass Unemployment by: Martin Ford.

CHALLENGES AND FUTURE TECHNOLOGIES ON INTERNET OF THINGS

Jambhale Apurva Shailesh
apurva.jambhale11@gmail.com
TYBsc(cs)Indira College

Joshi Dipali Dilip
ddjdipalijoshi12@gmail.com
TYBsc(cs)Indira College

ABSTRACT

This generation is entering into a new era of computer technology where there are a lot of changes happening which is all because of Internet Of Things [IoT]. Internet Of Things can be called as a "universal global neural network" stored in the cloud which is used to connect a lot of things. The Internet Of Things is intelligently connected electronic devices, different types of systems which comprise of smart machines interacting, communicating with other machines, environments, objects and infrastructures. The Radio Frequency Identification (RFID) and various sensor network technologies will improve to meet this new and difficult challenge. Enormous amounts of data is being generated and stored so that it can be processed into useful actions that can "command and control" the things to make our lives much easier and safer.

Internet of things facilitates billions and billions of devices to be enabled with network connectivity so that it can be used to collect and exchange real-time information for providing various important intelligent services. Thus, IoT allows connected devices to be controlled and accessed remotely in the presence of required and necessary network infrastructure.

Keywords*: Internet of things, Structure, Challenges, Future Technologies.*

INTRODUCTION

Internet of Things concept has begun to shape our modern world including a common man's everyday life in the society, a world in which devices of every shape and size are manufactured with smart capabilities that allow them to communicate and interact not only with other devices but also with humans, exchange their data, make autonomous decisions. Due to the continuous advancements and progresses happening in technology the innovation of Iot is coming down the road to become a global computing network where anyone and everything can be connected to the internet. The basic idea of IoT is to allow independent exchange of useful information between invisibly embedded different uniquely identifiable real world devices around us, fueled by the leading technologies like Radio-Frequency Identification (RFID) and Wireless Sensor Networks (WSNs) which are sensed by the sensor devices and further processed for decision making, on the basis of which an automated action is performed.

Numerous devices and objects will be connected to the Internet in the perspective of "Things". Each individually provides data, information, or even services. The devices providing things can be personal objects we carry around such as smart phones, tablets, and digital cameras.

The aim of this paper is to view the development and the deployment of the IoT in significant application domains. The organization of the paper is as follows:- It describes the structure of the IoT; it presents a review of the existing challenges of the IoT categorized into the Scalability, Self-organizing, Data volumes, Data interpretation, Interoperability, Security and privacy, Fault tolerance, Power supply, Wireless communications; it discuss about IoT and Related Future Technologies.

STRUCTURE OF INTERNET OF THINGS

Under the International Telecommunications Union (ITU), the perception of the IoT was structured as 4 dimensions of things, as illustrated in the below figure.

- **Tagging Things**

  Real-time traceability and addressability of RFID is what makes it stand at the forefront in terms of the Internet of Things vision. Due to maturity, low cost, and low power RFID is gaining strong support from the business community. To help in the automatic identification RFID acts as an electronic barcode. There are two tags available in RFID: active and passive. The active tags are widely used in retail, healthcare, and facilities management. The passive tags are powered by the reader and are more likely to be used in bank cards and road toll tags.

- **Feeling Things**

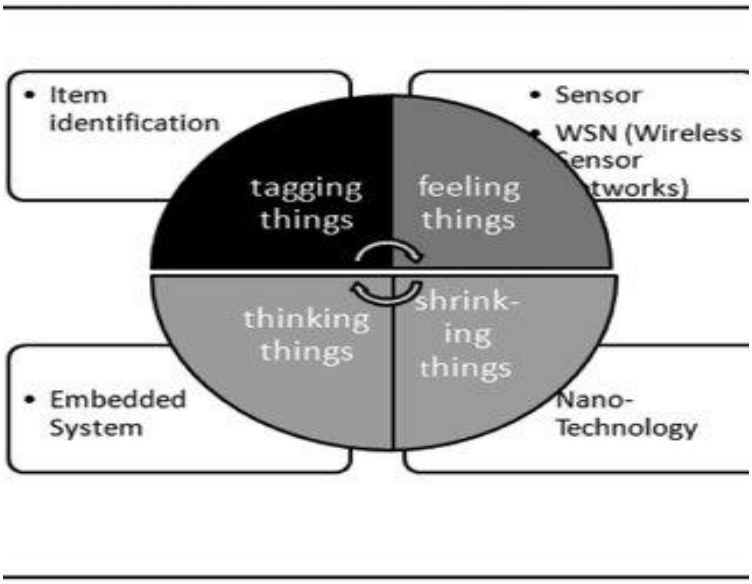
  To collect data from the environment sensors acts as a primary devices[1]. Necessary data is provided via communications which established between the physical and the information worlds. Recent advancement in technologies make them consume less power with low cost and high efficiency.

- **Shrinking Things**

  To interact and connect with the "things" or "smart devices" miniaturization and nanotechnology has provided the ability for smaller things. A clear advantage is the improvement in the quality of life. Its application can be seen in the diagnosis and treatment of diseases, including the diagnosis of HIV and AIDS, and in the prescription of nano- drugs for other diseases.

- **Thinking Things**

  Embedded intelligence in devices through sensors has formed the network connection to the Internet[1]. Embedded smart sensors may provide the means to communicate with users by sending alerts via the Internet connectivity. The connection can primarily be wireless or any other available communication, such as DSL, GPRS, WiFi, LAN, and 3G Smart things must not only communicate but must also be able to "...process information, self- configure, self-maintain, self-repair, make independent decisions, or even play an active role in their own disposal..."[2] which will change the way information is communicated from human- human to human-thing and to thing-thing.



Internet of Things Challenges

The IoT applications outlined are very interesting which provides technologies for smart things, but there are some challenges to the application of the Internet of Things concept in cost of implementation. The expectation from the technology must be available at low cost with a large number of objects. It also faced with many other challenges such as:

- **Scalability:**
  Because of things are cooperated within an open environment, Internet of Things has a big concept than the conventional Internet of computers. Basic functionality like communication and service discovery there is need to function equally efficiently in both small scale and large scale environments. It requires a new functions and methods in order to gain an efficient operation for scalability.
- **Self-Organizing:**
  Smart things should not be managed as computers that require their users to compose and adapt them to particular situations. Mobile things, which are often only randomly used, need to establish connections spontaneously, and able to be organize and configure themselves to suit their particular environment.
- **Data Volumes:**
  Some application scenarios of the internet of things will involve to rare communication, and gathering information form sensor networks, or form logistics and large scale networks. The term Data volumes represent this phenomena is big data which is requires many operational mechanism in addition to new technologies for storing, processing and management.
- **Data interpretation:**
  There is a need to interpret the local context determined by sensors as accurately as possible, to support the users of smart things. For service providers to profit from the dissimilar data that will be generated, needs to be able to draw some generalizable conclusions from the interpreted sensor data.

- **Interoperability:**
  Each type of smart objects in Internet of Things have different information, processing and communication capabilities. Different smart objects would also be subjected to different conditions such as the energy availability and the communications bandwidth requirements. To facilitate communication and cooperation of these objects, common standards are required.
- **Security and privacy:**
  In addition to the security and protection aspects of the Internet such in communications confidentiality, the authenticity and trustworthiness of communication partners, and message integrity, other requirements would also be important in an Internet of Things. There is a need to access certain services or prevent from communicating with other things in IoT and also business transactions involving smart objects would need to be protected from competitors.
- **Fault tolerance**:
  Objects in internet of things is much more dynamic and mobile than the internet computers, and they are in changing rapidly in unexpected ways. Structuring an IoT in a robust and trustworthy manner would require redundancy on several levels and an ability to automatically changed conditions.
- **Power supply:**
  Things typically move around and are not connected to a power supply, so their smartness needs to be powered from enough energy source. Although passive RFID transponders do not need their own energy source, their functionality and communications range are restricted. Hopes are pinned on future low power processors and communications units for embedded systems that can function with automatically less energy. For example the execution of protocol stacks, where every single transmission byte will have to justify its existence.
- **Wireless communications:**
  From an energy point of view, well-established wireless technologies such as GSM, UMTS, Wi-Fi and Bluetooth are far less suitable; more recent WPAN standards such as ZigBee and others still under development may have a limited bandwidth, but they do use significantly less power.

Internet Of Things And Related Future Technologies:
Many new technologies are related to IoT to prove the integration of wired as well as wireless control, communication and IT technologies together which are responsible for connecting several subsystems and things which operate under a unified platform controlled and managed smartly.

Cloud Computing:
The two worlds of Cloud and IoT have seen a increasing and autonomous evolution. These worlds are very different from each other, but their characteristics are often interdependent in general, in which IoT can benefit from the virtually unlimited capabilities and resources of cloud to compensate its technological constraints like

storage, communication and processing. Cloud Computing can offer an effective solution for service management, composition of IoT as well as for implementing services and applications[2]. On the other hand, cloud can benefit from IoT by extending its scope to deal with real world things in a more distributed and dynamic manner and also for delivering new services in a vast number of real life scenarios. Cloud can provide the intermediate layer between the internet of things and the applications, which hides all the complexity and functionalities which are necessary to implement the latter.

Big Data:

Due to the speedy expansion in the network nowadays, the number of sensors and devices in the network have increased more in the physical environments which will change the information, communication network, services and applications in various areas[2]. The expectations in the next year's show that around 50 billion devices will generate huge amount of data from many applications in a variety of areas like smart grids, smart homes, automotive, transport, healthcare, logistics and environmental monitoring. The related technologies, solutions that enable the integration of real world data and also the services into the current information networking technologies are often described under the term of the Internet of Things (IoT). The volume of data on the Internet and the Web is still ad will always be growing .Also everyday around 2.5 quintillion bytes of data is created and it is guessed that 90% of the data today was generated in the past two years.

Security and Privacy:

The fact that IoT applications are able to access the multiple administrative domains and involve in multiple ownership regimes , there is a need for security of the users and for a trust framework to enable the users to have confidence that the data and services being exchanged can indeed be relied upon. The trust framework needs to be able to deal with human beings and machines, for it to convey trust to users and needs to be robust enough to be used by machines without denial of service. IoT based systems needs a quality of information for metadata which can be used to provide an assessment of their liability of IoT data. A novel method is required for IoT based systems for building trust in people about the devices and the data. The most used methods is trust negotiation which allows two parties to automatically negotiate on the basis of trust policies. Internet of things uses a methods for access control to prevent suspicious data breaches by controlling processes to ensuring the correct usage of certain information according to a predefined policy after the access is granted. Recently, the Internet Of Things has become a key element for the future of internet. The need to provide adequate security for the IoT infrastructure becomes even more important.

Distributed Computing:

Distributed computing uses groups of networked computers for the same goal. It has many common issues with concurrent and parallel computing, because all these three fall in the scientific computing field. Nowadays, a vast amount of distributed

computing technologies are coupled with hardware virtualization and service oriented architecture. IoT with distributed computing represents a future in which the Internet extends into the real world embracing everyday objects. Physical items can be controlled remotely and can act as asa access point to Internet services connected physically.

Fog Computing:

It is related to the edge computing in the cloud. It have been described as dense computational architectures at the network's edge.[1] Characteristics of fog computing includes low latency, location awareness and use of wireless access. IoT may be likely be supported by fog computing in which storage, computing, control and networking power may exist anywhere along the architecture, either in data centres, the cloud, edge devices such as gateways or routers, or in sensors.

CONCLUSION:

Internet of things is a new internet application which leads smart technology where there exists thing-thing communication rather than human-human communication. With the IoT each and every object in this world can easily tracked and identified and can take decision independently[3]. IoT is used in healthcare, industry, agriculture, transportation, security, utilities, education and other areas, while providing a new ecosystem for application development.

The internet of things assures future new technologies when related to cloud, fog and distributed computing, big data, and security issues. By combining all these issues with the internet of things, smarter applications will be developed as soon. This paper overlook some of the most important challenges that facing the implementation the internet of things concept, and the other future technologies make the concept of IoT realistic.

REFERENCES :

1. Internet of Things Applications, Challenges and Related Future Technologies. Zeinab Kamal AldeinMohammeda, ElmustafaSayed Ali Ahmedb

2. Internet of Things: A Review of Applications And Technologies. Suwimon Vongsingthong1* and SuchaSmanchat

3. Review on Internet of Things: Recent Applications and its Challenges P Parhana*, MV Lakshmaiah, S Allaudheen, S Dastagiri, M VijayaSaritha

APPLICATIONS OF AI IN ROBOTICS: RESEARCHES IN BARC

Rupali Patil
Patilrupali920@gmail.com
Indira College of Commerce and Science, Pune

Abstract:

AI (artificial intelligence) is the simulation of human intelligence processes by machines, especially computer systems. Robots are manufactured as hardware. The connection between those two is that the control of the robot is a software agent that reads data from the sensors decides what to do next and then directs the effectors to act in the physical world. The aim of this paper is to provide basic, background information on two emerging technologies: artificial intelligence (AI) and robotics and their scope in India. According to the Department of Trade and Industry (DTI), it is important to consider these emerging technologies now because their emergence on the market is anticipated to 'affect almost every aspect of our lives' during the coming decades (DTI, 2002). Thus, a first major feature of these two disciplines is product diversity. In addition it is possible to characterize them as disruptive, enabling and interdisciplinary.

Keywords-

AI concept, robotics, software

Introduction :

Artificial intelligence (**AI**), sometimes called machine intelligence, demonstrated by machine, in contrast to the natural intelligence displayed by humans and other animals. In computer science AI research is defined as the study of intelligent agent: any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals.[1] Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human mind, such as "learning" and "problem solving".[2] Thought-capable artificial beings appeared as storytelling devices in antiquity,[24] and have been common in fiction, as in Mary Shelley's *Frankenstein* or Karel Čapek's *R.U.R. (Rossum's Universal Robots)*.[3]

These characters and their fates raised many of the same issues now discussed in the ethics of artificial intelligence.[4]The study of mechanical or "formal" reasoning began with philosophers and mathematicians in antiquity. The study of mathematical logic led directly to Alan Turing's theory of computation, which suggested that a machine, by shuffling symbols as simple as "0" and "1", could simulate any conceivable act of mathematical deduction. This insight, that digital computers can simulate any process of formal reasoning, is known as the Church–Turing thesis.[5] Along with concurrent discoveries in neurobiology, information theory and cybernetics, this led researchers to

consider the possibility of building an electronic brain. Turing proposed that "if a human could not distinguish between responses from a machine and a human, the machine could be considered "intelligent".[6] The first work that is now generally recognized as AI was McCullouch and Pitts' 1943 formal design for Turing-complete" artificial neurons".[7]

AI based upon the capabilities of digital computers to manipulate symbols, is probably not sufficient to achieve anything resembling true intelligence. This is because symbolic AI system, as they are known, are designed and programmed rather than trained or evolved. AI software designers are beginning to team up with cognitive psychologists and use cognitive science concepts. Another example centers upon the work of the 'connectionists' who draw attention to currently receiving much attention. This is a technique for getting software to solve a task by 'mating' random programs and selecting the fittest in millions of generations. Khan elaborates: 'Genetic algorithms use natural selection, mutating and crossbreeding within a pool of sub-optimal scenarios. Better solutions live and worse ones die – allowing the program to discover the best option without trying every possible combination along the way.'

Applications:

AI simulation systems These applications are commonly used in a number of different scenarios. First, an Intelligent Simulation System (ISS) may be generated to learn more about the behavior of an original system, when the original system is not available for manipulation. The modeling of climate systems is a good example. Second, the original system may not be available because of cost or safety reasons, or it may not be built yet and the purpose of learning about it is to design it better. Third, an ISS might be employed for training purposes in anticipation of dangerous situations, when the cost of real-world training is prohibitive. Such technologies are particularly well advanced in military applications through the simulation of war 'games'. Another very big business in the realm of ISSs is the videogame market, comparable to the film business in size. AI systems have become fundamental to this industry because, unlike in film, it is often up to a computer or game console to create a sense of reality for the game- player. Such standards of realism are going up all the time[8].

RESEARCH WORK BY CENTRE FOR ARTFICIAL INTELLIGENCE AND ROBOTICS:

The Centre for Artificial Intelligence and Robotics (CAIR) is a laboratory of the Defence Research & Development Organization (DRDO). Located in Bangalore, Karnataka, involved incapability. This involved in-house construction of mobile robot platforms, integration of infrared sensors with the vehicle, and the development and integration of path planning software. An useful off shoot of this work was the development of an intelligent wheelchair that would help physically challenged people both in hospitals and homes. One version of the wheelchair could be operated using human voice commands. Another was equipped with a camera system to get information about the surrounding space for its path planning. Other robots developed by CAIR are for Non-destructive testing, Ammunition loading, and Hot slug

manipulation. Both wheeled and legged miniature mobile robots have been developed.[9]

RESEARCH WORK BY BHABHA ATOMIC RESEARCH CENTRE, MUMBAI:

Brief description of at most three projects that were in progress in 2006:1. Laser based Mobile Robot Navigation & Mapping: BARC wishes to develop software for map building and localization over a wide (40m x 40m) indoor area with the help of range data from Laser Range Finder. We have in the past developed such software for use in smaller areas. The effort is directed to make the software highly reliable for use in industrial setup as a pose sensor. 2. Mobile robot navigation in outdoor environment with 3D laser range finder and panoramic camera. They were busy building the robot. The task of navigation in outdoor environment is very complex because of the fact that the planes of the sensors keep changing continuously. But they are interested in this area as it is of utmost importance in many real applications of deployment of mobile robots.3. Force sensing and control in robot manipulation: This is again a very important area for autonomous handling of objects by robots. They planned to buy a robot arm, integrate it with Force/Torque sensor and gripper and write controller programs for force sensing and control. Most recent 3-5 publications:1. "Sonar-based mobile robot navigation through supervised learning on a neural net", Autonomous Robots 3, pp. 355-374, 1996.2. "Gait Optimization through Search", The International Journal of Robotics Research, Vol.19, No.4, April 2000, pp. 394-408.3. "Sensor based mobile robot navigation through curvature activation and context switching", National Conference on Advanced Manufacturing & Robotics, Durgapur, Jan 15-16, 2004.[10]

CONCLUSION:

This paper began by stressing the need to provide background information on AI. In doing so, it was hoped that the prospects of these emerging technologies to affect quality of life in the coming decades could be realistically assessed. One consequence of providing such an overview is that there can be no decisive conclusions as such; the industries characterized here are too dynamic and uncertain to generate any real sense of resolution. However, it is possible to highlight a number of important differences and similarities between robotics and AI which go some way to shedding more light on their character. Perhaps the greatest contrast between the two industries concerns public interest. Indeed, as this paper has demonstrated, robotics is widely regarded as a ‘new’ and exciting branch of science and technology. AI, on the other hand, is viewed by many as a highly specialized and unproven discipline. One reason for this concerns the gross over-optimism that characterized the industry in the 1960s and 1980s. Another reason reflects the AI community’s seemingly insurmountable difficulty in publicizing its own achievements without whipping up general anxiety over machine superiority. The upshot of all this has been the field’s struggle to attract funding in the past and it is likely that this trend will continue for some time into the foreseeable future. Revealing similarities also exist between robotics and AI.

REFERENCES

1. http://www.ipedr.net/vol6/22-A10017.pdf
2. http://www.ciidefence.com/pdf/Future_Technology_Requirements_of_the%20Indian_Army.pdf
3. http://www.ias.ac.in/currsci/25jun2010/1553.pdf
4. http://sigai.cdacmumbai.in/files/AI_India_compilation.pdf
5. http://drdo.gov.in/drdo/labs/CAIR/English/index.jsp?pg=achieve.jsp
6. http://www.thinkdigit.com/Mobiles -PDAs/IBM-to- build-AI-mobile-interfaces-at_5191.htmlPosted on: Aug 09, 2010 18:45:43 IST
7. http://www.managementparadise.com/forums/articles/6846-ai-artificial-intelligence-india.html
8. http://www.indianexpress.com/news/now-artificial-intelligence-made-in-india/412129/Posted : Sun Jan 18 2009, 02:02 hrs
9. http://post.jagran.com/barc-develops-roboticsbased-automated-vehicle-for-industry-1316008078
10. http://science.

SMART CITY BASED ON INTERNET OF THINGS (IOT)

Sneha Sajeevan
M.Sc(Computer Science) Sem-II
snehasajeevan2@gmail.com
Indira College of Commerce and Science, Pune

Abstract
IoT is a system of interrelated computing devices, machines, people that have the ability to connect, interact and exchange data over a network. In today's world, IoT plays an important role by connecting physical objects together and thus grabbing more attention from the researchers. Smart city is one of the important sector where IoT can be very useful. A Smart City is an urban area that uses different kind of sensors which is used for managing the assets and resources efficiently. The information are collected, processed and used for different purposes like managing traffic, water supplies, energy supplies, and can also be used in hospitals, schools, libraries and various other sectors. Due to the growing development in cities, cities have been engaged in using different technologies and thus becoming smarter than before. However there are currently no detailed explanations about how technologies are contributing to make a city smarter. The aim of this article is providing an overview concept of smart city and how IoT technologies are used for expansion of cities.
Keywords: *Smart city, Internet of Things (IoT), technology*

I. Introduction

IoT, in simple words, can be defined as connecting physical objects with the network. It expands connectivity in internet beyond devices such as mobiles, laptops, smart phones and all the other standard devices to any range.[1] With this technology, various devices can be connected over the internet. Information from all over the world are collected, shared across the internet, then processed and are used for establishing various targets.[2] The concept of smart devices was first considered in 1982, a coke machine, first internet connected devices, which tells us if the drink is available or not.[3] The term Internet of Things (IoT) was then coined by Kevin Ashton, and later Auto-ID Center in 1999.[1] Basically, IoT was put forward to empower the computers or devices to sense the real world for themselves without the limitation of human-entered data.[4]

Iot is a combination of algorithms and computation, software and hardware that makes it smarter. It is capable of handling a situation intellectually and to carry out a specific task. It brings objects together enabling network accessibility and compatibility in things. IoT is dynamic in nature, state of the devices changes continuously. In addition to state of the device, number of devices may also change with a person, place and time. Sensing technologies have the capability to show the real estimation of world and the people in it.[5] IoT can be used in various sectors such as smart homes where we can switch off the fan even if we are not in our home. It can be used in connected cars,

which can manage its own operations, maintenance and comfort of their passenger. IoT in agriculture is increasing, sensing soil moisture, fertility of the soil and nutrients etc,. Researchers claim that IoT in healthcare will be massive in coming years.[6]

But there are many pitfalls to it, which includes complexity. Iot involves many technologies with various architectures which makes it a complex system. With number of complex systems there are more chances of failures. Any bugs in the network will have a disastrous effect. Security in IoT is a great concern, in which your data travelling over the network may lead to risk of losing privacy. Safety can be another problem with IoT, data modified in between the transmission can cause critical changes in operation of the devices. It would be very dangerous if private and confidential data is gained by intruders. The need for human labour will be reduced which can cause unemployment for several unskilled employee who are not aware of the recent technologies and trends. Humans will be completely dependent on technologies even for the tiniest task. But it will take a tremendous amount of time for IoT to get completely stable.[7]

II. Literature Review

Zintella et al. [8] introduced a comprehensive survey of the architectures, protocols and enabling technologies for a web-service based IoT framework in the Padova smart city project. It also discusses the technical solutions and gives the best guidelines adopted for this project. It aims to monitor street lighting, quality of air and other critical conditions. The survey conducted in [9] on the fundamental IoT elements on realizing smart city discusses a case study on noise monitoring. This paper prepares analysis on the innovation-oriented cities in Yangtze River Delta including Hefei and concludes an innovation efficiency difference and suggested some countermeasures and suggestions for the analysis results.

Nathalie et al. [10] proposed a different perspective of smart cities in which IoT devices were considered service providers mimicking cloud based services. This article intend to contribute to the design of infrastructure where new services interact with the surrounding environment. The paper [11] survey the smart city vision, providing information on the main requirements and highlighting the benefits of integrating different IoT ecosystems within Cloud under this new CoT vision. This paper also discusses relevant challenges in this research area. A general smart city architecture was presented in [12] in which internet service providers as a central information unit is connected to a set of IoT based services. It provides combination of IoT and acceptance of number of ICT technologies for realization of smart cities.

The paper [13] discusses invasion of projects, technologies that will be used for the change of smart city in the next decade. It also discusses various smart city opportunities, business models, different mechanisms of funding, etc. Also, this paper browses the semantic annotation of the sensors in Cloud, and innovative services can be implemented and considered by joining Cloud of Things (CoT) and IoT. Things such as semantic will be taken into consideration to perform the collection of heterogeneous resources by defining the CoT paradigm.

Despite of making tremendous number of changes in reconciling and simplifying semantic standards, industry-strength models are still few. In [14] they described the challenges and approach in building models for consumption in assembling large IT solutions in cyber-physical (Smarter Cities) domains. The large semantic model for smart city called SCRIBE is based on data gathering from all over the world. It also discusses the design trade offs, designer/user experience, and some of the practical challenges related to a model that combines large, complex, heterogeneous data sources.

III. Conclusion

In the upcoming years, there is a scope of lot of research work that needs to be done in the field of Internet of Things. Research could be concentrated about making it more efficient. To realize the concept of smart city, IoT is one of the most important technology which will be useful for the planning of making smart city. IoT will solve majority of problems faced by the people like traffic congestion, pollution, shortage of energy supplies, etc. The future of smart city based on IoT is more fascinating where billions of things will be talking to each other and human intervention will become least. IoT will bring a tremendous change in the way we will live and the way we work.

References

1. https://en.wikipedia.org/wiki/Internet_of_things
2. https://www.lifewire.com/introduction-to-the-internet-of-things-817766
3. https://www.informationweek.com/strategic-cio/executive-insights-and-innovation/internet-of-things-done-wrong-stifles-innovation/a/d-id/1279157
4. https://www.rfidjournal.com/articles/view?4986
5. https://www.linkedin.com/pulse/internet-things-iot-characteristics-kavyashree-g-c/
6. https://www.analyticsvidhya.com/blog/2016/08/10-youtube-videos-explaining-the-real-world-applications-of-internet-of-things-iot/
7. https://www.linkedin.com/pulse/pros-cons-internet-things-iot-bhaskara-reddy-sannapureddy/
8. A. Zanella, N. Bui, A. Castellani, L. Vangelista, and M. Zorzi, "Internet of Things for Smart Cities," Internet of Things Journal, IEEE, vol. 1, no. 1, pp. 22–32, 2014.
9. J. Jin, J. Gubbi, S. Marusic, and M. Palaniswami, "An Information Framework for Creating a Smart City through Internet of Things," Internet of Things Journal, IEEE, vol. 1, no. 2, pp. 112–121, 2014.
10. N. Mitton, S. Papavassiliou, A. Puliafito, and K. S. Trivedi,"Combining Cloud and Sensors in a Smart City Environment, "EURASIP journal on Wireless Communications and Networking, vol. 2012, no. 1, pp. 1–10, 2012.
11. Petrolo R, Loscrí V, Mitton N. Towards a smart city based on cloud of things. In: *Proceedings of the 2014 ACM international workshop on Wireless and mobile technologies for smart cities - WiMobCity '14*. New York, New York, USA: ACM Press; 2014:61-66. doi:10.1145/2633661.2633667.
12. Ganchev, Z. Ji, and M. O'Droma, "A Generic IoT Architecture for Smart Cities," in rish Signals & Systems Conference 2014 and 2014 China-Ireland International

Conference on Information and Communications Technologies (ISSC 2014/CIICT 2014). 25th IET, pp. 196–199, IET, 2013.

13. "Strategic opportunity analysis of the global smart city market", http://www.egr.msu.edu/~aesc310-web/resources/SmartCities/Smart%20City%20Market%20Report%202.pdf.

14. Uceda-Sosa R, Srivastava B, Schloss RJ. Building a highly consumable semantic model for smarter cities. In: *Proceedings of the AI for an Intelligent Planet on - AIIP '11*. New York, New York, USA: ACM Press; 2011:1-8. doi:10.1145/2018316.2018319

ARTIFICIAL INTELLIGENCE FOR SPEECH RECOGNITION

Heena Sayad
M.Sc(Computer Science) Sem-II
heenasayyad14@gmail.com
Indira College of Commerce and Science, Pune

Abstract
Speech Recognition, the most important application of Artificial Intelligence grows in technology. The concept of AI is well known due to its popularity in science fiction movies which depict humans interacting with machines as they would with other humans. Speech and gestures are the natural means of communication used by humans to interact with each other. Speech Recognition makes it possible for you to speak to a computer. Speech Recognition Software is the technology that transforms spoken words into alphanumeric text and navigational commands. Speech Recognition is used in legal and medical transcription, the generation of subtitles for live sports and current affairs programs on television. In naturally spoken language, there are no pauses between words, so it is difficult for a computer to decide where word boundaries lie. Automatic speech recognition is the process by which a computer maps an acoustic speech signal to text. These powerful trends will drive the next generation of information technology into the mainstream.
Keywords: *Artificial Intelligence, Humans, Speech, Affairs, Information, Mainstream.*

Introduction

Artificial Intelligence (AI) sometime called machine intelligence, is intelligence demonstrated by machines. AI is an of computer science that highlights the creation of machines that work and react like humans. It become an essential part of the technology industry[1]. Speech recognition is some intelligent system are capable of hearing and comprehencing the language in terms of text and their meaning while human talks to it. It can handle different accent, slangs words, noise in the background etc[2]. In 1950 Alan Turing published a landmark paper in which he speculated about the possibility of creating machines that think[1].

Basically, this approach deals with the conversion of the spoken words into text. Speech recognition is also referred as ASR (automatic speech recognition), STT (speech to text) or just computer speech recognition. On the contrary, it has been claimed by [4] that speech recognition can also be understood as the field of computer science, which deals with the designing and development of computer systems, in order to recognize the spoken words. In this regard, [7] has asserted that speech recognition or computer speech recognition or ASR is nothing more than the approach of converting a speech signal into the sequence of words, by the help of different algorithms and techniques. It has been documented in the research, which was carried out by [5] that these approaches include artificial intelligence approach, pattern

recognition approach, as well as acoustic phonetic approach. In accordance with the views and perceptions of [6], artificial intelligence is the most developing and effective techniques, which supports flawless and accurate speech recognition. It is because; artificial intelligence incorporates certain algorithmic approaches, which fosters coherent conversion and transformation of speech into readable patterns, and vice versa. This research will assist in understanding these concepts, which are associated with speech recognition. Among all of these approaches, artificial intelligence is found to be the most effective and integrated approach, which has strengthened and improved speech recognition practices [8]. The proceeding manuscript will commendably help in illustrating the core concept of artificial intelligence, as well as the technological advances, which have been occurred in artificial intelligence. In addition to this, the paper will also assist in understanding and identifying the statistical models for speech recognition.

Speech Recognition Methodology

Speech recognition is initiated with speaker producing an utterance which consists of audio waves. The audio waves are captured by a microphone and converted into electric signal which is again converted into digital signal in order to be understood by the speech system. The relevant information about the given utterance is extracted for accurate recognition. Finally, speech recognition system finds the best match by tuning the utterance.

1. **Analysis Techniques:**
   Analysis is the initial stage of speech recognition system which involves sampling, windowing, framing and noise cancelation. Analysis deals with framing size for segmenting speech signal and contains various types of information about speaker due to vocal tract, behavior feature and excitation source which is explained in the analysis types such as segmentation analysis, sub-segmental analysis and supra segmental analysis. Segmentation Analysis : Speech is analyzed using frame size and shift in the range of 10-30 ms to extract vocal tract information of speaker. Sub-segmental Analysis : The size of the frame and shift range around 3-5 ms extract the characteristic of the speaker from excitation state. Supra-segmental Analysis : Speech is analyzed, using frame size and behavior characteristics of the speaker.
2. **Feature Extraction:**
   According to speech recognition theory, it should be possible to recognize speech directly from the digitized waveform. Since speech signals are unstable in nature, statistical representations should be generated for compressing the speech signal variability which is achieved by performing feature extraction. In order to transform the time domain signal into an effective parametric representation feature extraction is used. Most widely used extraction technique is MFCC. The block diagram of MFCC techniques is shown in Fig.

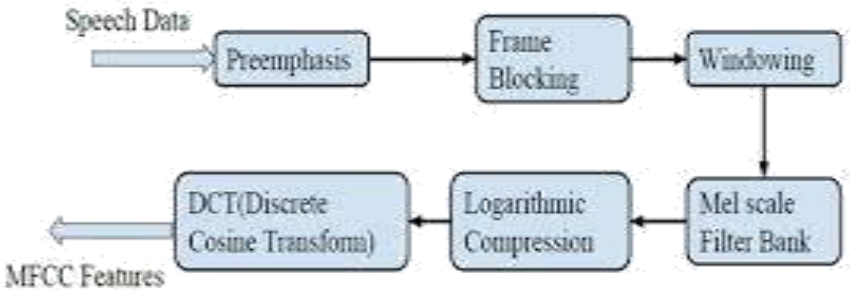


Figure 3. MFCC Features Extraction

The MFCC processor involves the following steps:

- ***Pre-emphasis****:* In the pre processing, the speech signal increases the amplitude of high frequency bands and decrease the amplitudes of lower bands which is implemented by FIR filter.
- ***Framing and windowing****:* The speech signal is split into number of frames. The frame size considered as 25 ms, hamming windowing is applied in order to minimize the signal discontinuities at the starting each edge of the frames.
- ***Fast Fourier Transformer (FFT):*** Each frame of N samples is converted in to time domain into frequency domain.
- ***Mel Filter Bank:*** The scale of frequency is converted from linear to mel scale which is called mel filter bank.
- ***Logarithm:*** Logarithm is taken for the mel filter bank which is known as log mel spectrum.
- ***Discrete cosine Transform (DCT):*** The log mel scale is again converted in to frequency domain to time domain which produces the feature of MFCC.

3. Recognition:

Recognition is broadly classified into three, namely acoustic-phonetic approach, pattern-recognition approach and artificial intelligence approach. In the training phase of recognition system, parameters of the classification model are estimated using a large number of training classes. During the testing phase the features of a test speech are matched with the trained speech model of each and every class.

4. Modeling Technique:

The aim of modeling technique is to create speaker models using speaker specific feature vector. The speaker modeling techniques are separated into two categorization namely, speaker identification and speaker recognition. The speaker identification technique automatically identifies who is speaking on the basis of individual information integrated in speech signal. Speaker recognition technique is the identification of a person from the characteristics of specific speaker voice.

Literature Review

Thing, et al. (2011) presented speech recognition using Linear Predictive Coding (LPC) and Artificial Neural Network (ANN) for controlling movement of mobile robot. Input

signals were sampled directly from the microphone and then the extraction was done by LPC and ANN [11].

Ms.Vimala.C and Dr.V.Radha (2012) proposed speaker independent isolated speech recognition system for Tamil language. Feature extraction, acoustic model, pronunciation dictionary and language model were implemented using HMM which produced 88% of accuracy in 2500 words [9].

Cini Kurian and Kannan Balakrishnan (2012) found development and evaluation of different acoustic models for Malayalam continuous speech recognition. In this paper HMM is used to compare and evaluate the Context Dependent (CD), Context Independent (CI) models and Context Dependent tied (CD tied) models from this CI model 21%.The database consists of 21 speakers including 10 males and 11 females [12].

Suma Swamy et al. (2013) introduced an efficient speech recognition system which was experimented with Mel Frequency Cepstrum Coefficients (MFCC), Vector Quantization (VQ), HMM which recognize the speech by 98% accuracy. The database consists of five words spoken by 4 speakers at ten times [13].

Annu Choudhary et al. (2013) proposed an automatic speech recognition system for isolated and connected words of Hindi language by using Hidden Markov Model Toolkit (HTK). Hindi words are used for dataset extracted by MFCC and the recognition system achieved 95% accuracy in isolated words and 90% in connected words [10].

Preeti Saini et al. (2013) proposed Hindi automatic speech recognition using HTK. Isolated words are used to recognize the speech with 10 states in HMM topology which produced 96.61% [14].
Md. Akkas Ali et al. (2013) presented automatic speech recognition technique for Bangla words. Feature extraction was done by, Linear Predictive Coding (LPC) and Gaussian Mixture Model (GMM). Totally 100 words recorded in 1000 times which gave 84% accuracy[17].

Maya Moneykumar, et al. (2014) developed Malayalam word identification for speech recognition system. The proposed work was done with syllable based segmentation using HMM on MFCC for feature extraction [18].

Jitendra Singh Pokhariya and Dr. Sanjay Mathur (2014) introduced Sanskrit speech recognition using HTK. MFCC and two state of HMM were used for extraction which produces 95.2% to 97.2% accuracy respectively [16].

In 2014, Geeta Nijhawan et al. developed real time speaker recognition system for Hindi words. Feature extraction done with MFCC using Quantization Linde, Buzo and

Gray (VQLBG) algorithm. Voice Activity Detector (VAC) was proposed to remove the silence [15].

Conclusion and Future Work:

Speech Recognition has been in development of more than 60 years. The various speech recognition methodologies and approach is available to enhance the recognition system. The fundamentals of SR system, various approaches existing for developing an ASR system are explained and compared in this paper. In recent years large vocabulary independent continuous speech has highly enhanced. From the review, it is concluded that HMM based MFCC feature is more suitable for speech recognition requirements and produces more good results than other models. In this paper, MFCC feature is extracted and the speech is trained by HMM model which is implemented for both connected and continuous speech. In order to improve the accuracy, other modeling techniques will be implemented in future.

References:

1. https://en.wikipedia.org/wiki/Artificial_intelligence.
2. https://en.wikipedia.org/wiki/Speech_recognition
3. http://www.sciencedirect.com/science/article/pii/S0167639313000988
4. http://www.equinoxpub.com/journals/index.php/CALICO/article/viewArticle/23361
5. http://www.sciencedirect.com/science/article/pii/S1051200412001133
6. http://www.ijsce.org/attachments/File/v2i5/E1054102512.pdf
7. http://www.ijettjournal.org/volume-4/issue-2/IJETT-V4I2P210.pdf
8. [8].http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6296522&url=http%3A%2F%2Fi eeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6296522.
9. Ms.Vimala.C and Dr.V.Radha, "Speaker Independent Isolated Speech Recognition System for Tamil Language using HMM", in Proceedings InternationalConference on Communication Technology and System Design 2011, Procedia Engineering 30 ISSN:1877-7058, 13March2012, pp.1097 – 1102.
10. Annu Choudhary, Mr. R.S. Chauhan, Mr. Gautam Gupta, "Automatic Speech Recognition System for Isolated & Connected Words of Hindi Language By Using Hidden Markov Model Toolkit (HTK)", in Proceedings of International Conference on Emerging Trends in Engineering and Technology, DOI: 03.AETS.2013.3.234, 22-24th February 2012, pp.244– 252
11. Thiang and Suryo Wijoyo, "Speech Recognition Using Linear Predictive Coding and Artificial Neural Network for Controlling Movement of Mobile Robot", in Proceedings of International Conference on Information and Electronics Engineering (IPCSIT), Singapore, IACSIT Press, Vol.6, 2011, pp.179-183.
12. Cini Kuriana, Kannan Balakrishnan, "Development & evaluation of different acoustic models for Malayalam continuous speech recognition", in Proceedings of International Conference on Communication Technology and System Design 2011 Published by Elsevier Ltd, December 2011, pp.1081-1088
13. Suma Swamy,K.V Ramakrishnan, "An Efficient Speech Recognition System",

14. Computer Science & Engineering: An International Journal (CSEIJ), Vol.3, No.4, DOI:10.512 1/cseij.2013.3403 August 2013, pp.21-27.

15. Preeti Saini, Parneet Kaur, Mohit Dua, "Hindi Automatic Speech Recognition Using HTK", International Journal of Engineering Trends and Technology (IJETT)", Vol.4, Issue 6, ISSN:2231- 5381, June 2013, pp.2223-2229.

16. I. Mohamed Kalith, David Ashirvatham, Samantha Thelijjagoda, "Isolated to Connected Tamil Digit Speech Recognition System Based on Hidden Markov Model", International Journal of New Technologies in Science and Engineering, Vol.3, Issue 4, ISSN:2231-5381, April 2016, pp.51-60.

17. Jitendra Singh Pokhariya and Dr. Sanjay Mathur, "Sanskrit Speech Recognition using Hidden Markov Model Toolkit", International Journal of Engineering Research & Technology (IJERT),Vol.3, Issue 10, ISSN: 2278-0181, October-2014, pp.93-98

18. Md. Akkas Ali, Manwar Hossain, Mohammad Nuruzzaman Bhuiyan, "Automatic Speech Recognition Technique for Bangla Words", International Journal of Advanced Science and Technology, Vol. 50, January, 2013, pp.51-60.

19. Maya Moneykumar, Elizabeth Sherly, Win Sam Varghese, "Malayalam Word Identification for Speech Recognition System" An International Journal of Engineering

20. Sciences, Special Issue International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE)", Vol.3, Issue 3, ISSN (Print): 2320-9798, March 2015, pp.1481-1488

NO MORE HUNGER

Anil Prajapati **Sameer Shabbir Khan** **Md. Salman Haidar Ali Khan**
T.Y. BSc (Comp.Sci) T.Y. BSc (Comp.Sci) T.Y. BSc (Comp.Sci)
Indira College of Commerce and Science
New Mumbai - Pune, Highway, Pune - 411033.

Abstract

Due to the rapid increase in the population many people of India are suffering from the problem of illiteracy, unemployment and mainly hunger. There are lots of NGO's who are trying to reduce these problems. But due to lack of time, money and man power these NGO's are not much effective on these problems. So with the help of this project we are trying to create a platform to feed, train and provide jobs to needy people.

Keywords - *Food wastage, Hunger, Unemployment, Needy People, Donators*.

Introduction

In the country like India, we have lots of festivals and occasions in which we enjoy the variety of good quality food. But what happens when some food get remains after the party? And not only in these events but also in restaurants, hotels and other places every day. Generally, people simply throw out the remaining food and if someone wants to share the food with the poor people then they have to search for the needy people which is really a tedious task.

As the population of India is too large, it is difficult to find out the hungry people and feed them. There are lots of NGO's who are trying to feed the hungry people but they are facing too much problem because of lack of food donators and volunteers. If these NGO's will get more information about the hungry people, donators and volunteers, they can feed more people in less time with less efforts.

Problem description

- 14.9% of our population is undernourished.[1]
- 836 million Indians survive on less than Rs. 20 a day. Over 20 crore Indians will sleep hungry tonight.[2]
- In India, 3,000 children die every day due to malnutrition.[3]
- Hunger is the number one cause of death killing more than HIV/AIDS, malaria, and tuberculosis combined.[4]
- It is estimated that nearly one third of the food produced in the world for human consumption every year gets lost or wasted. 40 percent of the fruits and vegetables, and 30 percent of cereals that are produced are lost due to inefficient supply chain management and do not reach the consumer markets.[1]

Proposed work

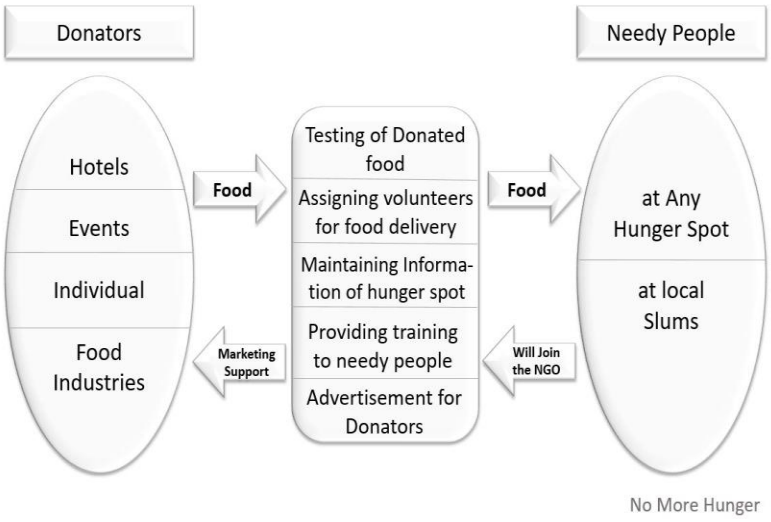
With the help of our proposed system we can reduce the food wastage and can help needy people for the food. Donator can add food and every user of this project can add

the hunger spot just by some clicks and every volunteer will get the notifications about the donated food and hunger spots. After that the volunteers will go and check the quality and quantity of the food and will collect the food from donators. Volunteers will provide this collected food to the nearest hunger spot and will ask the needy people to join them as a volunteer.

After receiving food from the donators, volunteers will minimize the food information in system and in case the food post time exceed the expiration time, the food will automatically get removed from the news feed. The volunteers will also have option to add photos with needy people. The people who don't have excess food to donate can also help the NGO's by donating money, clothes and other basic things.

This project will not only feed the hungry people but also offers them to work as a volunteer in the NGO's by which the needy people will get good jobs and the NGO's will get more volunteers to serve further needy people. When the volunteers get more experienced the other educational and training NGO's will train these volunteers as per their knowledge, talent and experience. After that the NGO's will arrange better job offers for them. Once the needy people will get a good job they will never be hungry anymore.

Workflow diagram



Conclusion:

- ✓ The "No More Hunger" will help the donators of society and the NGO's who are struggling for feeding the hungry people by providing the necessary information.
- ✓ This project will also work on the reason behind the hunger that is unemployment. Needy people will get basic education, training and good employments to make their life better.
- ✓ The daily food wastage will be reduced in large scale.
- ✓ This initiative will definitely help to develop our country by focusing on the people who don't get meal every day.

References

1. https://www.indiafoodbanking.org/hunger
2. https://www.quora.com/How-many-people-die-due-to-hunger-in-India
3. https://www.youthkiawaaz.com/2015/10/ten-facts-about-hunger/
4. http://ecolonomics.org/10-facts-about-world-hunger-poverty/

REVIEW ON CHALLENGES AND ISSUES IN BIG DATA

Khandekar Latika Tanaji
latikakhandekar9@gmail.com
TYBSc(CS)

Koli Sneha Deepak
snehakoli1207@gmail.com
TYBSc(CS)

Indira College of Commerce and Science, Pune

Abstract

Big data is new driver of the world economic and societal changes. The world's data collection is reaching a tipping point for major technological changes that can bring new ways in decision making, managing our health, cities and education. Big data analytics poses a grand challenges on the design of highly scalable algorithms. Big data analytics that discover useful and hidden knowledge from the big data efficiently and effectively. In all the fields around the world we need to use big data, it a very demanding field and also a very important topic and that's why there is a need to discuss issues and challenges about this topic .We live in on-demand, on-command digital universe with data rapid reproducing by institutions, individuals and tools at very high rate. This data is categorized as big data due to its volume, variety, velocity and veracity. Analysing the issues and challenges comes first as we begin a collaborative research program into methodologies for big data analysis and design

Keywords: *Big data, Information Retrieval, Data mining*

1. INTRODUCTION

The Big Data is used to store a large amount of data to uncover hidden pattern, correlations, and other understanding. Now-a-days, it is possible to analyse the data and get answers from it almost immediately - an effort that's slower and less efficient with more traditional business intelligence solutions. Big data is used to store large amount of data in database and easy to recover the data, and information from that database.

An exact definition of "big data" is difficult to nail down because projects, vendors, practitioners, and business professionals use it quite differently[1]. Big data is large datasets, the category of computing strategies and technologies which are used for handling large datasets.

Importance:

The evolution in the technology has helped organisations apply the findings, not only while strategizing but in almost every aspect of the functioning of an organisation, for internal and external benefits. Merely capturing data is not helpful, but to understand what insights you get from that data is paramount in decision making.

Big data, eliminates intuition such that all imperative decisions can be made through a structured approach, and with a data-driven insight. We can take data from any source and analyse it to find answers that enable cost reductions, Time reductions, new product development and optimized offerings, Smart decision making. When we combine big data with high-powered analytics, we can accomplish business related task such as determining root causes of failures, issues and defects in near-real time.

Characteristic of Big Data:

1. **Volume:**
   Big data implies enormous volumes of data. It used to be employees created data. It measures the amount of data available to an organization, which does not necessarily have to own all of it as long as it can access it. [2]
2. **Variety:**
   Variety refers to the many types of data both structured and unstructured. Now a days data comes in the form of emails, photos, videos, monitoring devices, PDFs, audio, etc. This variety of unstructured data creates problems for storage, mining and analysing data.
3. **Velocity:**
   Big Data Velocity deals with data flows in from sources like business processes, machines, networks and human interaction with things like social media sites, mobile devices, etc. The flow of data is massive and continuous. This real-time data can help researchers and businesses make valuable decisions that provide plan competitive advantages.
4. **Veracity:**
   Big Data Veracity refers to the data that is being stored, and mined meaningful to the problem being analysed. Inderpal feel veracity in data analysis is the biggest challenge when compares to things like volume and velocity[2]. In scoping out your big data strategy you need to have your team and partners work to help keep your data clean and processes to keep 'dirty data' from gathering in your systems.
5. **Validity:**
   Like big data veracity is the issue of validity meaning is the data correct and accurate for the delibrate use. Clearly valid data is key to making the right resolution.
6. **Volatility:**
   Volatility refers to how long is data valid and how long should it be stored. In this world of real time data you need to determine at what point is data no longer applicable to the current analysis.

Big data clearly deals with issues beyond volume, variety and velocity to other unsettle like veracity, validity and volatility.

Types of Big Data:

Unstructured Data

It is that kind of data which traditionally does not have any organized row-column format. For instance, email texts, images, audio files, video files, presentations, webpages, and any kind of multimedia or business contents. . In order to help in the competitive environment, it is an essential step for managing the unstructured data in such a way that one could extract even the most difficult information at any given point; which is why most organizations would go to any expand in designing their software with a flexible format as much as possible. The unstructured data is growing rapidly and most organizations are quite aware of that; they thus efficiently make utmost use of the available space and extend as well, if required.

Structured Data

As the name suggests, it basically refers to that kind of data which is organized and has a fixed size, so that it could be easily stored and managed within relational databases. The data model in this case, is already decided, like how the data will be stored, processed, retrieved and recover in any way. This means that the data type, size, etc. will be pre-defined and the protocol will be followed all over. These have the advantages of being easy. Learning the SQL, first introduced by IBM and later modified by Oracle Corporation (through developing relational model), is what it all requires to manage these kinds of information.

2. Challenges of Big Data

1. **Data storage and quality**

   Companies and Organizations are growing at a very fast pace. Moreover, the growth of the companies rapidly increases the amount of data produced. The storage of this data is becoming a challenge for everyone. Options like data lakes warehouses are used to collect and store huge quantities of unstructured data in its native format. The problem, however is when a data lakes warehouse try to combine conflict data from disparate sources, it encounters errors. Variant data, duplicates, logic conflicts, and missing data all result in data quality challenges.

2. **Good quality analysis**

   The companies and organisations use big data produced to make the best decisions possible. Consequently, the data they are using should be accurate. If the data used to make decisions is not accurate it will result in ill-advised decisions that would ultimately be detrimental to the future success of their business. This requires a lot of resources to ensure the accuracy of the information provided. The process of creating accurate data is very time consuming and requires the use of tools that can be expensive.

3. **Security and privacy of the data**

   Once, companies and organizations figure out how to use big data, it gives them a varied range of opportunities. However, it also involves big risks when it comes to the security and the privacy of the data. The tools used for analysis, stores, manages, analyses, and utilizes the data from a different variety of sources. This ultimately leads to a risk of exposure of the data, making it highly vulnerable. Therefore, the production of more and more data increases security and privacy concerns. Thus making it essential for analysts and data scientists to consider these issues and deal with the data in a manner that will not lead to the disruption of privacy.

4. **Various sources of data**

   Dealing with the volume of data being produced and the velocity at which it is being produced is a challenge. Additionally, it is a challenge to manage the enormous number of sources that are producing this data. The data comes from the company's internal sources like finance, marketing etc. Moreover, external sources like social media produce a huge amount of data. Therefore, making the data

extremely diverse and massive. Any number of tools and Big Data experts will not be enough to manage and utilize this amount of data optimally.

3. Issues of Big Data

It's difficult to get judgement out of a huge lump of data. There has to be a discernible signal in the noise that you can detect, and sometimes there just isn't one,in order to use Big Data.

According to a recent report from Experian Data Quality, 75% of businesses believe their customer contact information is incorrect. If you've got a database full of incorrect customer data, you might as well have no data at all. The best way to combat incorrect data eliminating data silos by integrating your data.

Larger companies are more prey to data silos, for such reasons as they prefer to keep their databases on-premises, and because decision making about new technologies is often slow.

However, when a data warehouse tries to combine inconsistent data from different sources, it encounters errors. Variant data, duplicates, logic conflicts, and missing data all result in data quality challenges. Poor data quality results in faulty reporting and logical necessary for optimal decision making.

4. Conclusion:

From this paper we studied the importance of Big Data, characteristics of Big Data, different types of Big Data like structured and unstructured, challenges and issues faced in Big data. The availability of Big Data, low-cost commodity hardware, and new information management and analytic software have produced a unique moment in the history of data analysis. The concurrance of these trends means that we have the capabilities required to analyse astonishing data sets quickly and cost-effectively for the first time in history. These capabilities are neither theoretical nor trivial.

References

1. Research Issues and Challenges of Big Data-A Review SamithaSahuDr.V.IlangoDr.R.Chinnayan
2. Recent Issues and Challenges on Big Data in Cloud Computing Dr.Jangala.SasiKiran, M.Sravanthi, K.Preethi, M.Anusha
3. Challenges and Opportunities with Big Data AlexandrosLabrinidhis, H.V. Jagadish

HOME AUTOMATION USING IOT

Rahul Haresh Panjabi
F.Y.B.Sc(Computer Science)
Student, Indira College of Commerce and Science
rahul.panjabi@iccs.ac.in

Abstract

This paper presents an idea or a concept for home automation using IOT. Today, home automation industry is growing widely. Smart home or home automation can be said as the residential extension of building automation, it also involves the automation and controlling of lightings, ACs, ventilation and security which also includes home appliances such as washers, ovens or refrigerators which uses Wi-Fi for monitoring via mobile. This paper focuses on flexible, cost friendly wireless home automation system which would be based on an Android App. The app will be working with the help of WIFI also Internet of Things. The App would be featuring by taking commands from user in order to control different home appliances that would be connected via IOT. This is powered by the need to provide systems which provides support for aged and physically handicapped people, especially people who lives alone.

Keywords: *Internet of Things (IOT), Home Automation, Nodemcu 8266, IOT, Mobile Application*

INTRODUCTION

As the mobile devices are continuously increasing in its popularity and also for its smooth functionality the demand for advanced and responsive mobile applications is increasing day by day in people's daily routine. Web services utilization is the most open and also practical way for providing remote service access or enabling the applications to make them communicate with each other. Busy and most engaged families also individuals with physical limitations are the people who represent an attractive market for home automation including networking. Because of rapid development in internet and internet of things, we all are highly integrated at an uneven scale. Internet of Things often abbreviated as IOT refers to the interconnection of different devices or any appliances through any possible mode. The idea used in this is controlling with mobile app. We can also control with voice with help of Google voice assistant or alexa or any voice recognition machine .The problem of communication with computer led to a heavy research on speech recognition before this the communication between user and computer was simple click method which was suitable for a limited process but researchers wanted a more enhanced communication for the betterment of the people and break the small thin barrier between user and computer. This similar method of speech recognition can be used in the app to control the home appliances with the user's voice.

LITERATURE REVIEW

Home automation system is a kind of automation systems, which are used specifically for controlling the home appliances and devices mechanically (in some cases remotely) with the help of variety of control systems. The home automation systems are used for controlling the indoor & outdoor lights, heat, ventilation, air conditioning in the house, to lock or open the doors & gates, to control electrical & electronic appliances and so on using various control systems with appropriate microcontroller. The first general purpose home automation network technology, X10 was developed in 1975.It was considered as a communication protocol for electronic devices. For the purpose of signaling and control, it primarily make use of electric power transmission wiring, here the signals will provide brief radio frequency bursts of digital data, and remains most widely available.e. A radical evolution of the current Internet into a Network of interconnected objects that not only harvests information from the environment (sensing) and interacts with the physical world (actuation/ command/control), but also uses existing Internet standards to provide services for information transfer, analytics, applications, and communications. Fueled by the prevalence of devices enabled by open wireless technology such as Bluetooth, radio frequency identification (RFID), Wi-Fi, and telephonic data services as well as embedded sensor and actuator nodes, IoT has stepped out of its infancy and is on the verge of transforming the current static Internet into a fully integrated Future Internet. The Internet revolution led to the interconnection between people at an unprecedented scale and pace. The next revolution will be the interconnection between objects to create a smart environment. John A. Stankovic vision saying [10], Many technical communities are vigorously pursuing research topics that contribute to the IoT. Today, as sensing, communication, and control become ever more sophisticated and ubiquitous, there is significant overlap in these communities; sometimes from slightly different perspectives. More cooperation between communities is encouraged. To provide a basis for discussing open research problems in IoT, a vision for how IoT could change the world in the distant future. In 2013, Salah Addin Ahmed developed Smart GSM Based Home Automation System. In recent years, there has been a growing interest among consumers in the smart home concept. Smart homes contain multiple, connected devices such as home entertainment consoles, security systems, lighting, access control systems and surveillance.

RELATED WORK

Smart home is not a new term for science society however; it is still far more away from people's vision .The field of home automation is growing exponentially as the electronic based technologies are converging day by day. Variety of smart systems have been constructed where the control is through Bluetooth, internet, short message service (SMS) etc. Bluetooth system is one of the best wireless system and also most of the current laptop/notebook, tablets and cell phones have in-built adaptor which results in reducing the cost of system indirectly. As it limits the control to within the range of Bluetooth environment while on the other hand most of the systems are not too possible to be implemented as a cost-friendly solution. The Wi-Fi based home automation system makes use of Wi-Fi microcontroller which is based on ardino programming.

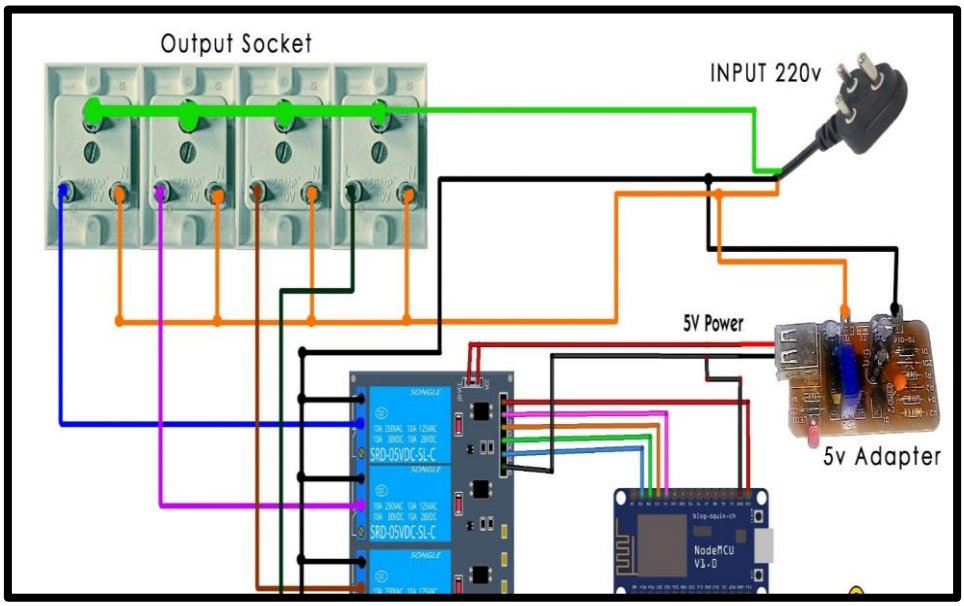
Here the users can manage and also can control the system locally (LAN) or remotely (internet). Wide range of home automation devices are supported by system such as power management components and security components.

SYSTEM DESIGN /WORKING

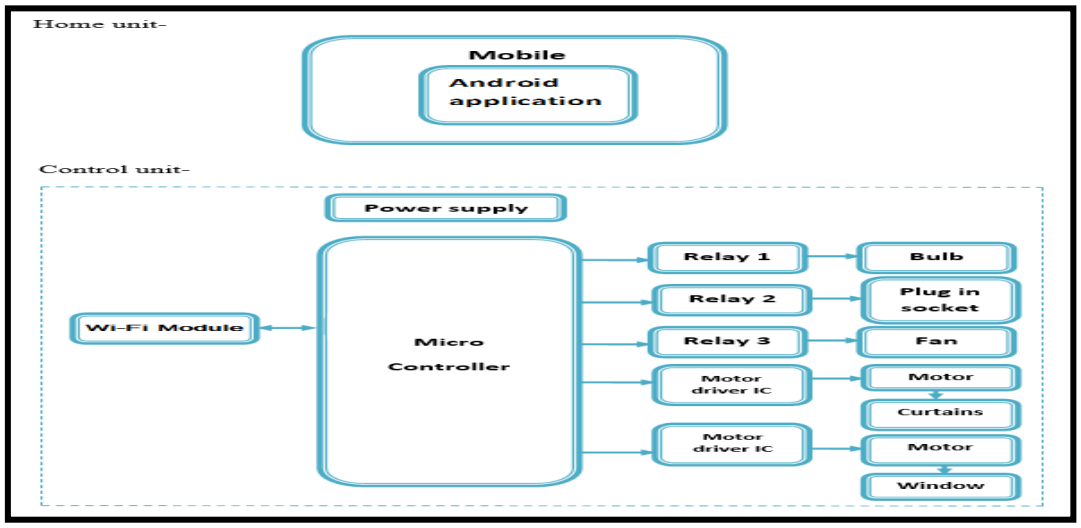
As shown in the design, a low cost smart home system for remotely controlling. The system consists of an app which is developed using Android platform and by using Arduinonodemcu 8266 microcontroller. The Arduino micro-controller acts as a main controller that hosts and performs the actions which are necessary to be carried out. The master controller that has the nodemcu micro web server which is used to communicate and coordinate actions with the other circuits. .The ESP8266 Wi-Fi Module is a self contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all Wi-Fi networking functions from another application processor. Each ESP8266 module comes pre-programmed with an AT command set firmware

All the actuators/relays and sensors are directly interconnected to the main controller. Using the smart home app, from a remote location it is possible to control and monitor the smart home. The app will send an signal to node mcu from node-mcu there are total 9 input pins from which we are using pin(d1,d2,d3,d4) as input pins for 4 pins of relay board and from 4 grounds we are using one ground pin ,one 3.3 vcc pin for running of node-mcu. We also use a mobile charger circuit to create 5v which is required for relay board to activate. When signal is send trough mobile app the microcontroller converts the signal to relay and we have connected our appliances to relay as the relay gets the activated our appliances get ON. This all automation and controlling of the home appliances and the alert systems can be done just with the single app from your mobile which could be done from anywhere with help of internet server.

CIRCUIT DIAGRAM



System Architecture



CONCLUSION

In this project, we have made a low cost and flexible home control using Android based Smart phone is proposed and implemented. The proposed architecture utilizes a micro web server and Wi-Fi communication as an interoperable application layer for communicating between the remote user and the home devices. Any Android based Smart phone with built in support for Wi-Fi can be used to access and control the devices at home. When a Wi-Fi connection is not available, mobile cellular networks such as 3G or 4G can be used for controlling.

REFERENCES

1. ShubhamAgarwal m2r technomations, engineering's
2. VinaySagar K N, Kusuma S M, "Home Automation Using Internet OF things", International Research Journal of Engineering and Technology (IRJET)
3. Sweatha K N, Poornima M, Vinutha M H , "advance home automation using FPGA controller", International Journal of Advanced Research in Computer and Communication Engineering Vol. 2
4. Y. Liu, "Study on Smart Home System Based on Internet of Things Technology," in Informatics and Management Science IV. vol.

ANALYSIS OF HOSPITAL DATA USING HADOOP: A CASE STUDY

Vishal S. Gadhave
T.Y.BSc(C.S)
vishalgadhave121198@gmail.com

Pratik S. Jagtap
T.Y.BSc(C.S)
pratikjagtap4698@gmail.com

Ganesh R. Gholap
T.Y.BSc(C.S)
ganesh.gholap@iccs.ac.in
Indira college of Commerce and Science, Pune

ABSTRACT

The main aim of this paper is to provide analysis on the field of healthcare(Hospital) data. The paper has listed some data analytics tools and techniques that have been used to improve healthcare performance in many areas such as: medical operations, reports, decision making, and prediction and prevention system. In today's era data analysis is big challenge in healthcare. Unstructured data are growing very faster than semi-structured and structured data. 90 percentages of the big data are in the form of unstructured data, major steps of big data management in healthcare industry are data acquisition, storage of data, managing the data, analysis on data and data visualization. Recent researches targets on big data visualization tools. In this paper the we analyzed the effective tools used for visualization of big data. This paper will be helpful to understand the processes and use of big data in healthcare management.

Keywords : *Big data, Hive Tools, Data Analytics, Hadoop, Distributed File System, Hospital data set, pig Tool.*

1. INTRODUCTION

The medical world is growing along with growth of hospital. From medical records to network operations, if your hospital isn't taking advantage of a healthy dose of big data, then your management team is missing out.

When it comes to healthy data management, here are just a few ways big data can improve your hospital. Nowadays the data is expanding in huge amount in field of medicine. Every patient comes with their own set of medical data and hospitals. By using big data hospital management team can create a better healthcare infrastructure. Big Data collects and store huge amounts of data related to hospital can use it from patient recovery rates to hospital finances. Patient health records are an important step in ensuring your hospital gives the most appropriate care to its visitors. The problem is records that aren't intuitive and immediately available don't have as great of an effect on a patient's recovery rate or the quality of their future visits. Big data analytics in the healthcare field are helping physicians better track their patient's medical conditions by collecting and analyzing each piece of the medical data puzzle.

2. CHALLENGES IN BIG DATA

1. **Data storage and quality:**
   Companies and Organizations are growing at a very fast pace. Moreover, the growth of the companies rapidly increases the amount of data produced. The storage of this data is becoming a huge challenge for every organization. Options like data lakes and warehouses are used to collect and store massive quantities of unstructured data in its native format. The problem, however, is when a data lakes and warehouse try to combine inconsistent data from disparate sources, it encounters errors. Inconsistent data, duplicates, logic conflicts, and missing data all result in data quality challenges.
2. **Security and privacy of the data:**
   Once, companies and organizations figure out how to use big data, it gives them a varied range of opportunities. However, it also involves big risks when it comes to the security and the privacy of the data. The tools used for analysis, stores, manages, analyses, and utilizes the data from a different variety of sources. This ultimately leads to a risk of exposure of the data, making it highly vulnerable. Therefore, the production of more and more data increases security and privacy concerns. Thus making it essential for analysts and data scientists to consider these issues and deal with the data in a manner that will not lead to the disruption of privacy.
3. **Various sources of data:**
   Data is coming in various resources and in various forms like audio, video, images, files, etc. To dealing with such volume of data is a big challenge nowadays.
4. **Searching of Data:**
   For searching specific data from such large data set is very critical. For that purpose, we required special tools and techniques. So that the specific data is found without some delay.

3. ANALYSIS OF HOSPITAL DATA

The proposed method is made by considering following scenario under consideration. Hospital has huge amount of data related to number of patient data, Appointment date, discharge date and number of patient's treated in each Hospital, list of regular customers in each hospital and their diseases. The proposed method intension is to develop model for the hospital data for new analytics based on the following queries.

The data description is as shown in table 1 and table 2.

Table1 Hospital Data Set:

Attribute	Description
Patient ID	Unique identifier for patient.
PatientName	Name of a patient
City	City of patient
Country	Country of patient
Patient phone no	Phone no of patient

Age	Age of patient
Gender	Gender of patient
Birth date	Birth date of patient
Appointment date	Date of appointment
Discharge date	Date of Discharge
Cost	Bill of Patient

Table 2 Dataset for Hospital:

Attribute	**Description**
Hospital ID	Unique identifier for Patient.
Hospital Name	Name of Hospital
City	City of hospital
Country	Country of Hospital
Address	Address of the hospital

4. METHODOLOGY

In this paper the tools used for the proposed method is Hadoop which is mainly used for structured data. Assuming all the Hadoop tools have been installed and having semi structured information on hospital data.

1. Put the data set in the Hadoop directory.
2. Extract semi structured data into table using the LOAD command.
3. Analyze data for the following Queries: -
   - **a)** list of patients in the specific hospital id.
   - **b)** list of patients having particular age.
   - **c)** list of patients with highest hospital bill, etc.

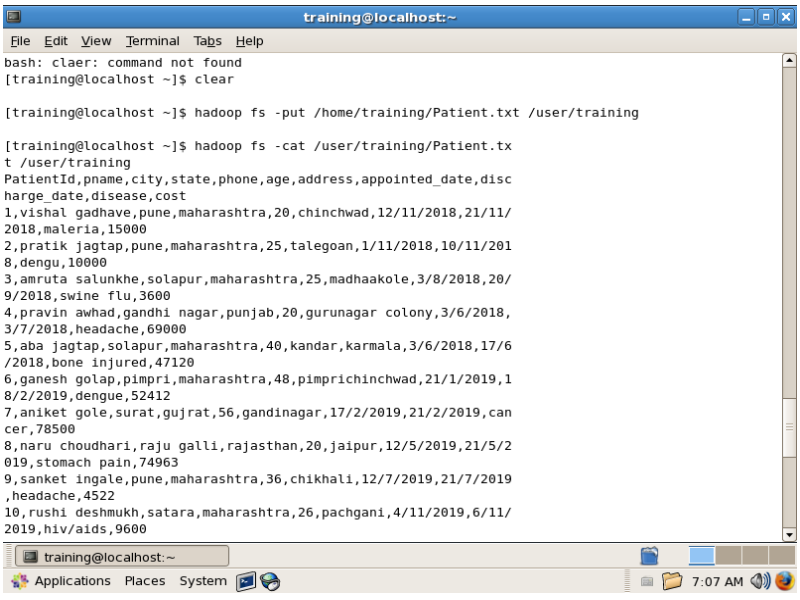


Fig 1 Put the file in HDFS

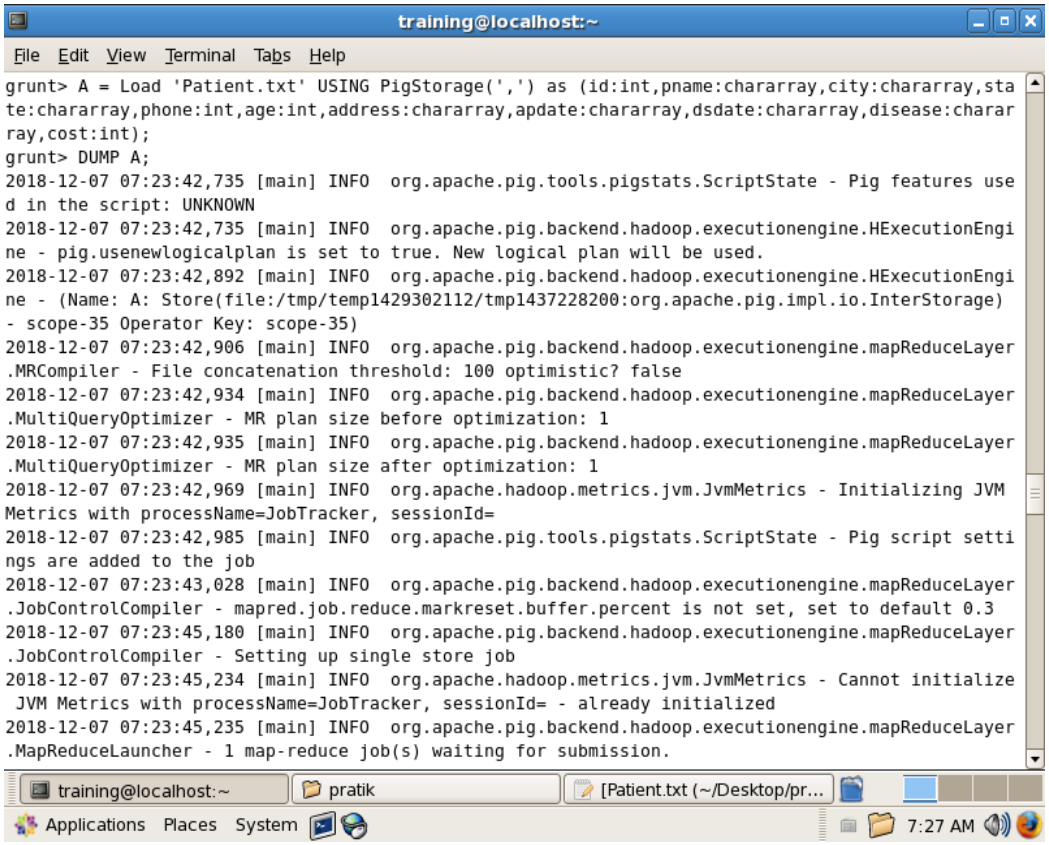


Fig 2 load the file in pig (grunt terminal)

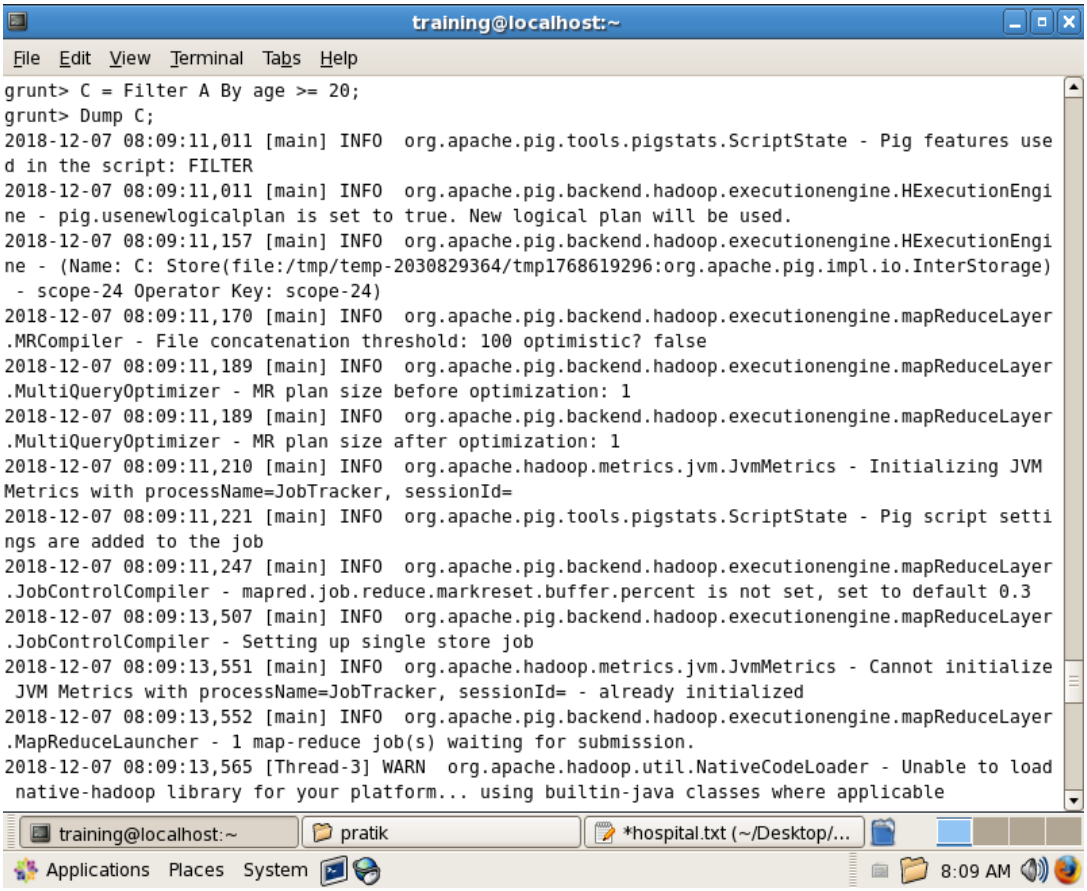


Fig 3 List of patients having age greater than 20

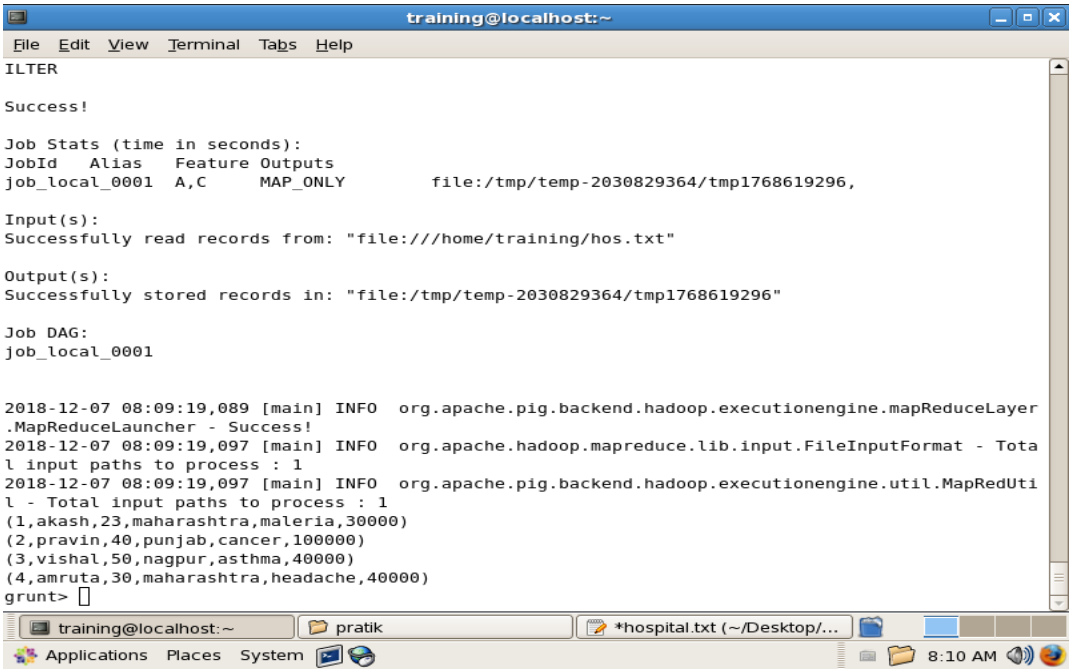


Fig 4 List patients having of age greater than 20

Query 2- Find the patients having Expense >= 50000.

grunt>C = Filter A By cost >=50000

4,pravinawhad,gandhinagar,punjab,20,gurunagar colony,3/6/2018,3/7/2018,headache,690006,akash kale,pimpri,maharashtra,48,pimprichinchwad,21/1/2019,18/2/2019,dengue,524127,aniket gole,surat,gujrat,56,gandinagar,17/2/2019,21/2/2019,cancer,785008,naru choudhari, raju galli,rajasthan,20,jaipur,12/5/2019,21/5/2019,stomach pain,749639,sanket

5. CONCLUSION

Big data analytics has the potential to transform the way hospital providers use sophisticated technologies to gain insight from their clinical and other data repositories and make Appropriate decisions. In the future we'll see the rapid, widespread implementation and use of big data analytics across the hospital organization and the healthcare industry. To that end, the several challenges highlighted above, must be addressed. As big data analytics becomes more mainstream, issues such as guaranteeing privacy, safeguarding security, establishing standards and governance, and continually improving the tools and technologies will garner attention.

From above work, we conclude that with the help of big data tools like hadoop we can efficiently handle or deal with huge amount data of any sectors and can produce useful information that user want to deal with. Nowadays companies are move forward to use big data to deal with their massive amount of data using big data analytics. In future, there will be more need of big data analytics because for a day, we generate **2.5 quintillion** bytes of data. And it is very difficult for organization to handle this massive amount of data with traditional method. Big data analytics and

applications in healthcare are at a nascent stage of development, but rapid advances in platforms and tool can accelerate their maturing process.

REFERENCES

1. Challenges and opportunities with Big Datahttp://cra.org/ccc/wpcontent/uploads/sites/2/2015/05 /bigdatawhitepaper.pdf
2. Dataset is taken from edureka http://www.edureka.co/my-course/big-data-and-hadoop
3. big data in organizationhttps: //www.researchgate.net/publication/264555968_Big_Data_Analytics_A_Literature_Review_Paper
4. Big Data Analytics in Healthcarehttps://www.degruyter.com/view/j/jib.ahead-of-print/jib-2017-0030/jib-2017-0030.xml
5. Analysis on Big Data in health and hospitalhttps://www.amazon.com/Data-Analytics-Healthcare-Research-Strategies/dp/1584264438
6. Big data Analytics in Medicine and Healthcare https://www.degruyter.com/view/j/jib.ahead-of-print/jib-2017-0030/jib-2017-0030.xml
7. The data challenges at scale and The scope of Hadoophttps://intellipaat.com/tutorial/big-data-and-hadoop-tutorial/the-data-challenges-at-scale-and-the-scope-of-hadoop/

USE OF BLOCK-CHAIN IN E-COMMERCE: A REVIEW

Pratiksha Mohite
Rohit Kadam
S.Y.B.Sc(CS) , Indira College of Commerce and Science

***Abstract**:*
Now a days everyone is using various online application in which maximum people/users are shopping online. In this research paper, researchers are explaining the use of Block-chain concept for E-commerce application.
***Keywords:** E-Commerce, Block-chain, Block Chain Architecture*

Introduction:
Ecommerce, also known as electronic commerce or internet commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions. Ecommerce is often used to refer to the sale of physical products online, but it can also describe any kind of commercial transaction that is facilitated through the internet.
A block-chain is a digital record of transactions. The name comes from its structure, in which individuals records, called blocks, are linked together in single list, called a chain. Block-chains are used for recording transactions made with crypto-currencies, such as Bit-coin and have many other applications.[1]

Literature Review:
From the first paper we come to know that if any seller wants to sell his product via block-chain, it is quite simple and takes several minutes. After the seller is connected his accounting program to the application, he can manage to recognize stock balance and bind it to a single nomenclature with fine merchandise cards and complete data of the product features. Then the information about the seller's product gets available to all the members of the network. If any customer places the order for the product then the seller receives a notification that the customer wants your product. Customer's money is immediately transferred to a smart contract, which means that the order is real. The seller arranged the delivery and began his usual work. As soon as the product is delivered the money is transferred to the seller account. [1].

E-commerce Challenges [2]
The main goal of e-commerce is to simplify the entire process of buying and selling goods and services and to make this process as transparent as possible at a low-cost. However, the existing technologies do not fully meet these objectives. For the moment, e-commerce has a number of sticking points that are significantly impacting its efficiency.

1. One of the most important obstacles is the non-transparency of information and the complexity in obtaining it. The sheer number of e-commerce participants (brand, manufacturer, distributed retailer, delivery, consumer and regulator) creates the necessity for constant data exchange. In addition, different participants of this market commonly require different parts of the data. That is why, in processing this information, it is always necessary to do the same work many times, which leads to high processing costs, data duplication and loss or partial change of this data. It allows harmful participants of the market to carry out fraudulent schemes, such as fakes, counterfeit, evasion of taxes, illegal import/export, etc.
2. Lack of a unified standard. E-commerce market was formed arbitrarily. The more it grew, the more traditional companies were engaged in online trade. Unfortunately, lack of unified regulations and standards led to chaos in offering products on the market. The same goods in Internet shops, even within one country, have different names and categories. It causes difficulties not only for the final customers, who need to spend considerable time comparing offers from various Internet shops, but for B2B sector as well. Retailers examine offers from various suppliers with a fine-toothed comb in order to find the best deal. It is so due to different formats of data on stock and goods. Marketplaces invent high priced solutions to match goods from the supplier whose data they collect. In such cases, these solutions are a serious restraint for connection to the marketplace.

Architecture:

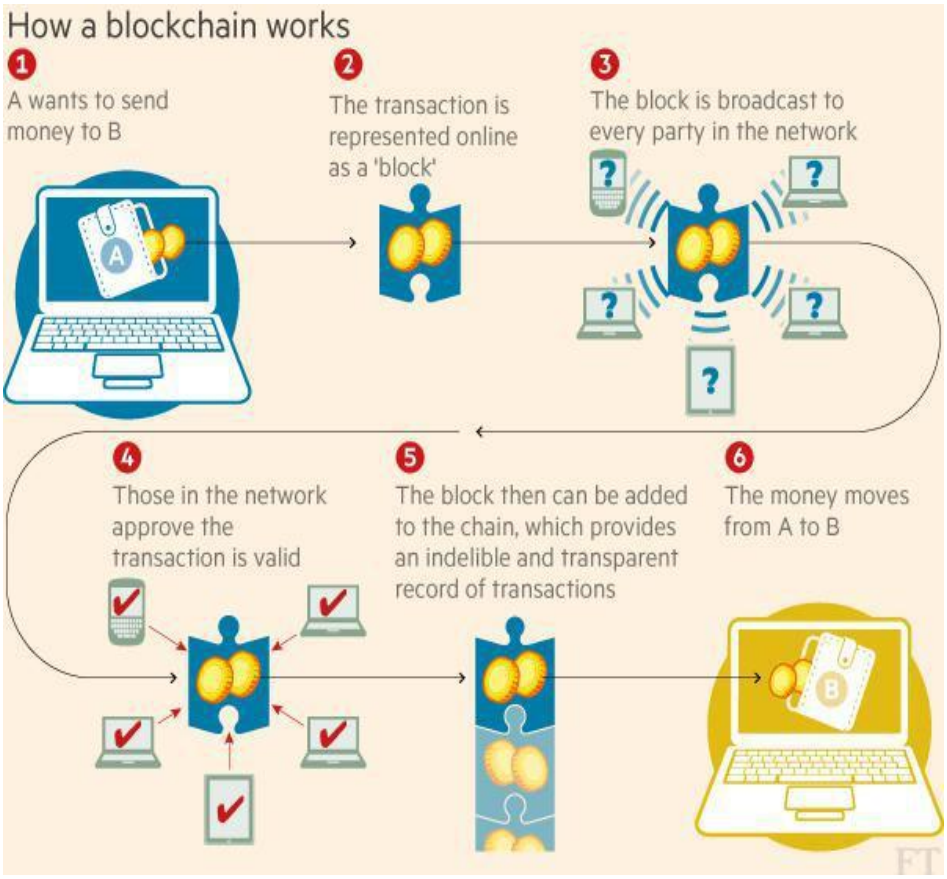


Fig. 1. Bit coin Architecture

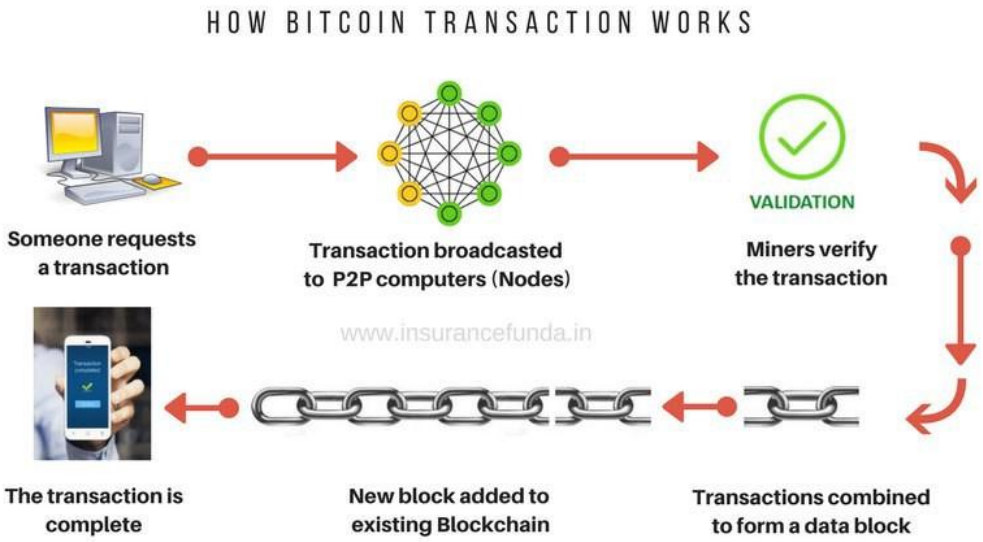


Fig 2 Bit Coin Transaction Execution

Use of Block Chain

1. **Alternative Payment Methods**

   Block chain-powered currencies (called cryptocurrencies) were the first implementation of modern block chain technology, with Bitcoin leading in popularity and global adoption. Bitcoin and other cryptocurrencies provide several advantages over traditional currencies that benefit both customers and merchants. In addition to being relatively easy to implement, sending or receiving money is often as simple as sharing a QR code.

2. **Faster Transactions**

   According to Monetha, a payment processing company based on the Ethereum block chain, traditional payment processing systems can involve up to 16 different steps with total fees ranging from 2 to 6%. And considering the number of parties involved, from payment processors to credit card vendors, simplifying the transaction process benefits both merchants and customers.

   Block chain transactions take place on a single network, reducing or outright eliminating the need for intermediaries. Transaction speeds are limited only by the speed of the network and by the speed at which new blocks can be generated. While Bitcoin once struggled to handle 7 transactions per second, platforms like the Lightning Network promise millions of transactions in the same amount of time.

3. **More Secure Payments**

   Another advantage for customers is that blockchain-based currencies don't expose personally identifiable information. Credit and debit cards were used in over 100 billion transactions in 2015 for a value of $5.72 trillion dollars. However, 31.8 million US consumers were victims of credit card fraud just one year prior.

   Currencies such as Bitcoin are like cash in that they don't require the customer to expose sensitive data such as a credit card number. Instead, the customer authorizes a transfer from his or her own personal "wallet" to that of a recipient. The only

distinguishing bit of data tied to each user's wallet is a randomly generated unique identifier.

Blockchains work well for payment processing because they balance speed, privacy, and integrity. Customers and merchants can make secure transactions quickly without exposing themselves nearly as much to fraud.

4. **Improved Order Fulfillment**

One of the key benefits to eCommerce platforms is that each block in the blockchain links to the previous block. This creates a visible chain of events that closely mirrors the process of fulfilling an order.

For example, imagine a customer is placing an online order on a blockchain-powered eCommerce site. Each step in the ordering process (order placement, payment, fulfillment, and shipping) adds a new block to the chain with the time that the action was performed. The process would look similar to the following:

1. The customer places an order by selecting her item(s) and entering her shipping information. The marketplace generates a block and a proof of work for the order.
2. The customer pays for the product using her credit card. This generates another block backed by another proof of work that verifies payment to the seller.
3. The seller receives the block for the order and payment, then ships the product. This generates a third block indicating the product was shipped and the order was fulfilled.

This can be extended to other parties in the process as well, such as the shipping provider. In this example, a fourth block could be generated by the shipping provider after delivery.

Conclusion

The world will experiment with blockchain as a platform for future trade. Blockchain as a solution for tracking the movement of pharmaceuticals, luxury goods, and even diamonds and many more stores will get managed through this. Bitcoin will maintain security in the various online E-Commerce applications.

References

1. https://github.com/ElementhFoundation/Documentation/blob/master/ElementhWhitepaerEN.md#blockchain-and-e-commerce
2. https://en.wikipedia.org/wiki/E-commerce

CONCEPTUAL STUDY OF TEXT MINING

Mahesh Balaji Raikwade
Indira college of commerce and science
Maheshraikwade123@gmail.com

Vishal Gajanan Patil
Indira college of commerce and science
vishalgajananpatil4@gmail.com

***ABSTRACT**:*
The success of human is due to ability to communicate and share an information this is where the concept of language comes in however many such language come in where each language has its own set of alphabets resulting in making words and words to sentences. Where each language has its own set of rules also known as grammar.
Today in 21st century according to industry estimate only 21% of data is present in structured format. This data is generated as we speak, tweet or send messages and majority of data is present in the textual format which highly unstructured now in order to produce significant and actionable inside from the text data is important to get acquainted with techniques of text mining.
Key Words: Text Mining, Data Mining, Natural Language Processing, Information Retrieval, Text Cleanup.

INTRODUCTION*:*

Text mining or text analytics is the process of deriving meaningful from natural language text .This is the process involve structuring the input text and deriving patterns within the structured data & finally evaluating the integrated output .Compared with the data stored in database. Text is unstructured, amorphous & difficult to deal with algorithmically. Nevertheless, in modern culture, text is commonly the way of exchanging information, data. Text mining deals texts whose purpose to communicate with actual information or opinion.

Data mining and text mining serve the same purpose except that in data mining the tools are present to handle structured data from databases. Whereas text mining also serves the instructed or semi-structured.

PROCESSES OF TEXT MINING:

It is mainly classified in 3 steps.

1) **Text clean-up**: as the title suggests text clean-up is method for removing unnecessary or undesired information like ads form a website, conversion of binary formats, issues with tuples.
2) **Tokenisation**: in this process the text information is split with white spaces, adding or removing punctuation marks that are identified in preceding step.
3) **Parts of speech tagging**: parts of speech means assign a word class for each token. Tokenised inputs are given. Taggers have to deal with unknown words conflicting word tag mapping.

Types of text mining:

1. Information retrieval (IE)
2. Data mining (DM)
3. Natural language processing (NLP)

INFORMATION RETRIEVAL (IE):

Information retrieval is the process of abstracting an information needed form an information source. This searching involves full-text or content –based indexing.

Automated systems are used to reduce the information overload.

For example: the amazon software arranges the data or information is organised form and stores them and manages accordingly.

To increase the effectiveness of process the documents are transformed into adjustable representation. Each technique involves a specifies model to be formed, some of them are lighten here

1. First dimension: mathematics basis
2. Second dimension : properties of the model

Data mining (DM):

Data mining is process which targets to extract pattern and knowledge from a big data set and transform into comprehensible structure for further processing. It is frequently applied to any form of large scale information. The main task of data mining dig out the previously unknown structures such as unwanted records, dependences, bunch of records. It involves a data base technique (spatial indices). The patterns can be treated as kind of summary of the input data and can be used for further.

Data mining involves following process for data conversion or transformation:

1. Selection: selection of precise data or informative data.
2. Pre-processing: data is to be processed
3. Transformation
4. Interpretation

Natural language processing:

NLP is part of computer science & artificial intelligence which deals with human languages. By utilizing NLP and its components one can organise the mass or chunks of textual data to form news or make a task and solve a wide range of problems such as automatized summarization, speech recognition, machine translation and topic segmentation.

Components of NLP

1. Natural language understanding
2. Lexical ambiguity
3. Syntactical ambiguity
4. Referential ambiguit

APPLICATION OF TEXT MINING:

Text mining application are used in various fields. To get most important and large amount of data from enormous data in I.T. industries. Here are the main application of text mining:

a) Competitive intelligence: It is the process in which collection of all possible trends and other competitors so that by analysing this data in specific patterns and current requirements.

b) Detection Of Junk E-mails: Text mining is also detect unwanted junk e-mails by default.

c) Management of human resources: It also can be used to manage human resources.

ADVANTAGES OF TEXT MINING:

1. Quick analysis of data.
2. Writer interpretation.
3. Mapping.
4. Digital editing.
5. Ability to make previously unstructured data into quantitative information

DISADVANTAGES OF TEXT MINING:

1. Omitting emotion
2. Misguided interpretations
3. Miss use of qualitative data
4. Can lead to erroneous representation
5. Ill organized or free text

CONCLUSION:

In this research paper we have thrown the light on a major topic i.e. Text mining which is an new research area at the insertion data mining, natural language processing, information retrieval and explained different types and process of text mining. We also highlighted the friend and foe of text mining.

REFERENCES:

1. Shilpa Dang, Peerzada Hamid Ahmad – "Text Mining : Techniques and its Application" IJETI International Journal of Engineering & Technology Innovations, Vol. 1 Iss 4, Nov 2014 .

2. S.Sathya [1] , Dr.N.Rajendran "A Review on Text Mining Techniques" - International Journal of Computer Science Trends and Technology (IJCST) – Volume 3 Issue 5, Sep-Oct 2015

3. https://en.wikipedia.org/wiki/Text_mining

4. Yu Zhang ; Mengdong Chen ; Lianzhong Liu – "A review on text mining" - IEEE

5. https://en.wikipedia.org/wiki/List_of_text_mining_software

MACHINE LEARNING: A REVIEW

Payal Sachin Vispute **Gauri Mahesh Patole**
payalvispute2018@gmail.com gauripatole12@gmail.com
Sannidi Ramesh Poojary
sannidipoojary@gmail.com
Indira College of Commerce and Science

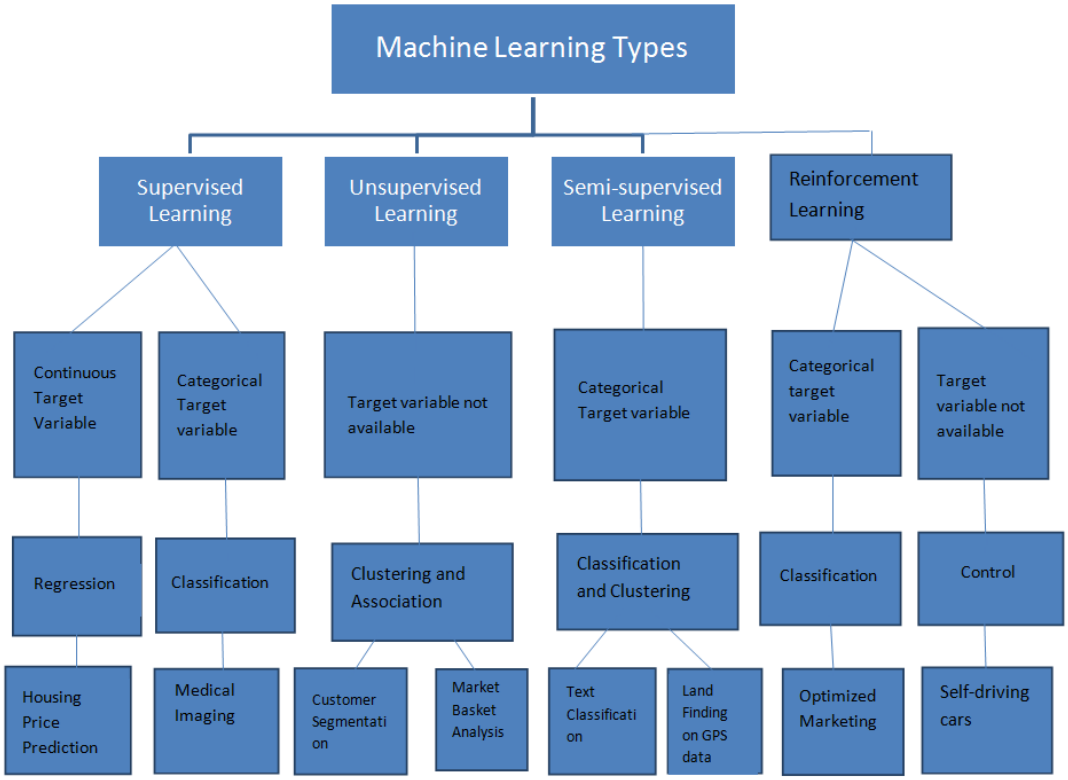
Abstract:
Machine Learning is advance and vast technology. It finds applications in big data, data mining, and artificial intelligence. Machine learning give assurance of supporting potentially transformative advance in range of area. Machine learning mainly works as to improve the certain task based to past experience. It's majorly related to statistics and data mining. Python is popular language for machine learning which is often compared to 'R'. Machine learning algorithms are always classified as supervised, unsupervised, semi-supervised and reinforcement. Machine learning plans are among enterprise technology's most competitive realms, with most major dealers, including Google, Microsoft, Amazon, IBM and others, chasing to sign customers up for plan services that includes the spectrum of machine learning activities, containing data collection, model building, data preparation, application deployment and training.
Key-words: *Quest, Naive Bayes, K-means clustering, swarm, impel, Q-learning, realms, spectrum.*

Introduction:

Machine Learning is to make the machine capable of taking the decision by its own. These systems also learns from past experiences or analyze previous data. It concludes outcomes according to its circumstances.

There are some variations of how to define the types of machine learning algorithms but often they can be divided into categories according to their cause and the main categories are the following:

1. **Supervised Learning** is the quest of learning a function and that directs inputs to outputs. A supervised learning algorithm surveys the training data and assembles a gathered function that can be used for mapping samples and attempt to model relationships and dependencies between the target forecast output and the input features such that we can guess the output values for new data based on those relationships which it learned from the past data sets.



List of common algorithms:

- Nearest Neighbor.
- Naive Bayes.
- Decision Trees.
- Linear Regression.
- Support Vector Machines.
- Neural Networks.

2. **Unsupervised Learning** is instructed with unlabeled data by the computer. It recognizes commonalities in the data and responds on the presence or absence of commonalities in each new section of data. A central approach in the field of density approximation in statistics, it encloses many other domains demanding summarizing and describing data features.
   List of common algorithms:
   - K-means clustering.
   - Association Rules.
3. **Semi-supervised Learning** falls in between supervised and semi-supervised learning. In the absence of labels majority of the consideration. These algorithms are the best candidates for the model building. These methods utilize the idea that even the group memberships of the unlabeled data are unrevealed.
4. **Reinforcement Learning** in this, a computer program cooperates with a positive environment. It is a branch of artificial intelligence. These algorithm constantly learns from the environment in a repeated fashion. The issue, is studied in many

other routines such as game theory, control theory, operations research, information theory, simulation-based optimization, multi-agent systems, swarm intelligence, statistics and genetic algorithms.

List of common algorithms:

- Q-Learning.
- Temporal Difference.
- Deep Adversarial Networks.

Advantages of Machine Learning:

1. Machine Learning has many vast applications as financial sector, retail, banking, healthcare, etc.
2. Facebook and Google are using machine learning to impel applicable advertisement, that advertisements are formed on users previous search performance.
3. It allows time cycle depletion and operative utilization of resources.
4. It is used to handle multi-dimensional and multi-variety data in an effective environments.
5. As there are many things that come under the practical ease of machine learning. Also, they collaborate the development of autonomous computers, software programs.

Disadvantages of Machine Learning:

1. Machine Learning has the vital challenge called Acquisition. And, it must proceeded before granting as input to specific algorithm. Therefore, it has a remarkable impact on results to be attained.
2. We have one more vital challenge interpretation, to determine the usefulness of machine learning algorithms.
3. The uses of machine algorithms are limited. Also, it's not having any guarantor that its algorithms will surely in every case. Thus, it requires some comprehending of the problem to apply the right algorithm.
4. There are less possibilities to make instant predictions with a machine learning systems. Also, don't neglect that it learns through previous data. Thus, bigger the data and the longer it needs reveal to these data, the better it will perform.

Conclusion:

Machine learning is a growing field in computer science. Machine learning appeals in systematic reviews of complex research field's and appeals are of specific interest considering stable increasing search output and accessibility of the existing evidence is a specific challenge of the research field quality enhancement.

References:

1. Ayon Dey "Machine Learning Algorithms: A Review" International Journal of Computer Science and Information Technologies (IJCSIT), vol.7(3), 2016, 1174-1179
2. Diksha Sharma[1], Neeraj Kumar[2] "A Review on Machine Learning Algorithms, Task and Applications" International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 6, Issue 10, October 2017, ISSN:2278-1323
3. Hempel S[1], Shetty KD[2], Shekelle PG[3] "Machine Learning Methods in Systematic Review" Agency for Healthcare Research and Quality (US), Rockville (MD), 2012 September
4. Steve Minton[1], Jaime G. Carbonell[2], Craig A. Knoblock[3], Daniel R. Kuokka[4], Oren Etzioni[5], and Yolanda Gil[6]. "Explanation-Based Learning: A Problem-Solving Perspective". Artificial Intelligence, 40(1-3):63:118, September 1989

IMPACT OF RISE IN SOCIAL MEDIA: A SURVEY

Mr. Nikhil Bhigwankar FYBSc(CS).
Mr. Jyotiraditya Ighe FYBSc(CS).
Mr. Sidharth Jawale FYBSc(CS).

Indira College of Commerce and Science.

Abstract:
Social media is becoming the most adopted communication tool for everyone. The aim of this survey is to investigate the use of social media by different age groups population. The target group of our population was between the ages of 10-70. This study adopts a quantitative research approach to investigate the use of social media. Quantitative findings reveal that majority of the respondents (81.63%) is aware of social networks, have access to the internet and regularly use mobile phones for social networking.
Keywords: *social media, social networks and usage of social media.*

1. Introduction

The rise of social media has drastically affected our social lives, lifestyle, interaction with people and health. Since 18th century, the inventions of technology have deprived the human life so far. The most affected ones are our next successors, the young generation who are going to build the new world. The world we thought about in our mind no more exists. Humans no longer emphasize with humans. The IOT (Internet of Things) revolution has affected majorly technologies and social living.

Initially internet was accessible only for few people, mostly elites. Nowadays it has become one of the most crucial necessities along the tag of bread, clothing and shelter. This is why it's now easily accessible and affordable to all of us. Social media has impacted in our day to day life. Nowadays everyone seems to have their own smartphone(s) and tablet(s) because of which their time is being utilized the other way round. Our world has now shrunken to 5-6 inches. A study in US reveals that 88% of the young adults in the age group of 18-29 years use Facebook while 59% use Instagram, 36% use Pinterest, 36% use Twitter, and 34% use LinkedIn (PEW Research,2016). Such a higher rate of social media adoption is due to its ability to bring people together across the world, to cultivate friendships, maintain romantic and social relationships, to provide entertainment with multimedia media content and games [2].

To find what went wrong with us, we conducted a survey in which we tried to find the factors which led this revolution with the help of data that we've collected so far. Undoubtedly, WhatsApp stood at the top in the list as most used social media around 16-20 aged pupils. We observed that the number of WhatsApp users is more. Followed by Instagram and then Facebook. Twitter and Hike aren't so far behind in the league. People co-operated us in helping us out by giving their

reasons for using social media. This facilitated us to complete our research on 'Impact of rise in social media: A survey'.

2. Research Methodology

Based on the comprehensive review of the literature, a survey instrument was developed. Survey instrument was developed with the use of Google Forms, and a link is shared through electronic format with the use of mobile phone. The survey questionnaire is prepared in English language. Participants were requested to fill the survey questionnaire on the spot, and responses were recorded in the Google database in the form of excel-sheet.

3. Analysis of Data

The total number of responses received for this survey was 49. The collected data was analyzed using Microsoft Excel. Analysis of demographic profile of the survey respondents reveals that 67.35% were male and the 32.65% were female. A majority (59.18%) of respondents fall into the age group of 16-20 years.

Do you about social media?

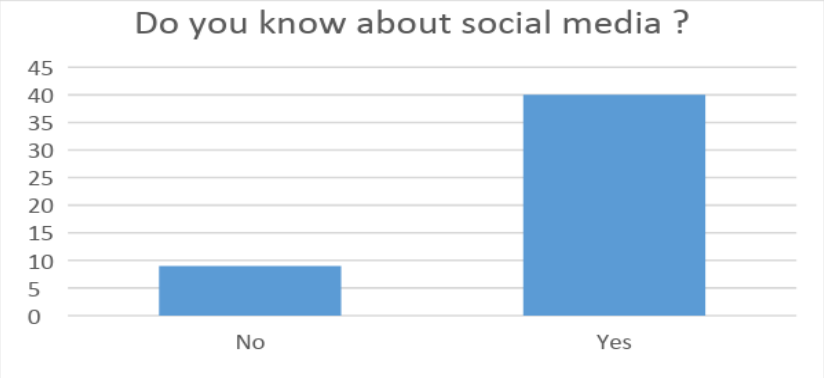


Figure 1

We conducted this survey on 49 people. 45 of them were aware of social media and 5 weren't. This indicates that still today, in 2018, people exist who aren't familiar with social world. But according to the data (Fig. 1), only ~10% didn't know about social media.

Which social network are you aware of the following?

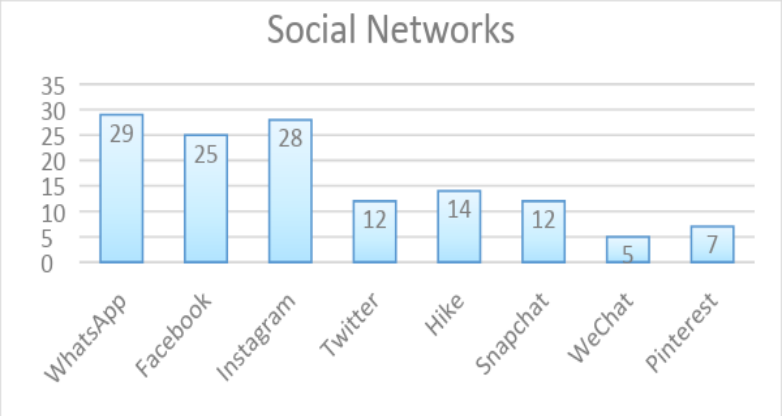


Figure 2

As we can see in (Fig. 2), no. of WhatsApp users is just above that of Instagram. They are dominating the social world. Facebook is likely to have gotten less used social platform from this survey. We Chat is the least used application among them all.

How do you access social networks?

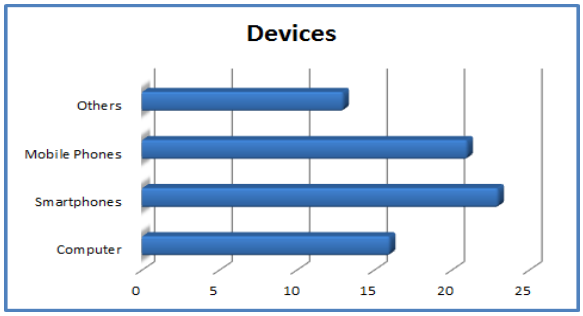


Figure 3

People tend to use smartphones more than any other device for accessing the virtual world. Mobile phones are still holding their grip on second position. As per the data (Fig. 3), usage of computers for social media has decreased.

In which age group do you belong to?

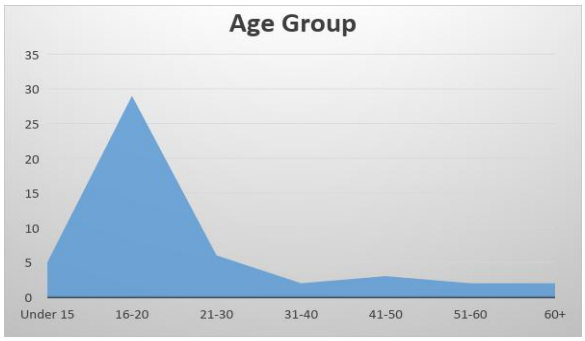


Figure 4

Normally, or I can say, as usual, the trend for social media is still at peak among youngsters. Especially, teens are more into this rather than the adults. (Fig. 4) shows it clearly how the trend is flowing.

Gender

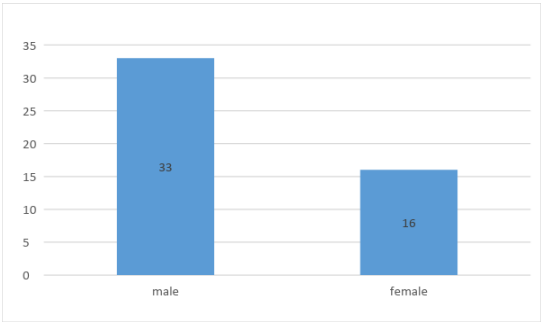


Figure 5

When it comes to gender, females are more involved in chatting than males. But here that's not the case. (Fig. 5) depicts the no. of male users are more than that of females. Too contradictory.

Education profile

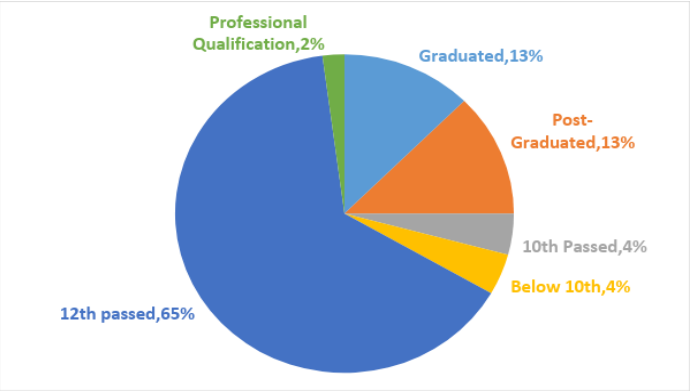


Figure 5

The study examined which education profile students are most active on social networking sites. The survey revealed that 12th passed students are the ones who are most active. The number of Graduate and Postgraduate available on social networking sites are almost same and very few students from school (below 10th) are using social network.

Work engagement

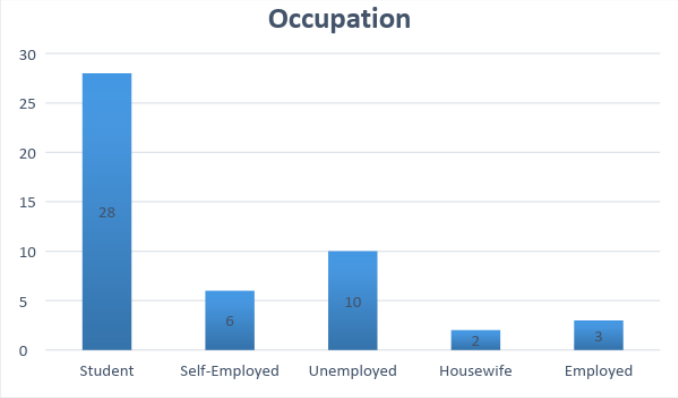


Figure 6

Nothing to much about this. (Fig. 7) clearly shows the significant figures of users of social media. As per the data, most of them are students whereas least is the housewives. We can see the unemployed group has some height, which clearly indicates that they're passing their most of the time on social media.

Which among these are you aware of?

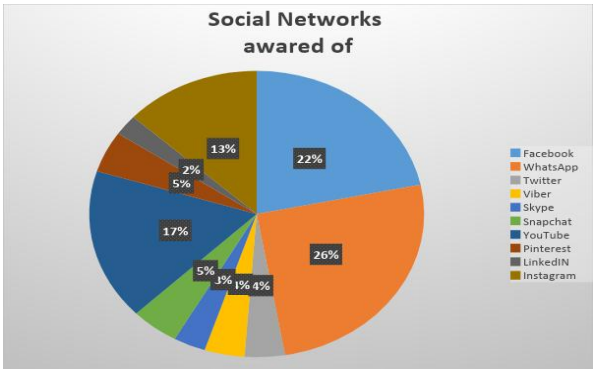


Figure 7

In the survey people were asked about which social media apps they know and which one is widely used by them. It revealed that WhatsApp is the most popular and most used app among all other app. Facebook and Instagram are not so behind they are also very popular among the young generation. The other social apps like Twitter, Snapchat, YouTube, Skype, Pinterest are the other apps which are frequently used by social media users.

What's the cause of using social media?

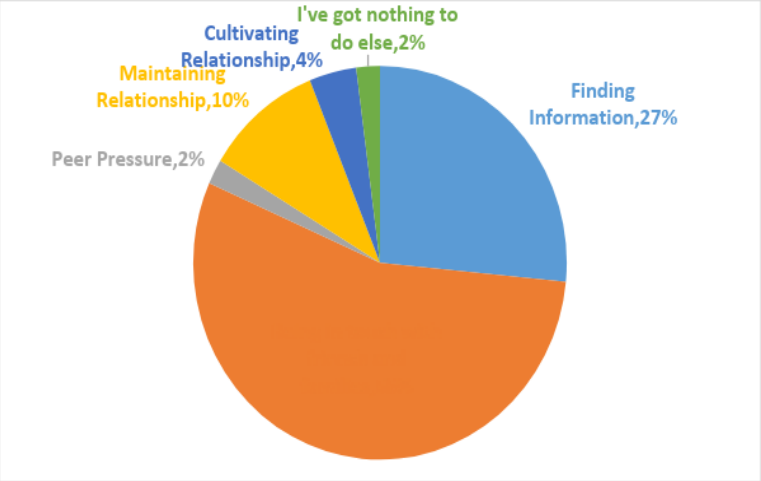


Figure 8

In the survey we asked about the cause of using social media for user, most of them are using it for just being in touch with friends and families. Many of them use social media as source of their information for gaining knowledge.10% of them wants to just maintain relationship with friends & relatives. Very few of them said that it is the peer pressure that drags them into social network.

How much time do you spend on social media?

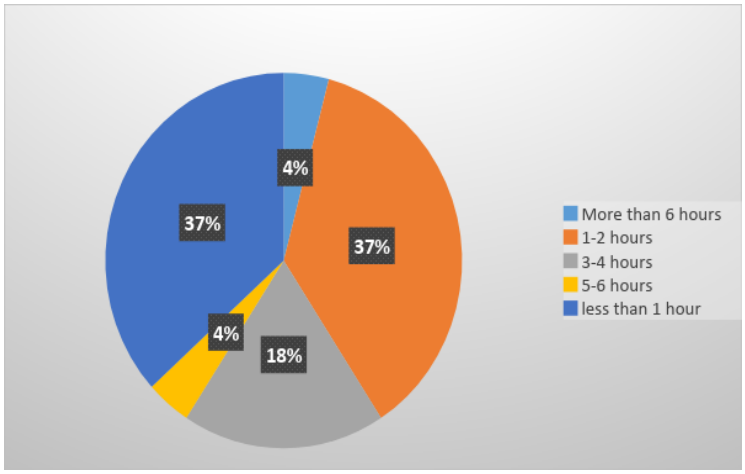


Figure 9

This study also examined the time spent on social media by Indian youth. It was revealed that 37% of users spend 1-2 hours on social media per day while Almost Same number of users spend less than 1 hour on social media.4% of them Spend more than 6 hours on social media.

What's the purpose of using social media?

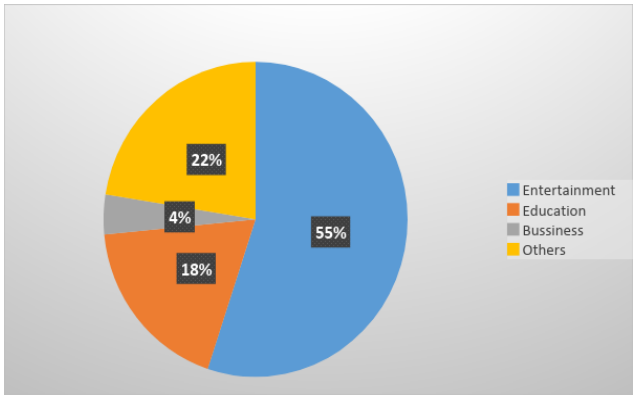


Figure 10

In our survey we asked about purpose of using social media for a user. In which most of them Use it as a source of entertainment, almost half of the social media users use it for entertainment purpose. Some of them use it as a source for gaining educational knowledge. There are some people who use it as business developing source.

Conclusions

Nowadays, it is very difficult to find a person without awareness and or using either one or many social networking sites. This indicates that these social networks have established a big space in the day to day activities of every person. It also implies that social networks can be used in a beneficial way as the respondents also used it to support their academic or business activities. In the present research, we found that social networks such as WhatsApp and Instagram were very popular among the respondents of this study. Results from this study indicate that the age of respondents does not matter when it comes to using social networks for information purposes and that all age generations are somewhat indifferent about using social networks to find and spread information or to keep informed of current events. With regards to using social networks for social purposes, although the most agreed purpose was to keep in touch with friends, the results show that there are significant differences between age generations.

References

1. Aisar Salihu Musa, Mohd Nazri Latiff Azmi & Nur Salina Ismail. Awareness and usage of social media: a study of mass communication students of kano state polytechnic.
2. Youth survey on social media security and privacy, 2017 by Sri-Lanka CERT-CC.
3. Fareeah Vadwa, Beate Elizabeth Stiehler & Nontuthuzelo Mashaba. Therefore it can be concluded that different age generations differ in terms of personal information sharing on their social network profiles.

COMPARATIVE STUDY BETWEEN SQL AND NOSQL

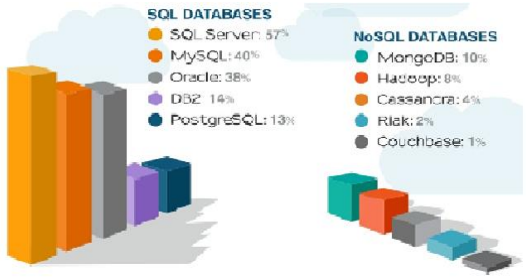
Komal Verma
F.Y.B.SC(comp.science)
kkv7559250945@gmail.com
Indira College of Commerce And Science, Tathawade (Pune)

Abstract:
In today's world rapid growth of computer and internet causes an efficient storage and retrieval of data. Big data requires exceptional technologies to efficiently process large quantities of data. As big data is stored in many companies. One of critical decision facing companies on big data project is which database to use SQL or NoSQL. SQL (Structured Query Language) is standard query language for relational database management system. NoSQL is the Not Only SQL is a collection of non-relational data storage systems. All NOSQL offerings relax one or more of the ACID properties.
Today SQL databases become an integral part of IT infrastructure of any organization. The main focus of NoSQL databases is more on BASE (Basically, Available, Soft state Eventually Consistent) than RDBMS ACID (Atomicity, Consistency, Isolation, and Durability) properties.
In this research paper we will see what is SQL and NoSQL and how queries are executed in these two different databases.
Keywords — *RDBMS, NoSQL, MongoDB, Insertion , deletion, update.*

INTRODUCTION

SQL: SQL(Structure Query Language SQL) is a database query language used for storing and managing data in Relational Database Management System(RDBMS). SQL was the first commercial language introduced by E.F. Codd. Today almost all RDBMS like My Sql, Oracle, Infomix, Sybase, MS Access use SQL as the standard database query language. SQL is used to perform all types of data operations in RDBMS.

NOSQL: NoSQL is an approach to databases that represents a shift away from traditional relational database management systems (RDBMS). To define NoSQL, it is helpful to start by describing SQL, which is a query language used by RDBMS. Relational databases depend on tables, columns, rows, or schemas to organize and retrieve data. In contrast, NoSQL databases do not depend on these structures and it use more flexible data models. NoSQL means "not only SQL." As RDBMS have increasingly failed to meet the performance, scalability, and flexibility needs that next-generation, data-intensive applications require, NoSQL databases have been adopted by mainstream enterprises. NoSQL is particularly useful for storing unstructured data, which is growing far more rapidly than structured data and does not fit the relational schemas of RDBMS.



Common types of unstructured data include: user and session data; chats, messaging and log data; time series data such as device data; and large objects such as videos and images.

Differences in query execution in SQL and NoSQL:

1. **FOR INSERTION OF RECORDS**

   SQL : We need to create a table first and then we can insert records in it by following queries:-

   Create table stud_3(roll no int , name varchar(),school varchar(60));

   Insert into stud_3 values(4,'rohan','VSA');

   Insert into stud_3 values(6,'nisha','VBN');

   NoSQL: We need not create table ,we can insert records directly in it by following queries in the below image:-

```
> db.inventory.insert({item:"notebook",qty:25,status:"A",size:{h:14,w:21,uom:"cm
"},tags:["black","red"]});
WriteResult({ "nInserted" : 1 })
> db.inventory.insert({item:"paper",qty:50,status:"in",size:{h:8.5,w:21,uom:"D"}
,tags:["red","black"]});
WriteResult({ "nInserted" : 1 })
> db.inventory.insert({item:"planner",qty:30,status:"D",size:{h:6,w:8,uom:"in"},
tags:["red","black"]});
WriteResult({ "nInserted" : 1 })
```

2. **FOR SELECT QUERY**

   For SQL and NOSQL we use following queries for selection:

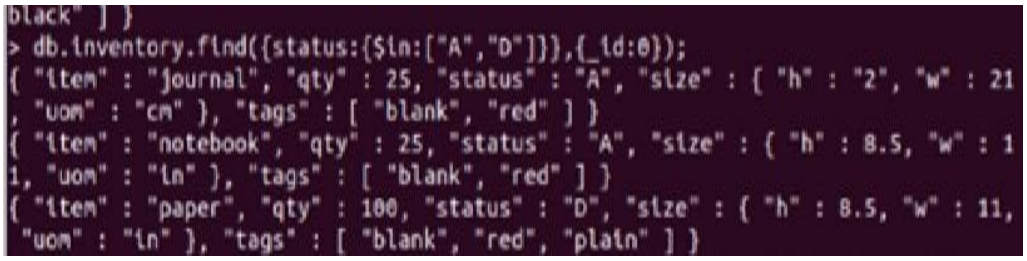
   SELECT * FROM inventory;

```
> db.inventory.find({});
{ "_id" : ObjectId("5c021b759a35a7e074daba5f"), "item" : "journal", "qty" : 25,
"status" : "A", "size" : { "h" : "2", "w" : 21, "uom" : "cm" }, "tags" : [ "blan
k", "red" ] }
{ "_id" : ObjectId("5c021bcb9a35a7e074daba60"), "item" : "notebook", "qty" : 25,
 "status" : "A", "size" : { "h" : 8.5, "w" : 11, "uom" : "in" }, "tags" : [ "bla
nk", "red" ] }
{ "_id" : ObjectId("5c021bfe9a35a7e074daba61"), "item" : "paper", "qty" : 100, "
status" : "D", "size" : { "h" : 8.5, "w" : 11, "uom" : "in" }, "tags" : [ "blank
", "red", "plain" ] }
{ "_id" : ObjectId("5c053e5819f4032507874765"), "item" : "notebook", "qty" : 25,
```

   SELECT * FROM inventory WHERE status = "D";

```
> db.inventory.find({status:"D"},{_id:0});
{ "item" : "paper", "qty" : 100, "status" : "D", "size" : { "h" : 8.5, "w" : 11,
 "uom" : "in" }, "tags" : [ "blank", "red", "plain" ] }
{ "item" : "planner", "qty" : 30, "status" : "D", "size" : { "h" : 6, "w" : 8, "
uom" : "in" }, "tags" : [ "red", "black" ] }
```

SELECT * FROM inventory WHERE status in ("A", "D")



SELECT * FROM inventory WHERE status = "A" OR size.h<6

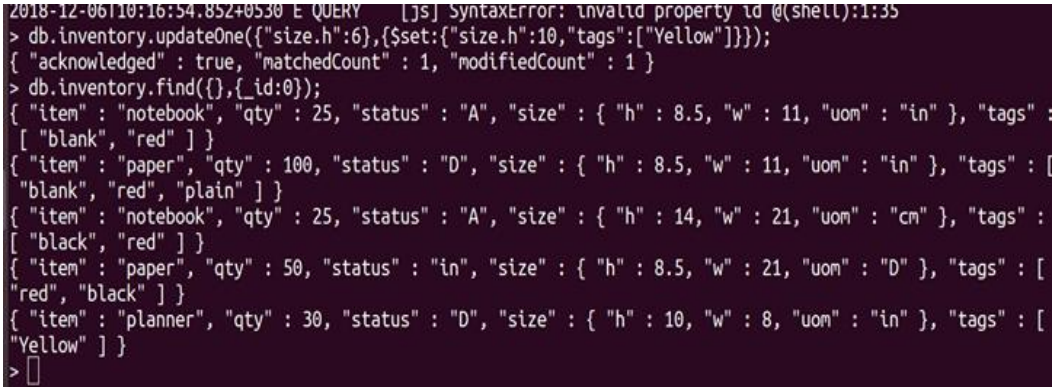
SELECT * FROM inventory WHERE status = "A" AND (size.h>2 OR item LIKE "^p%")

3. FOR DELETION OF RECORDS

In SQL AND NoSQL we use following queries for deletion of records:
Delete from inventory where size.h=2;

4. FOR UPDATE QUERY

In SQL AND NoSQL we use following query for updating records:
Update inventory set size.h=10 and tags=”yellow” where size.h=6



Advantages of NoSQL:

1. NoSQL is non-relational or tableless database. In this sense, they provide a easy management while ensuring a high level of flexibility with data models .
2. NoSQL is low cost: While being low cost, NoSQL is also an open-source.
3. The various kinds of NoSQL databases includes Couchbase, Amazon's Dynamo Db, MongoDB and MarkLogic to provide for the processing of big data apps that are cost-effective or so costly.
4. Scalability is easier: NoSQL has been gaining popularity because of the elasticity and scalability that it offers over the other kinds of databases that are available. It perform well including low cost hardware.

Disadvantages of NoSQL :

1. Less or no support from community: Though the NoSQL has been expanding at an unbelievable level but the community support is relatively less because it is new for them.
2. Standardization: It doesn't have a standardized platform like SQL, which is preventing it from further expanding.
3. Lack of interfaces and interoperability is another concern that is faced by NoSQL.

Advantages of SQL:

1. Speed: The speed offered by SQL is great , helping the retrieval of data from database records is so easy.
2. Well-defined standards: This follows the ISI and ANSI standards, which are approved across the globe or globally.
3. No coding: It's code-free in nature.

Disadvantage of SQL:

1. Interfaces: Though there are no complex coding involved, the process of interfacing is complex.

CONCLUSION

The major requirement of NoSQL is to store large amount of data that traditional database(SQL) can't handle because SQL databases have predefined schema whereas

NoSQL databases have dynamic schema for unstructured data.It provides many advantages to deal with Big Data storage, processing and querying. NoSQL database is very useful because a website is used by billions of users per second so to store this big data it is very much useful. Many social websites like Facebook, instagram, whatsapp ,twitter,etc. mostly prefer NoSQL to store information about people. In NoSQL no need to create tables to insert records, this quality of NoSQL is proved so impressive in "technology world".

REFERENCES

1. International journal of advanced research in computer engineering and technology (IJARCET) .
2. https://acodez.in/sql-and-nosql-an-overview/
3. https://visualstudiomagazine.com/blogs/data-driver/2014/06/sql-cloud-report.aspx?m=1

CYBER CRIME AND ETHICAL HACKING: A REVIEW

Aishwarya Borkar
TYBSc(Computer Science)
aishwaryaborkar570@gmail.com

Vruddhi Chonkar
TYBSc(Computer Science)
vruddhi.chonkar@iccs.ac.in

Indira College of Commerce and Science, Pune

Abstract:
In Today's world everyone is using online applications for so many reasons. Many of us are using online banking applications for money transaction, but still day by day cybercrime is happening in various part of country , it refers to unauthorized task happened for misuse of our personal information and data. In this paper researcher is going to review papers based on topic Hacking, Cyber Security.
Keywords: Cyber Crime, Cyber Laws, Ethical Hacking, Ethical Hackers.

Introduction

Internet usage is very vast now days, where everyone almost depends on Internet for different kinds of tasks. There are certain attacks on the internet called as Hacking. Hacking is a process of controlling the system of an organization without the knowledge of the organization members. In contrast it is called breaking the security to steal the sensitive and confidential information such as credit card numbers, telephone numbers, home addresses, bank account numbers etc that are available on network.[1]

Cyber Crime

Sussman and Heuston first proposed the term "Cyber Crime" in the year 1995. Cyber crime cannot be described as a single definition, it is best considered as a collection of acts or conducts. These acts are based on the material offence object which affects the computer data or systems .These are the illegal acts where a digital device or information system is a tool or a target or it can be the union of both. The cyber crime is known as electronic crimes, computer related crimes, e-crime, high technology crime, information age crime etc.

In simple term we can describe "Cyber Crime" are the offences or crimes which takes place over electronic communications or information systems. These types of crimes are basically the illegal activities in which a computer and a network are implicated. Due of the development of the internet, the volumes of the cybercrime activities are also increasing because when committing a crime there is no longer need for the physical present of the criminal.

The unusual characteristic of cyber crime is that the victim and the offender may never come into direct contact. Cyber criminals often opt to operate from countries with nonexistent or weak cyber crime laws in order to decreases the chances of detection and prosecution.

There is a myth among the people that cyber crimes can only be committed over the cyber space or the internet. In fact, cyber crimes can also be committed without ones

involvement in the cyber space, it is not necessary that the cyber criminal should remain present online. Software privacy can be taken as an example.

Classification of Cyber Crime

Cyber Crime can be classified into four major categories they are as follows:

a) **Cyber Crime against individuals:** Crimes which are committed by the cyber criminals against an individual or a person.
b) **Cyber Crime against property:** These types of crimes comprises vandalism of computers, Intellectual (Copyright, patented, trademark etc) Property Crimes, Online threatening etc.
c) **Cyber Crime against organization:** Cyber Crimes against organization are as follows:
   - Unauthorized changing or deleting of data.
   - Reading or copying of confidential information unauthorised, but the data are neither being changed nor deleted.
d) **Cyber Crime against society:** Cyber Crime against society includes:
   - Forgery: Forgery means making of false document, signature, currency, revenue stamp etc.
   - Web jacking: In this offence the attacker creates a fake website and when the victim opens the link a new page appears with the message and they need to click another link.

Cyber Laws in India:

Following are the sections under IT Act, 2000

1. Section 65- Temping with the computers source documents
   Punishment: Anyone who involves in such case could be sentenced upto 3 years imprisonment or with a fine of Rs. 2 lakhs or with both.
2. Section 66- Hacking with computer system, data alteration etc.
   Punishment: Any person who involves in such case could be sentenced up to 3 years imprisonment, or with a fine that may extend upon 2 lakhs rupees, or both [16].
3. Section 66A-Sending offensive messages through any communication services.
   Punishment: Any person if found to commit such crimes under this section could be sentenced upto 3years of imprisonment along with the fine.
4. Section 66B- Receiving stolen computer's resources or communication devices dishonestly.
   Punishment: Any individual who involves in such crimes could be sentenced either description for a term that may be extend up to 3 years of imprisonment or with a fine of rupee 1 lakhs or both.
5. Section 66C- Identify theft.
   Punishment: Anyone who involve in such crimes could be sentenced either with a description for a term which may extend up to 3 years of imprisonment along with a fine that may be extend up to rupee 1 lakhs.

6. Section 67C- Retention and preservation of information by intermediaries.
   Punishment: Whoever commits such crimes shall be sentenced for a period that may be extend up to 3 years of imprisonment and also liable for fine.
   Excluding these there are many other sections in the IT Act, 2000

Types of Hackers:

There are three types of hackers

1. White Hat Hacker: They are one who does ethical hacking and writes the report for what he has done.
2. Black Hat Hacker: They are the one who does hacking for his own purpose.
3. Grey Hat Hacker: They are combination of both Black hat and White hat hackers.

Kinds of Hackers:

1. **Coders:** Coders are the one who write codes. Coders come under grey hat because they write code for white hat hackers and black hat hackers.
2. **Admins:** Admins manages these codes. They come under white hat hackers. Actually coders are great than admins because admins just manages the code written by these coders.
3. **Script Kiddies:** They are the one who can read blogs, make use of tips find in internet. They don't know anything they are like small kid searches everything in web every step. Script kiddies comes under black hat hackers
4. **Hacktivist:** Hacktivist are group of hackers coming for a cause. The cause may either be good or bad. They come under black hat hackers.
5. **Suicidal Hackers:** They know how to be secured and wanted to reveal his name and details after they are done with hacking. Suicidal hackers come under black hat hackers.

Rules of Ethical Hacking:

- The hacker must obey the ethical hacking rules. If they don't follow the rules then it would be dangerous for the organization.
- Execute plan: For the ethical hacker time and patience is more important [2].
- Ethical hacker must have clear intensions to help the organization not to harm them.
- Privacy is the major concern from the organization point of view, thus the ethical hacker must be kept it private because their misuse can be dangerous or illegal.

Conclusion:

The internet users must adopt 5P mantra for their security which are Precaution, Prevention, Protection, Preservation, Perseverance. It is rightly said, "Prevention is better than cure", thus it is advised to take precautions while operating over the internet. Basically everyone becomes dependent over internet access and saves their crucial and important data over the internet. This becomes an invitation to all of the

crackers to gain and access of information organization hires ethical hackers who are well knowledge and experienced person.

References:

1. "Ethical Hacking" *Deepak Kumar1, Ankit Agarwal2, Abhishek Bhardwaj3 International Journal Of Engineering And Computer Science ISSN:2319-7242Volume 4 Issue 4 April 2015, Page No. 11466-11468*
2. ''Cyber Security and Ethical Hacking'' P. Harika Reddy Surapaneni Gopi Siva Sai Teja International Journal for Research in Applied Science & Engineering Technology (IJRASET)*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887*
3. "A brief study on Cyber Crime and Cyber Law's of India"Animesh Sarmah, Roshmi Sarmah , Amlan Jyoti Baruah International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395 -0056 Volume: 04 Issue: 06 | June -2017,Page No.1634-1641

SOLDIER'S HEALTH AND POSITION TRACKING SYSTEM

ADITI S. BHANDARI, **SNEHA S. BHALERAO**
aaditi.bhandari@iccs.ac.in snehabhalerao@iccs.ac.in
FYBSC, Indira College of Commerce and Science, Pune

Abstract:

During wars and military search operations, soldiers gets injured and sometimes losses. To find soldiers and provide health security , army base station need global position system device for locating soldiers , wireless base stations to sense health related parameters of soldiers and wireless trans receiver to transmit the data wirelessly . upon losing in the battle field it is necessary for the base station to guide the soldiers.

The base station can access the current status of the solider which is displayed on the personal computer the proposed system can be mounted on the soldier's body to track their health status and current location using global positioning system. This information will be transmitted to the control room through internet. the proposed system contains tiny wearable physiological devices, sensors, transmission modules.

Hence, with the use of the proposed system, it is possible to implement a low-cost mechanism to protect the valuable human life on the battle field.

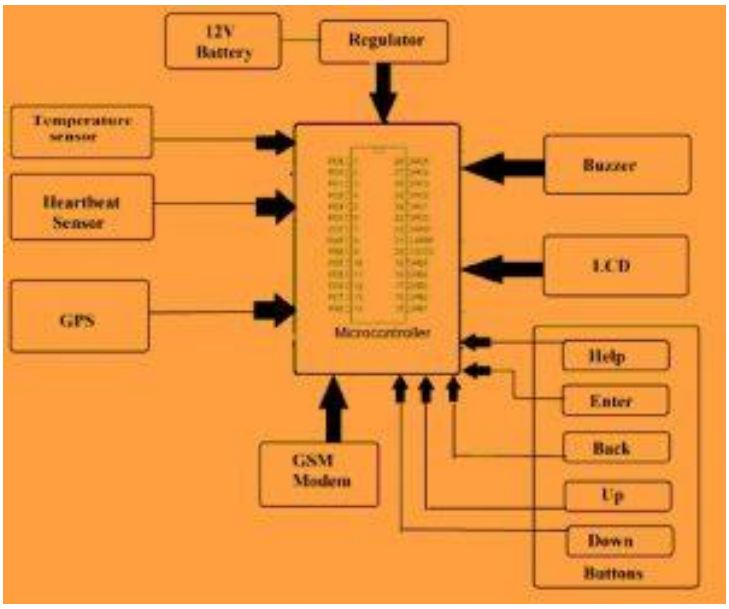
Keywords: positioning system, modules, monitoring, communication.

Introduction:

The nation's security is in the hand of army, navy and air-force. The important and vital role is of soldiers who sacrifice their life for their country. There are many concerns regarding the safety of the soldier.

This system will help our soldiers by providing then necessary help by tracking their location with the help of GPS. Thanks to wireless communication systems, Base Station can track the soldier position in case that need help thanks to the GPS modem also the health status to know soldier case, also provide SOS messages that soldier can inform its condition. For monitoring the health parameters of soldier, we are using bio medical sensors such as temperature sensor and heart beat sensor.

GPS and GSM Based Soldier Tracking and Health:



This project is designed to monitor the soldier's health condition with respect to respiration and temperature in border areas. The main units in this project are respiration sensor, temperature sensor, multivariator, counter, and driver unit, buffer, driver, relay, power supply unit, ARM controller, LCD, GPS, GSM and buzzer.

This project has two sensors in order to monitor the respiration and temperature of the soldier.

Respiration sensor:

If the respiration sensor vibrates that will be counted with the help of counter and driver stage.

Temperature sensor:

If the temperature of the soldier health varies then that signal will be given to ARM controller via multivibrator. The temperature sensor we are using is LM35.This series is accurate integrated circuit sensor. Whose output voltage is linearly equal to Celsius temperature.

ARM controller:

If temperature of soldier health varies then that signal will be given to ARM controller via multivibrator.

If any sensor parameter sensed a signal then that sensed parameter information will be sent to ARM controller which intern activates the GPS to read location of that particular area of the soldier.

GPS:

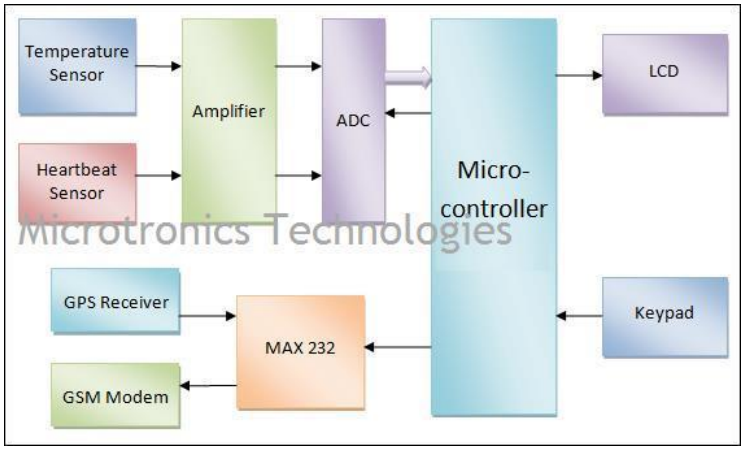
It is used to check the location of the soldiers.

GSM:

The ARM controller sends the location of the soldiers with respect to latitude and longitude to concerned person via GSM and activates the mild buzzer.

Advantages:

1. We can monitor the health in real time.
2. A sensor network base health monitoring system that is dependable and safe.
3. The system has high performance, high reliability and low power consumption.



One of the most important tasks in military processes is that the Soldier is not able to interconnect with control room administrator.

Present a problem faced by the soldiers are:

Soldier wants to identify the location. They will not get assistance during terror situation and soldiers are not trackable.

Global System for Mobile Communications

- **LCD Unit:**
  The LCD display is used to display the temperature , heart beat rate, current time, date and the position of the soldier.

The applications and advantages of the health monitoring system include the following:

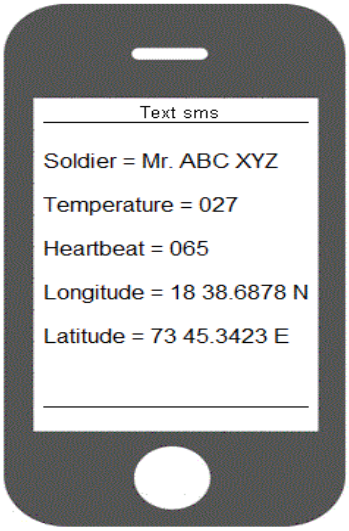
- No need to go on the field
- High reliability

- Cost effective
- We can monitor the health in real time
- A sensor network-based health monitoring system i.e. dependable and safe.
- The system has high performance, high reliability and low power consumption.

From the above information (health monitoring system) we can conclude that it would help in tracking the health status of the soldier with measures of heart beats and also the temperature of the body. It would also assist in tracking his location by using GPS and GSM modem. It can send all information to the BSS (base station) so that more necessary action could be taken. Furthermore, any doubts regarding this concept or to implement any electrical and electronic projects, please give your valuable suggestions by commenting in the comment section below. Here is a question for you, what are the applications of health monitoring system.

CONCLUSION:

The result is as shown below. A message is send on the registered number confirming about GSM and GPS configuration. After that an alert message is send to base station along with the precise location of the soldier. When any of the switch is pressed by the soldier accordingly the message will be displayed like this**.**



The protection of our country is primary mission for soldiers. So there is concern regarding the safety of our real heroes. GPS tracks position of soldier with respect to latitude and longitude anywhere on globe and also health system monitor.

References:

1. Dineshwar jaiswar,Sanjana S.repal(2015 july).”real time tracking and health monitoring of solider using zigbee technology” international journal of innovative research in science,engineering and technology : A survey. Volume 4.issue 7 pages.
2. Pangavne S.M. , Choudhary sohanlal and Pathak Bhavik (2015) “real time soldier tracking system”ISOR journal of electronics and communication engineering(ISOR-JECE), nashik, Maharashtra.

PREDICTIVE ANALYTICS IN BIG DATA

Tejashri Prakash Deshpande
tejashri.deshpande@iccs.ac.in
M.Sc. (Comp.Sci) Sem-I
Indira College of Commerce and Science, Pune

Abstract:
Today, the larger set of data is generated from various resources and different organizations. This huge and different kind of data is big data. The analytics is the process of analysis which predict concealed pattern and association between data. The objective of this paper is to give detail view about different predictive analytics approaches. Predictive analytics consists of many statistical and analytics technique for future possibilities of prediction. This paper gives brief information about different techniques to achieve prediction.
Keywords: *Big Data Analytics, Predictive Analytics, Big Data, Advanced Analytics, Data Mining.*

I. Introduction:

Big data refers to understanding and predicting human behavior by studying large volumes of unstructured data. [1]. According to definition given by webopedia big data means large volume of both structured and unstructured data. [2]. In 2005 Roger Mougalas from O'Reilly media introduced the term big data for first time and in this same year Yahoo developed Hadoop. [3].In revolution of big data there is contribution of many peoples. In 1663 John Graunt provided the first statistical analysis of data which is given in his book 'Natural and Political Observations Made upon the Bills of Mortality'. In 1889 Herman Hollerith invented the computing system to organize people count. In 1937 using Herman's input franklin D. Roosevelt created remarkable data development. In 1943 very first data processing machine was named 'colossus' and it was developed by British in World War II. From this development the National Security Agency (NSA) was created in 1952. The first data center was built by the US government in1965 for storing huge number of tax returns and fingerprint sets. In 1989 Tim Berners Lee invented World Wide Web (WWW). In1995 first supercomputer is developed which handle the work of thousand years in matter of seconds. In 2009 the largest biometric database is created by Indian government to store fingerprint and iris scan of all citizens. [4]. Big data technology is required in current era to process large amount of data sets. [5]. Today big data is key to solve many problems in both market place and public health. [6].

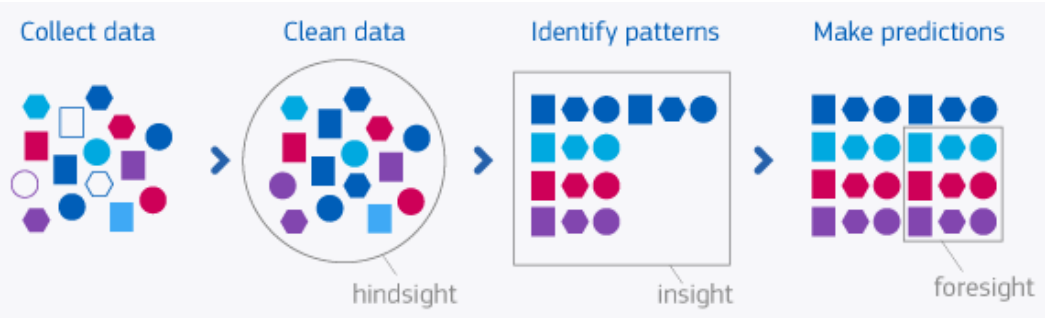
Big data is used to understand customer and their behavior. [7]. There are many benefits of using big data some of these are as follows, it is used to identify the root cause of failure and issues in real time. It improves customer engagement and increasing customer loyalty. Used to generate customer offers based on their buying

habits. [8]. It can be used to personalize the customer experience. Big data also adds values to online and offline customer interaction. There are many applications for big data which are listed below. Big data is having great influence in education world as it gives solution to e-learning. It has extended use in the field of medicine and healthcare because it reduces cost of treatment and helps to decide preventive measures. It has played an important role in private sector as well, like power, economic promotion investigation, and ecological fortification. Big data contributes to communication, media and entertainment which gives music recommendations as well as suggestion to each user and Amazon Prime offers video, music and Kindle books. It is also used in fraud detection and banking sectors. Through big data we can detect illegal activities like misuse of credit, debit cards, money laundering. [9].

The biggest issue in big data is it grows constantly and organizations fail to catch the opportunities. [10]. It is difficult to find signals in noise. Here noise is nothing but huge amount of unstructured data. One of the major problem of big data is inaccurate data. According to report of Experian data quality, 75% of businesses believe that their customer contact information is incorrect. There is lack of skilled workers for big data. It is observed in Cap Gemini's report that 37% of companies have trouble in finding skilled data analysts to make use of their data. [11]. Privacy beach or data privacy is major issue of big data. It refers to the release of private information to users that have no access to it. It occurs when a business implements weak security measures. The main purpose of analyzing big data is to help in coming up with new decisions. [3]. There is issue of security in big data. Here there is no guaranty of data security. In order to deal with big data we need to face challenges of volume, velocity, variety, veracity and value. Means in short there is problem of storing huge amount of data, heterogeneous data. There is problem of accessing and processing speed. [5].

II. Literature Review:

2.1 What is Predictive Analytics?

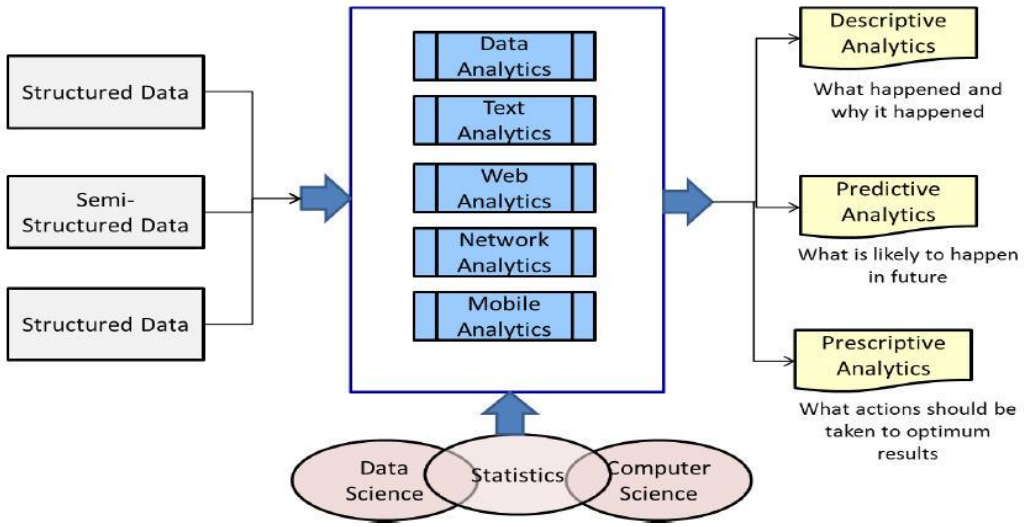


What is predictive analytics? [18]

There are four types of big data analytics: Prescriptive, Predictive, Diagnostic and Descriptive. The prescriptive analytics reveals what actions should be taken. The predictive analytics is an analysis of likely scenarios of what might happen. The diagnostic analytics is a look at past performance to determine what happened and why.

The descriptive analytics is typically use a real-time dashboards or reports. Simply a predictive analysis is developing a model to predict future outcomes based on variable inputs. [13]. Predictive analytics uses data, statistical algorithm and machine-learning techniques to identify probability of future outcomes based on historical data.

According to Wikipedia the Predictive Model Markup Language (PMML) which was proposed standard language for expressing predictive models. For example XML-based language which provides a way for the different tools to define predictive models and to share them. PMML 4.0 was released in June, 2009. [14]. Predictive models use known results to develop a model that can be used to predict values for different or new data. The results in predictions represent a probability values for different or new data. The predictive analytics used to predict trends, improve performance, drive decision making, and predict the behavior. [12]. Predictive Analytics is used to discover meaningful patterns of data using pattern recognition techniques, statistics, machine learning, artificial intelligence and data mining. It is also referred as Advanced Analytics. [13]. Process mining is used in predictive analytics. Process mining is a bridge between the data mining and business process management whereas data mining includes analysis of large data sets and business process management includes modeling, controlling and improving business processes. [15].



Framework for Predictive Analytics [13]

2.2 History of Work

Kenny Ng, Amol Ghoting proposed the need of predictive analysis in health care after the approval of electronic health records which lead to the production of huge amount of variety of data. They proposed the construction of a predictive model for health care data analytics. S. G. Manikandan and S. Ravi proposed the need of Hadoop frame for processing Big data as traditional data management, warehousing. Map Reduce over Hadoop and HDFS help to better understand the customer and marketplace of the organization. A. Jalanila and N. Subramanian proposed the performance and ease of tool usage and visualization. It provides a comparison between SAS® Text Miner, Python and R Programming tools. SAS®

Text Miner is a data mining tool used for finding patterns across text data through predictive modeling. Python and R programming tools (both open source tools) are used for statistical analysis and data interpretation. To compare these three tools, the author used two models the Random Forest (RF) Model and the Support Vector Machines (SVM) model. HACE theorem proposed by X. Wu characterizes the important features of Big Data revolution. It also proposed the Big Data Processing model from the data mining point of view. Shivaram Venkataraman, Zongheng Yang proposed an R front-end to Apache Spark which allows users to run large scale data analysis using Spark's distributed computation engine referred as SparkR where R is a popular statistical programming language. Ping Sun proposed, designed and implemented a novel data mining system named RFDM (RHadoop-based Fuzzy Data Mining), which supports fuzzy data mining process. [17].

Predictive analysis is can be done by using regression and machine learning techniques. Regression models are the backbone of predictive analytics. Its focus is on deriving the mathematical equation as a model to represent interactions between different types of data. There are a wide variety of models that can be used for prediction analytics such as linear regression model, discrete choice models, logistic regression, multinomial logistic regression, probit regression. Time series models are used for predicting or forecasting the future behavior of variables[16]. Machine learning is a branch of artificial intelligence which was originally employed to develop techniques to enable computers to learn. We can use number of model for that such that neural networks, multilayer perceptron (MLP), geospatial predictive modeling. [16]. Modern predictive analytics tools are no longer restricted only to the IT specialists. Business users want tools they can use on their own. Vendors are responding them by creating new software that removes the mathematical complexity and provides user-friendly graphic interfaces. For example it recognizes the kind of data available and suggests an appropriate predictive model which will be beneficial for them. There are numerous tools available in the marketplace that help for the execution of predictive analytics. Different types of tool are available on the basis of level of customization and the heavy data lifting allowed. Some open-source software predictive analytic tools includes R, D3, JSON, Orange, Weka, and Apache Mahout. Commercial predictive analytic tools include RapidMiner, MATLAB, Stata, Mathematica, RCASE, Neural Designer, IBM SPSS Modeler, and Statistica. The most popular commercial predictive analytics software packages according to the Rexer Analytics Survey for 2013 are IBM SPSS Modeler, SAS Enterprise Miner, and Dell Statistica. [16].

2.3 Result and Analysis:

The results of this research show an importance to choose rightly the variables used in the model in order to get better quality in the resulted predictions. While the limitation of this study is its focus in the tactical and short term decision without investigating the use of predictive analytics to improve and make strategic decisions. Big data constitutes several other challenges like data life cycle

management, redundancy of data, analytical mechanism, and confidentiality of data, energy management, cooperation and data representation.

Following table shows the usage of predictive analytics in term of sectors, the purpose of use and the most algorithms and tools applied to the huge amount to data. [20].

S.No	Sector	Goals of PA use	Algorithm	Tools
1	Social media	analyzing sentiment and trend analysis by using social media data	Naive Bayes, Logistic regression, linear regression and decision trees (used for unstructured data)	WEKA, JSON, D3,R
2	Educational	Predicting students' results, Predicting the performance of students in a specific course	Feature Selection for Classification Using Decision Tree	WEKA
3	Manufacture sector	Predicting the power consumption in a metal cutting industry	n-dimensional feature vector	Hadoop HDFS, Map reduce, Machine learning tool
4	Aviation (Aerospace Engineering)	predicting future attack frequency and the prospective losses and injuries	automatic selection of algorithms	IBM SPSS
5	Public Transportation	predicting the time of bus arrival, It can be used to plan routes, reduce traffic and bottlenecks	Clustering model	Travel Demand Forecasting Models (Aggregate, Disaggregate, highly disaggregate, activity-based models) [19]

III. Conclusion:

This paper described the some predictive analytics techniques. As data is growing tremendously every day and traditional analytics techniques are not suitable for big

data analysis, but the power of big data is still not utilized properly. The ability to predict gives immense power to plan ahead of competition for business firms. It can give window of opportunity for advance planning to governments in situations such as hurricanes or spread of epidemics. Big Data has arrived around year 2000 and it is growing exponentially which consists digitalization of society and business firms. Several technological revolutions such as internet, cloud computing, smart phones or internet of things are powering the data generation engines.

References:

1. Definition of big data - https://www.lifewire.com access on 5 Dec, 2018.
2. What is big data? - https://www.webopedia.com access on 5 Dec, 2018.
3. Need and issues of big data - https://www.datafloq.com access on 5 Dec, 2018.
4. Revolution of big data - https://www.cleverism.com access on 5 Dec, 2018.
5. Current use, issues and challenges of big data - https://www.quora.com access on 5 Dec, 2018.
6. How to solve problems in big data - https://www.insidebigdata.com access on 5 Dec, 2018.
7. Use of big data - https://www.bernardmarr.com access on 5 Dec, 2018.
8. Benefits of big data - https://www.ngdata.com access on 5 Dec, 2018.
9. Applications of big data - https://www.intellipaat.com access on 5 Dec, 2018.
10. Issues in big data - https://www.allerin.com access on 6 Dec, 2018.
11. Problems in big data - https://www.piesync.com access on 6 Dec, 2018.
12. S. Banumathi, A. Aloysius, "PREDICTIVE ANALYTICS CONCEPTS IN BIG DATA- A SURVEY", International Journal of Advanced Research in Computer Science, Volume 8, No. 8, September-October 2017, access on 6 Dec, 2018.
13. Shirish Jeble, Sneha Kumari and Yogesh Patil, "Role of Big Data and Predictive Analytics", https://www.researchgate.net/publication/309809606_Role_of_big_data_and_predictive_analytics, access on 6 Dec, 2018.
14. PredictiveAnalytics - https://en.wikipedia.org/wiki/Predictive_analytics#Analytical_techniques, access on 6 Dec, 2018.
15. Data Mining - https://www.horsum.be/en/blog/large-company/mining-analytics/data-mining-vs-process-mining-what-s-difference, access on 6 Dec, 2018.
16. AnalyticsTechniques - https://en.wikipedia.org/wiki/Predictive_analytics#Analytical_techniques, access on 6 Dec, 2018.
17. Mr. Rizwanahmed B. Mujawar, Dr. Dinesh B. Kulkarni, "A Review: Predictive Analytics with Big Data", International Journal of Advanced Research in Computer and Communication Engineering ISO 3297:2007 Certified Vol. 6, Issue 3, March 2017, access on 7 Dec, 2018
18. Pictorial representation for Predictive Analytics - https://amadeus.com/en/insights/blog/5-examples-predictive-analytics-travel-industry, access on 10 Dec, 2018.

19. Tools used for Predictive Analytics in Public Transportation - https://www.nap.edu/read/ 21887/chapter/8#136, access on 10 Dec, 2018.

20. Fatimetou Zahra Mohamed Mahmoud, "THE APPLICATION OF PREDICTIVE ANALYTICS: BENEFITS, CHALLENGES AND HOW IT CAN BE IMPROVED", International Journal of Scientific and Research Publications, Volume 7, Issue 5, May 2017, access on 10 Dec, 2018.

TOUR GUIDE SYSTEM WITH MOBILE AUGMENTED REALITY

Amol B. Borkar
MSc(Computer Science)
amol.borkar@iccs.ac.in
Indira College of Commerce and Science, Pune

Abstract
This paper presents a tour guide system with mobile Augmented Reality(AR).This System enables tourist to have more realistic , interactive and user specific experiences .The stand alone mobile system demanding low computational cost .Our system can be applicable to many area's such as education and entertainment industries. This is the representative Cultural Heritage site in Korea.
Keywords: *Augmented Reality (AR), visualization, navigation, guide, tour, tourist.*

I. Introduction:

Craig proposed a formal definition of augmented reality is that: "A medium in which digital information is overlaid on the physical world that is in both spatial and temporal registration with the physical world and that is interactive in real time."

Augmented reality was first achieved by a cinematographer called Morton Heilig in 1957. He invented the Sensorama which delivered visuals, sounds, vibration and smell to the viewer. Then in 1968, Ivan Sutherland the American computer scientist and early Internet influence, invented the head-mounted display as a kind of window into our world.

Tourism is one of the most significant industry in many countries and it's importance is growing very fast day by day. To guide tourist there is various methods .In all methods, Paper Based tour booklets are the most commonly used to provide the tour routes information for tourist. This system is with limited Information, so they have Various drawbacks of interactive visualization and accurate navigation. Once paper based booklet is printed and distributed, it is hard to update and then latest information cannot be access by the tourist. To overcome this problem, the concept of mobile tour guide system was proposed and several prototype of the system utilizing augmented reality were printed.

For a stand alone mobile system, it is still challenging. The system should recognize or track large number of natural scene images in real_time with low computing power and memory capacity. Then computationally efficient matching technique (ex- fixed point operation and Low memory load) are necessary in mobile based image recognition and tracking. By considering this limitations on both paper_based and AR_based tour guide, we propose a mobile tour guide system based on AR, called Smart Booklet. The goal of our system is provide travel information to tourist at any time and any where if they posses offline tour bookle.

Smart booklet enables tourist to have more informative and interactive experiences by retrieving virtual information on cultural heritage image or offering context aware services based on point of interest (POI's) in recognized tour maps. Two state of the art binary feature descriptors, Binary Robust Invariant Scalable Keypoints (BRISK) and Fast Retina Keypoints (FREAK), are applied for fast and robust feature Matching or Tracking between query and reference image. Achieve Comparable matching performance at less computation time due to the simple characteristics of Tour Map.

Literature Review:

This paper specially tried to point out the limitations of the current Computer Vision techniques that prevent the implementation of mature Augmented Reality applications. Presented a novel method named BRISK, which used to tackles the classic Computer Vision problem of detecting, describing and matching image keypoints for cases without sufficient a priority knowledge on the scene. AR presented a retina-inspired keypoint descriptor to enhance the performance of current image descriptors. The focus of this research is the development of the body-mind model for the guides. Present the design and implementation of the Android based city tour guide system. The system is mostly based on Web Service technology and adapts three layer architecture.

Benefits and Limitations of Existing System:

In tourism industry, tourist information is obtained through newspaper, magazines, radio and other simple ways those are available easily. The main Problem is that tourists are not able to get travel information timely when they are on the move. While today's mobile phones are becoming more intelligent, compared with PC, they still have the following limitations like small screen and tiny keyboard, limited CPU capacity, limited memory space, slow and fitful Internet connection. Many mobiles have travel guide application. But the application on these mobiles works very slow due to continues acquisition of the bandwidth. Therefore, the mobile end-user’s operation is very hard, and the contents display on the screen of mobile device is limited. Besides, once paper-based booklet is printed and distributed, it is not easy to update it frequently so the latest information cannot be provided for the tourists.

The Current State and Problems of looking Information:

Tourist info is essential for tourists to pay their look effectively. Lacks of sightseeing information creates tourists to lose opportunities to become interested in the city's charm. And also travel agents can throw away a golden chance of delivering attractiveness of look areas. Therefore, providing useful information and being ready to access it simply square measure essential for the native revitalization. Most of tourists previously check a travel guidebook, looking places and routes with reference to websites, information magazines, guide books or brochures. However, these are typically transmitted simply from commercial enterprise to the tourists. And, it is very hard to get latest info in sure space. On the other hand, blogs are typically written in a timely manner and contain blog writer’s opinions or impressions. Because of these

options, the blog is a helpful system to get the personal experiences of look. Transmitting information from operators of native commercial enterprise to tourists is not efficient thanks to the diversification of look desires. To overcome this problem, the automatic extraction of useful information from blogs has recently been taken. These studies proved that being able to utilize this info simply is effective in partitioning this downside.

Objectives:

a) To provide travel information to tourists at any time, anywhere if they possess off-line tour booklet.

b) To provide tourist with interactive visualization, accurate navigation of information and allow fixed point operation and reducing memory load.

c) To maximize quality of service provided by the service provider, to increase availability, confidentiality and integrity of information and to provide user friendly environment for Guiding tourist.

d) The motivation to develop an Automatic Tour Guide System, based on the new wireless technologies and hand-held devices, for mobile learning to overcome the drawbacks of the traditional mechanisms.

Proposed System:

Modules of System

a) Image Recognization

The identification of objects in any image. This process would probably head with image processing techniques such as noise removal, followed by (low-level) feature extraction to locate lines, regions and possibly areas with certain textures.

b) Image Retrival

An image retrieval system is a computer system for browsing, searching and retrieving images from a bigger database of digital images. Most traditional and common methods of image retrieval utilizes method of adding metadata such as captioning', keywords, or descriptions to the images so that retrieval would be performed over the annotation words.

To search images, a user may queries terms such as keyword, image file, link, or click on some image, and the system will revert images "similar" to the query. The similarity used for search criteria could be meta tags, color distribution, region, shape attributes, in images etc.

c) Context Management

Is a computer application that allows publishing, editing and modifying content, organizing, managing, handling, deleting as well as maintenance from a central interface. Such systems of provides procedures to manage workflow in a collaborative environment. The function of it is to store, organize files, manage it and provide version-controlled access to their data. It’s features vary widely. Simple systems showcase a handful of features, while other releases, notably enterprise systems, offers more powerful functions.

d) 3D Rendering

3D rendering is the 3D computer graphics process of automatically converting 3D wire frame models into 2D images with 3D photorealistic effects or non-photorealistic rendering on the computer. Rendering is the process of re-creating the actual 2D image or animation from the prepared scene. It can be compared to taking a photo or filming the scene after the setup is finished in real life.

System Architecture:

The overall framework of System After capturing an image from the image or video, the system first recognizes query image by matching with reference images in database. This result is then sent to the context management system. The CMS links to the corresponding site and contents information of each database. Additionally, GPS information can be used to redefine and provide the users locations more accurately and give user specific information such as shortest tour path and recommended site. If user captures live video sequences, tracking procedure is performed.

Conclusion:

In this paper, we introduce a new tour guide system utilizing augmented reality in mobile environment by considering limitations of paper based and older mobile based tour guide systems. This system considers tourist point of interest and properly guide tourist. The results of the application of Learning of Standard Electronic and Electrical Devices Using Augmented Reality are gained. This provides the ability to learn concepts and ideas through interacting with a scene facilitates with generation of knowledge and skills that otherwise would take too long to accumulate. Earlier Augmented Reality tool kit was used to design the mechanical elements which has limitations but we design a application of AR using MATLAB 2014a which uses a image acquisition toolbox which uses a hardware and support packages that includes OS generic video interface.

References:

1. V. Vlahakis, N. Loannidis, J. Karigiannis, M. Tsotros, and M. Gounaris, "Archeoguide: An Augmented Reality Guide for Archaeological Sites," IEEE Computer Graphics and Applications, vol. 22, pp.52-60, 2002.
2. F. Shibata, "Augmented Reality (AR Information Proccessing Society of Japan Magazine, Vol.51, No.4, pp.365-434, 2010 (in Japanese).
3. H. Kawamura, K. Suzuki, M. Yamamoto and H. Matsuhara, "2 Tourism Informatics (<Special Feature> New Informatics)", Information
4. Sanni Siltanen "Theory and applications of marker-based augmented reality" ISBN 978- 95138-745 (URL:http://www.vtt.fi/publications/index.jsp) ISSN 2242-1203 (URL: http://www.vtt.fi/publications/index.jsp
5. http://ijrar.com/ A Virtual Guide for Tourist Assistance by Dileep Adabala & Sumit kaushik.

6. Heeseung Choi, Gyu Chul Han, and Ig-Jae Kim Imaging Media Research Center, Korea Institute of Science and Technology, Seoul, Korea {hschoi, ghan221, kij}@imrc.kist.re.kr

7. Heeseung Choi,Gyu Chull Han,Ig-Jae Kim Imaging Media Research Center, Korea Institute of Science and Technology, Seoul, Korea 2014 IEEE International Conference on Consumer Electronics (ICCE)

8. Akil. H. Sayyad1 , Santosh. A. Shinde2 1 ME-II Student, Vidya Pratishthan's College of Engineering, Baramati, Savitribai Phule Pune University, Pune, Maharashtra, 2 Professor, Vidya Pratishthan's College of Engineering, Baramati, Savitribai Phule Pune University, Pune, Maharashtra.

GREEN COMPUTING: AN ECOFRIENDLY APPROACH TO MANAGE E-WASTE

Ratan Rajendra Rode
roderatan97@gmail.com
(Msc-1, Indira college of Commerce and Science).

Abstract:
In green computing the disposing, recycling and manufacturing of computers and electronic devices is taken into consideration. The aim of green computing is to minimize the hazardous material. Today green computing is essential because of efficient power uses to minimize carbon footprint, also paper disposal of electronic waste. There are many reasons to develop the green computing like saving powers, reduce pollution and increase output. Green computing broadly divided into four parts which are hardware manufacturing, software technique, people awareness and st0 policies. With the help of green computing we achieve reduction in use of hazardous materials, maximize output from the product during its lifetime with consumption of energy is also reduced. In green computing there is reusability or recyclability of e-waste is achieved. So that it can reduces the harmful impact of e-waste on environment.
Keywords: *E-Waste, Green Design, Green Disposal, Green Manufacturing, Green Use.*

Introduction:

History:

Green computing is a practices of designing, manufacturing and using of computer resources in an environment friendly way and also disposing in a way that minimize their impact on environment? The green computing is started in 90's, when US environment protection energy launched the energy star program. It is program of label awarded to electronic devices. It is mainly used to minimize the use of energy and maximize the efficiency of product. The labeling program aimed to promote and recognize the energy efficiency in monitor, climate control equipment and technologies. This technique basically increase the adaption of "sleep mode" among consumer's electronics. The low magnetic and electrical emission program was launched by the Swedish organization TCO. And this program letter extends to include criteria on energy consumption and use of hazardous material in construction. The first manifestation of green computing was held in 1992[1, 2].

Features / Advantages:

Green computing aimed at the biodegradability of used products and e-waste. That is meeting human development goals while preserving natural resources and ecosystems on which the society depends. There are many corporate organizations which are taking initiatives to reduce the harmful impact of their operations on environment. United Nation Framework Convention on Climate Change (UNFCC) is an international

environment treaty. This organization has an objective as, to stabilize emission of greenhouse gas in the atmosphere. The following are some advantage which are provided by green computing: Reduced energy usage from green computing technique translate into lower carbon dioxide emission, stemming from the reduction in fossil fuel used in power plants. Less energy is required to produce, use or dispose of products. Saving energy and resources saves money [2, 3]. Green computing even include changing government policy to encourage recycling and lowering energy use by individuals and businesses. Reduce the risk existing in the laptops such as chemicals to cause cancer and damage immune reactions in human [4]. There are some important applications of green computing like , efficient resource energy management , green parallel computing of Bigb Data systems, Green cloud computing using genetic algorithms ,used in green wireless network and energy efficiency management.

Challenges / Disadvantages:-

There are some challenges that green computing facing today. In which equipment power density and coding capabilities is major challenge. Increase in energy requirement of data centers and growing energy cost. Because of increase in total power consumption by IT equipments there is increase requirements of heat removing equipments. Also it is difficult to manage life cycle of equipment. Disposal of e-waste is a big issue in green computing. Green computing challenges are not only for IT equipment users but also IT equipment vendors [2]. Actually green computing is quit costly. It affected due to rapid technology changes.

Literature Review:-

There is no easy way to green computing. We must strive to minimize greenhouse gases and waste, while increasing the effectiveness of IT, such as computers, data centers, and computer networks. A green computing activity must cover all territories: people, organizations, equipment, and networks [2]. This is recycling of e-waste such as old computers, monitors, phone, and TV [14, 15]. You can give them to non-profit organization instead of throwing them away. Recycling computing hardware can keep unsafe materials (such as lead, mercury) out of landfills. Proper management of e-waste is a good potential route to implementing green computing [5]. Green computing presents some challenges for business people, engineers, and architects. It requires that designer takes the product life cycle into consideration, from production to operation to recycling [15]. There are privacy and ethical issues that arise from the recycling of the old computer. Computers gathered through recycling drives are often shipped to developing countries, where environmental standards are less strict than in Western world. Developed countries are already implementing green computing solutions, while developing countries are just at awareness stage [6, 7]. At present if the Government through legislation make it is mandatory on the part of the Companies to comply with the green standard then the green movement may start in the country in a conspicuous manner. But as in every other cases until the awareness is built up there will be no true development of green computing in the country [10]. A green computer or green IT system is one where the entire process from design, manufacture, use, and disposal

involves little environmental impact as possible. In other words, a green initiative is taken in consideration of facets of a computer‘s life, from design to disposal [7].

Advantages	Disadvantages
Conserving resources means less energy is required to produce, use, and dispose of Products.	Rapid technology change.
Saving energy and resources saves money.	Some computers that are green may be considerably underpowered.
Green computing even includes changing government policy to encourage recycling and lowering energy use by individuals and businesses.	Green computing could actually be quite costly.
Reduced energy usage from green computing techniques translates into lower carbon dioxide emissions, stemming from a reduction in the fossil fuel used in power plants and transportation.	High start-up cost, Still in experiment stage.
Reduce the risk existing in the laptops such as chemical known to cause cancer, nerve damage and immune reactions in humans.	Privacy issue arises from recycling of computers.

Details of green computing:-

The climate change and global warming are viewed by many as the two most challenging problems facing the Earth. Green IT and particular, green computing, are two ways the information and communications technology community is working to address those problems. With the explosive growth of Internet-enabled cloud computing and high-performance computing centers, its energy consumption and sustainability impacts are expected to continue climbing well into the future. Efforts are an underway in both industry and academia, however, to address it. Discard use or unwanted electronic equipment in a convenient and environmentally responsible manner. Re-cycling computing equipment can keep harmful materials such as lead, mercury, and hexavalent chromium out of landfills, and can also replace equipment that otherwise would need to be manufactured, saving further energy and emissions. Computer systems that have outlived their particular function can be re-purposed or donated various charities and non-profit organizations.

However there are many charities have recently imposed minimum system requirements for donated equipment. Additionally a parts from outdated systems may be salvaged and recycled through certain retail outlets and municipal or private recycling centers. The computing supplies, such as printer cartridges, paper, and

batteries may be recycled as well. A drawback is too many of these schemes is that computers gathered through recycling drives are often shipped to developing countries where environmental standards are less strict than in North America and Europe. The Silicon Valley Toxics Coalition estimates that 80% of the postconsumer e-waste collected for recycling is shipped abroad to countries such as a China.

Analysis:-

Currently, e-waste receives more and more public attention as it is considered to be one of the fastest-growing waste streams. This sector operates within a long-established legislative framework that covers issues such as product safety, energy labeling, minimum efficiency requirements, ecodesign and waste. A Computers today are an integral part of individuals' lives all around the world; but unfortunately these devices are toxic to the environment given the materials used, their limited battery life and technological obsolescence. Individuals are concerned about the hazardous materials ever present in several computers, even if the importance of various attributes differs, and that a more environment friendly attitude can be obtained through exposure to educational materials. The costs of implementing energy efficiency and renewable energy measures are minimal as they not cash expenditures but rather investments paid back by future, continuous energy savings. Sustainable innovation, understood as the shift of sustainable technologies, products and services to the market, requires market creation concept and one common global agenda. The challenge is to raise awareness among all actors of the different sectors in order to realize the innovation potential and shift to eco-innovations that lead to sustainable consumption and production patterns.

The issues overcomes during e-waste (IT waste) management in green computing are referenced in following table [14, 15]:-

Problem no.	**Issue**	**Overcome or not**
1.	Power management	yes
2.	Material cycling	yes
3.	Telecommuting	no
4.	Lack of experience	yes
5.	Computing priorities	no

Conclusion

Whilst the performance and the breadth of application of computers is increasing, so too is our awareness of the cost and scarcity of the energy required to power them, as well as the materials needed to make them in the first place. However, because computing developments can be enable individuals and businesses to adopt greener lifestyles and work styles, in terms of the environmental debate computing is definitely both part of the problem and part of the solution. The computing industry is to more prepared and far more competent than almost any other industry when it comes to facing and responding to rapid change. Environmentally it is not good thing that most PCs -- especially in companies -- have typically entered a landfill after only a few years in service. However this is reality does at least mean that a widespread mindset already

exists for both adapting to and paying money for new computer hardware on a regular basis. Hence it took decades to get more energy efficient cars on the roads, it will hopefully only take a matter of years to reach a state of affairs where most the computers are using far less power than they needlessly waste today. Green computing represents a responsible way to address computing represents a responsible way to address the issue of global warming. By adopting green computing practices, business leaders can be contribute positively to environmental stewardship—and protect the environment while also reducing energy and paper costs.

Future work:-

The main objective of this technology is that reduce the energy consumption of computer related products. Green computing represents a responsible way to address the issue of global warming by adopting green computing, business leaders can contribute the environmental stewardship and protect the environment while also reducing energy and paper cost. So green computing is mindset that asks how we can satisfy the growing demand for Network computing without putting such pressure on the environment. There is an alternative way to design processor and a system such that we don't increase demands on the environment, but still provide an increased amount of processing capability to customers to satisfy their business needs. A Green computing is not about going out and designing biodegradable packaging for products. Now the time came to think about efficiently use of computers and the resources which are non-renewable. It opens new window for the new entrepreneur for harvesting with E-waste material and scrap computers.

References

1. San Murugesan, ―Harnessing Green IT: Principles and Practices, IEEE IT Professional, January-February 2008, pp 24-33.
2. The Green Grid (2010) Retrieved from http://www.uh.edu/infotech/news/story.php ?story_id=1 30
3. Ryan, John C. & Durning, Alan T. Stuff: The SecretLives of Everyday Things. 97
4. www.ijetae.com/files/Volume3Issue1/IJETAE_0113_56.pdf
5. Tariq Rahim Soomro, Hasan Wahba, Perspectives of Cloud Computing: An Overview, 14th International Business Information Management Association
6. San Murugesan, "Harnessing Green IT: Principles and Practices," IEEE IT Professional, January–February 2008, pp 24-33.
7. "The common sense of lean and green IT". Deloitte Technology Predictions. Archived from the original
8. "Best Practices Guide for Energy-Efficient Data Center Design", prepared by the National Renewable Energy Laboratory for the U.S. Department of Energy, Federal Energy Management Program, March 2011
9. Shinde et al., Int. J. of Adv. Res. in Comp. Sc. and Software Engg. Vol. 3(7), July 2013, pp 1033-1037
10. Lakshmi et al., Int. J. of Engg. Res. and App. Vol 2(4), july-Aug 2012, pp. 1282-1285.

11. Andreas Berl, Erol Gelenbe, Marco Di Girolamo, Giovanni Giuliani, The Computer Journal, 2009, Volume 53, Issue 7, pp. 1045-1051, DOI:10.1093/comjnl/bxp080,http://comjnl.oxfordjournals.org/content/53/7/1045.short?rss=1.

12. Green computing, http://en.wikipedia.org/wiki/Green_computing, Retrieved December 2011

13. Userful, Userful is the Green Solution: reduce CO@ emissions and electronic waste, 2011, http://www2.userful.com/green-pcs

14. Pirate, AuthorStream, Green Computing, http://www.authorstream.com/Presentation/piratebhai-727374-greencomputing/, Retrieved December 2011

15. Paul, Prantosh Kumar, Dipak Chaterjee and Bhaskar Karn "Information Science Education and Research: emphasizing contemporary Indian scenario-an overview", in IEM/IEEE sponsored international conference proceedings (IEMCON-12). Pp.349-353.

SECURITY ISSUES AND ITS SOLUTIONS IN CLOUD COMPUTING

Kajal Vilas Jaykar
kajaljaykar98@gmail.com
MSC-1, Indira College of Science and Commerce

Abstract:
Cloud computing means storing and accessing data and program over the internet instead of your computer hard drive. We can access the pre-installed application and system software from anywhere on any device. Cloud Computing is used in education can be very effective in many ways. Data security is the major issue in cloud computing. Multiple serious threats like virus attack and hacking of the client's site are the biggest cloud computing data security issues. Data storage has many security challenges. In this paper we will discuss the different techniques that are used for secure data storage on cloud. The simple solution is to encrypt the data before uploading it onto the cloud.

Keywords:- *Data storage, Cloud Computing Security, Cloud Storage, Cloud Computing Server, Cryptography, Access Control.*

1. INTRODUCTION

The terms cloud computing is the everywhere. Cloud Computing is the technology we are using for storing, retrieving, managing and deleting data on cloud environment rather than personal computer [5,2]. We can access database at anywhere any time by using any system [1]. By using cloud computing we can reduces the cost of storage and computational time and we can use multiple access at a time very easily. The term cloud computing was popularized with amazon.com in 2006. In April 2008 Goole released Google App engine in beta. In feb 2010 Microsoft release Microsoft Azure. In 2011 IBM announced the IBM smart cloud [2,3]. Current need of cloud computing is in business education healthcare.

We can calculate, manipulate arrange, manage, store data and information by using any device mostly computer/tablet or mobile. Examples of cloud computing such as Google Drive, one drive, Dropbox etc [3]. Cloud computing is the advanced uses of the internet. Cloud computing is the new business model for companies. Uses of cloud computing in education can be effective in many ways. Cloud computing technology is used by online education provider so that student can learn and practice to code, design, and develop solution. Cloud computing used in healthcare are to monitor the medical care [4].

Data security is the major concern in cloud computing. Multiple serious threats like virus attack and hacking of client site are the biggest cloud computing data security issues. Cloud services faces issue of data loss. Managing cloud is not easy task [4]. It consist a lot of technical challenges. We are not able to see the exact

location where our data is stored or being proceed. It is a big challenge for an organization [4].

2. Details of Topic:-

The term cloud computing is everywhere. Various data are stored in cloud. By sending the data to the cloud the data owners transfer the control of their data to a third person that causes security problems. Sometime the cloud service provider itself will use/corrupt the data illegally. Large amount of data stored in cloud. Preserving confidentiality, integrity and availability of data is the major challenges for the cloud service provider. A simple solution is to encrypt the data before uploading it onto the cloud. There are various cryptographic mechanism used to encrypt the data.

Cloud Storage: Cloud storage is one of the primary use of cloud computing. Cloud storage of the data online in the cloud. When storing data on cloud it appears as if the data is stored in particular place with specific name.

There are four main types of cloud storage.

Personal cloud storage:- It also known as mobile cloud storage. In this type storage individual data is stored in the cloud and we may access the data from anywhere.

Public cloud storage:- The cloud storage provider fully manages the public cloud storage.

Private cloud storage:- Private cloud storage helps resolve the potential for security and performance concern while still offering the advantages of cloud storage.

Hybrid cloud storage:- It is a combination of public and private cloud storage where some critical data resides into the private cloud while other data is stored and accessible from public cloud storage provider.

Cloud computing enables users to store their data in remote storage location. But data security is the major threat I cloud computing. To overcome this confidentiality, integrity, availability should be encapsulated in a CSP's Service level agreement (SLA) to its customer otherwise ensure that any sensitive information is not put into a public cloud and if any it is to be stored in encrypted from effective auditing mechanism also can be used for providing data integrity[6].

3. Literature Review:

The author R.Velumadhava Rao, Data Security Challenges and its solution in cloud computing. In this paper the other examined the security problem. They suggested the Encryption is the better solution to secure information. Before storing data in cloud server it is better to encrypt the data. To avoid access of data from other users, applying encryption on data that makes data totally unusable and normal encryption can complicate. RSA based data integrity check can be provided by combining identity based cryptography and RSA signature. Author suggested that to provide a secure data access in cloud, advanced encryption techniques can be used for storing and retrieving data from cloud [8].

The author Kevin Hamlen, Murat Kuntarcioglu, Latifur the paper is Security issues for Cloud Computing. In this paper they focused on specific aspects of cloud

computing. In particular, they are taking a bottom up approach to security where they are working on small problems in the cloud that they hope that they will solve the large problem of cloud security. First they discussed how they may secure documents that may be published third party environment. Next they discussed how XACML may be implemented in the Hadoop environment as well as in secure federated query processing with SPARQL using Mapreduce and Hadoop. Using this techniques improves the performance [9].

The authors Ertem Esiner, Adilet kachkeev, Alptekin kupcil and Oznur ozkusap and the paper is Flexlist: Optimized skip List for Secure Cloud Storage. In this paper they provide a new data structure called Flexlist to solve the security problem. Flexlist optimized implementation for use in the cloud data storage. A flexlist support the variable block sized dynamic provable updates, and they showed how to handle multiple proofs at once, greatly improved scalability [10].

The authors K. Govind, V.Gurunathprasad, H. Sathishkumar, published a paper Third party auditing for secure Data Storage in CLOUD Through Digital Signature using RSA. In this paper they proposed digital signature method to protect the privacy and integrity of outsourced data in cloud environment. They proposed provably secure auditing protocol to store data and verify it. They used RSA algorithm for digital signature and for the process of encryption and decryption this can also be designed with some other algorithm or tool [11].

The authors S.Poonkodi, V.Kavitha, K.Suresh and the paper is Providing A Security Data Forwarding in Cloud Storage System Using Threshold Proxy Re-Encryption Scheme. In this paper, they consider a cloud storage system consists of storage servers and key servers. They integrate the newly proposed threshold proxy re-encryption scheme support encoding, forwarding and partial decryption operations in a distributed way. By using the threshold proxy re-encryption scheme, they present the secure cloud storage system that provides secure data storage and secure data forwarding functionality in a decentralized structure. Moreover, each storage servers independently performs partial decryption. Using this techniques improves the performance [12].

4. Analysis:

There are various techniques are used to resolve the security problem. Some techniques highly improves the performance. Below table describes the various techniques resolve the security issues.

No.	Authors	Techniques	Description
1	R.Velumadhava Rao	Encryption techniques	Before storing data in cloud server it is better to encrypt the data. Author suggested that to provide a secure data access in cloud, advanced encryption techniques can be used for storing and retrieving data from

			cloud [8].
2	Kevin Hamlen, Murat Kuntarcioglu, Latifur	taking a bottom up approach to security	XACML may be implemented in the Hadoop environment as well as in secure federated query processing with SPARQL using Map reduce and Hadoop [9].
3	Ertem Esiner, Adilet Kachkeev, Alptekin Kupcil and Oznur Ozkusap	provided a new data structure called Flexlist	A flexlist support the variable block sized dynamic provable updates, and they showed how to handle multiple proofs at once, greatly improved scalability [10].
4	K.Govind, V.Gurunathprasad, H. Sathishkumar	Digital Signature using RSA	They proposed digital signature method to protect the privacy and integrity of outsourced data in cloud environment [11].
5	S.Poonkodi, V.Kavitha, K.Suresh	Proxy Re-encryption scheme	By using the threshold proxy re-encryption scheme, they present the secure cloud storage system that provides secure data storage and secure data forwarding functionality in a decentralized structure [12].

5. Conclusion:

In this paper the selection of issues of cloud computing security. Various type of information put in various storage like public storage, private storage etc. Sending the data to the cloud make sure that data should be encapsulated. Confidentiality, integrity, availability is maintain. Any sensitive information is not put into the public cloud it's put into the private cloud. Encryption is the best technique to secure cloud computing. Before storing data in cloud server it is better to encrypt the data.

6. Future Work:

Although cloud computing is the new emerging technology that presents a good number of benefits to the users, it faces a lot of security challenges and also solutions are provided to overcome this problem. In future cloud computing security can be developed. To provide secure data access in cloud advanced encryption techniques can be used for storing and retrieving data from the cloud. Also proper key management techniques can be used to distribute the key to the cloud users such that the only authorized person can access the data.

7. References:

1. https://en.m.wikipedia.org/wiki/Cloud_computing_security accessed on 5/12/2018
2. https://www-geeksforgeeks-org.cdn.ampproject.org/v/s/www.geeksforgeeks.org accessed on 5/12/2018
3. http://www.klientsolutech.com/why-learn-cloud-computing/ accessed on 5/12/2018
4. https://www.educba.com/cloud-computing-issues-challenges/ accessed on 5/12/2018
5. https://www.explainthatstuff.com/cloud-computing-introduction.html accessed on 5/12/2018
6. Venkateshh Marrynai s Eastaff "A study of Data Storage Security issues in cloud computing". 2008. International Journael of Scientific Reachers In Computer Science, Engineering and Information Technology.
7. Danish jamil. Department of computer engineering, scir sayed university of Engineering and technology.Security Issues In Cloud Computing And Countermeasures.
8. R. Velumadhava Rao, K. Selvamani "Data Security Challenges and its Solution in Cloud Computing. 2015. International conference on Intelligent Computing , Communication and Convergence.
9. Kevin Hamlen, Murat Kuntarcioglu, Latifur Khan, , "Security issues for Cloud Computing". 2010
10. Ertem Esiner, Adilet Kachkeev, Alptekin Kupcil and Oznur Ozkusap " Flexlist:Optimized skip List for Secure Cloud Storage."
11. K. Govind, V.Gurunathprasad, H. Sathishkumar, "Third party auditing for secure Data Storage in CLOUD Through Digital Signature using RSA." 2012. International journael of Advanced Scientific and Technical Research.
12. S.Poonkodi, V.Kavitha, K.Suresh ,"A Security Data Forwarding in Cloud Storage System Using Threshold Proxy Re-Encryption Scheme." 2013. International journal for emerging technology and advanced engineering.

GREEN COMPUTING: A NEW PARADIGM FOR ENERGY EFFICIENCY

Shraddha Ajay Jade
shraddha.jade@iccs.ac.in
MSC - 1, Indira College of Commerce and Science

Abstract:

Green computing refers to making use of eco-friendly computer resources to save the environment. Computer consumes more electricity and it is not affordable. Green computing is used to overcome the negative effect of the computer. It mainly focuses on energy minimization and resources utilization. This paper gives an idea to save the environment by using green computing.

Keywords*: Energy consumption, Energy star, E-Waste, Power minimization, Resource utilization, Green-IT*

Introduction:

Green computing is defined as using the eco-friendly computer resources that minimize the impact of the computer system on the environment [1]. Green computing was created in 1992. Green computing started a program known as energy star by U.S Environment Protection Agency. In 2010, the president signed American recovery and reinvestment act according to this 90 billion dollars are donated to green infinities [3]. The extensive use of computer has made our life easier but it uses a lot of energy and generates heat, greater emission of greenhouse gases such as carbon dioxide. Because of the negative effect of the computer, there is a need for green computing that minimizes energy and reuses the resources [4].

Using green computing techniques the use of energy is reduced and minimizes carbon emission. Green computing is important because it keeps the environment safe. Green computing lowers the energy consumption that leads to minimize the power bill. Green computing also reduces the use of dangerous materials or waste to produce computing device, maximum energy efficiency during the product's lifetime. It also helps to recycle the unusable product and factory waste. It enables companies to meet business demands for energy-efficient, flexible, secure & stable solutions while being environmentally responsible. Every data center transaction requires power [4]. Efficiency, equipment disposal, and recycling, and energy consumption, including power and cooling costs, have become a priority for those who manage the data centers that make businesses run [5].

There are many disadvantages of green computing, first is to convince the company and their stakeholder to invest the environmental friendly computing. Going for green computing would be so much easier if it is free of cost. In real life, every green IT project has a price tag. With budget make longer to the certain limit many organizations must weigh green IT project against other potential investment [5]. Many of the Researchers of Green Computing following are few noticeable challenges that Green

computing is facing today that are Equipment power density / Power and cooling capacities, Increase in energy need for Data Centers and cost, Control on increasing requirements of heat removing equipment, which increases because of Increase in total power consumption by IT equipment's, Equipment Lifecycle management-Cradle to Grave; and disposal of Electronic Waste [6].

Literature survey:

According to researchers in the past, the focus was on computing efficiency and cost associated with equipment's and infrastructure services were considered low cost and availability. Now infrastructure is becoming the bottleneck in IT environments and the reason for theft is to growing computing needs, energy costs and global warming. This shift is a great challenge for the IT industry. Therefore now researchers are focusing on the cooling system, power and data center space. At one extreme it is the processing power that is important to business and on the other extreme; it is the drive, challenge of the environment-friendly system infrastructure limitations [7].

Raghavendra et al. [9] have studied the problem of power management for a data center environment through merging and arranging five different power management strategies based on 180 server traces from nine different real-world enterprises. The researchers investigated the problem regarding to control theory and exerted a loop to control the feedbacks for coordinating the controllers' activity. This strategy deals just with the CPU management and is independent of the workload type.

Mesaad et al. provided an analysis of the current green computing initiatives and an overall comparison between them to show their efficiency. HP program is the greenest computing waste-management initiatives from the point of e-waste management. Considering Energy consumption, the Energy Star and EPEAT initiatives happen to be the most successful progress base on the latest energy savings statistics and their users trusted labelling. AlMusbahi et al. [8] discussed about the developments and challenges of green computing. Kern [8] discussed about awareness and approaches of creating awareness on green computing with emphasis on green software along with a user survey. Tyurin et al. [8] proposed both new indexes of calculating competency of computing systems and synthesis technique of fault tolerant delay insensitive circuits along with an analysis of semi modularity for fault – tolerant circuits. Sharma et al. [8] made an analysis and describes a green university data center and in the process makes an excellent insight into the various operational and competency characteristics. Shaikh et al. [8] discussed about green Internet of Things by exploring ways of successful and efficient deployment of various enabling technologies like the Internet, smart object and sensors to name a few. They have also made a review on various IoT applications, projects and standardization efforts going on at present along with identification of few challenges that has to be addressed in the near future to successfully enable a green IoT. Pahlevan et al. [8] presented an optimization framework for managing green data centers using multilevel energy reduction techniques jointly. The results obtained demonstrate satisfactory results as there is considerable, up to 96% savings in electricity bill. Taufiq et al. [8] in their study discussed about cloud computing and green I.T to discover the important factors that influences adoption of SaaS cloud

computing as a means to adopt green I.T. Theory of planned behavior (T.P.B) is used and their proposed model successfully explains the concept of cloud computing and green I.T jointly. Lin et al. [8] Proposed a new green video transmission (GVT) algorithm using video clustering and channel assignment that will help in video transmission. The design is also made of a video clustering model based on the basis of a game theory for grouping the different video parts stored in mobile devices. The analysis and simulations demonstrates a superior video transmission performance the proposed GVT algorithm. [8]. hang et al. [11], presented the various research challenges in cloud computing. One of which is energy management in cloud computing. The energy efficient datacenters design is main concern. The directions to approach this are first energy efficient hardware architecture which consists of energy aware job scheduling and server consolidation. Second energy efficient network protocols and infrastructures [11].

Analysis:

Author	**Problem**	**New concept**
Raghavendra et al. [9]	power management for a data center environment	Strategy deals just with the CPU management and is independent of the workload type.
Lin et al. [8]	the focus was on computing efficiency and cost associated with equipment's and infrastructure services	A new green video transmission (GVT) algorithm using video clustering and channel assignment that will help in video transmission.
hang et al. [11]	energy management	energy aware job scheduling and server consolidation
Pahlevan et al. [8]	electricity bill	an optimization framework for managing green data centers using multilevel energy reduction techniques jointly
More et al. [12]	algorithms for energy competent green cloud computing	Consolidation of virtual machines (VMs)

Raghavendra et al. [9] have studied the problem of power management for a data center environment. Lin et al. [8] Proposed a new green video transmission (GVT) algorithm using video clustering and channel assignment that will help in video transmission. hang et al. [11], presented the various research challenges in cloud computing. One of which is energy management in cloud computing. Pahlevan et al. [8] presented an optimization framework for managing green data centers using multilevel energy reduction techniques jointly. More et al. [10] studied various techniques, models, algorithms, for energy competent green cloud computing.

Current trends in green computing:

Green computing has aim to utilize resources efficiently, there are some fundamental steps that researcher have taken into consideration [10].

1. **Power management techniques:** An aim is to reduce greenhouse gas emission produced by the organization, energy consumption should be reduced. The organizations have started to acquire several techniques starting with using devices that are more energy efficient. Another technique is energy efficient which means reducing the software usage of the hardware. By combining these two techniques, energy savings will be greater [10].
2. **Virtualization:** It is one of the hardware reducing, cost saving and energy saving technology that is rapidly transforming the IT landscape and fundamentally changing the way that people compute. On a server or Desktop PC, it allows multiple operating systems and multiple applications to run on a single computer [7].

Result:

The green computing was increase in the last decade. The organizations and researchers have put in a lot of effort to achieve environmentally-friendly technologies. Power management techniques, virtualization, improved repair, re-use, recycling and disposal are the approaches that have been taken so far by the organizations towards green computing. The challenges that are facing the researchers in the field of green computing, the computing industry observes an improvement in energy efficiency.

Conclusion:

Green computing is important because it keeps the environment safe. Green computing lowers the energy consumption that leads to minimize the power bill. The features of a green computer of tomorrow are like: efficiency, manufacturing & materials, recyclability, service model, self-powering, and other trends. So green computing is the utmost requirement to protect the environment and save energy along with operational expenses in today's increasingly competitive world.

Future work:

Green computing uses computers in the most efficient manner so that minimum electricity or power is wasted in using them. Green computing is helping companies to cut costs and save the environment. Green techniques used to minimize energy usage so that there is lesser burning of fossil fuels and the subsequent emissions of carbon dioxide and other gases in the atmosphere. The advantages of green technology can be seen on a large scale as well as small scale organizations. So, make use of green computing in the entire organization or just for a single workstation. At the end, savings from green computing will outnumber the costs.

References:

1. https://www.techopedia.com/definition/14753/green-computing accessed date: 5/12/18

2. https://en.wikipedia.org/wiki/Green_computing accessed date: 4/12/18
3. https://louissp8.weebly.com/history-and-fact.html accessed date: 5/12/18
4. http://www.ecoideaz.com/innovative-green-ideas/green-computing accessed date:
5. https://www.greenbiz.com/article/real-problem-green-it-and-how-solve-it accessed date: 6/12/18
6. www.google.com/site/greenersolutionnow/problem-with-going-green accessed date: 7/12/18
7. www.researchgate.net/publication/276266707_Green_Computing_Emerging_Issues_in_IT accessed date: 5/12/18
8. https://www.researchgate.net/publication/325360535_Green_Computing_Current_Research_Trends accessed date: 5/12/18
9. http://www.jatit.org/volumes/Vol94No2/18Vol94No2.pdf accessed date: 7/12/18
10. http://pdfs.semanticscholar.org/c166.685f0ad883c625b8353dl8c572222f64147824a.pdf accessed date: 6/12/18
11. https://www.researchgate.net/publication/281978851_Scrutiny_of_Energy_Efficiency_for_Green_Cloud_Computing accessed date: 8/12/18
12. https://www.researchgate.net/publication/325360535_Green_Computing_Current_Research_Trends accessed date: 10/12/18

AN ANALYSIS OF PROGRESSIVE WEB APPS

Rahul Dattatary Varal
rahul.varal@iccs.ac.in
Msc-1
Indira College of Commerce and Science

Abstract:
Progressive web apps is taking advantage of capabilities that are available in the application environment rather than having rigid requirements. This includes running a range of devices instead of focusing on narrow categories like the mobile-first approach. Moving across a disparate array of environments should include making use of opportunities that are available, such as a larger screen and adapting to the limits of a small screen. Perhaps in the future, we'll treat the screen as an optional interaction surface given the availability of voice, touch, and other methods.
Keywords:- *Progressive Web Apps, Service Workers, Cross-platform, Cross-platform Development, Mobile Web.*

Introduction:

A progressive web app (PWA) is web app that given a app-like experience to user. These apps meets certain requirements, are deployed to servers accessible through URLs and indexed by search engines. Flipkart provide the progressive web app firstly we have to go flipkart.com after opening this site in any web browser click on the 'Add to Home Screen' after clicking the icon is added on our mobile home screen and provide experience like a native applications. In 2015, designer Frances Berriman and Google Chrome engineer Alex Russel found the term of progressive web apps. The Progressive web apps take a advantage of new features supported by modern browser. The need of PWA is for maintain one application for multiple platforms, familiar experiences across devices, Eliminate overhead and maximise resource and developing a progressive web app save time.

A Progressive Web Application is an app which can act as web page and as a native mobile at the same time. These are the main features of such a product described by Google. No matter which networks conditions a user works in a PWA load instantly. The page loading of PWA is faster like a native applications .The PWA really looks like a native mobile product, so it is natural in terms of the mobile user experience. Flipkart customer market consist of customer almost entirely an poor mobile connections .Their mobile devices has limited storage and may or may not have reliable 4G or 3G connection . A client application experience that load quickly and works even the network is absent gives flipkart a business advantage.

With more and more social media companies making their own in-app browser, it is getting difficult to promote PWA experience an social media. PWAs can't use some of the latest hardware advancement (like fingerprint scanner), they are all after all. The Feature like key re-engagement add to homescreen, notifications etc, Limited to

android the full support for PWAs are not available in default browsers of some of the manufacture's. .

Literature Review:-

By taking this topic for research and building the progressive web app for an educational system we come across lot of background work created and conducted by various researchers worldwide. As we more familiar with the invent of using mobile web which exist for years as a subset of WWW which is really a slow and not so good interface on mobile phones. It has a support of WAP protocol and we generally load m.website.com pages on limited browser supported smartphone and tables which could not handle full web support.

For few years it looked like the old, dirty mobile Web was going to die. Adaptive and responsive design came for make full websites look good on mobile with rich and immersive experiences. The "mobile" bit was going to be stripped out and all we were left with was the Web, in all its glory, from any device we decide to access it. But it is now looks like the mobile Web is making a comeback. Instead of breaking down barriers between the mobile Web and the full Web, a group of technology companies is working to try and make the mobile version of the Web faster. Native Apps on mobile are fast whereas the mobile websites are comparatively slow in 2016 this particular problem of Web and native App was prime conversation during all the discussion and conference. Researcher around world was planning to launch a new way of programming which will help fill this gap of Web and Native Apps.

.

Details of PWA's:-

Why Progressive Web Apps?

Now let's talk about the "*WHY"*. Why Frances Berriman and Alex Russell found the concept called Progressive Web Apps? Before that let's understand what problems does it solve.

Problems with Native Apps?

We all are using Android or iOS apps on our mobile phones. We use them for all kinds of thing. But before installing any Android/ iOS apps it may happen we can go through this problems.

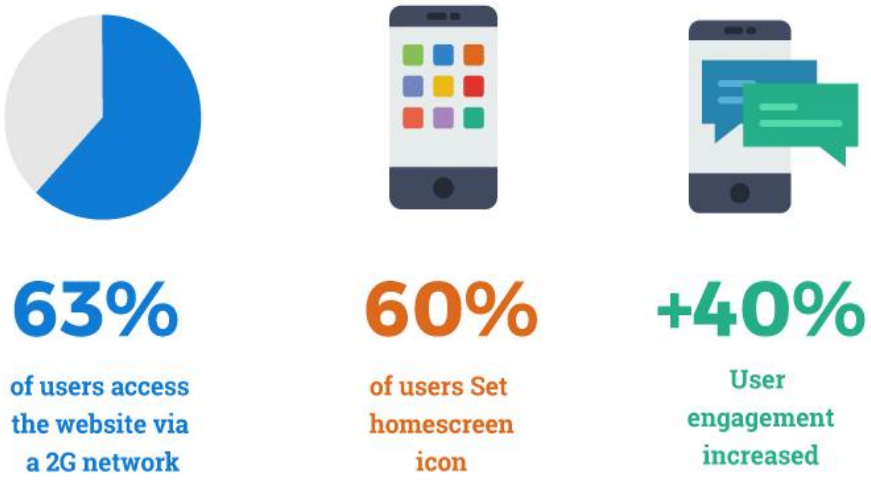
Is this app worth downloading?

Do I have enough space?

My available data is not sufficient.

One recent survey shows that people are **turning away from Android/iOS apps,** because the experience of all apps are not satisfying. There are many people simply don't want any more apps on their phone, some even hesitate to download any app.

If we take a look at the apps installed in our mobile there might many apps we does not user regularly . Some apps if the internet connection is active works good.



The irony is that most of the apps have a fully responsive website performing the same functions. So why we waste your disk space and your internet data on your smartphone by installing the native app? The apps has average size that we install from play store/app stores would range from 30–200MB. Moreover, these app needs to updated every week! But Progressive Web Apps are within some KBs and are automatically updated.

Features of PWA's:

- **Progressive** — The word progressive means it can works for every user, regardless of browser choice because they're built with progressive enhancement as a core tenet.
- **Responsive** — Automatically adjustable to any form: desktop , mobile and tablet.
- **Load Time** — Progressive Web Apps are instantly available any time.
- **App-like** — Same feels like a mobile app with app-style interactions since it's built on the app shell model.
- **Fresh** — Always up-to-date so you do not need to update it again and again like any other Android/iOS apps.
- **Safe** — Served via HTTPS to ensure content is securely delivered
- **Engaging** — Features like push notifications, etc. makes it very engaging.
- **Installable** — It Allows users to install the website as an app on their home screen without the taking user to an app store.
- **Linkable** — It can Easily shared via a URL and do not require complex installation.
- **Cost Effective** — For an app publisher the PWA provide biggest advantage is the cost saving in terms of app development and maintenance. Because it is assumed that making a website is many more easier than making a Android App.
- **Cross Platform** — Unlike any other apps, PWA are not restricted to any specific platform. That means you do not need to develop separate versions of app for different-different platforms.

Some Popular Companies that Do Progressive Web Apps

Ola, Flip kart, Pinterest, Twitter, Alibaba, BookMyShow, MakeMyTrip, OLX, The Weather Channel, Forbes, JioCinema, Trivago

Introducing the Flip kart Lite

Flip kart is India's largest e-commerce site, decided to combine their web presence and native app into a Progressive Web Application that has resulted in a 70% increase in conversions. Flipkart's Progressive Web App takes merely 100KB to download, is 100 times smaller than the 10MB Android app and 300 times smaller than the iOS app. Repeat visits take less than 10KB to download.

How to use a Progressive Web App?

Probably, you must have be wondering how to use a Progressive Web App! Well, you just click on any links mentioned above. But provided that you must using a smart phone in order to install it your own device.

Now let's click open Flip kart in chrome.

Now Let's create a Progressive Web App:

Here show we can created a Progressive Web App for simple blog. We can get the codes here. Now we have a basic website can start turning it into a progressive web app. To do this we need to add a few things to it which I will go through as we need them.

Testing your PWA

To check if your site working as a PWA you can use Lighthouse. Lighthouse is an chrome extension that will tell you if your site is a good PWA and if it isn't how to improve it.

Once we installed open up your website and click on the Lighthouse icon in the top right of your browser then Generate Report.

Analysis/Results obtained

Progressive web apps are not more expensive than native applications, *and* they can be used by every possible smartphone user in the world - doesn't matter if their system of choice is iOS or Android.

It has High conversion rates, unique active users, higher retention and lower bounce rate. These metrics are strictly correlated with the app speed. Progressive web apps focused on speed and delivery to every user.

Conclusion

Just a year ago the tech experts were saying that were it not for Apple, progressive web apps would have successfully replaced hybrid apps. Now, Safari and iOS are on their way to supporting PWAs, this is most likely what's going to happen. Easy to develop, discover, navigate and install, progressive web apps will offer a new web experience to both desktop and mobile users to of all platforms.

Future work

In this paper, we are presented work on several topics from modern mobile computing. We have proposed a research question: Can Progressive Web Apps (PWAs) be the

definite approach to cross-platform development? To answer the question, we are introduced several technologies and their underpinnings. Based on background, we have scrutinized PWAs regarding their possibilities in being an unifying technology for mobile app development.

Whether we can assert that Progressive Web App fulfil many requirements for unified multi-platform development already, is too early to say and whether they will be able to replace existing cross platform development approaches. Moreover, other noteworthy technologies are likely be seen soon. However massive interest by practitioners mandates further research. At least Progressive Web App can contribute to a richer development experience, and – eventually – better apps. We are therefore sketched future developments and suggested a research agenda. We suggested balanced approach of experimental and qualitative work.

References

1. https://ionicframework.com/docs/developer-resources/progressive-web-apps
2. https://en.wikipedia.org/wiki/Progressive_web_applications
3. https://medium.freecodecamp.org/progressive-web-apps-101-the-what-why-and-how-4aa5e9065ac2
4. https://alistapart.com/article/progressive-web-apps-excerpt
5. Aaron Andersen. 2008. History of the browser user-agent string. https://webaim. org/blog/user-agent-string-history/. (2008).
6. Android Developers. 2018. Building Web Apps in WebView. https://developer. android.com/guide/webapps/webview.html. (2018).
7. Apple Developer Documentation. 2018. SFSafariAuthenticationSession. https://developer.apple.com/documentation/safariservices/sfauthenticationsession. (2018).
8. Apple Developer Documentation. 2018. SFSafariViewController.https: //developer.apple.com/documentation/safariservices/sfsafariviewcontro

SECURITY ISSUES IN BIG DATA

Snehal Tukaram Hatkar
Snehal.hatkar@iccs.ac.in
Msc (Comp.sci)- Indira College of Commerce and Science, Pune.

Abstract:
Today, in the world of information technology with the application of cloud technology the big data and its analysis plays very important role. The huge amount of data is generated from various information system and digital technology. Such as Internet of Things and cloud computing. Big data is large volume of both structured and unstructured data. Big data describes data that is large and complex and cannot be practically managed with traditional software tools. So to manage the data which is publically available there is need of security. But there are many security issues that are associated with big data. This paper concentrates on security issues in big data.
Keywords: *Big data, Hadoop security, Cloud security, Key management, Security challenges.*

1. Introduction:

Big data is the term that describes the large volume of both structured and unstructured data. Big data is the word used to refer data that is large and complex[1, 2]. According to webopedia in most of the enterprises the volume of data is too big or it moves fast or it exceeds processing capacity [3]. Big data was originally associated with three key concept that are volume, velocity, variety and the other concept that is later associated with big data is veracity[4]. The term 'Big Data' came into view for first time in 1998 in a Silicon Graphics (SGI) by John Mashey. The growth of big data needs to increase the storage capacity and processing power[13]. In the 21 century in 2005 Roger Mougalas from O'Reilly Media find out the term big data first time[5]. Big data is flexible that is it can process variety of input data sources with very high input data size. There is need of big data because when we deal with large data then result tend to closer to the average and we get more accurate result for business [7]. Today one of the popular technology is machine learning and it will play big role in the future of big data. The data security and privacy is the biggest hurdle for big data in future [8].

There are four characteristics of big data: Volume- The volume is the quantity of generated and stored data. The size of data determines whether it can be considered as big data or not [9].Variety-the variety describes the type and nature of data. This helps people who analyze data to get effective result. Velocity-The speed at which the data is generated and processed to meet the demand and challenges. Veracity-The quality of capture data can vary to get accurate analysis [9]. Some tools of big data like Hadoop and cloud based analytics minimizes the cost as well as reduces time by making quick decisions [10]. Big data used in financial institutions, retail

marketing, government and public sector, media and entertainment businesses. And it also provide an infrastructure for transparency in manufacturing industry.

Big data challenges include capturing data, data storage, data analysis, search, sharing, transfer, information privacy and data source. The most obvious challenge associated with big data is simply storing and analyzing the information. The variety associated with big data leads to data integration. Security is also big issue for organizations with big data [11]. In big data there is management issue, storage and processing issue [12].

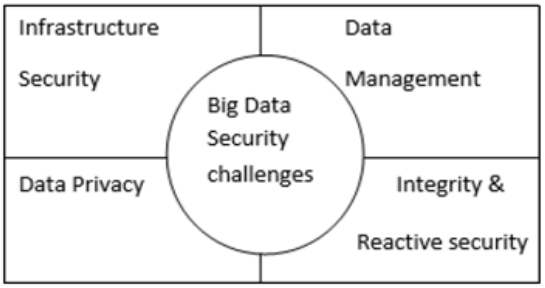
2. Literature Review:

Ninny Bhogal and Shaveta Jain presents a memory and time efficient method for dealing with the massive facts to fulfil the price of records development of business [14]. Mohammed S.Al-Kahtani presents a survey on big data network security. This work starts by introducing the distributed architecture of big data which focuses on the network security. Minit Arora and Dr Himanshu Bahuguna presents a survey that organizations used various methods to ensure security. The most common solution to ensure security may be oral and written pledges. However, history has shown that this method is flawed. Passwords, controlled access, and two factor authentication is low-level [15].

Sanchita Gupta, Akashkataria, Shubham Rathore and Dharmendra Singh Rajput discussed about information security issues in big data and provides a solution using Privacy Preserving Data Mining [15]. K.P.Maheswari, P.Ramya and S.Nirmala Devi provides a study of security levels in big data. The big data issues are most deeply feel in certain industries and in certain government activities. The security issues of big data systems and technologies are also applicable to cloud computing because it is very important for the network which interconnects the systems [15]. Vinod B. Bharat, Pramod B. Deshmukh, Laxmikant S. Malphedwar, P. Malathi and Nilesh N. Wani presents an idea about Big Data and Database Security. In this paper they concentrated on the vast information security and protection challenges. They concentrated on high-need security and protection issues.

J.L. Joneston Dhas, S. Maria Celestin Vigila and C. Ezhil Star designed a framework on Security and Privacy for Storage of Health Information using Big Data. There are many real time problems when we store the health record as a big data. The first is how a user will protect the information in the cloud. The next one is how to identify the record and how to protect the health information from the unauthorised person. The size of the data is the main challenge for big data [15]. The big data faces many challenges that is the first challenge for organizations is to choose and select the significant and important data and also with that volume of data it becomes important for organizations to able to separate the important data [16]. Second is Big Data is all about collection of data from various business points. Organizations need to be able to manage the data from all its enterprises [16]. And the third there is a security issue related to Big Data collection. This is a major

problem that preventing the companies from taking advantage of Big Data Analysis [16].



There are four different aspects of big data security [15]:

• Infrastructure Security	• Privacy in Social Networks
✓ Security for Hadoop	✓ Anonymization
✓ Availability	✓ Differential Privacy
✓ Architecture Security	• Data Management
✓ Group Communication	✓ Security at Collection or Storage
✓ Communication Security	✓ Policies, Laws, or Government
✓ Authentication	✓ Sharing Algorithms
• Data Privacy	✓ Integrity and Reactive Security
✓ Cryptography	✓ Integrity
✓ Access Control	✓ Attack Detection
✓ Confidentiality	✓ Recovery
✓ Privacy-Preserving Queries	

Traditional solutions are insufficient when dealing with bigdata to ensure security. Encryption methods, access permissions, firewalls, transport layer security cannot be able to achieve security. For these reasons, advanced techniques and technologies are developed to protect, monitor and audit big data processes in terms of infrastructure, application and data [17]. Considering the related literature, this paper has categorized security issues for big data under 3 titles as Hadoop security, cloud security, key management [18].

Hadoop security: Hadoop is a distributed process framework and it was not originally developed for security. It was supposed to operate in reliable environments. As Hadoop has become a popular platform, security precautions have started to be developed. The unit that cause the security weakness is Hadoop Distributed File System (HDFS).In order to achieve authentication issue, Kerberos (name assign from three headed dog from Greek mythology) mechanism based on Ticket Granting Ticket or Service Ticket have been used as first method. The second method is about monitoring all sensitive information using Bull Eye algorithm. This algorithm has been used to make sure data security and manage relations.

Cloud security: Data storage on clouds is one of the main problem nowadays. Therefore, some precautions must be taken by internet service provider. Because of this, a secure way to handle big data on cloud platform has been presented. It includes

many security methods like authentication, encryption, decryption, and compression etc. to store big data securely. Authentication with email and password has been used for the authorized person. Data has been encrypted and compressed to prevent security issues. It also takes precautions in case of a natural disaster and uses three backup servers for this purpose. In these servers, data has been stored in an encrypted format. If something happens to the server, encrypted data has been decrypted with the secret key. The classical encrypted technique is not enough for big data security on cloud [18].

Key management: Key generating and sharing between servers and users is another big data security issue. However, using big data centres, quick and dynamic authentication protocols can be suggested. The big data services consist of multiple groups that need group key transfer protocols for secure communications. For this reason, novel protocol without an online key generation centre based on Diffie-Hellman key agreement and linear secret sharing scheme different existing protocols has been offered [18].

3. Result and Analysis:

Charu c. Aggarwal	Provide modern techniques for privacy	Discuss about theoretical limit associated with data privacy
Ninny Bhogal and Shaveta Jain	Present memory and time efficient method	Testing evaluation cost, fake effective, usage of time, utilization of memory
J.L. Joneston Dhas, S. Maria Celestin Vigila	designed a framework on Security and Privacy	Storage of Health Information using Big Data
Sanchita Gupta, Akashkataria, Shubham Rathore and Dharmendra Singh Rajput	Provide solution using Privacy Preserving Data Mining	Data pre-processing ,Data transformation, Data mining , Pattern evaluation and presentation

Almost all data security issues are caused by the lack of effectiveness provided by antivirus software and firewalls. Big data needs extra requirements for security in data gathering, storing, analysing, and transferring. Big data privacy and security are the largest issues to be discussed more in the future, so new techniques, technologies and solutions need to be developed for accurate results. To secure the health data, different techniques such as authentication, digital ware marking and MPEG encryption schemes are used. But there are many real time problems when we store health record as big data because we need to protect data from unauthorised use r.

4. Conclusion:

That is in fact, the currently used security mechanisms such as firewalls and Demilitarized zone cannot be used in the Big Data infrastructure because the security mechanisms should be rigid tofulfil the user requirements and the policies.

Security of big data can be improved by using the techniques of authentication, authorization, encryption and audit trails. There is an increasing need of research in technologies that can handle the vast volume of Data and make it secure efficiently. Current technologies for securing data are slow when we applied it on huge amounts of data. With this, we can come to conclude that we required some new technologies or the modifications in the available technology.

5. Future work:

The following are some of the future enhancements which I have found while referring these papers. To highlight big data security- focus on software protection, in location of tool safety. Introduce real-time security data and event control. Provide automatic and practical protection. Another big challenge is processing data from various sources. Tools with facial recognition can be implemented with big data as a platform. Major big data security challenges are: In Big Data most distributed systems computations have only a single level of protection, which is not optional. Non-relational databases (NoSQL) are actively developing, making it difficult for security solutions to keep up with demand. Automated data transfer requires additional security measures, which are often not available. There is huge scope in Big Data security for research and development.

6. References:

1. Definition of big data - https://en.m.wikipedia.org/wiki/Big_data access on 5 Dec, 2018.
2. Introduction to BIG DATA- https://www.guru99.com access on 5 Dec, 2018.
3. What is big data - https://www.webopedia.com access on 5 Dec, 2018.
4. Information about big data - https://www.oracle.com access on 5 Dec, 2018.
5. Short history of big data - https://datafloq.com access on 5 Dec, 2018.
6. Big data application - https://www.edureka.com access on 6 Dec, 2018.
7. Need of big data - https://www.quora.com access on 7 Dec, 2018.
8. Future of big data - www.smartdatacollective.com access on 5 Dec, 2018.
9. Big data features - https://www.dataskills.it access on 5 Dec, 2018.
10. Benefits of big data - https://newgenapps.com access on 5 Dec, 2018.
11. Big data challenges - https://datamation.com access on 5 Dec, 2018.
12. Security issue - https://researchgate.net access on 6 Dec, 2018.
13. Neelam Singh, NehaGarg, Varsha Mittal, Data – insights, motivation and challenges, Volume 4,Issue 12, December-2013, 2172, ISSN 2229-5518 2013. access on 6 Dec, 2018.
14. Ninny Bhogal, Shaveta Jain," A Review on Big Data Security and Handling", International Research Based Journal, Vol(6)-Issue(1) , ISSN 2348-1943, March,11, 2017. access on 6 Dec, 2018.
15. ShreyasSatardekar"A Research on Big Data Analytics Security and Privacy in Cloud, Data Mining, Hadoop and Mapreduce", Int. Journal of Engineering Research and Application ISSN: 2248-9622, Vol. 8, Issue4 (Part -III) April 2018, pp65-78. access on 4 Dec, 2018.

16. ” Big Data Security Issues and Challenges”,International Journal of Innovative Research in Advanced Engineering (IJIRAE) ISSN: 2349-2163 Issue 2, Volume 2 (February 2015). access on 6 Dec, 2018.

17. “A Survey on Security and Privacy Issues in Big Data,“The 10th International Conference for Internet Technology and Secured Transactions (ICITST-2015). access on 6 Dec, 2018.

18. A. Kumar, L. HoonJae, R.P. Singh, “Efficient and secure Cloud storage for handling big data”, Information Science and Service Science and Data Mining (ISSDM), pp. 162 – 166, Taipei, 2012. access on 7 Dec, 2018.

STUDY OF SUPERVISED MACHINE LEARNING ALGORITHMS

Sayali Santosh Chavan
sayali.chavan@iccs.ac.in
MSc -1, Indira College of commerce and science.

Abstract:
Machine learning is study of algorithms and mathematical models that provides computer with ability of prediction based on experiences which is data in case of machines. Machine learning categorized into supervised learning, unsupervised learning and reinforcement learning. Supervised learning maps input to output based on labelled training data. This paper emphasize on three algorithms used in supervised learning.
Keyword: *Decision tree, support vector machine, naïve bayes, machine learning, supervised learning*

Introduction:

Machine learning gives the ability to the computer to predict an output using statistical analysis [1,2]. Machine learning allows computer to learn by creating algorithms. The term machine learning was coined by Arthur Samuel, an American pioneer in the field of computer gaming and artificial intelligence in 1959[2]. Machine learning is the application of artificial intelligence which use to interaction between machine and human [3].

Machine learning use to push relevant advertisement by Google and Facebook based on users past search behaviour[4]. Machine learning algorithms used in application of email filtering, detection of network intruders, computer vision, online advertising, agriculture, brain machine interfaces, bioinformatics, computational economics, search engines, sentiment analysis, software engineering etc[2].

Supervised machine learning train the machine to give an output according to well labelled data[2]. Chatbots, self-driving cars, facial recognition programs, expert systems and robots are among the system that may either supervised or unsupervised learning[2]. Machine learning use in farming management concept like precision agriculture, satellite farming or site specific crop management [2].

Machine learning algorithm cannot give surety that algorithm always give correct output[6]. Machine learning requires lots of trained data before predicting for any output. In machine learning diagnosing and correcting error can be difficult[6]. Acquisition of relevant data and interpretation of result is also a major challenge in machine learning[4].

Literature Review

A. Decision trees

Decision trees (DT) are trees where each node represents a feature in an instance to be classified and each branch represents a value that the node can assume[6].

Decision tree consist of nodes that form so called root tree, which has basic root node with no incoming edge and rest of nodes are called leaves[8]. Murthy (1998) provided an overview of work in decision trees and a sample of their usefulness to newcomers as well as practitioners in the field of machine learning[7]. In decision tree, according to certain discrete function of the input values each test node splits the instance space into two or more subspaces[7].

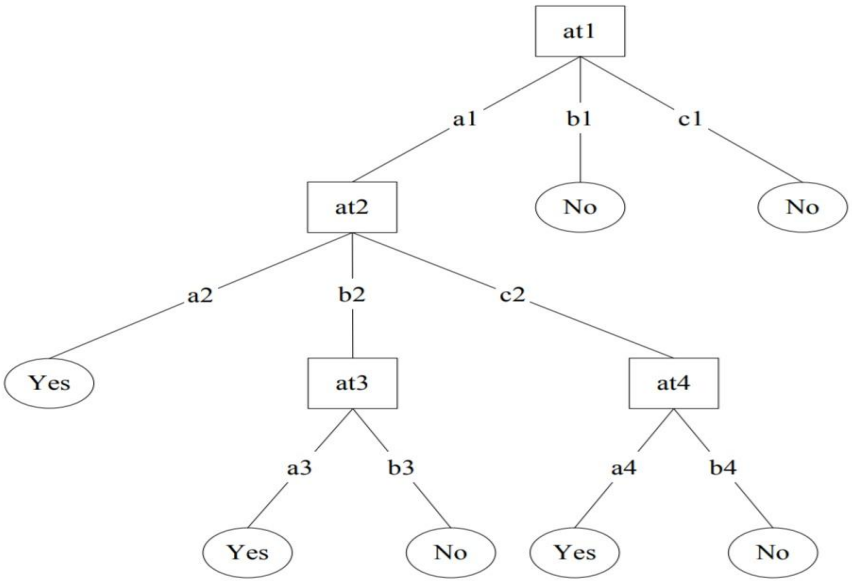


Figure 2. A decision tree

at1	at2	at3	at4	Class
a1	a2	a3	a4	Yes
a1	a2	a3	b4	Yes
a1	b2	a3	a4	Yes
a1	b2	b3	b4	No
a1	c2	a3	a4	Yes
a1	c2	a3	b4	No
b1	b2	b3	b4	No
c1	b2	b3	b4	No

Table 2. Training Set [7]

B. Naive Bayes

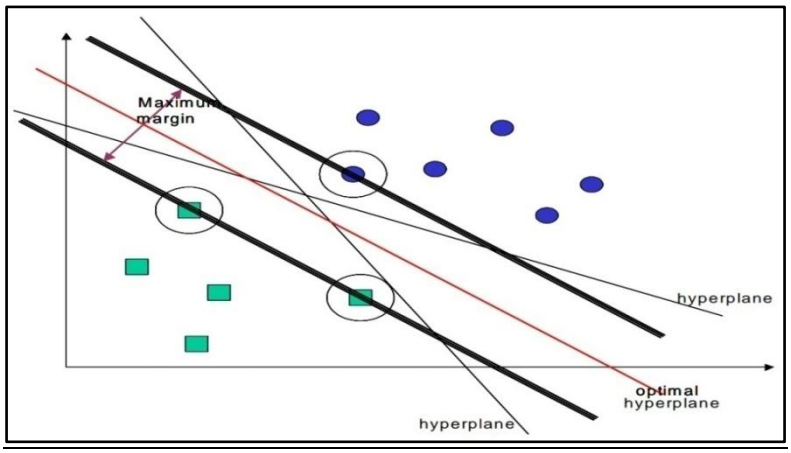
Bayesian classification is another method of supervised learning methods as well as statistical method for classification. Bayesian classification is used to solve the predictive problems[8]. Naive Bayesian networks (NB) are very simple Bayesian networks which are composed of directed acyclic graphs with only one parent (representing the unobserved node) and several children (corresponding to observed nodes) with a strong assumption of independence among child nodes in the context of their parent (Good, 1950).Thus, the independence model (Naive Bayes) is based on estimating (Nilsson, 1965):

$$R = \frac{P(i \mid X)}{P(j \mid X)} = \frac{P(i)P(X \mid i)}{P(j)P(X \mid j)} = \frac{P(i)\prod P(X_r \mid i)}{P(j)\prod P(X_r \mid j)} \quad [7]$$

The major advantage of the naive Bayes classifier is its short computational time for training[7]. In addition, since the model has the form of a product, it can be converted into a sum through the use of algorithms – with significant consequent computational advantages[7]. If a feature is numerical, the usual procedure is to discretize it during data pre-processing (Yang & Webb, 2003), although a researcher can use the normal distribution to calculate probabilities (Bouckaert, 2004)[7].

C. Support Vector Machine

Support vector machines are the recent supervised machine learning technique[7]. Support vector machine are closely related to classical multilayer perceptron neural networks[6]. Support vector machine can maximize the margin between two data populations by finding separation (i.e. hyper plane in n-dimensions space). It mathematically reduce the tendency to over fit the learning data[9]. Support vectors are used to maximizing margin between the two populations and this support vector are the data closest to the separation and defining the merge. Once the hyper plane is trained, you only need to store the support vectors for the prediction[9]. This saves a lot of memory when storing the model. Support vector machine is used for the fast prediction and it dose not require large memory to store[9].



[7]

Analysis:

1. S. B. Kotsiantis compared features of algorithms and provided the following table[7]:

	Decision Trees	**Naïve Bayes**	**SVM**
Accuracy in general	**	*	****
Speed of learning with respect to number of attributes and the number of instances	***	****	*
Speed of classification	****	****	****
Tolerance to missing values	***	****	**

(**** stars represent the best and * star the worst performance)

2. J E T Akinsola compared algorithms with large data set and more attributes

Algorithm	Time(Sec)	Correctly classified (%)	Incorrectly classified (%)
Decision Tree	0.23	72.3958	27.6042
Naïve Bayes	0.03	76.3021	23.6979
SVM	0.09	77.3438	22.6563

SVM tend to perform much better when dealing with multi-dimensions and continuous features[6]. For SVMs, a large sample size is required in order to achieve its maximum prediction accuracy[6]. Most decision tree algorithms cannot perform well with problems that require diagonal partitioning[6]. The division of the instance space is orthogonal to the axis of one variable and parallel to all other axes[6]. Therefore, the resulting regions after partitioning are all hyper rectangles[6]. Naive Bayes (NB) requires little storage space during both the training and classification stages: the strict minimum is the memory needed to store the prior and conditional probabilities[6].

Conclusion:

Supervised learning is a task of predicting outcome by using labelled training dataset. We use regression if label is a real number or classification if label is from limited number of values. To solve a particular problem using machine learning algorithm we should know the strength and weakness of machine learning algorithms. Machine learning algorithm provides fast processing and real time predictions.

References

1. https://searchenterpriseai.techtarget.com/definition/machine-learning-ML accessed on 4 Dec 2018
2. https://en.m.wikipedia.org/wiki/Machine learning accessed on 7 DEC 2018
3. https://www.quora.com/Why-do-we-need-machine-learning
4. https://www.rfwireless-world.com/Terminology/Advantages-and-Disadvantages-of-Machine-Learning.html accessed on 7 Dec 2018
5. https://data-flair.training/blogs/advantages-and-disadvantages-of-machine-learning/ accessed on 7 DEC 2018
6. J E T Akinsola Supervised Machine Learning Algorithms: Classification and Comparison International Journal of computer trends and technology
7. S. B. Kotsiantis Supervised Machine Learning: A Review of classification techniques
8. Vladimir Nasteski AN OVERVIEW OF THE SUPERVISED MACHINE LEARNING METHODS
9. https://recast.ai/blog/machine-learning-algorithms/2/

CLOUD COMPUTING AND SECURITY ISSUES IN THE CLOUD

Dipali Dattatraya Bade
Dipalibade96@gmail.com
Msc1 (Indira college of commerce and science)

ABSTRACT:
Cloud computing is the delivery of computing services-servers, storage, databases networking, software, analytics, Intelligence and most important the cloud (internet) to offer faster innovation, flexible resources and economics of scale. The biggest cloud computing services run on worldwide network of secure datacenters, which are regularly advanced to the hottest generation of fast and efficient computing hardware. security issues present a robust barrier for users to adapt into cloud computing systems. This paper presents a review on the cloud computing issues within the context cloud.

KEYWORDS: *Cloud Security, Data Protection, Cloud Platform.*

INTRODUCTION:

The Google defined as cloud computing means storing and accessing data and program over the internet instead of your computers hard drive [1]. The IBM and Investopedia defined as cloud computing is a method for delivering information technology (IT) services in which resources are retrieved from the internet through web based tools and applications as opposed to a direct connection to a server[2,3]. Cloud computing is a set of principles and approaches to deliver infrastructure, services, platforms and applications[1]. Computing Cloud computing concept originated from telecommunication companies changing to VPN. The history of cloud computing starts way back in the 1960's .

Could computing removes the need for many of these task's so IT teams can spend time on achieving more important business goals. Companies can save big by employing cloud computing as it eliminates cost for hardware and software. All data located on a centralized location , data more organized making it easy to manage .Cloud computing increased storage capacity is another benefit of the could, as it can store more data as compare to personal computer. Cloud computing also allows you to customize your business applications. Cloud computing does not need high quality equipment for the user and it is easy to use. Cloud computing services users can check their email on any computer and even store files using services such as Dropbox and Google drive[10] .

Security issues present a strong barrier foe users to adopt into cloud computing systems. Security are the biggest concerns about cloud computing. Major problem cloud computing is users dependency on the provider .migration problem is also a big concern about cloud computing. The most obvious disadvantage is that cloud computing relies on network connections. The risk of cloud computing taking services from remote servers.

LITERATURE REVIEW:

The nonfiction analyze three different broad service models for cloud computing: a) Software as Service (SaaS), where applications are hosted and distributed via a web browser subscription outmoded desktop functionality for example Google Docs, Gmail and MySAP. b) Platform as a Service (PaaS*)*, where the cloud provides the software platform for systems (as opposed to just software), the best current example being the Google App Engine. c) Infrastructure as a Service (IaaS), where a set of productive computing resources, such as storage and computing capacity, are introduced in the cloud; customers deploy and run their own software stacks to obtain services. Current examples are Amazon Elastic Compute Cloud (EC2), Simple Storage Service (S3) and Simple DB.

Analysis Of Security Issues

Issues	Countermeasures	Description	References
Data Security	Cryptographic techniques are implemented to secure the data, data should be redundant and in cases we need to delete the data, it should be deleted from the root.	Normally involves the protection of data from three aspects. Confidentiality, availability and Integrity.	[7]
Network Security	Firewall and VPN measures are taken. Systems, technologies and protocols should be properly configured.	Involves the security of network from attacks such as spoofing, sniffing, man in the middle, denial of service.[7]	[7]
Virtualization Security	Network separation and monitoring may be implemented.	Hypervisor is the main target of hackers. Allocation and deal location of memory, storage and other resources. Hidden attacks.	[5]
Compliance	Logs of all the requests should be maintained. Privileged user's Monitoring is necessary. Each provider should define policies clearly to highlight legal concerns.	Problem of the verification of authorization and authentication records, and also to check the compliances with predefined standards and policies.[13]	[6]

Data confidentiality issue: Confidentiality is a set of rules or an agreement that bounds access or location restriction on certain types of information so in cloud data reside publically so Confidentiality refers to, customers data and computation task are to be

kept confidential from both cloud provider and other customers who is using the service.

Data availability issue – when keeping data at remote location which is owned by others, data owner may face the problem of system failure of the service provider. And if cloud stops working, data will not be available as the data depends on single service provider.

Data integrity issue –as the word itself explains the "completeness" and "wholeness" of the data which is the basic and central needs of the information technology.

Reliability-The cloud servers also experience downtimes and slowdowns as our local server[7].

CONCLUSION:

Cloud computing is the cost, time and performance effective technology. Of course the usage of cloud computing will surely will increase more in next few years. In this paper we have deliberate and observe basic of cloud computing and privacy issues in the cloud computing. Some security issues are the key concern in the cloud computing. Especially privacy and honesty of data are the key burden security issues. In the cloud as data is stored publically and we really don't know where the data is being stored, we don't know the exact location of the data, due to this data stored in the cloud has a higher risk of being accessed by un- theorized person during storage as well as transportation[6].

FUTURE WORK:

Cloud computing is the most modern technology so lots of issues are pause to consider. It has many open issues some are technical that includes expansible, flexibility ,data handling mechanism, reliability, license software, dominion, performance, system development and management and non-technical issues like administrative and economic aspect. Cloud computing still unknown "Destroy application" will establish so many challenges and solutions must develop to make this technology work in practice. So the research is not stop here much work can be done in future. The model granted in this paper is the initial step and needs more alteration; however it can provide the basis for the broad research on security distribution of cloud computing for the research association working in the field of Cloud Computing.

REFERENCES:

1. https:// sgartner.org/en/information technology.
2. https://en.m.wikipedia.org/wiki/cloud_computing.
3. www.investopedia.com.
4. Adamov, A ; Erguvan, M.; (2009),"The Truth about Cloud Computing as new Paradigm in IT",IEEE International Conference on Application of Information and communication Technologies, AICT 2009.
5. Sharif, F., &Hafeez, A. (2012). "The Analysis of Cloud Computing Major Security Concerns & their Solutions. Journal of Information & Communication Technology, 6(2), 48-53.

6. HuagloryTianfield, "Security Issues in Cloud Computing ," IEEE. 978-1-4673-1714-6/2010.

7. Nelson Gonzaalez,Charles Miers, Fernando REdigoloo, "A quantity analysis of current security concerns [9] and solutions for cloud computing," (2011) Third International Conference on cloud computing Technology 18 and Science.

8. Geng L; David F; Jinzy Z; Glenn D; (2009), "Cloud computing: IT as Service, "IEEE computer society IT Professional", Vol. 11, pp.10-13, March-April 2009.

9. Basit Ali; (2009), "Ufone Launches Uconnect", published in TlecomPK.Net,12 Aug 2009.

10. Muzzammil Sheikh; (2011), "PTCL Launched EVO USB become Wi-Fi Hotspot", The Frontier Star (Northwest Frontier Province, Jan 26 2011.

ANALYSIS OF AIRPORT DATA USING PIG: A CASE STUDY

Sanket P. Ingale
T.Y.BSC(C.S)
sanket.ingale@iccs.ac.in

Aniket K. Gole
T.Y.BSC(C.S)
aniket.gole@iccs.ac.in

Narendra K. Choudhary
T.Y.BSC(C.S)
narendra.choudhary@iccs.ac.in

Abstract*:*
In the contemporary world, Data analysis is a challenge in the era of varied inters-disciplines though there is a specialization in the respective disciplines. In other words, effective data analytics helps in analyzing the data of any business system. But it is the big data which helps and axialrates the process of analysis of data paving way for a success of any business intelligence system. With the expansion of the industry, the data of the industry also expands. Then, it is increasingly difficult to handle huge amount of data that gets generated no matter what's the business is like, range of fields from social media to finance, flight data, environment and health. Big Data can be used to assess risk in the insurance industry and to track reactions to products in real time. Big Data is also used to monitor things as diverse as wave movements, flight data, traffic data, financial transactions, health and crime. The challenge of Big Data is how to use it to create something that is value to the user. How can it be gathered, stored, processed and analyzed it to turn the raw data information to support decision making.
Keywords: *Airline data set, Pig Tool, Big data, Pig, Data Analytics, Hadoop, Distributed File System.*

1. INTRODUCTION

Big data is a term used to refer to data sets that are too large or complex for traditional data-processing application software to adequately deal with. Data with many cases (rows) offer greater statistical power, while data with higher complexity (more attributes or columns) may lead to a higher false discovery rate. Big data challenges include capturing data, data storage, data analysis, search, sharing, transfer, visualization, querying, updating, information privacy and data source. Big data was originally associated with three key concepts: volume, variety, and velocity. Other concepts later attributed with big data are veracity (i.e., how much noise is in the data) and value.

Most of the time social media is analyzed by advertisers and used to promote produces and events but big data has many other uses. It can also been used to assess risk in the insurance industry and to track reaction to products in real time. Big Data is also used to monitor things as diverse as wave movements, flight data, traffic data, financial transactions, health and crime. The challenge of Big Data is how to use it to create something that is value to the user. How to gather it, store it, process it and analyze it to turn the raw data information to support decision making. Hadoop allows to store and process Big Data in a distributed environment across group of computers using simple programming models. It is intended to

scale up starting with solitary machines and will be scaled to many machines. We use this concepts of big data and hadoop to process the Airport data.

In this paper first tables were created for the below mentioned Data Set. The Data set was loaded into the created tables on an HDFS system. The Hive queries were applied and the results were analyzed.

2. CHALLENGES IN BIG DATA:

The uses of Big Data in various fields of knowledge are immense in the sense its potentiality of micro and macro levels of analysis of the data. For instance, the tools in Big Data help the Institutions to study the quantitative and qualitative learning abilities of students from different strata of the society. Even the behavioral learning and the psychological attitudes of the student may also be estimated through the tools of Big Data. Big Data can also be used in analyzing the cognitive abilities and the impact of health in acquiring the knowledge since health condition of the students usually affects on learning process. Further, the scope of big data is so vast that it has been used in globalized urban societies in planning the locality, intelligence transportation, air ambulance monitoring system, road mapping, environment and natural disaster prediction. Big Data is supported by range of technologies such as Hadoop. Traditional relational data base skill are still in high demand but increasingly, so are the skills needed to work with the generation of non-relational data bases known as NoSQL. These NoSQL data bases which are often open source are built to handle the processing of large volumes of data and use different design strategies, architectures and query languages. One of the biggest challenges in Big Data is Big Data analytics, where analyze examining and interpret Big Data. In this paper first tables were created for the below mentioned Data Set. The Data set was loaded into the created tables on an HDFS system. The Hive queries were applied and the results were analyzed.

3. ANALYSIS OF AIRPORT DATA

The proposed method is made by considering following scenario under consideration An Airport has huge amount of data related to number of flights, data and time of arrival and dispatch, flight routes, No. of airports operating in each country, list of active airlines in each country. The problem they faced till now it's, they have ability to analyze limited data from databases. The Proposed model intension is to develop a model for the airline data to provide platform for new analytics based on the following queries. The data description is as shown in Table 1 to Table 3

Table 1:- Airport Data Set

Attribute	Description
Airport ID	Unique OpenFlights identifier for this airport
Name	Name of airport. May or

Table 2: Airline Data Set

Attribute	Description
Airline	Unique OpenFlights identifier for this airline. ID

	may not contain the City name.
City	Main city served by airport. May be spelled differently from Name.
Country	Country or territory where airport is located.
IATA/FAA	3-letter FAA code, for airports located in Country "United States of America"
ICAO	4-letter ICAO code.

Name	Name of the airline
IATA	2-letter IATA code, if available.
ICAO	3-letter ICAO code, if available
Callsign	Airline callsign.
Country	Country or territory where airline is incorporated
Headquaters	Headquater office.

Table 3: Route Data Set

Attribute	**Description**
Airline	2-letter (IATA) or 3-letter(ICAO) code of the airline.
Airline ID	Unique OpenFlights identifier for airline
Source airport	3-letter (IATA) or 4-letter (ICAO) code of the source airport
Source airport ID	Unique OpenFlights identifier for source airport
Destination airport	3-letter (IATA) or 4-letter (ICAO) code of the destination airport.
Destination airport ID	Unique OpenFlights identifier for destination airport.
Codeshare	"Y" if this flight is a codeshare (that is, not operated by Airline, but another carrier), empty otherwise.
Stops	Number of stops on this flight ("0" for direct)
Equipment	3-letter codes for plane type(s) generally used on this flight, separated by spaces

4. METHODOLOGY

In this paper the tools used for the proposed method is Hadoop, Hive and Sqoop which is mainly used for structured data. Assuming all the Hadoop tools have been installed and having semi structured information on airport data.

1. Put the data set in the Hadoop directory.

Command=> hadoop fs –put /home/training/airport.txt /user/training

2. Extract semi structured data into table using the LOAD command.
   Command=>grunt> Load 'airport.txt' USING PigStorage(',') as (airport_id:int,name:charaaray,city:chararray,country:chararray,iata:chararray,icao:charaaray);
3. Analyze data for the following Queries: -
   a) list of airlines whose id is less than or equal to 3.
   b) list of airlines of which headquarter is in Delhi.

Query 1:- In the below query we try to find those airlines whose id is less than or equal to 3.

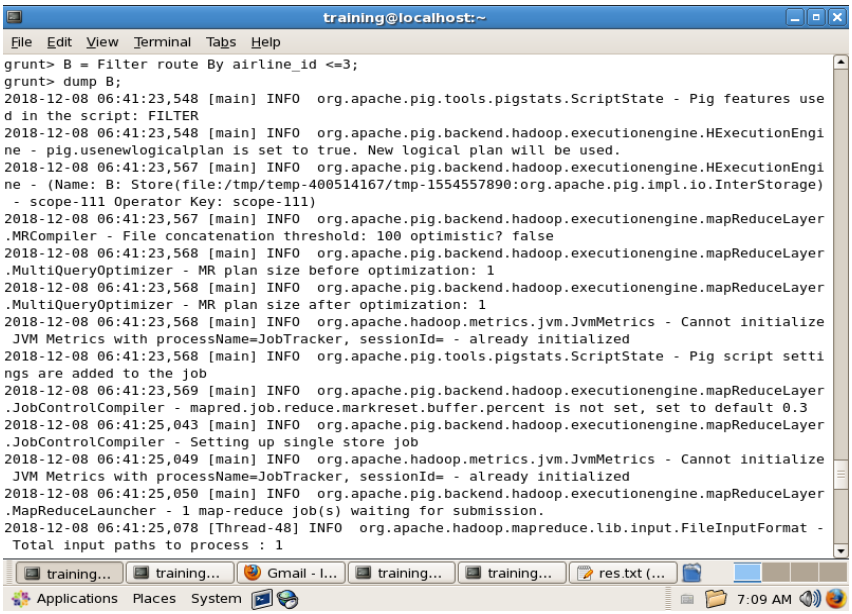


Fig. 1

Result:-

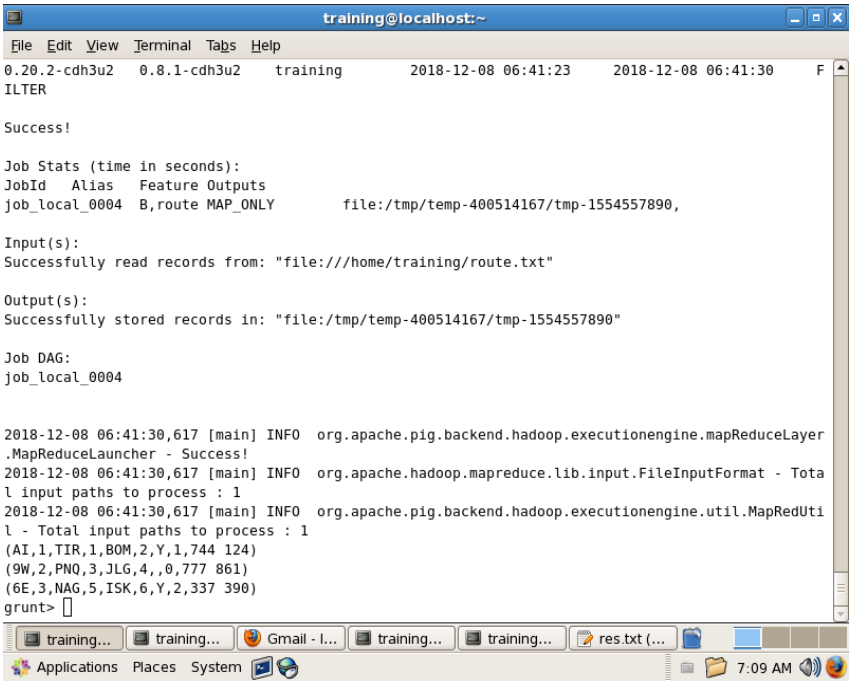


Fig.2

Query 2:- list of airlines of which headquarter is in Delhi.

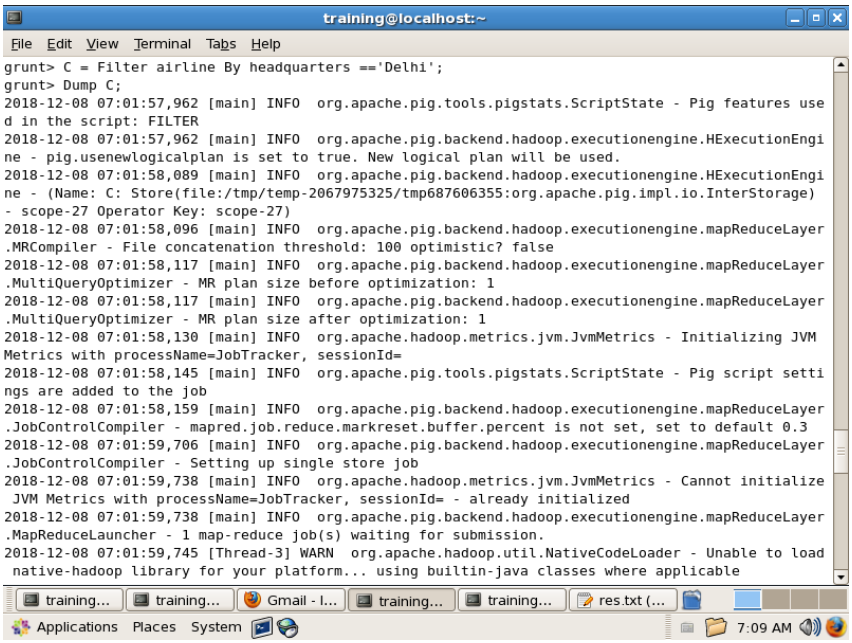


Fig.3

Result :-

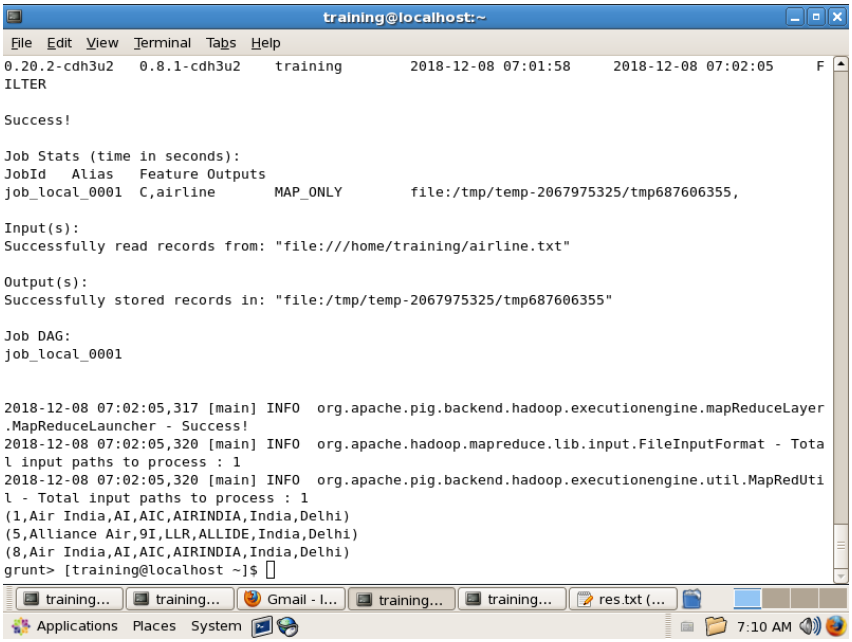


Fig.4

5. RESULTS & CONCLUSION

This paper emphasize on data analysis on airline data set. The paper address the usage of modern analytical tool pig on Big Data set which focus on common requirements of any airport. Some of the instances are highlighted below with the sample snapshots shown in Figure 1 to 4. Figure 1&2 shows query of listing the airlines whose id is less than or equal to 3 & result respectively. It also gives number of Map and Reduce that are internally taken care by the underlying tools of

Hadoop System. Figure3 and 4 shows query of listing airlines whose headquarter is in Delhi. It is found that pig is effective in-terms of processing huge data sets when compared to traditional data bases with respect to time and data volume.

This paper addresses the related work of distributed data bases that were found in literature, challenges ahead with big data, and a case study on airline data analysis using Hadoop. Author attempted to explore detailed analysis on airline data sets such as listing airlines whose id is less than or equal to 3 & the second query such as listing the airlines of which headquarter is in Delhi. Here author focused on the processing the big data sets using hadoop component in distributed environment. This work will benefit the developers and business analysts in accessing and processing their user queries.

6. REFERENCES

1. Challenges and opportunities with Big Data http://cra.org/ccc/wpcontent/uploads/sites/2/2015/05 /bigdatawhitepaper.pdf
2. Dataset is taken from edureka http://www.edureka.co/my-course/big-data-and-hadoop
3. **Nada Elgendy, Ahmed Elragal –"Big Data Analytics: A Literature Review Paper "**
4. Big Data Analytics in Airline https://www.exastax.com/big-data/how-airlines-are-using-big-data/
5. Analysis on Big Data in Airport https://www.zoomdata.com/blog/airports-and-analytics-big-data-aviation/
6. The data challenges at scale and The scope of Hadoop https://intellipaat.com/tutorial/big-data-and-hadoop-tutorial/the-data-challenges-at-scale-and-the-scope-of-hadoop/