TECHMINDS

2014-15

Volume-1

IT Magazine

Department of Computer Science

Jindal First Grade College For Women
Jindal Nagar, Tumkur Road,
Bangalore-73.

College Vision and Mission

Vision:

Educate and empower rural women through value based quality education and nurture values that promote holistic development.

Mission:

* Striving for academic excellence
* To faster human values
* Nurture women to enable them become worthy citizens
* To produce graduates of practical value to the community

Student Editorial Board

Top Row : Thanushree, Ranjitha, Bhavya, Swathi
Bottom Row : Shwetha kumari, Jayashree, Manjushree, Chaitra, Usha

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B.D. GARG
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7th January, 2015

The Principal
Jindal Degree College for Women
Jindal Nagar
Tumkur Road
Bangalore 560 073

Dear Sir,

It is indeed a great pleasure to know that **Computer Science Department** is bringing out ***TECH MINDS*** a magazine highlighting the current trends in information Technology field. The vision of the Institution is to educate and empower rural women by providing value based quality education and I am happy to know that the institution is progressing in that direction.

I wish all the success and hope that Department of Computer Science will engage itself in enriching the lives of hundreds of students by imparting quality education. I also wish all the students who have worked hard to make this magazine a reality by contributing quality articles.

Thanking you,

Yours sincerely

B.D.GARG

Message from the Principal

It gives me immense pleasure to know that the Department of Computer Science is bringing out the magazine. Computer Science Department's TECH MINDS is really a novel step by the staff and students. The magazine contains well researched articles by both staff and students highlighting the current trends in IT Field. The whole exercise of bringing out the magazine by students and staff will result in lot of innovative ideas also and energise the thinking process.

I take this opportunity support and guidance of the Management has helped all of us to achieve good thing for the institution.

Bharath Inamdar

Department Message

Effort of the BCA department in this academic year is the publication of a IT magazine "TECHMINDS". It includes all the academic, curricular and co-curricular activities, initiatives and achievements of the department during the current and past academic years.

As we are proudly presenting first edition of IT magazine we would like to take a moment to thank Management, Principal, Faculties, BCA students, sponsors for their constant support.

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Raspberry Pi

Sushmakiran
Asst. Professor

Raspberry Pi is a credit-card sized computer manufactured and designed in the United Kingdom by the Raspberry Pi foundation with the intention of teaching basic computer science to school students and every other person interested in computer hardware, programming and DIY-Do-it Yourself projects. The Raspberry Pi is manufactured in three board configurations through licensed manufacturing deals with Newark element14 (Premier Farnell), RS Components and Egoman. These companies sell the Raspberry Pi online. Egoman produces a version for distribution solely in China and Taiwan, which can be distinguished from other Pis by their red coloring and lack of FCC/CE marks. The hardware is the same across all manufacturers.

The Raspberry Pi has a Broadcom BCM2835 system on a chip (SoC), which includes an ARM1176JZF-S 700 MHz processor, VideoCore IV GPU and was originally shipped with 256 megabytes of RAM, later upgraded (Model B & Model B+) to 512 MB. It does not include a built-in hard disk or solid-state drive, but it uses an SD card for booting and persistent storage, with the Model B+ using a MicroSD. The Foundation provides Debian and Arch Linux ARM distributions for download. Tools are available for Python as the main programming language, with support for BBC BASIC (via the RISC OS image or the Brandy Basic clone for Linux), C, Java.As of February 2014, about 2.5 million boards had been sold. The board is available online in India at a price of Rs. 3000.

The Idea to create the Raspberry Pi

The idea behind a tiny and affordable computer for kids came in 2006, when Eben Upton, Rob Mullins, Jack Lang and Alan Mycroft, based at the University of Cambridge's Computer Laboratory, became concerned about the year-on-year decline in the numbers and skills levels of the A Level students applying to read Computer Science. From a situation in the 1990s where most of the kids applying were coming to interview as experienced hobbyist programmers, the landscape in the 2000s was very different; a typical applicant might only have done a little web design. Something had changed the way kids were interacting with computers. A number of problems were identified: majority of curriculums with lessons on using Word and Excel, or writing webpages; the end of the dot-com boom; and the rise of the home PC and games console to replace the Amigas, BBC Micros, Spectrum ZX and Commodore 64 machines that people of an earlier generation learned to program on.

There isn't much any small group of people can do to address problems like an inadequate school curriculum or the end of a financial bubble. But those students felt that they could try to do something about the situation where computers had become so expensive and arcane that programming experimentation on them had to be forbidden by parents; and to find a platform that, like those old home computers, could boot into a programming environment. Thus came the idea of creating the device which kids could buy and learn programming or hardware on The Raspberry Pi.

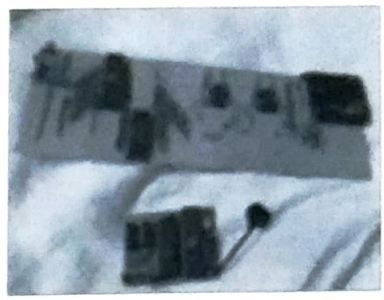
Initial Design Considerations

From 2006 to 2008 they created many designs and prototypes of what we now know as the Raspberry Pi. One of the earliest prototypes is shown below

These boards use an Atmel ATmega644 microcontroller clocked at 22.1MHz, and a 512K SRAM for data and frame buffer storage. By 2008, processors designed for mobile devices were becoming more

affordable, and powerful enough to provide excellent multimedia, a feature which would make the board desirable to kids who wouldn't initially be interested in a purely programming-oriented device. The project started to look very realisable and feasible. Eben (now a chip architect at Broadcom), Rob, Jack and Alan, teamed up with Pete Lomas, MD of hardware design and manufacture company Norcott Technologies, and David Braben, co-author of the BBC Micro game Elite, to form the Raspberry Pi Foundation to make it a reality. Three years later, the Raspberry Pi Model B entered mass production through licensed manufacture deals with Element 14/Premier Farnell and RS Electronics, and within two years it had sold over two million units!

Accessories



Raspberry Pi being a very cheap computer has attracted millions of users around the world. Thus it has a large user base. Many enthusiasts have created accessories and peripherals for the Raspberry Pi. This range from USB hubs, motor controllers to temperature sensors. There are some official accessories for the RPi as follows: Camera On 14 May 2013, the foundation and the distributors RS Components & Premier Farnell/Element 14 launched the Raspberry Pi camera board with a firmware update to support it. The Raspberry Pi camera board contains a 5 MPixel sensor, and connects via a ribbon cable to the CSI connector on the Raspberry Pi. In Raspbian support can be enabled by the installing or upgrading to the latest version of the OS and then running Raspi-config and selecting the camera option. The cost of the camera module is 20 EUR in Europe (9 September 2013), and supports 1080p, 720p, 640x480p video. The footprint dimensions are 25 mm x 20 mm x 9 mm.

Gertboard A Raspberry Pi Foundation sanctioned device designed for educational purposes, and expands the Raspberry Pi's GPIO pins to allow interface with and control of LEDs, switches, analog signals, sensors and other devices. It also includes an optional Arduino compatible controller to interface with the Pi. The Gertboard can be used to control motors, switches etc. for robotic projects.

USB Hub Although not an official accessory, it is a highly recommended accessory for the Pi. A powered USB Hub with 7 extra ports is available at almost all online stores. It is compulsory to use a USB Hub to connect external hard disks or other accessories that draw power from the USB ports, as the Pi cannot give power to them.

The NOOBS installer

The Raspberry Pi package only comes with the main board and nothing else. It does not come shipped with an operating system. Operating systems are loaded on a SD card from a computer and then the SD card is inserted in the Pi which becomes the primary boot device. Installing operating system can be easy for some enthusiasts, but for some beginners working with image files of operating systems can be difficult. So the Raspberry Pi foundation made a software called NOOBS New Out Of Box Software which eases the process of installing an operating system on the Pi. The NOOBS installer can be downloaded from the official website. A user only needs to connect a SD card with the computer and just run the setup file to install NOOBS on the SD card. Next, insert the card on the Raspberry Pi.

On booting the first time, the NOOBS interface is loaded and the user can select from a list of operating systems to install. It is much convenient to install the operating system this way. Also once the operating

system is installed on the card with the NOOBS installer, every time the Pi boots, a recovery mode provided by the NOOBS can be accessed by holding the shift key during boot. It also allows editing of the config.txt file for the operating system

Conclusion

Raspberry Pi is an innovative product. The sheer number of users and fan base support the fact that the device can see a great future ahead. The device can surely help anyone who really wants to lean electronics and computers. Increasing the processing power can surely help the product in the future. Also supplying a case and a proper instruction manual will improve the product. Also currently Windows operating systems are not compatible because of the ARM processor. If the processor is improved or any workaround is found to run Windows directly on the Raspberry Pi, then it can be a great step for the Pi. The Raspberry Pi is an amazing piece of hardware because of the combination of the features of a traditional computer and an embedded device.

Supporting computer operating systems like Linux and providing simple input/output lines i.e. the GPIO makes it perfect for controlling almost anything. Programming the GPIO is much easy and intuitive then an traditional FPGA or microprocessor. Finally it can be said that Raspberry Pi can be effectively used if its processing power is kept in mind. It can work as a personal computer but cannot replace it.

Digital Image Processing

Latha H. R
Asst. Professor

Nowadays, an image is playing an important role in everyone's life. People are fond of uploading and modifying images on web applications like WhatsApp. Medical Image processing has become life of man as many diseases are diagonized and treated using scanning techniques like Magnetic Resonance Imaging (MRI), Sonography, CT scan and X-rays.

Image processing is being used by common man in computer and smart phones. People edit, crop, enhance, accentuate, rotate, segment and vary the contrast of an image by playing with fingertips. Technically, Digital Image Processing involves series of activities to perform a process.

Digital Image Processing is defined as the process of analyzing and manipulating images using computer.

Here is brief information about the activities involved in processing an image.

Image Acquisition: Images are acquired using scanner or camera.

Image enhancement: It is the process of highlighting certain features of interest in an image. It involves contrast enhancement, edge enhancement, noise filtering, sharpening and magnifying.

Image Restoration: It is the process of reconstructing an image which is degraded or distorted.

Segmentation: It is the process of partitioning or subdividing an image into its constituent regions or objects.

Image compression: It is the process of reducing the amount of data needed to represent a digital image.

Image Representation: It is the process of characterizing the quantity represented by each pixel.

Digital Image Processing is applied in Televideo conferencing, Remote Sensing, Medical Imaging, Facsimile Transmission (FAX), Control of remote piloted vehicles in military and space.

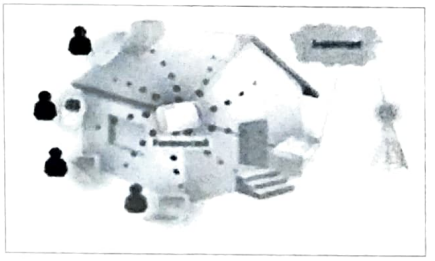
FEMTOCELL

Kathyayini .R
Asst. Professor

Mobile cellular and 3G networks normally often suffer from poor penetration and reception in certain areas, like indoors. This decreases the quality of voice and video communication and slows down high-speed services. A femtocell is a small device that is used to improve wireless coverage over a small area, mostly indoor. It is a small cellular base station, also called a wireless access point that connects to a broadband Internet connection and broadcasts it into radio waves in its area of coverage. As a result, mobile handsets can handle phone calls through the femtocell, via the broadband Internet connection. The name femtocell has the prefix 'femto', meaning a very small cell (area of network coverage). Small is rather a big word here, because femto denotes a division that is mathematically represented by 10 raised to the power of -15, or a quadrillionth. In plain English, it is one divided by a figure with fifteen zeros. Well, close to infinitely small. The first interest in femto cells started around 2002 when a group of engineers at Motorola were investigating possible new applications and methodologies that could be used with mobile communications. Further after 2yrs. In 2004 more attention was given to this technology and it was enhanced further. A femtocell is a small device that is used to improve wireless coverage over a small area, mostly indoor.

Third-generation cellular technology suffers from inadequate indoor-signal penetration, leading to poor coverage in the environment where consumers spend two-thirds of their time. Poor coverage diminishes the quality of voice and video applications, and slows down high-speed data services To keep customers satisfied, 3G carriers have increased capacity by building additional microcell sites. This strategy is becoming much less attractive. Site acquisition costs are exorbitant and continue to mount as space on viable towers and buildings fills up, landlords exact high rents and regulators impose onerous permit requirements. Public opposition to the building of large-scale base stations is increasingly common.

Problem-3G Coverage Issues



3G cells are smaller by virtue of supporting higher data rates

3G infrastructure needs to Proliferate

Femtocells are a vehicle for expanding 3G coverage and improving indoor coverage

Infrastructure must evolve to support millions of small cells

Third-generation cellular technology suffers from inadequate indoor-signal penetration, leading to poor coverage in the environment where consumers spend two-thirds of their time. Poor coverage diminishes the quality of voice and video applications, and slows down high-speed data services To keep customers satisfied, 3G carriers have increased capacity by building additional microcell sites. This strategy is becoming much less attractive. Site acquisition costs are exorbitant and continue to mount as space on viable towers and buildings fills up, landlords exact high rents and regulators impose onerous permit requirements. Public opposition to the building of large-scale base stations is increasingly common. Acquiring a site is only half the battle: Sophisticated base station equipment must then be purchased, installed, insured, operated and maintained. The net present value of a cell site in the U.K. is estimated to be $500,000. Carriers thus face a serious dilemma.

Well it's clear more and more consumers want to use mobile phones in the home, even when there's a fixed line available. Friends and family usually call a mobile number first, and it's where messages and contact lists are stored. However, it is often the case that providing full or even adequate mobile residential coverage is a significant challenge for operators. From a competitive perspective, femtocells are important because mobile operators need to seize residential minutes from fixed providers, and respond to emerging VoIP and WiFi offerings. Improving user experience in the home is also essential for reducing churn and gaining marketshare and new revenues. However, high deployment costs ensure that 3G networks rarely extend beyond the regulatory minimum.

Using femtocells solves these problems with a device that employs power and backhaul via the user's existing resources. It also enables capacity equivalent to a full 3G network sector at very low transmit powers, dramatically increasing battery life of existing phones, without needing to introduce WiFi enabled handsets.

* Indoor cellular coverage
* Can "talk" with any handset device Low cost backhauling
* More than 50% voice calls and more than 70% data traffic are originated indoor
* The 3Cs--coverage, churn and capacity--are stifling 3G adoption.
* Femtocells produce cost savings as well for the carriers. Consumer's home in essence becomes a cell site and there is no site acquisition costs involved.
* Electricity bills can be minimized.
* Unlimited mobile minutes for a fixed monthly fee.

Why Femtocell?

The 3Cs--coverage, churn and capacity--are stifling 3G adoption. Femtocells produce cost savings as well for the carriers. Consumer's home in essence becomes a cell site and there is no site acquisition costs involved. Electricity bills can be minimized. Unlimited mobile minutes for a fixed monthly fee. The call charges can also be reduced based on which subscriber we are using. Provides better coverage and also prolonged battery life compared to others. Portable and easy to install and use.

Concept of Femtocell

* Indoor cellular coverage
* Can "talk" with any device
* Low cost backhauling

Working of Femtocell

Femtocells from part of the mobile operation's network, although they are located at home or in the business. Most of the functionality of a completer 3G cell site has been miniaturized onto a chip, which look and operates like a WiFi access point, and is connected via broadband DSL back to the mobile operator's network. A femtocell is installed at home and connected to mains power and a standard broadband IP connection (typically DSL) through to the mobile operator's core network. Voice calls, text massages and data services are provided by the same systems. Femtocells operate at very low radiation power levels (50 milliwatts peak output during a call, much lower when idle), and typically have a range of 200 meters.

The signals do not travel through walls particularly well, but this is a benefit because it allows the frequency to be reused for other calls in nearby building. Where users walk outside or out of range, calls are automatically handed over to the external mobile network. Any standard 3G phone can be used on the femtocell if permitted by the mobile operator. Unlike WiFi access points, 3G Femotcells operate using licensed spectrum and thus must be supplied and operated in conjunction with the mobile operator Figure 1 shows working of femtocell. The battle is most likely to be between the modified 3G RAN (which some RAN Network vendors are keen to promote because it reuses their existing RNC products) versus UMA, which has new, custom designed systems architected to handle the much larger number of cells and IP connectivity.

SIP based solutions may be of interest where the user wants to bypass the network operator When registered handsets enter the range of a femtocell, handing over to the femtocell network is done automatically, such that calls are channeled through the broadband connection. One femtocell can support up to 5 mobile handsets. Femtocell technology, which is another block in the Fixed-Mobile Convergence concept, is still in its early days and it is receiving fierce competition from UMA and Wi-Fi technologies. For instance, one might ask why invest in femtocells when a cheap Wi-Fi router can do the work with a Wi-Fi supporting handset, given that handsets supporting Wi-Fi are becoming more common and are being shipped by hundreds of millions.

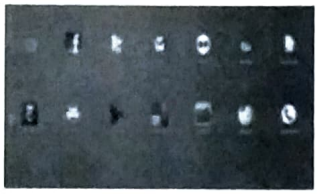
Advantages

* A Femtocell is used for compensating poor cellular coverage inside the homes in some places.
* A Femtocell can also give lower call charges while the caller calling from home, using the Femtocell as it directly connects to the core network through the internet.
* Some vendors are also planning to incorporate all the three features Wi-Fi, cellular and DSL into the same box to achieve maximum functionality.
* The voice calls/data calls through the Femtocells are encrypted and the cell phones automatically switches over to the Femtocells when they come in their range eg. in homes, where they are installed.
* Femtocell units can handle up to three or four simultaneous calls, from the same operator, depending on the model. They can operate with normal cellphones, without any enhancements.
* Femtocell units can help related cellular services like 3G by offering a better speed and data rate when inside buildings, where the coverage and data rate is generally lesser than outside.
* Generally, the cell towers are back-hauled by using lines with bandwidth of around 2 Mbps (in some places) and hence when newer services like 3G are introduced, these lines may not be sufficient and hence may require a upgrade. But with Femtocells, since the subscribers internet connection is used, there may not be an issue with existing infrastructure if Femtocells are adopted in a large scale.

Google Chrome Book

Balaji D.J
Asst. Professor

Chrome is the web browser used for browsing the internet in any computer. In the late 1990's when the browsers were designed they were computed for using the internet which was slow in that period. So some of the members at GOOGLE thought in the 2000's have to design a browser which could make internet computing faster as per the present day speeds in the internet. So they designed a browser called the GOOGLE CHROME. This was the current day's fastest browser. In the later on stages the developer's at Google wished to convert it to the operating system & the practical implementation lead to the discovery of chrome laptops which consisted of the Chrome Browser as the Operating system. The major thought behind developing this operating system is to reduce the time consumed when the power button is turned on by the user and facilitating the easiest way of computing which is done in the present day computers.



The Google Chrome OS is one of the latest and advanced operating system which was especially designed for Browser experience on your system, that's why this operating system is called as a web browser operating system. Now you don't need to install any type of application for Google Chrome which is used for web services and usage. So surely you don't require installing any of required applications or managing updates and don't need to take back up your data also in your system. In Google chrome OS. Your data will be stored in the cloud so you don't need to worry about antivirus services or software for your system or laptop. The Google Chrome OS is called as a Linux-based open source OS which was centered on Google Chrome browser. So if you are always using internet then the Chrome OS is perfectly good for you.

With Google Chrome, you are able to download anything in your system by easy and simple method and also you can save your all files and data by the use of Chrome browser. The all upcoming Chrome OS notebook or laptops are going to be released from Acer and Samsung. This laptop has simple cost compare to other laptop or systems. This laptop can easily load with Google Chrome in fraction of seconds which do not have hard disk with it. Google Chrome OS need only 16 GB for storage which is built in with non-volatile flash memory. The cost of chrome OS laptops cost has approximately $300 to $400.

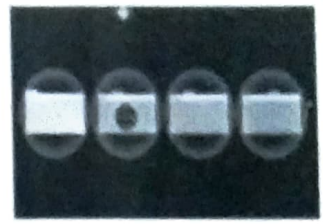
Concept of Sandbox

In March 2010, Google software security engineer Will Drewry discussed Chrome OS security. Drewry described Chrome OS as a "hardened" operating system featuring auto-updating & "Sandbox" features that will reduce malware exposure. He said that Chrome OS net books will be shipped with Trusted Platform Service and include both a "trusted boot path" and a physical switch under the battery compartment that actuates a developer mode. That mode drops some specialized security functions but increases developer flexibility. Drewry also emphasized that the open source nature of the operating system will contribute greatly to its security by allowing constant developer feedback.

The concept of sandbox is that if the user opens a site or an application that contains virus then the virus content will not be spread into other part of the system or the Operating system as it happens in the windows operating system. In windows if the file containing virus is run or executed by the user then the virus content will spread into the entire memory of the hard disk and spoils the functioning of the computer. So in order to prevent these phenomena that may damage the PC the concept of SANDBOX is introduced. The total documents, photos all can be stored in the cloud with the use of picassa web albums and Google docs.

These can be shared with respective friends by adding there email id to the share list or else can be set to

private for the use of them only by us. where ever we need access to our files or photos we can just login using the Gmail id and can have the access of data. So even if we lose our net book our data will be very safe in the server. This facility will help in the prevention of data theft. When we use the normal windows operating system we will be having the risk of data loss if it crashes or if it is lost the personal data or other will be accessed by some other user. So the use of notebooks will prevent this and keep the data safe in the server. Hacking of our personal data from the GOOGLE server is definitely impossible for any expert hacker. Sandbox is hardware backed security.



How does the sandbox work?

When the user opens more than 2 windows or tabs in the browser the chrome operating system treats them as 3 separate windows which will be as below. So even when multiple windows are opened they are all provided with equal security.

In this the virus will be immuned and will not be allowed to move into the other tab. The tab containing the virus is contained within the tab and then the tab is closed to remove the virus. So, it will be very good to prevent loss of data or crash of the computer when we use the chrome laptops.

Connectivity

No more missed emails. Get the web everywhere. With built-in Wi-Fi and 3G, Chrome books make it easy to get connected anytime and anywhere.* 3G models come with flexible internet plans, including a free introductory mobile plan, so you can keep working on the go. Coupled with long battery life, Chrome books enable you to be truly mobile - even without a place to stop and plug in. Chrome books also have Print built in, allowing you to print to any cloud-connected printer from anywhere.

All-day battery life means that you can connect anywhere and never miss a beat on the web. In the 1990's the connection of internet needed many devices and wires that need to be always connected at a place and then the access of internet is made possible. But now the technology has been improved in such a way that we can access the internet any where anytime with the use of Wi-Fi enabled zones the new 3G networks. In the most developed countries like Japan, America there will be many Wi-Fi zones and the 3G services which will be in very lane of the road we walk.

It takes time for INDIA to reach that stage. So using these net books with a good internet connection will be useful for having the access at Home, Office, Flight journey, Cafes and almost everywhere. Even if the network connection is lost or interrupted the user need not worry about the unsaved file. Because the data or the document on which the user is working will be instantly saved to the server memory for every 3secs. So this will create the backup copy ready for the user to continue where he stopped his work. This auto saving feature in the chrome laptops is a very good advantage to all the users.

There's a connections drop-down menu on the top right corner, which allows you to turn Wi-Fi on and off, switch networks, or turn on your 3G. To the right of that is a simple battery life indicator, and, unfortunately, right now there's no way to control some power saving features, like the automatic screen timeout. You need an internet connection for the very first setup and login, but you can login to an existing user while the device is offline.

Printing

Google cloud print is Google's proposed solution to help any application on any device to print on any printer. While the cloud provides virtually any connected device with information access, the task of "developing and maintaining print subsystems for every combination of hardware and operating system

from desktops to net books to mobile devices simply isn't feasible." However, the cloud service would entail installing a piece of software, called a Proxy, as part of Chrome OS. The proxy would register the printer with the service, manage the print jobs, provide the printer driver functionality, and give status alerts for each job.

Google Cloud Print works with all printers, but for the best printing experience we recommend that you use a cloud ready printer. You can connect a printer to your Google Cloud Print account. Google Cloud Print is a Google service to allow any application (web, desktop, Mobile) on any device in the network cloud to print to any printer without Google having to create and maintain printing subsystems for all the hardware combinations of client devices and printers, and without the users having to install drivers to the client.

Google Cloud Print integrates with the mobile versions of Gmail and Google Docs, allowing users to print emails and documents from their mobile devices Google Cloud Print is listed as a printer option in the Print Preview page of Google's web browser, Google chrome, in Chrome 16 and higher. "Legacy" printers (those without cloud printing capabilities) are supported through a "Cloud Print Connector" integrated with Google Chrome (9 and higher). Google introduced Cloud Print in April 2010, as a future solution for printing from Google chrome OS. Then they made the design document and a preliminary version of the source code available.

Applications can print through a web-based, common print dialog (web UI) or an API. The service then forward the job to the printer registered prior to the service. A new kind of printer will be able to directly connect to Google Cloud Print; current printers will have to connect through a Proxy server. Google Cloud Print reached beta stage on 25 January 2011. As current printers cannot accept input from a cloud service, Google chrome 9 contained a "Cloud Print Connector" the user will only be able to use Cloud Print while the connector is running. Printing through Google Cloud Print from any instance of Google Chrome was enabled in Google Chrome 16.As Google invented cloud print APPLE Company invented AIR Print which is used in APPLE products.

Conclusion

Finally these laptops have wide range of features which will make the use of internet very much interesting for the mankind. For the best way of experiencing the joy with the chrome books we need INTERNET.

No Internet? No joy. No Internet connection, then you cannot have access to do cloud-bound workparticularly using Google Chrome OSyou must be able to connect to the Net.

Slow Internet? Only a little joy. Doing even basic web surfing is a frustrating bit of business with a slow Internet connection, but trying to actually do some work in the slow lane? Cloud computing requires a fast connection, period.

Need more space? It'll cost you. You need a Google account to use Google Chrome OS, and the default account comes with 1 GB of storage for Google Docs. (Gmail offers 7 GB for messages, while Picasa Web Albums offers 1 GB for photos.) That's not much, and if you want more you have to buy it. For example, an extra 20 GB goes for $5 a year.

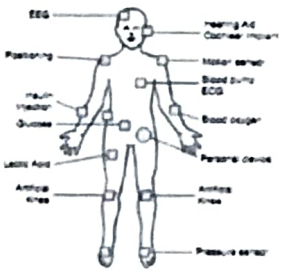
In the current generation of using computers INTERNET has become a compulsory add-on. So the people of our country have to learn many things which can be found on the internet. When the people are well educated and learn something good it will help in the development of our country as the very well developed countries. Awareness has to be created in the students to know about the future gadgets and the background process that takes place for the successful working of them. So for this improvement INTERNET connection is very much essential.

WIRELESS BODY AREA NETWORK

Asha H.E.
Asst. Professor

Future communication systems are driven by the concept of being connected any-where at any time. This is not limited to even in medical area. Wireless medical communications assisting peoples work and replacing wires in a hospital are the applying wireless communications in medical healthcare. The increasing use of wireless networks and the constant miniaturization of electrical devices has empowered the development of wireless body area networks(WBANs).In these networks various sensors are attached on clothing or on thebody or even implanted under the skin. These devices provide continuous healthmonitoring and real-time feedback to the user or medical personnel. The wire-less nature of the network and the wide variety of sensors offer numerous new,practical and innovative applications to improve healthcare and the quality of life.The sensor measures certain parameters of human body, either externally or internally. Examples include measuring the heartbeat, body temperature or recording a prolonged electrocardiogram (ECG).

Several sensors are placed in clothes, directly on the body or under the skin of a person and measure the temperature, blood pressure, heart rate, ECG, EEG, respiration rate, SpO2 levels etc. Next to sensing devices, the patient has actuators which act as drug delivery systems. The medicine can be delivered on predetermined moments, triggered by an external source or immediately when a sensor notices aproblem. The sensor monitors a sudden drop of glucose, a signal can be sent to the actuator inorder to start the injection of insulin. Consequently, the patients will experiences fewer nuisances from his disease. An example of a medical WBAN used forpatient monitoring.



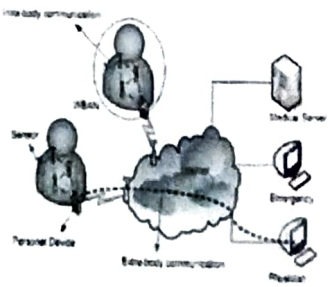
A WBAN can also be used to offer assistance to the disabled. For example, a paraplegic can be equipped with sensors determining the position of the legs or with sensors attached to the nerves. In addition, actuators positioned on the legs can stimulate the muscles. Interaction between the data from the sensors and the actuators makes it possible to restore the ability to move. Another example is aid for the visually impaired. An artificial retina, consisting of a matrix of microsensors, can be implanted into the eye beneath the surface of the retina. Theartificial retina translates the electrical impulses into neurological signals. Another area of application can be found in the domain of public safety where the WBAN can be used by firefighters, policemen or in a military environment. The WBAN monitors for example the level of toxics in the air and warns thefirefighters or soldiers if a life threatening level is detected. The introduction of a WBAN further enables to tune more effectively the training schedules of professional athletes.

Positioning WBANS

The protocols developed for WBANs can span from communication between the sensors on the body to communication from a body node to a data center connected to the internet. Thus communication in WBAN is divided into:

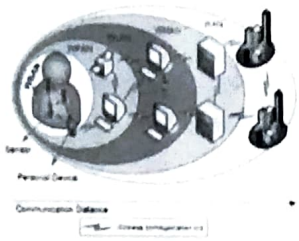
1. Intra body Communication
2. Extra body communication

Intra body communication controls the information handling on the body between the sensors or actuators and personal device. And extra body communication ensures communication between the personal devices and an external net-work . This segmentation is similar to the one defined in where a multi-tiered telemedicine system is presented. Tier 1 encompasses the intra-body communication, tier 2 the extra-body communication between the personal device and the Internet and tier 3 represents the extra-body communication from internet to the medical server. To date development has been mainly focused on building the system architecture and service platform for extra-body communication. Much of these implementations focus on the



repackaging of traditional sensors (e.g. ECG, heart rate) with existing wireless devices. They consider a very limited WBAN consisting of only a few sensors that are directly and wirelessly connected to a personal device. Further they use transceivers with a large and large antennas that are not adapted for use on a body.

In the figure 4.2, a WBAN is compared with other types of wireless networks, such as Wireless Personal (WPAN), Wireless Local(WLAN), Wireless Metropolitan(WMAN), and Wide area networks(WAN). A WBAN is operated close to human body and its communication range will be restricted to a few meters, with typical values around 1-2 meters. While a WBAN is devoted to interconnection of one persons wearable devices, a WPAN is a network in the environment around the person.



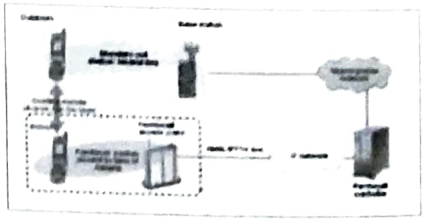
Physical Layer

The characteristics of the physical layer are different for a WBAN compared to a regular sensor network due to the proximity of the human body. Tests with TelosB motes (using the CC2420 transceiver) showed lack of communications between nodes located on the chest and nodes located on the back of the patient . This was accentuated when the transmit power was set to a minimum for energy savings reasons. when a person was sitting on a sofa, no communication was possible between the chest and the ankle. Better results were obtained when the antenna was placed 1 cm above the body. As the devices get smaller and more ubiquitous, a direct connection to the personal device will no longer be possible and more complex network topologies will be needed. The characteristics of the propagation of radio waves in a WBAN and other types of communication are as follows.

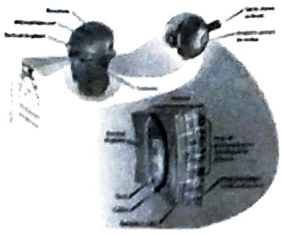
RF Communication

There exists several path loss along and inside the human body either using narrowband radio signals orUltra Wide Band (UWB). All of them came to the conclusion that the radio signals experience great losses. Generally in wireless networks, the transmitted power drops off is defined as $P = dn$ (5.1) where d represents the distance between the sender and the receiver and n the coefficient of the path loss. In free space, n has a value of 2. Other kinds of lossesinclude fading of signals due to multi-path propagation. The propagation can be classified according to where it takes place: inside the body or along the body.

The body acts as a communication channel where losses are mainly due to absorption of power in the tissue, which is dissipated as heat. As the tissue is lossy and mostly consists of water, the EM-waves are attenuated considerably before they reach the receiver. In order to determine the amount of power lost due to heat dissipation, a standard measure of how much power is absorbed in tissue is used: the specific absorption rate (SAR). It is concluded that the path loss is very high and that, compared to the free space propagation, an additional 30-35 dB at small distances is noticed. It is argued that considering energy consumption is not enough and that the tissue is sensitive to temperature increase.



Artificial Retina



WBANs can also assist blind people. Patients with no vision or limited vision can see at a reasonable level by using retina prosthesis chips implanted within a human eye, as shown in Figure

A WBAN is expected to be a very useful technology with potential to offer a wide range of benefits to patients, medical personnel and society through continuous monitoring and early detection of possible problems. With the current technological evolution, sensors and radios will soon be applied as skin patches. Doing so, the sensors will seamlessly be integrated in a WBAN. Step by step, these evolutions will bring us closer to a fully operational WBAN that acts as an enabler for improving the Quality of Life.

EXPLORICA

Department Organaises IT Fest "Explorica"
to identify the hidden talents of the students in
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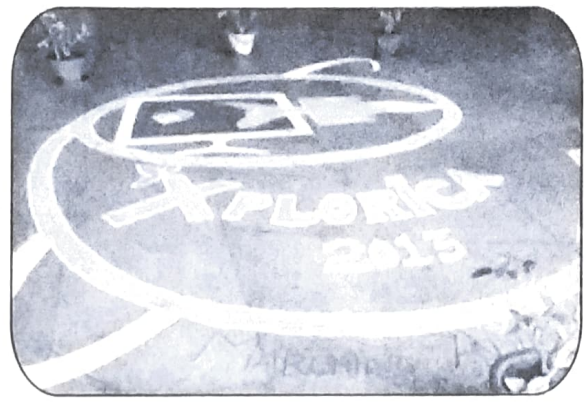
IT knowledge through working models ,technical topics
PPT presentation, and participate in various IT related activities.



EXPLORICA (2012-13)

Dr. Muralidhar, HOD of Computer Science Department,
Bangalore University inaugurated IT Fest in 2013

EXPLORICA(2013-14)

Dr. Arvind Gambir,
Director Pearsan and Edurite and
NASA scientist
inaugurated IT Fest in 2014

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"The routs of education are bitter,
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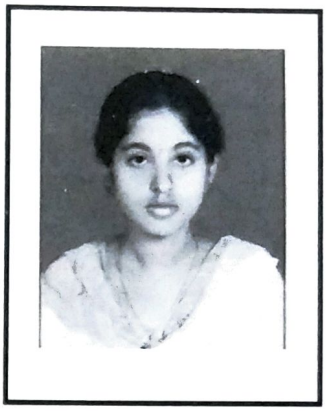
-aristotle

Student Achievements

BCA Toppers

Poornima .v
81.56%
2010-13



Manjushree .s
84.56%
2011-14

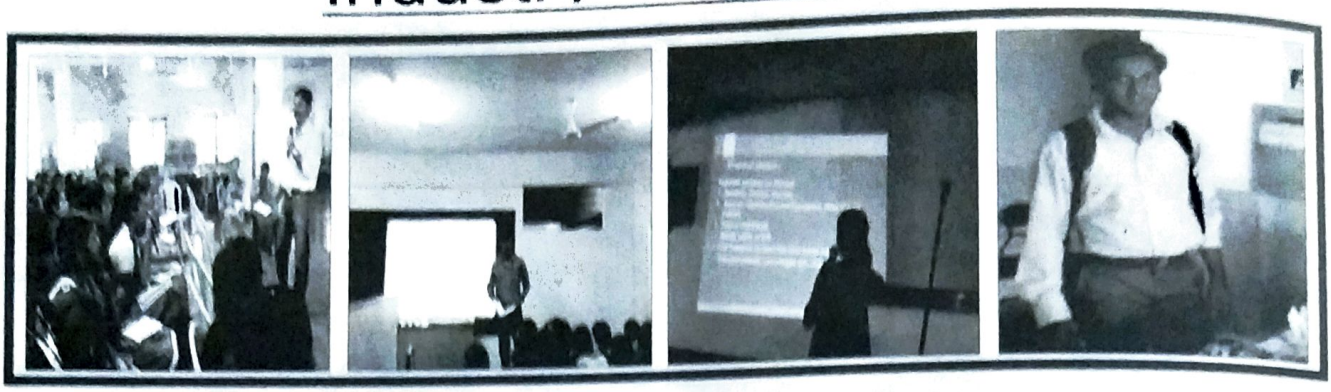
Students Achievements

Sl No	Name	Year	NCC Camp attended/ College Organaised	Certificate/ Price
01.	Amrutha	2010	Combained annual training Tumkur	B
02.	Asha	2010	Combained annual training Tumkur	B
03.	Sneha	2010	Combained annual training at Tumkur	B
04.	Amrutha	2011	National level trekking camp at Niligiri	B
05.	Asha	2011	National level trekking camp at Niligiri	B
06.	Sneha	2011	National level trekking camp at Niligiri	B
07.	Nandini	2011	National level trekking camp at Niligiri	B
08.	Bhavyashree	2013	CATC Doddabalapur	Perceiving
09.	Shilpa	2013	CATC Doddabalapur	Perceiving
10.	Triveni	2014	CATC Tumkur	Perceiving
11.	Chaitra	2014	CATC Tumkur	Perceiving
12.	Meenakshi	2014	CATC Tumkur	Perceiving
13.	Prathimashree	2014	CATC Tumkur	Perceiving
14.	Chaitra. S	2014	St.claret degree college	1st prize
15.	Shwetha Kumari	2014	St.claret degree college	3rd prize
16.	Nisha M.M.	2014	St.claret degree college	1st prize
17.	Manasa N	2014	St.claret degree college	1st prize
18.	Rojitha M.R.	2014	St.claret degree college	1st prize
19.	Nisha B. Negi	2014	St.claret degree college	1st prize
20.	Mamatha A.G.	2014	St.claret degree college	1st prize
21.	Bhavya Y.C	2014	St.claret degree college	1st prize
22.	Ramya N.	2014	KLE societies	1st prize

PLACEMENT NEWS

SL. NO.	STUDENT NAME	COMPANY NAME	PLACE
1	Sneha G.	Capgemini India	Pune
2	Shilpa P.V.	Bosch	Bangalore
3	Amrutha	Cross domain	Bangalore
4	Nayana	Accenture	Channi
5	Deepushree	Cross domain	Bangalore
6	Kusuma	Infosys	Bangalore
7	Suma	Concentrix	Bangalore
8	Manjula V.V.	Accenture	Bangalore
9	Yamana Kadaka	Accenture	Bangalore
10	Shwetha T.	Accenture	Bangalore
11	Lavanya D.V.	Accenture	Bangalore
12	Manjushree S.	First Advantage	Bangalore

Industry Interaction



Sl.no	Guest Lecturer/Semenor	Date Of Event	Name of the resource person
1.	TechTalk Series-1 : J2EE	20/01/2014	Mr. Lohith, Glovish Technology
2.	Work shop on interview skills	19/02/2014	X-plore consultancy services
3.	TechTalk Series-2 :Android	26/7/2014	Sadhanandha Rudhrayya Java consultancy
4.	Job oriented training	28/7/2014	Mr. Akhilesh Aspeiron info solution
5.	TechTalk Series-3 : Software Testing	12/08/2014	Gopal Lingsur, Test Practice Solution
6.	TechTalk Series-4 :Latest technologies in the field of computer science	11/08/2014	Mr. Vinayak System Domain
7.	Seminor on how to present & publish paper	10/09/2014	Mrs. Mousmi paul Lect. Computer science Soundarya college
8.	Discussion on job oriented courses & modules	16/09/2014	Mr. Akhilesh Aspeiron Info solution

Value Added Course

Department has orgnized certificate courses for the student

* **.Net by TechMantra for 5th and 6th sem BCAstudents in 2013**
* **Oracle by Glovish Technology for 4th sem BCA students in 2014**
* **J2EE by Glovish Technology for 6th sem BCA students in 2014**
* **Software Testing by Test Practice Solution for 6th sem BCA students in 2015**

BLACKBERRY TECHNOLOGY

Madushree.M
II sem BCA

Not long after PDA's become internet ready, a company named Research in Motion [RIM] developed a new device, and more importantly a new ground breaking technology, that would change the world of mobile internet access forever.

PDA devices had cellphone and internet capabilities integrated into them long before the Blackberry become household name.

Push technology compare to the pda "pull" method

There are different configurations of the Blackberry service, the most common enterprise setup is with the Blackberry Enterprise Server (BES). The entire purpose of the server is to keep all Blackberry users instantly updated the moment any "data event" occurs. Instead of residing on your mobile device the software is installed on the blackberry enterprises server.

What is so special about blackberry technolgy?

There are new "sync" options being offered every day that can help you to keep your internet-enabled Windows mobile device instantly up to date. However the subsequent lawsuit with NTP, that claimed RIM used its technology already in use for PDA's was only the first indication that while the technology is certainly effective and valuable it is not rocket science.

BLUE BRAIN

Divyashree.M
II sem BCA

It is planned that the human brain project and blue brian project (both from the ecole polytechnic Federale de lausanne) will move to the campus biotech in 2014.

The Blue Brian project is an attempt to create a synthetic brain by reverse-engineering the mammalian brain down to the molecular level. The aim of the project, founded in May 2005 by the Brain and Mind Institute of the Ecolo Polytechnique Federale de Lausanne (EPFL) in Switzerland, is to study the brain's architectural and functional principles.

The project is headed by the founding director Henry Markram and co-directed Felix Schurmann and Sean hill. Using a Blue Gene supercomputer running Michael Hines's NEURON software, the simulation does not consist simply of an artificial neural network, but involves a biologically realistic model neurons. It is hoped that it will eventually shed light on the nature of consciousness.

Program of blue brain project:

In November 2007, the project reported the end of the 1st phase, delivering a data-driven process for creating, validating, and researching the neocortical column. The project is currently busying itself with the publishing of initial result in scientific literature and pressuring two repeated goals.

BLUETOOTH

Kavya .K.R
II sem BCA

Bluetooth is a wireless technology standard for exchanging data over short distances from fixed and mobile devices building personal area networks (PANS). Invented by telecom vendor Ericsson in 1994, it was originally conceived as a wireless alternative to RS-232 data cables. It can connect several devices, overcoming problems of synchronization.

Bluetooth is managed by the Bluetooth Special Interest Group (SIG), which has more than 20,000 member companies in the areas of telecommunication, computing networking, and consumer electronics. Bluetooth was standardized as IEEE 802.15.1, but the standard is no longer maintained. The SIG oversees the development of the specification, manages the qualification program, and protects the trademarks.

The word "BLUETOOTH" is an anglicized version of the Scandinavian *Blåtand/Blåtann*, the epithet of the tentheentury king Herald Bluetooth who united dissonant Danish tribes into a single kingdom and according to legend, introduced Christianity as well. The idea of this name was proposed in 1997 by Jim Kardach who developed a system that would allow mobile phones to communicate with computers.

Bluetooth operates in the range of 2400 -2483.5 Mhz. This is in the globally unlicensed industrial, scientific and medical (ISM) 2.4 GHz short-range radio frequency band. Bluetooth uses a radio technology called frequency-hopping spread spectrum. The transmitted data are divided into packets and each packet is transmitted on one of the 79 designated Bluetooth channels. Each channel has a bandwidth of 1 Mhz. Bluetooth 4.0 uses 2 Mhz spacing, which allows for 40 channels.

Bluetooth is a packetbased protocol with a masterslave structure. A master Bluetooth device can communicate with a maximum of seven devices in a piconet.

BROWSER SECURITY

Pavitra B.R.
VI sem BCA

Browser security is the applicat[illegible] security to web browsers in order to protect networked data and computer systems from breaches of privacy or malware.

Web browsers can be breached in one or more of the following ways:

- Operating system is breached and malware is reading/modifying the browser memory space in privilege mode.
- Operating system has a malware running as a background process, which is reading/modifying the browser memory space in privilege mode.
- Main browser executable can be hacked.
- Browser components may be hacked.
- Browser plugins can be hacked.
- Browser network communications could be intercepted outside the machine.

Here are five ways you can enhance the security of your browser:

1. Configure your browser's security and privacy settings

Review your browser's privacy and security settings to make sure you're comfortable with what's checked or unchecked. For example, look to see if your browser is blocking third-party cookies, which can enable advertisers to track your online activities.

2. Keep your browser updated

Frequently, browser updates are released to plug recently discovered security holes. So it's important to always keep any browsers you use updated.

3. Sign up for alerts

Consider setting up Google alerts for your browser to stay current on any emerging security issues. If you use Internet Explorer, for example, create a Google Alert using the keywords Internet Explorer security, or something similar.

4. Be cautious when installing plug-ins

Plug-ins and extensions can sometimes put you at risk. For instance, earlier this year, it was discovered that some Chrome extensions can change service or ownership without notification to user.

5. Install security plug-ins

The majority of plug-ins and extensions are safe, however, and some can help bolster your browser's security.

COMPUTER CLUSTER

Usha.K
VI sem BCA

A **computer cluster** consists of a set of loosely or tightly connected computers that work together so that, in many respects, they can be viewed as a single system. Unlike grid computers, computer clusters have each node set to perform the same task, controlled and scheduled by software.

The components of a cluster are usually connected to each other through fast local area networks ("LAN"), with each *node* (computer used as a server) running its own instance of an operating system. In most circumstances, all of the nodes use the same hardware and the same operating system, although some setups (i.e. using Open Source Cluster Application Resources (OSCAR)), different operating systems can be used on each computer, and/or different hardware.

Benefits

Clusters are primarily designed with performance in mind, but installations are based on many other factors; fault tolerance (*the ability for a system to continue working with a malfunctioning node*) also allows for simpler scalability, and in high performance situations, low frequency of maintenance routines, resource consolidation and centralized management.

Design and Configuration

A typical Beowulf configuration

One of the issues in designing a cluster is how tightly coupled the individual nodes may be. For instance, a single computer job may require frequent communication among nodes: this implies that the cluster shares a dedicated network, is densely located, and probably has homogeneous nodes. The other extreme is where a computer job uses one or few nodes, and needs little or no inter-node communication, approaching grid computing.

In a Beowulf system, the application programs never see the computational nodes (also called slave computers) but only interact with the "Master" which is a specific computer handling the scheduling and management of the slaves. In a typical implementation the Master has two network interfaces, one that communicates with the private Beowulf network for the slaves, the other for the general purpose network of the organization. The slave computers typically have their own version of the same operating system, and local memory and disk space. However, the private slave network may also have a large and shared file server that stores global persistent data, accessed by the slaves as needed.

Due to the increasing computing power of each generation of game consoles, a novel use has emerged where they are repurposed into High-performance computing (HPC) clusters. Some examples of game console clusters are Sony PlayStation clusters and Microsoft Xbox clusters.

Data sharing and communication

Data sharing

A NEC Nehalem cluster

As the computer clusters were appearing during the 1980s, so were supercomputers. One of the elements that distinguished the three classes at that time was that the early supercomputers relied on shared memory. To date clusters do not typically use physically shared memory, while many supercomputer architectures have also abandoned it.

However, the use of a clustered file system is essential in modern computer clusters. Examples include the IBM General Parallel File System, Microsoft's Cluster Shared Volumes or the Oracle Cluster File System.

Cluster management

One of the challenges in the use of a computer cluster is the cost of administrating it which can at times be as high as the cost of administrating N independent machines, if the cluster has N nodes. In some cases this provides an advantage to shared memory architectures with lower administration costs. This has also made virtual machines popular, due to the ease of administration.

Some implementations

The GNU/Linux world supports various cluster software; for application clustering, there is distcc, and MPICH. Linux Virtual Server, Linux-HA - director-based clusters that allow incoming requests for services to be distributed across multiple cluster nodes. MOSIX, LinuxPMI, Kerrighed, OpenSSI are full-blown clusters integrated into the kernel that provide for automatic process migration among homogeneous nodes. OpenSSI, openMosix and Kerrighed are single-system image implementations.

Microsoft Windows computer cluster Server 2003 based on the Windows Server platform provides pieces for High Performance Computing like the Job Scheduler, MSMPI library and management tools.

gLite is a set of middleware technologies created by the Enabling Grids for E-sciencE (EGEE) project.

slurm is also used to schedule and manage some of the largest supercomputer clusters.

COMPUTER HACKING

Shwetha Kumari D
VI sem BCA

term's original sense, a hacker is a computer enthusiast who enjoys and is proficient at computer programming. However, the term hacker is popularly applied to a person who gains unauthorized access to computer systems, particularly with some malicious intent. A true hacker considers this an offensive misuse of the term. The articles below provide information on ethical and unethical hacking.

Computer hacking is a marvelous piece of art, practiced by prodigies in the field of computers. Read on to know what it actually is.

Computer hacking is basically an alteration of hardware or software, in order to accomplish a goal which is outside the creator's original purpose. A standalone machine is less vulnerable to hacking, as compared to one on a private or public network. In case of standalone machines, it is necessary to get the hands on the machine, whereas, in case of machines on a network, unauthorized access can be gained without actually handling the machine.

Computer hacking invariably involves some degree of infringement on the privacy of others, breaching the network security, and thus causing damage to confidential files, web pages, or software. It may also involve downloading or altering files through unauthorized access, and the impact resulting from such activities will vary from being simply inquisitive to being illegal. In most cases, ethical hacking helps to prevent identity theft and other serious crimes.

Types of Hackers:

Depending on the domain of their work, there are basically three types of hackers. A **white hat hacker** is the one who breaks security for non-malicious purposes. The second category includes the **black hat hackers**, who generally subvert computer security without authorization, with the help of viruses and various other hacking tools. These hackers use technology for vandalism, credit card fraud, or identity theft. The third category includes **gray hat hackers**, whose domain of work lies mid-way between black hat and white hat hackers. They are of ambiguous ethics and work on the borderline of legality.

Skills Required for Hackers:

The best way to learn hacking is to master programming languages like Python, C/C++, Java, Perl, and LISP, because these particular languages teach the programmer a very different approach towards problem solving and algorithms. This in turn provides a stronger hold on the machine and its components. It is important to learn the algorithms and working of computers in general. It is also necessary to gain knowledge about the operating system and the various important files which are used by it.

India well only five hackers

1. Ankit fadia
2. Rahul Dutt Awasthy
3. Sunny Vaghela
4.Ashik aka Hungry -hacker
5. Pavan Kushwaha

World's Top 5 Most Famous Hackers

1. Kevin David Mitnick
2. Gary McKinnon
3. Jonathan James
4. Adrian Lamo
5. Stephen Gary Wozniak

CYBER SECURITY

Pramodini
IV sem BCA

Cyber security, also referred to as information technology security, focuses on protecting computers, networks, programs and data from unintended or unauthorized access, change or destruction.

Importance of Cyber Security

Governments, military, corporations, financial institutions, hospitals and other businesses collect, process and store a great deal of confidential information on computers and transmit that data across networks to other computers. With the growing volume and sophistication of cyber attacks, ongoing attention is required to protect sensitive business and personal information, as well as safeguard national security.

During a Senate hearing in March 2013, the nation's top intelligence officials warned that cyber attacks and digital spying are the top threat to national security, eclipsing terrorism.

E-PAPER TECHNOLOGY

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Electronic paper, e-paper and electronic ink are display technologies that mimic the appearance of ordinary ink on paper. Unlike conventional backlit flat panel displays that emit light, electronic paper displays reflect light like paper. This may make them more comfortable to read and provide a wide viewing angle than most light-emitting displays. The contrast ratio in electronic displays available as of 2008 approaches newspaper and newly developed displays are slightly better. An ideal e-paper display can be read in direct sunlight without the image appearing to fade. Flexible electronic paper uses plastic substrates and plastic electronics for the display backplane. Electronic paper was first developed in the 1970's by Nick Sheridon at Xerox's Palo Alto Research center.

E-paper technologies:

- The first electronic paper called Gyricon consisted of polyethylene spheres between 75 and 106 micrometers across. Each sphere is a Janus particle composed of negatively charged black plastic on one side and positively charged white plastic on the other.
- In the simplest implementation of an Electrophoretic Display, titanium dioxide particles approximately one micrometer in diameter are dispersed in hydrocarbon oil. A dark-colored dye is also added to the oil, along with surfactants and charging agents that cause the particles to take on an electric charge. An Electrophoretic display forms images by rearranging charged pigment particles with an applied electric field.
- Electro-wetting Display (EWD) is based on controlling the shape of a confined water/oil interface by an applied voltage. Electronic paper technologies have a very low refresh rate compared to other low-power display technologies, such as LCD.

FIVE PEN PC TECHNOLOGY

Introduction:

P-ISM ("Pen-style Personal Networking Gadget Packages) Connected with a wireless technology.

This 'pen sort of instrument' produces both the monitor as well as the keyboard on any flat surface from where we can carry out functions we would normally do our desktop computer.

P-1sm includes 5 function:

1. CPU Pen:
- Dual core processor is used
- Works with windows operating system.
- It is also known as computing engine
2. COMMUNICATION PEN:
- Wireless Bluetooth technology
- Connected to internet through cellular phone function.
- Uses Wi-Fi technology
- Exchange information with wireless connection
3. Display Projector:
- Monitor is LED projector.
- Resolution capacity is 1024*768 approx.
- Size is A4
4. Virtual keyboard:
- Virtual laser keyboard is a new gadget.
- It emits laser on desk
5. Digital camera:
- It is useful in video recording, video conferencing simply as a web camera.
- Connected with other device.
- 360 degree visual communication device.
6. Battery:
- Batteries are small in size and work for a long time.
- It come with a battery life of 6 days
- For normal use it can be used for 2 works.

GREEN COMPUTING

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Green computing is the use of computers and related resources in an environmentally responsible manner. This involves the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as proper disposal of electronic waste.

To promote green computing concepts at all possible levels, the following four complementary approaches are employed:

- **Green use**: Minimizing the electricity consumption of computers and their peripheral devices and using them in an eco-friendly manner
- **Green disposal**: Re-purposing an existing computer or appropriately disposing of, or recycling, unwanted electronic equipment
- **Green design**: Designing energy-efficient computers, servers, printers, projectors and other digital devices
- **Green manufacturing**: Minimizing waste during the manufacturing of computers and other subsystems to reduce the environmental impact of these activities

Government regulatory authorities also actively work to promote green computing concepts by introducing several voluntary programs and regulations for their enforcement.

The goals of green computing are similar to green chemistry: reduce the use of hazardous materials, maximize energy efficiency during the product's lifetime, and promote the recyclability or biodegradability of defunct products and factory waste. Many corporate IT departments have green computing initiatives to reduce the environmental impact of their IT operations.

I CLOUD

Pushpalatha .U
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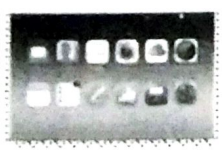

This article is about the cloud service operated by Apple Inc. For the service previously named iCloud by Xcerion.

iCloud is a cloud storage and cloud computing service from Apple Inc. launched on October 12, 2011. As of July 2013, the service had 320 million users. The service provides its users with means to store data such as documents, photos, and music on remote servers for download to iOS, Macintosh or Windows devices, to share and send data to other users, and to manage their Apple devices if lost or stolen.

The service also provides the means to wirelessly back up iOS devices directly to iCloud, instead of being reliant on manual backups to a host Mac or Windows computer using iTunes. Service users are also able to share photos, music, and games instantly by linking accounts via AirDrop wireless.

It replaced Apple's MobileMe service, acting as a data syncing center for email, contacts, calendars, bookmarks, notes, reminders (to-do lists), iWork documents, photos and other data.

One of Apple's iCloud data centers is located in Maiden, North Carolina, US.

Cloud is the latest branding of Apple's cloud computing services. It has previously been branded as iTools in 2000, Mac in 2002, and MobileMe in 2008. iCloud was announced on June 6, 2011, at the 2011 Apple Worldwide Developers Conference (WWDC). Apple announced that MobileMe would be discontinued after June 30, 2012, with anyone who had an account before the unveiling of iCloud having their MobileMe service extended to that date, free of charge. iCloud had 20 million users in less than a week after launch. The iCloud.com domain and registered trademark were bought from a Swedish company called Xcerion, who rebranded their service to CloudMe. CloudMe still controls major domains like iCloud.de, iCloud.fr and iCloud.

IMPACT OF INFORMATION TECHNOLOGY ON SOCIETY

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The definition is of "information technology". Information technology is the technology used to store, manipulate, distribute or create information. The type of information or data is not important to this definition. The technology is any mechanism capable of processing this data. A development in information technology is any improvement to the mechanism used to "store, manipulate, distribute or create information". This report aims to provide a brief summary of these developments. This will be achieved by highlighting only those developments that have influenced "general society". The identification of significant developments begins chronologically in 1969.

The question of a change in the continuity of social attitudes or customs is a question that by itself could occupy an entire report. Social attitudes have changed with the effect that citizen of a society now expect the various elements of that society to be better informed than previously. They also expect to be able to access more information about a specific product,

service or organization so that they can make informed decisions with regard to their interactions with that entity.

Information technology has also had a major impact on the defence capabilities of governments. This covers both a government's capabilities towage war and their intelligence gathering capability. Advances in weapons technology and weapons design has increased the effectiveness of various governments armed forces. For example it would has been impossible to design aeroplanes such as the B2 Bomber if it were not for the advances made in information technology. The B2 bomber relies on a "continuous curvature" design to minimize radar signature. It would have been impossible to design or build this machine without the development of computer modeling techniques.

Information technology has also had a major impact on a government's intelligence agencies. Encryption of sensitive information has enabled government's to obtain added security. However attempting to decryption information is also a major area of work for those employed by the government.

The advances in information technology have heavily influenced commercial businesses in several ways. The most important role of information technology in a commercial business however is to provide a commercial advantage. Advances such as computer aided design, relational database technologies, spreadsheets, and word processing software all provide a commercial benefit to the business, as does automation of manufacturing process.

It has been shown that the developments in information technology have had an impact on general societies perception of information. Without going into specific detail about individual situations, it has been shown that impact has been fourfold: storage, manipulation, distribution and creation.

INTERESTING FACTS ON COMPUTER

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1. new computer viruses are released every month.
2. The first computer mouse constructed in 1964, was made out of wood (by Doug Englebart).
3. The average human being blinks 20 times a minute-but only 7 times a minute when using a computer.
4. The first electro-mechanical computer was developed in 1939.
5. By the end of 2012 there was 17 billion devices connected to internet.
6. 5 out of 6 internet pages are porn related.
7. Over 1 million domain names are registered every month.
8. With its 800 million internet users, face book would be the third largest country in the world.
9. The first hard drive was created in 1979 and could hold 5MB of data.
10. The Nvidia Ge Force 6800 ultra video card contains 222 million transistors.
11. 20% of online viruses are released by organized crime units.
12. The engineers who developed the IBM PC were known as"The Dirty Dozen".
13. Email was invented before the web, which means that it has been around longer.
14. The home of Bill gates was designed with the use of a Macintosh computer.
15. On a regular work day for a typist, their fingers travel at an average rate of about 12.6 miles per day.
16. The state of Alaska is the only state whose letters can be typed in a straight row of key board letters.
17. You tube .com was registered February 14th, 2005.
18. Computer programming is an occupation that is growing faster than any other.
19. If you are able to find a way to hack into Face book then they will pay you up to, $500.

M-COMMERCE

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Introduction:

The phrase mobile commerce was originally coined in 1977 by Kevin Duffy at the launch of the global mobile commerce capabilities directly into the consumer hand. Anywhere via wireless technology. Many chose to think a mobile commerce as a meaning a retail outlet in your consumer packet.

Mobile ATM:

With the introduction of mobile many service for the unbanked operator are now looking for efficient ways to roll out and manage distribution networks that can support cash in and cash out.

Mobile Teckting:

Tickets can be sent to mobile phones using a variety of technologies users are then able to use their tickets immediately by presenting their mobile phones at then ticket check most number of the users are know moving towards this technology. Best example would be TRC TC where tickets comes as sms to user.

Mobile Vouchers,Coupons And Loyalty Cards:

Mobile ticketing technology can also be used for the distribution of vouchers, coupons and loyalty cards

location based services.

m-commerce transaction knowing the location of the users allows for location based services.

Local discount offers

Local whether

Ticketing and monitoring of peoples

Information Services:

information services includes :

News

Stock quotes

Sports scours

Financial records

Traffic reporting

Mobile Banking:

Banks and other financial institution use m-commerce to allow their customers to access account information and transaction. Such as purchasing stock remitting money.

Mobile Browsing:

Using a mobile browsing a world wide web browser on a mobile device. Customers can shop online without having to be at their personal computer.

MOBILE PHONE JAMMER

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Mobile jammer is used to prevent mobile phones from receiving or transmitting signals with the base stations. Mobile jammers effectively disable mobile phones within the defined regulated zones without causing any interference to other communication means. Mobile jammers can be used in practically any location, but are used in places where a phone call would be particularly disruptive like Temples, Libraries, Hospitals, Cinema halls, schools & colleges etc.

Mobile Jammers were originally developed for law enforcement and the military to interrupt communications by criminals and terrorists to foil the use of certain remotely detonated explosives. The civilian applications were apparent with growing public resentment over usage of mobile phones in public areas on the rise & reckless invasion of privacy. Over time many companies originally contracted to design mobile jammers for government switched over to sell these devices to private entities.

As with other radio jamming, mobile jammers block mobile phone use by sending out radio waves along the same frequencies that mobile phones use. This causes enough interference with the communication between mobile phones and communicating towers to render the phones unusable. Upon activating mobile jammers, all mobile phones will indicate "NO NETWORK". Incoming calls are blocked as if the mobile phone were off. When the mobile jammers are turned off, all mobile phones will automatically re-establish communications and provide full service. Mobile jammer 's effect can vary widely based on factors such as proximity to towers, indoor and outdoor settings, presence of buildings and landscape, even temperature and humidity play a role.

The choice of mobile jammers are based on the required range starting with the personal pocket mobile jammer that can be carried along with you to ensure undisrupted meeting with your client or a personal portable mobile jammer for your room or medium power mobile jammer or high power mobile jammer for your organisation to very high power military jammers to jam a large campuses.

SMART CLASS

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SMART CLASS is a solution which is designed to help teachers in meeting with new challenges and developing student's ability and performance.

Smart class helps the teachers to access multimedia content and information ,that can be used for teaching students more effectively. It helps the teachers in expressing their views and ensures teacher that every student is understanding and learning.

->Why smart class has become so effective in education system?

Some students and teachers have problems with chalk dust and tend to suffer from allergic reactions. The smart-boards saves from such distress and won't cause any health hazards. Smart boards are smarter when it comes to field trips which is impossible with textbooks. For example a field trip to deserts of Sahara or Amazon forests becomes easy with visuals in the smart-boards. These visuals are definitely more effective and attractive than the descriptions given in the textbook.

->How is it installed?

Smart class is available for teachers and students on the web. It can also be installed on local server for faster access.

A smart classroom contains an instructor station equipped with computer with internet facility also containing CD/DVD along with audio and visual equipments like speakers and LCD projector.

Advantage:

SMART CLASS use all interactive modules like videos and presentations and these visually attractive methods of teaching becomes appealing to students who are already struggling with traditional method of teaching in a classroom. In fact smart class are almost like watching movies as sometimes animated visuals are used to teach a point. This kind of visual is both eye catching and young students can easily relate with them. This is because audio-visual senses of students are targeted and it helps them to store information fast and more effectively. Another advantage is that earlier more time was wasted in drawing or preparing diagrams on board.

Disadvantage:

The negative side of this kind of smart education is that sometimes the technical faults that arise during a class lecture is a common concern among those lobbying against smart technologies in classroom education. Then another fact is the cost which prevents the schools to adopt this technology. With smart education comes the problem of high cost of education.

STORAGE AREA NETWORK

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A storage area network (SAN) is a dedicated network that provides access to consolidated, block level data storage. SANs are primarily used to enhance storage devices, such as disk arrays, tape libraries, and optical jukeboxes, accessible to servers so that the devices appear like locally attached devices to the operating system. A SAN typically has its own network of storage devices that are generally not accessible through the local area network (LAN) by other devices. The cost and complexity of SANs dropped in the early 2000s to levels allowing wider adoption across both enterprise and small to medium sized business environments.

A SAN does not provide file abstraction, only block-level operations. However, file systems built on top of SANs do provide file-level access, and are known as SAN file systems or shared disk file systems.

Storage

Historically, data centers first created "islands" of SCSI disk arrays as direct-attached storage (DAS), each dedicated to an application, and visible as a number of "virtual hard drives" (i.e. LUNs). Essentially, a SAN consolidates such storage islands together using a high-speed network.

Operating systems maintain their own file systems on their own dedicated, non-shared LUNs, as though they were local to themselves. If multiple systems were simply to attempt to share a LUN, these would interfere with each other and quickly corrupt the data. Any planned sharing of data on different computers within a LUN requires advanced solutions, such as SAN file systems or clustered computing.

Despite such issues, SANs help to increase storage capacity utilization, since multiple servers consolidate their private storage space onto the disk arrays.

Common uses of a SAN include provision of transitionally accessed data that require high-speed block-level access to the hard drives such as email servers, databases, and high usage file servers.

SAN compared to NAS

Network-attached storage (NAS) was designed before the emergence of SAN as a solution to the limitations of the traditionally used direct-attached storage (DAS), in which individual storage devices such as disk drives are connected directly to each individual computer and not shared. In both a NAS and SAN solution the various computers in a network, such as individual users' desktop computers and dedicated servers running applications ("application servers"), can share a more centralized collection of storage devices via a network connection through the LAN.

Concentrating the storage on one or more NAS servers or in a SAN instead of placing storage devices on each application server allows application server configurations to be optimized for running their applications instead of also storing all the related data and moves the storage management task to the NAS or SAN system. Both NAS and SAN have the potential to reduce the amount of excess storage that must be purchased and provisioned as spare space. In a DAS-only architecture, each computer must be provisioned with enough excess storage to ensure that the computer does not run out of space at an untimely moment. In DAS architecture the spare storage on one computer cannot be utilized by another. With a NAS or SAN architecture, where storage is shared across the needs of multiple computers, one normally provisions a pool of shared spare storage that will serve the peak needs of the connected computers, which typically is less than the total amount of spare storage that would be needed if individual storage devices were dedicated to each computer.

In a NAS solution the storage devices are directly connected to a "NAS-Server" that makes the storage available at a file-level to the other computers across the LAN. In a SAN solution the storage is made available via a server or other dedicated piece of hardware at a lower "block-level", leaving file system concerns to the "client" side. SAN protocols include Fiber Channel, iSCSI, ATA over Ethernet (AOE) and HyperSCSI. One way to loosely conceptualize the difference between a NAS and a SAN

is that NAS appears to the client OS (operating system) as a file server (the client can map network drives to shares on that server) whereas a disk available through a SAN still appears to the client OS as a disk, visible in disk and volume management utilities (along with client's local disks), and available to be formatted with a file system and mounted.

One drawback to both the NAS and SAN architecture is that the connection between the various CPUs and the storage units are no longer dedicated high-speed busses tailored to the needs of storage access, instead the CPUs use the LAN to communicate, potentially creating bandwidth bottlenecks.

While it is possible to use the NAS or SAN approach to eliminate all storage at user or application computers, typically those computers still have some local Direct Attached Storage for the operating system, various program files and related temporary files used for a variety of purposes, including caching content locally.

To understand their differences, a comparison of DAS, NAS and SAN architectures may be helpful.

Wi MAX

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Wi MAX (Worldwide Interoperability for Microwave Access) is a wireless communications standard designed to provide 30 to 40 megabit-per-second data rates, with the 2011 update providing up to 1 Gbit/s for fixed stations. The name "WiMAX" was created by the WiMAX Forum, which was formed in June 2001 to promote conformity and interoperability of the standard. The forum describes WiMAX as "a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative tocable and DSL".

Terminology

WiMAX refers to interoperable implementations of the IEEE 802.16 family of wireless-networks standards ratified by the WiMAX Forum. (Similarly, Wi-Fi refers to interoperable implementations of the IEEE 802.11 Wireless LAN standards certified by the Wi-Fi Alliance.) WiMAX Forum certification allows vendors to sell fixed or mobile products as WiMAX certified, thus ensuring a level of interoperability with other certified products, as long as they fit the same profile.

The original IEEE 802.16 standard (now called "Fixed WiMAX") was published in 2001. WiMAX adopted some of its technology from WiBro, a service marketed in Korea.

Mobile WiMAX (originally based on 802.16e-2005) is the revision that was deployed in many countries, and is the basis for future revisions such as 802.16m-2011.

WiMAX is sometimes referred to as "Wi-Fi on steroids" and can be used for a number of applications including broadband connections, cellular backhaul, hotspots, etc. It is similar to Wi-Fi, but it can enable usage at much greater distances.

Uses

The bandwidth and range of WiMAX make it suitable for the following potential applications:

- Providing portable mobile broadband connectivity across cities and countries through a variety of devices.
- Providing a wireless alternative to cable and digital subscriber line (DSL) for "last mile" broadband access.
- Providing data, telecommunications (VoIP) and IPTV services (triple play).
- Providing a source of Internet connectivity as part of a business continuity plan.
- Smart grids and metering

Internet access

WiMAX can provide at-home or mobile Internet access across whole cities or countries. In many cases this has resulted in competition in markets which typically only had access through an existing incumbent DSL (or similar) operator.

Additionally, given the relatively low costs associated with the deployment of a WiMAX network (in comparison with 3G, HSDPA, xDSL, HFC or FTTx), it is now economically viable to provide last-mile broadband Internet access in remote locations.

Middle-mile backhaul to fiber networks

Mobile WiMAX was a replacement candidate for cellular phone technologies such as GSM and CDMA, or can be used as an overlay to increase capacity. Fixed WiMAX is also considered as a wireless backhaul technology for 2G, 3G, and 4G networks in both developed and developing nations.

In North America, backhaul for urban operations is typically provided via one or more copper wire line connections, whereas remote cellular operations are sometimes backhauled via satellite. In other regions, urban and rural backhaul is usually provided by microwave links. (The exception to this is where the network is operated by an incumbent with ready access to the copper network.) WiMAX has more substantial backhaul bandwidth requirements than legacy cellular applications. Consequently, the use of wireless

microwave backhaul is on the rise in North America and existing microwave backhaul links in all regions are being upgraded. Capacities of between 34 Mbit/s and 1 Gbit/s are routinely being deployed with latencies in the order of 1 ms.

In many cases, operators are aggregating sites using wireless technology and then presenting traffic on to fiber networks where convenient. WiMAX in this application competes with microwave, E-line and simple extension of the fiber network itself.

Triple-play

WiMAX directly supports the technologies that make triple-play service offerings possible (such as Quality of Service and Multicasting). These are inherent to the WiMAX standard rather than being added on as Carrier Ethernet is to Ethernet.

On May 7, 2008 in the United States, Sprint Nextel, Google, Intel, Comcast, Bright House, and Time Warner announced a pooling of an average of 120 MHz of spectrum and merged with Clearwire to market the service. The new company hopes to benefit from combined services offerings and network resources as a springboard past its competitors. The cable companies will provide media services to other partners while gaining access to the wireless network as a Mobile virtual network operator to provide triple-play services.

Some analysts questioned how the deal will work out: Although fixed-mobile convergence has been a recognized factor in the industry, prior attempts to form partnerships among wireless and cable companies have generally failed to lead to significant benefits to the participants. Other analysts point out that as wireless progresses to higher bandwidth, it inevitably competes more directly with cable and DSL, inspiring competitors into collaboration. Also, as wireless broadband networks grow denser and usage habits shift, the need for increased backhaul and media service will accelerate, therefore the opportunity to leverage cable assets is expected to increase.

Connecting

A WiMAX USB modem for mobile access to the Internet

Devices that provide connectivity to a WiMAX network are known as subscriber stations (SS).

Portable units include handsets (similar to cellular smartphones); PC peripherals (PC Cards or USB dongles); and embedded devices in laptops, which are now available for Wi-Fi services. In addition, there is much emphasis by operators on consumer electronics devices such as Gaming consoles, MP3 players and similar devices. WiMAX is more similar to Wi-Fi than to other 3G cellular technologies.

The WiMAX Forum website provides a list of certified devices. However, this is not a complete list of devices available as certified modules are embedded into laptops, MIDs (Mobile Internet devices), and other private labeled devices.

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Hi.....

Have u ever given a THOUGHT
What all life has become all ABOUT
Our WINDOWS open on the face of GATES
When it should be our LIFE-MATES

We play around with MOUSE
When it should be our SPOUSE
Always our hands are on the KEYS
When it should be on our "WOULD-Bees

How long can u go on CODING
When u should be at ooty BOATING
Hey u robots running after CAREER
Listen to this carefully DEAR
BEHIND EVERY SUCCESFUL MAN IS A WOMEN
And that u cannot get fiddling alone with LAN-WAN;

Life is not just COBAL
It is also PYAR-KE-Do-BOL
Life is not just C-PLUS-PLUS;
It is also PYAR-PLUS-PLUS
Life is not just DEBUGGING
It is also HUGGING.....

So once in a while, think TWICE
Life will be so NICE
If one gets out of 'if-then'LOOPS
And goes out with your dear ones for movies, FRUIT-SALADS & SOUPS

C'mon end this life of ROBOTISUM
And fill it with ROMANTICISM
C'MON all the software Romeos and Juliet's lets take a VOW;
All boring ROUTINES; SUB-ROUTINES:PROCEDURES out will we THROW
And seeds of LOVE and CARE shall we SOW.

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