LOGIN

To Explore

Sixth Edition

2015

Department Of Information Technology

VIDYAVARDHINI COLLEGE OF ENGINEERING AND TECHNOLOGY

I-TECH COMMITTEE

PRINCIPAL

Dr. A .V Bhonsale

HEAD OF DEPARTMENT

Prof. Madhavi Gangurde

STAFF INCHARGE

Prof. Anagha Patil

CHAIRPERSON

Ms. Aparna Nair

TREASURER

Mr. Prasad Diwan
Mr. Rahul Jain

TE HEADS

Mr. Ved Raut
Mr. Prashant Bhat

GRAPHICS HEAD

Ms. Sayli Dalvi

GRAPHICS TEAM

Mr. Mehul Rana,Ms. pooja Bhatkar,
Mr.Deval Shah,Ms. Seema Pandya

JOINT MAGAZI NE SECRETARY

Ms. Sheetal Kalyankar
Ms. Darshana Sakhiya

CHIEF EDITORS

Mr. Prashant Bhat
Mr.Swapnil Mishra

PR TEAM

Mr.Shalv Chakravarthy,Ms. Ruta Mirgal
Ms.Suman Yadav,Ms. Ruchita Mali
Ms.Bhagyashree Patil,Ms.Neha Raut

From HOD'S Desk

I am immensely proud to present to you yet another edition of VCET Information Technology's departmental magazine ,"LOGIN...To Xplore ".The magazine you are holding in your hands right now is the epitome of the zealous activities and profound involvement of the students as well as the staff of the Information Technology Department.

This magazine will take you through a thrilling journey of fast paced world of changing and emerging IT industry and technologies thereby acquainting you readers with the hitherto unknown marvels of the world of technology. For second, third and fourth year students, it will provide the invaluable inside into what to be ready for, what skill sets are essential in the industry and thus how to prepare themselves for employment.

The department staff predominantly the Staff-In-Charges of the I-TECH committee Prof.Anagha Patil and the students who have worked tirelessly for this magazine are to be highly congratulated for bringing out such a fine, informative piece of publication. I hope the IT Department and I-TECH Committee will continue to strive and make mammoth efforts to keep up their good work and raise the bar of their soaring ability.

Happy Reading!!!

Prof.Madhvi Waghmare
Head Of Department, INFT
VCET

From Staff-Incharge's Desk

We are happily delighted to present to you the sixth edition of "LOGIN... To Xplore", the annual technical magazine of the department of Information Technology. The magazine that you hold in your hands now is an outcome of grueling efforts of everyone involved in making fuelled by right mix of passion, dedication and determination. The magazine under I-TECH committee was first published in the academic year 2009-2010.The first edition of magazine was named "Dig-It" which was later named as "Login... To Xplore"..

The Key Purpose of this magazine is to convey to the readers the trends and developments in the field of Information Technology. You will see the success story of various Entrepreneurs in the field of Information Technology with their Interviews in this edition of the magazine. Also, the I-TECH committee aspires to provide the students with continual exposure to the ever-increasing scope of Information Technology enriching the knowledge based in their chosen field and thereby acquainting them with knowledge pertaining to the IT industry that awaits them

For and behalf of I-TECH committee we would like to extend our sincere gratitude to Dr.A.V.Bhonsale-Our honorable principal for his support and guidance as also Prof. Chandan Kolvankar - H.O.D of information Technology Department for constantly encouraging us to make this magazine bigger and better and infusing us with dynamism to succeed in our endeavors. Also a special word of thanks to our dedicated team of designers, editors, and PRs as also the entire I-TECH Committee who have put in their heart and soul to the making of this magazine.

Special appreciation to the creator of newsletter for ITECH Mr.Swapnil Mishra for his relentless efforts.

We are sure you will enjoy the technological extravaganza this magazine holds.

Prof.Anagha Jayesh Patil
Staff-In-Charge,
ITECH-Committee

CHAIRPERSON'S DESK

"The function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education." -Martin Luther King, Jr.

I take this opportunity to thank and congratulate all members of ITECH for making a valiant attempt to reach our desired goals and executing it with precision. ITECH is a committee which looks after all the technical activities as well as academic interests of all students pursuing Information Technology engineering in VCET. We aim in keeping the students updated with the latest enthralling technologies and advancements.

To give an over view of the committee: it was formed by Prof. Anagha Patil in 2010 and it launched its first technical publication-'Login : to explore' informing students about the latest technologies. Since then we have come a long way and this is our 6th edition.

Amidst the placement season we present our diverse articles focusing on our juniors like the best programming language every beginner should learn. As certifications are an added advantage when placements come into picture, we have also added some top IT certifications.

I would extend my thanks to our respectable H.O.D Prof. Madhvi Waghmare who gave us our invaluable time and support. We are thankful to our staff in charge Prof. Anagha Jayesh Patil, Prof Chandan Kolvankar and Prof. Mehul Khandhedia, the teaching and non-teaching staff of IT department for their constant encouragement and guidance.

We plan to outdo our expectations each year and we will do that in coming years too, by organizing new events to encourage fellow students' participation and expand the committee's horizons. We assure to remit a better and enlightening magazine and carry forward the vision.

APARNA S. NAIR
-BE IT

EDITORS DESK

Hello Friends, we the editors of ITECH committee have immense pride in bringing forth the sixth edition of our mesmerizing technical magazine "LOGIN…To Explore". The magazine that you have in your hands is full of brilliant technical articles contributed by the students and respected teachers of VCET. The junior editors and my colleagues in the committee have worked very hard to make this amazing magazine a reality

On flipping the pages through this magazine you would come across various new technological inventions, innovations and discussions that have been announced recently. This edition of the magazine focusses on the new advancements in various technological fields. The magazine congratulates our seniors who with their sincerity and hard work have excelled themselves and got placed in companies through Campus Placements rounds. We also extend a warm gratitude to the PAT(Placements and Training) committee for their hard work to bring companies to our campus.

On behalf of the I-TECH committee we would like to extend our sincere gratitude to Dr.A.V.Bhonsale – Our Honorable Principal for his support and guidance, Prof.Madhavi Waghmare–H.O.D of Information Technology Department and also Prof.Anagha Patil, Prof.Chandan Kolvankar –Our respected staff-incharge for constantly encouraging us to make the magazine bigger and better and infusing us with dynamism to succeed in our endeavors.

We the editors of the magazine welcome you to read the technological extravaganza the magazine holds for you.

MR.PRASHANT BHAT

MR.SWAPNIL MISHRA

(TE-IT)

LOGIN

The Best Programming Languages Every Beginner Should Learn

Computer science is a booming industry in the US - and it pays extremely well. There's always demand for sharp, talented engineers, which is why learning how to code can seem like an attractive option. But, as is the case with any new skill, it can be difficult to know where to start. Here are a few steps you should take early on :

1 **Before you learn a language, start with 'drag and drop' programming.**

"Drag and drop" programming is a basic technique that allows you to build code by dragging and dropping blocks or some other visual cue rather than manually writing text-based code.There are plenty of programs out there that can help you get started with drag and drop programming, including MIT Scratch and Code.org's Code Studio, and Google Blocky.

2 **Python is one of the easiest languages to start with.**

Python is an easy language for beginners, according to Partovi, because there's less of an emphasis on syntax. So, if you forget your parentheses or misplace a few semicolons, it shouldn't trip you up as much as it might if you were coding in a different language.

3 **But Javascript is one of the most useful languages to know as a developer.**

Javascript isn't as easy as Python, but it runs on every single platform out there - Mac, Windows, iOS, and Android among others. Every single Web browser, and even new types of devices like smartwatches use Javascript at some capacity, Partovi said."Once you reach that level of critical mass, it's not going away," Partovi said.

4 **Once you have the hang of Javascript, try playing with Ruby and Ruby on Rails.**

Ruby on Rails is a great tool that can help you with the backend aspect of your programming. Although Ruby and Ruby on Rails have similar names, there's actually an important difference. Ruby is a scripting language, just like Python, but Ruby on Rails is a Web app framework built on Ruby. In other words, Ruby is the language, while Ruby on Rails is a tool that makes it easy to use the Ruby language to build websites.

5 **BONUS: Get familiar with HTML...you're going to need it if you want to build a website.**

While HTML isn't a programming language in the sense that Python, Ruby, and Javascript are, you still need it to build a website. HTML is used to describe how your website looks, while other languages like Javascript power the interactive components.

Prasad Diwan

BEIT

Reference: (http://www.mbaskool.com)

Top 5 IT companies in the world

1.Microsoft Corporation

Microsoft Corporation is the most valuable IT company in the world and it offers wide range of software products, hardware devices and services. The company also offers training to computer system integrators and developers. It was founded in 1975, when Bill Gates and Paul Allen developed an interpreter for programming language at Micro Instrumentation and Telemetry Systems. Now it is headquartered in Redmond, Washington and it has 99,000 employees.

After the change in organisational structure in July 2013, the company has five operating segments: Devices and Consumer hardware, Devices and Consumer licensing, Devices and Consumer other, commercial licensing and commercial other. Devices and Consumer hardware segment provides Xbox gaming and entertainment consoles and accessories, its subscription and PC accessories and video game royalties. Devices and Consumer licensing segment offers Windows OS and related software, their licensing, Windows original equipment manufacturing licensing and Microsoft office products for consumers. Resale of Windows store, Xbox live transaction, Windows phone store and advertising are the operating areas of Devices and Consumer other segment. Its commercial segments provide software and services for increasing the productivity and efficiency of organisations, teams and individuals.

Microsoft Corporation has robust presence in software industry across the globe with offices in more than 100 countries. Its 16 businesses generate more than 1 billion revenue.

Revenue: $77.849 B

Profit: $21.863 B

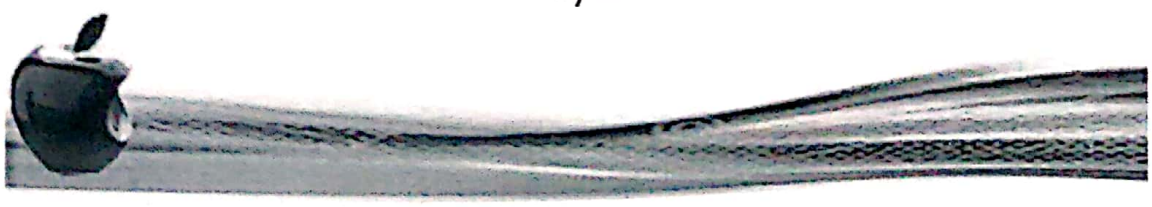
Assets: $153.54 B

Market Value: $338.18 B

2. Oracle Corporation

Oracle Corporation is the second most valuable company in IT industry. The company provides enterprise software, computer hardware products and services. It operates across Middle East, Europe, Americas and Africa, and Asia Pacific regions. It is headquartered in Redwood Shores, California and it has 1,20,000 employees.

In 1977 Larry Ellison, Robert Miner, Bruce Scott and Edward Oates established Oracle as a System Development Laboratories. In 1982, the company changed its name to Oracle Systems, now it is known as Oracle Corporation. Oracle has three business segments: software, hardware systems and services. Software segment provides wide range of software products which is designed to operate on both clustered server like cloud and single server. It also gives licences to



customer with right to upgrade the software products and maintenance releases. Hardware segment provides different hardware systems and related services. The service segment offer cloud services, consulting services and educations services.

Diversified geographical presence across 145 countries and strong customer base are Oracle's core strength. The company adopted inorganic growth strategy and acquired number of companies for portfolio diversification.

Revenue: $37.9 B

Profit: $11.12 B

Assets: $86.56 B

Market Value: $187.36 B

3. SAP AG

SAP AG is a leading software company in the world which provides licenses for enterprise application software products, solutions, and cloud subscriptions. In 1972, former IBM engineers established SAP as a data processing company. In 1998 it was listed on the New York Stock Exchange. Now it has operations over 180 countries across Middle East and Africa, Americas, Europe, and Asia Pacific Japan. It is headquartered in Walldorf, Germany and it has 66,572 employees.

SAP mainly has two business divisions: on premise and cloud. The on premise division provides on premise software, mobile software and services related to this software. The cloud segment offers cloud software and related services like support services, professional services and educational services.

SAP offers approximately 25 industry specific solutions and follows a vertical strategy. It has 11,500 partners all over the world.

Revenue: $22.32 B

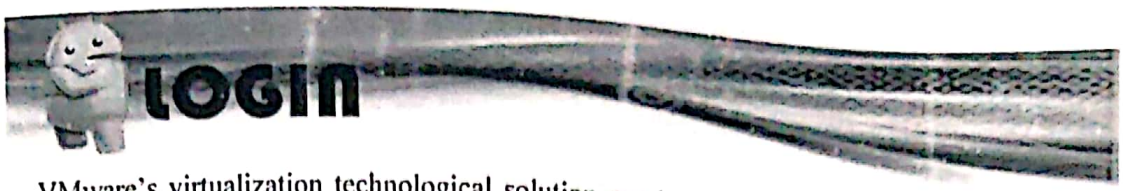
Profit: $4.42 B

Assets: $37.33 B

Market Value: $97.12 B

4. VMware Inc.

VMware Inc. engaged in offering virtualization and virtualization based cloud infrastructure solutions. The company is founded in 1988 and its major operation regions are Middle East, Africa, US , Asia Pacific, Europe and Canada. It is headquartered in Palo Alto, California and it has 14,300 employees.



VMware's virtualization technological solution can be categorized into two product group: cloud infrastructure and management, and end-user computing. Cloud infrastructure and management products consists of VMware vSphere, the company's data center platform, which can be used to aggregate multiple servers, convert the storage infrastructure and networks into shared pool of resources. Its end user computing solution is use for ensuring secure access to application and data from a different devices and locations. VMware also offers loud application platform solutions for running and managing enterprise applications.

VMware has served more than 500,000 customers. Pat Gelsinger is the present CEO and Joseph M. Tucci is the Chairman of the company.

Revenue: $5.207 B

Profit: $1.014 B

Assets: $12.327 B

Market Value: $41.544 B

5. Symantec Corporation

Symantec Corporation provides solutions relating to security, storage and systems management to customers for managing their business and identities. In 1982, Gary Hendrix was established Symantec Corporation and it went to public in 1989. It mainly operates in U.S. It is headquartered in Mountain View, California and it has 21,500 employees.

Symantec Corporation has four business segments: Security and compliance, storage and server management, consumer and services. Security and compliance segment provides solutions for security, authentication and encryption of data. This segment also offers solutions for data loss prevention, threat and risk management and infrastructure protection. Its storage and server management segment provides solutions relating to information management and standardising storage management. Consumer segment provides different security software like Norton Internet Security, Norton AntiVirus, Norton Live Services, Norton Online Backup, Norton 360, Norton Mobile Security, and Norton One and Norton 360 Everywhere. Service segment provides services and solutions to customers for getting most out of their Symantec software.

Revenue: $6.906 B

Profit: $0.765 B

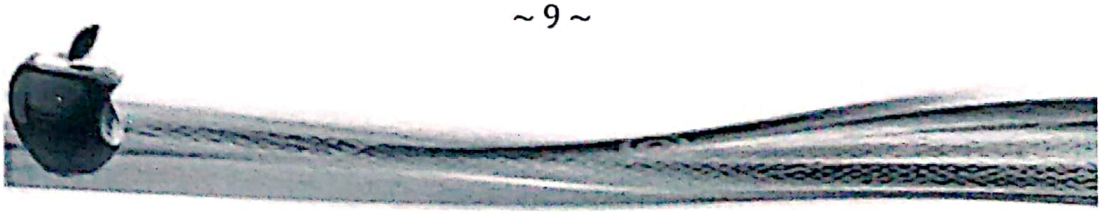
Assets: $14.379 B

Market Value: $15.21 B

APARNA S. NAIR

BE-IT

Reference:(http://www.blog.pluralsight.com)



UNITY-The Game Engine.

INTORDUCTION

Unity is a cross-platform game creation system developed by Unity Technologies, including a game engine and integrated development environment (IDE). It is used to develop video games for web sites, desktop platforms, consoles, and mobile devices. First announced only for Mac OS, at Apple's Worldwide Developers Conference in 2005, it has since been extended to target more than fifteen platforms. It is now the default software development kit (SDK) for the Wii U. Unity is notable for its ability to target games to multiple platforms. Within a project, developers have control over delivery to mobile devices, web browsers, desktops, and consoles. Supported platforms include BlackBerry 10, Windows Phone 8, Windows, OS X, Linux (mainly Ubuntu), Android, iOS, Unity Web Player (including Facebook), Adobe Flash, PlayStation 3, PlayStation 4, PlayStation Vita, Xbox 360, Xbox One, Wii U, and Wii. It includes an asset server and Nvidia's PhysX physics engine. Unity Web Player is a browser plugin that is supported in Windows and OS X only. Unity is the default software development kit (SDK) for Nintendo's Wii U video game console platform, with a free copy included by Nintendo with each Wii U developer license. Unity Technologies calls this bundling of a third-party SDK an "industry first".

FEATURES

With an emphasis on portability, the graphics engine targets the following APIs: Direct3D on Windows and Xbox 360; OpenGL on Mac, Windows, and Linux; OpenGL ES on Android and iOS; and proprietary APIs on video game consoles. Unity allows specification of texture compression and resolution settings for each platform the game supports, and provides support for bump mapping, reflection mapping, parallax mapping, screen space ambient occlusion (SSAO), dynamic shadows using shadow maps, render-to-texture and full-screen post-processing effects. Unity's graphics engine's platform diversity can provide a shader with multiple variants and a declarative fallback specification, allowing Unity to detect the best variant for the current video hardware; and if none are compatible, fall back to an alternative shader that may sacrifice features for performance.The game engine's scripting is built on Mono, the open-source implementation of the .NET Framework. Programmers can use UnityScript, C#, or Boo

UNITY 5

Unity 5 released for free on March 3rd, 2015 added the much anticipated real-time global illumination based on the Geomerics Enlighten technology. Other major changes include physically-based shaders, HDR sky-boxes, reflection probes, a new audio mixer with effects and enhanced animator workflows. PhysX was updated to 3.3, whereas Unity 4.x had an aging version. Unitys Cloud Build system was introduced (for $25/month for non-pro users) as well as 'Game Performance Reporting' and the beta 'Game Analytics' (also 25$/month for non-pro users) which logs players usage and performance on released games, something that many developers found hard to implement in Unity 4.x. Previously, a game developer needed to code support for player logging directly into their game engine.Smaller additons include: A 64-bit editor to handle large projects, iOS 64-bit support, new deferred rendering, graphics command buffers, improved linear lighting, HDR, skybox and cubemap workflows, improved job scheduling system, a new 'CPU Timeline Profiler' lets you see and investigate multicore usage, improved NavMesh pathfinding system, integrated SpeedTree (a 3rd-party vegetation creation program) support to create lush, rich and dynamic vegetation, new Frame Debugger to track down graphical issues in your projects, Improved Project Wizard, updated standard assets, new UI and scripting APIs for AssetBundle Build system and lastly, access to the new Asset Store Level 11 program: Available for free to Unity 5 Professional customers, and soon to be available to Unity Personal Edition users for $19/month.

PhysX 3.3 Update

Up until Unity 5 the engine was using a fairly outdated version of Nvidias PhysX physics middleware. The 3.3 version included in Unity 5, which is standard among triple-a quality video games includes the following features: multithreaded simulation for platforms that support it, a new cloth component for character clothing. New wheel colliders make better support for suspension and tire force simulation in vehicle based games. All these features means the physics will be much more realistic in Unity 5 and no longer prone to the problems and bugs that plagues developers in Unity 4.x.

Supported Platforms in Unity 5

Unity 5 brings support for Windows, Mac, Linux/Steam OS, Unity Webplayer, Android, iOS, Blackberry 10, Windows Phone 8, Tizen, Windows Store apps, WebGL, Playstation 3, Playstation 4, Playstation Vita, Wii U. Xbox One, Xbox 360, Android TV, Samsung Smart TV, Oculus Rift, and Gear VR for a total of 21 supported platforms.

MR.PRASHANT BHAT
TE-IT

Reference:(http://www.unity3d.com)

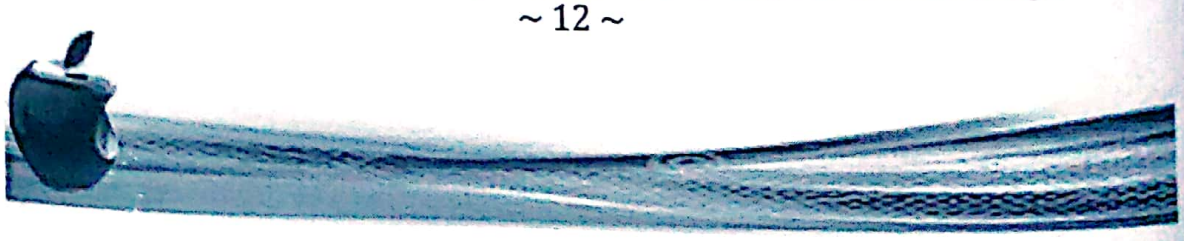
Top IT certifications to jumpstart your job

1.)VMware Certified Design Expert (VCDX)

No infrastructure professional can do much of anything these days without having to manage virtualized assets. With the growth of cloud computing and software-defined data center technologies, virtualization's footprint continues to expand, and many organizations are using VMware's technology. VCDX builds on vSphere and datacenter virtualization skills to focus on the software-defined-data center and delivering Infrastructure-as-a-Service with comprehensive management and security. According to IT Career Finder, IT pros with the VCDX cert command annual salaries starting at $99,000. VMware Certified Design Expert (VCDX) No infrastructure professional can do much of anything these days without having to manage virtualized assets. With the growth of cloud computing and software-defined data center technologies, virtualization's footprint continues to expand, and many organizations are using VMware's technology. VCDX builds on vSphere and datacenter virtualization skills to focus on the software-defined-data center and delivering Infrastructure-as-a-Service with comprehensive management and security. According to IT Career Finder, IT pros with the VCDX cert command annual salaries starting at $99,000.

2.)Citrix Certified Professional

While VMware technology is dominant in the data center, Citrix technology is virtualizing the applications and desktops that rely on the back end. IT pros who pursue the newly revamped levels of Citrix certification have demonstrated their ability to design and manage solutions using application and desktop virtualization technologies as well as NetScaler from Citrix. Citrix Certified Professional While VMware technology is dominant in the data center, Citrix technology is virtualizing the applications and desktops that rely on the back end.IT pros who pursue the newly revamped levels of Citrix certification have demonstrated their ability to design and manage solutions using application and desktop virtualization technologies as well as NetScaler from Citrix. It's worth the effort, as the average Citrix-certified salaries rate very high, at more than $100,000 per year, according to Global Knowledge.



3.)SNIA Certified Storage Network Expert (SCSN-E)

Storage is hotter than ever. With the constant mushrooming of data quantities and the accelerating rise of big data technologies, enterprises are storing -- and accessing -- more data than ever. What's more, storage environments are increasingly heterogeneous, connecting a variety of storage technologies, from SAN to NAS to cloud-based file sharing. By attaining this designation from the vendor-neutral Storage Networking Industry Association, infrastructure pros can ready themselves for what figures to be a fast-changing future on the storage front. Even better, they can expect an immediate 5 to 11 percent bump in pay, as well as a 30 to 40 percent increase in their market value when it comes time to consider making a career move, according to SNIA.

4.) Red Hat Certified Architect (RHCA)

The fast-growing infrastructure needs of today's enterprises demand a more budget-friendly approach to technology investments, hence the growing interest in commodity hardware and open-source software. And that means infrastructure pros are well advised to pursue the highest level of certifications from Red Hat, the predominant provider of open-source cloud, virtualization, storage, and middleware technologies. RHCAs have pocketed Red Hat certifications in everything from deployment and systems management to clustering and storage management, which is why they can command an average annual salary of $81,000. (Salary data via Simply Hired.)

5.)Certified Wireless Network Administrator (CWNA)

Having made the transition from luxury to necessity, wireless networks have become as much a part of the enterprise landscape as servers, ERP systems and organizational charts. The same can be said, naturally, of the skills required to design, build, and maintain those wireless networks, making this certification from the vendor-neutral Certified Wireless Network Professional standards organization one of growing importance. CWNP calls the cert a "must have" for network pros. It's also valuable: IT pros with a CWNA can earn an average of $83,000 per year, according to the CWNP.

6.)Certified Information Systems Security Professional (CISSP)

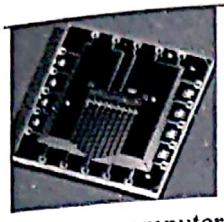
Security has long been a critical component of any organization's IT environment, but it's safe to say its importance has been ramped up of late. From Target to Experian, enterprises have been reminded that a network is only as good as its security. The growing focus on preventing breaches, not to mention securing cloud and mobile infrastructures, is translating to increased opportunity for information security professionals -- as well as competition for those opportunities. The CISSP, issued by the non-profit International Information Systems Security Certification Consortium, prepares recipients for security roles ranging from consultants and auditors to architects and analysts, or even chief information security.

7.)Cisco Certified Design Professional/Network Professional (CCDP/CCNP)

It's a safe bet for most networking professionals to pursue some level of Cisco certification. With five levels of completion, ranging from entry to architect, there are numerous opportunities to increase earning power and knowledge. CCDP and CCNP credentials, in particular, validate recipients as capable of designing a Cisco converged network. The CCDP focuses on building scalable internetworks and multilayer-switched networks, and the CCNP emphasized the ability to plan, implement, verify and troubleshoot local and wide-area enterprise networks in the areas of security, voice, wireless, and video.

DEVAL SHAH
TE-IT
Reference:(http://www.blog.pluralsight.com)

Google Researchers Make Quantum Computing Components More Reliable



A solution to one of the key problems holding back the development of quantum computers has been demonstrated by researchers at Google and the University of California, Santa Barbara. Many more problems remain to be solved, but experts in the field say it is an important step toward a fully functional quantum computer. Such a machine could perform calculations that would take a conventional computer millions of years to complete.

The Google and UCSB researchers showed they could program groups of qubits—devices that represent information using fragile quantum physics—to detect certain kinds of error, and to prevent those errors from ruining a calculation. The new advance comes from researchers led by John Martinis, a professor at the University of California, Santa Barbara, who last year joined Google to set up a quantum computing research lab. Martinis now holds a joint position between UCSB and Google, leading work on superconducting aluminum chips that operate at a fraction of a degree above absolute zero. Most of the work behind the new results, reported today in the journal Nature, took place before Martinis joined Google. Google has been exploring quantum computing since 2009, when it began collaborating with D-Wave Systems, a startup that sells what it calls "the first commercial quantum computer". Microsoft also has a sizable quantum computing research program.

To make a quantum computer requires wiring together many qubits to work on information together. But the devices are error-prone because they represent bits of data—0s and 1s—using delicate quantum mechanical effects that are only detectable at super-cold temperatures and tiny scales.

Martinis's group has demonstrated a piece of one of the most promising schemes for doing this, an approach known as surface codes. The researchers programmed a chip with nine qubits so that they monitored one another for errors called "bit flips," where environmental noise causes a 1 to flip to a 0 or vice versa.

A trickier kind of error, where a quantum property of a qubit known as "phase" is altered by environmental noise, can only be tackled using more complex algorithms that exploit quantum effects. Austin Fowler, a quantum electronics engineer with Google, says the group is now working on that, and on demonstrating error checking on more than nine qubits.

MR.SWAPNIL MISHRA
TE-INFT

Reference:(http://www.mitpress.mit.edu)

How's the Weather There? Crowdsourcing App Promises Better Forecasts

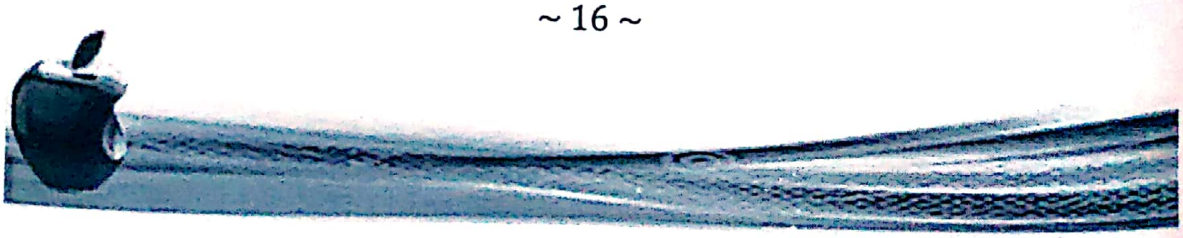
An app called Sunshine taps into users' smartphone sensors to provide localized weather predictions. An app called Sunshine wants you to help it create more accurate, localized weather forecasts. The app, currently in a private beta test, combines data from the National Oceanic and Atmospheric Administration (NOAA) with atmospheric pressure readings captured by a smartphone. The latest iPhones, and some Android smartphones, include barometers for measuring atmospheric pressure. These sensors are generally used to determine elevation for navigation, but changes in air pressure can also signal changes in the weather. Sunshine will also rely on users to report sudden weather hazards like fog, cofounder Katerina Stroponiati says. About 250 people spread out among the Bay Area, New York, and Dallas are now using Sunshine, she says, and the team behind it plans to release the app publicly at the end of March for the iPhone. It will be free, though some features may eventually cost extra.

While weather predictions have gotten more accurate over the years, they're far from perfect. Weather information usually isn't localized, either. The goal of Sunshine is to better serve places like its home base of San Francisco, where weather can be markedly different over just a few blocks.Stroponiati aims for Sunshine to get enough people sending in data—three per square mile would be needed, according to experiments the team has conducted—that the app can be used to make weather prediction more accurate than it tends to be today. Some other apps, like PressureNet and WeatherSignal, already gather data entered manually by users, but they don't yet offer crowdsourced forecasts.

I checked out the private beta version of the app, which showed me weather-app basics like an hourly forecast for the current day and basic weather details for the days ahead. The app showed my current weather as clear and 64 degrees, and said the data was gathered from 37 devices in the area. Cliff Mass, an atmospheric science professor at the University of Washington, cautions that while crowdsourced barometer data can help provide detailed weather statistics, making forecasts is trickier: for that, all those data points must be used with weather-data models. This is the kind of thing he's working on with the use of smartphone barometric readings that come in via the PressureNet and WeatherSignal apps.

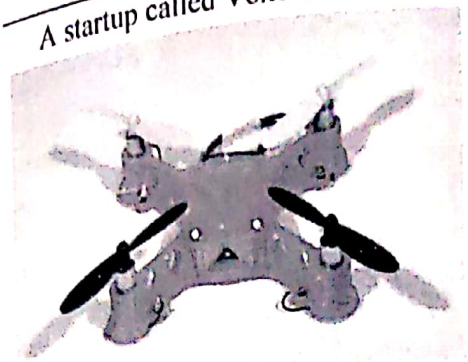
MR.VED RAUT
TE-INFT

Reference:(http://www.technologyreview.com)



Electronic Inks Make 3-D Printing More Promising

A startup called Voxel8 is using materials expertise to extend the capabilities of 3-D printing.

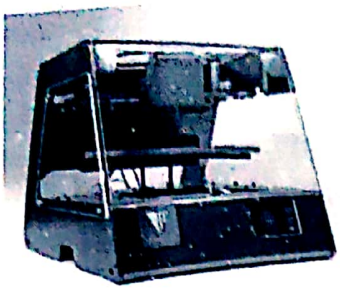


The quad copter printed by Voxel8

Three cofounders of Voxel8, a Harvard spinoff, are showing me a toy they've made. At the company's lab space—a couple of cluttered work benches in a big warehouse it shares with other startups—a bright-orange quad copter takes flight and hovers above tangles of wires, computer equipment, coffee mugs, and spare parts.

Voxel8 isn't trying to get into the toy business. The hand-sized drone serves to show off the capabilities of the company's new 3-D printing technology. Voxel8 has developed a machine that can print both highly conductive inks for circuits along with plastic. This makes it possible to do away with conventional circuit boards, the size and shape of which constrain designs and add extra bulk to devices. Conductive ink is just one of many new materials Voxel8 is planning to use to transform 3-D printing.

The new ink is not only highly conductive and printable at room temperature; it also stays where it's put. Voxel8 uses the ink to connect conventional components—like computer chips and motors—and to fabricate some electronic components, such as antennas. The company made the quadcopter by printing its plastic body layer by layer, periodically switching to printing conductive lines that became embedded by successive layers of plastic. At the appropriate points in the process, the Voxel8 team would stop, manually add a component, such as an LED, and then start the printer again.



Voxel8's 3D printer

The toy looks like something that could be made with conventional techniques. The real goal is to work with customers to discover new applications that can only be produced via 3-D printing. A video the company made to show off its technology starts by asking: "What would you do if you could 3-D print electronics?" While the founders have some ideas, they really don't know what the technology is going to be particularly useful for.

Voxel8's business plan is to start by selling the conductive ink and a desktop 3-D printer. The machine is designed primarily to produce prototypes, not to manufacture large quantities of finished product. The company's long-term goal, however, is to create industrial manufacturing equipment that can print large numbers of specialized materials simultaneously, which will enable new kinds of devices. The founders will draw on a large collection of novel materials—and strategies for designing new ones—developed over the last decade by cofounder Jennifer Lewis, a professor of biologically inspired engineering at Harvard .

One of Lewis's key insights has been how to design materials that flow under pressure—such as in a printer-head nozzle—but immediately solidify when the pressure is removed. This is done by engineering microscopic particles to spontaneously form networks that hold the material in place. Those particles can be made of various materials: strong structural ones that can survive high temperatures, as well as epoxies, ceramics, and materials for resistors, capacitors, batteries, motors, and electromagnets, among many other things .

MS.RUTA MIRGAL
TE-INFT

Reference:(http://www.electronics.housestaffsworks.com)

India's Ambitious Bid to Become a Solar Power

India's Prime Minister, Narendra Modi, made headlines last fall by announcing his ambition to install 100 gigawatts of solar power capacity—over 30 times more than India has now—by 2022. Skeptics noted Modi's lack of a detailed plan and budget, but some well-capitalized industrial players have apparently caught Modi's solar fever: at a renewable energy summit called by Modi last month he collected pledges for 166 gigawatts of solar projects.

At the New Delhi summit, renewables giants such as First Solar and SunEdison mixed for the first time with chief ministers from Indian states and top executives of Indian industrial conglomerates such as Adani Enterprises and the National Thermal Power Corporation, India's largest power generator. Tobias Engelmeier, founder of Bridge to India, a solar-market consultancy, says Modi's ambition has "changed the conversation" about India's solar potential. But what happens next, says Engelmeier, will depend only in part on what renewable energy strategy Modi can devise from within the central government. The ultimate driver could be India's unmet demand for electricity. A quarter of India's population is not connected to the power grid, and electricity supply is chronically short for those who are.

Modi told the New Delhi summit that India had to "make a quantum leap in energy production," and he said solar could deliver with its rapid construction rates and crashing prices—from 20 rupees (32 cents) per kilowatt-hour to less than seven rupees over the last three years. "The government seems to really subscribe to the possibility that solar and renewables can transform India," says Pashupathy Gopalan, president for the Asia-Pacific region for SunEdison, based in Belmont, California. Gopalan, whose firm has installed about 200 megawatts of solar projects in India over the past five years, came to Modi's summit with signed agreements to build 10 gigawatts of solar and wind power in the states of Karnataka and Rajasthan by 2020. SunEdison also struck a joint venture with Adani Enterprises to explore building a $4 billion silicon solar plant in Gujarat; the companies say they could make a final decision and begin construction later this year. First Solar, which until last year was only a supplier of solar panels to India, pledged to develop five gigawatts of solar projects there by 2020.

Between 2012 and 2014, solar capacity increased from 461 megawatts to over three gigawatts in India, and Engelmeier projects that developers will add up to two more gigawatts this year. An increasing number of states, including Rajasthan, Gujarat, and Andhra Pradesh, are leasing public lands for solar parks. This eliminates the need for solar developers to work through India's complex land registries to support their own solar farm.

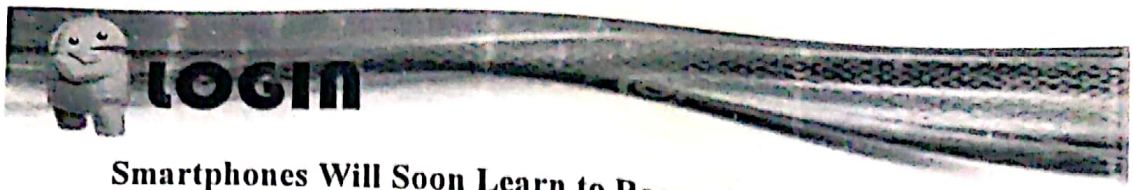
Power grid access is opening up in several states that have exempted solar projects from so-called "wheeling" charges. This means solar developers can identify commercial and industrial buyers for their power and send the power over the transmission grid for free.

Still, hitting Modi's target of 100 gigawatts of solar by 2022 will require more fundamental reform of the power sector. Solar power's exemption from wheeling, for example, is likely to prompt a backlash by utilities desperate to retain their highest-paying clients. "The utilities are pretty averse to losing their good customers. I'm not clear about the political economy of how this is going to play out over the long term," says Gireesh Shrimali, an energy economist at the Middlebury Institute of International Studies in Monterey, California, who has advised the Indian government on renewable energy policies.

However, distributed solar installations could actually help the utilities by reducing demand from their least profitable customers: Indian farmers who get free electricity to power irrigation pumps. This free power accounts for 20 percent of India's electricity consumption and accounts for roughly $10 billion of the losses on utilities' books, Gopalan says. Solar is well suited to pumping, which is not adversely affected by its intermittent output. "With solar pumping for irrigation," says Gopalan, "the electricity sector is going to get a big boost on its balance sheet."

MR.MEHUL RANA
TE-INFT

Reference:(http://www.technologyreview.com)



Smartphones Will Soon Learn to Recognize Faces and More

"Smartphone apps will be able to perceive objects and perform other intelligent tricks thanks to Qualcomm's newest mobile chips." Smartphone camera apps could soon do more than just capture images. Software integrated with a new line of smartphone chips will be capable of recognizing, say, a cat or city skyline in a photo, and tagging pictures of your friends with their names.

The chip maker Qualcomm announced last week that it will bundle the software with its next major chip for mobile devices. The technology, which Qualcomm calls Zeroth, could make sophisticated machine learning more common on mobile devices. As well as processing images, the Zeroth software is designed to allow phones to recognize speech or other sounds, and to learn to spot patterns of activity from a device's sensors.

The technology uses an approach to machine learning known as deep learning that has led to recent advances in speech and object recognition, as well as software able to play Atari games with superhuman skill. Deep learning software is loosely modeled on some features of brains. It can be trained to recognize certain objects in images by processing many example photos through a network of artificial "neurons" arranged into hierarchical layers.

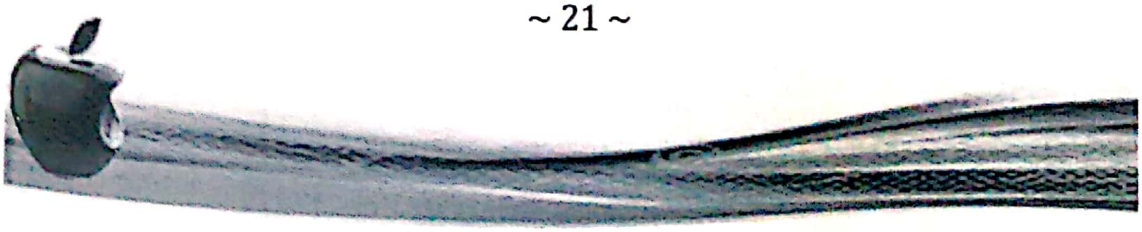
Tim Leland, a vice president of product management with Qualcomm, says the company plans to work with partners to build apps to make use of the new capabilities. He wouldn't say exactly what those apps might do, but Qualcomm's demonstrations of the technology have so far focused mostly on enhancing the features of camera apps. Last week at the Mobile World Congress event in Barcelona, where Zeroth was announced, Qualcomm showed it powering a camera app that could recognize faces it had seen before, and detect different types of photo scenes. The Zeroth software is being developed to launch with Qualcomm's Snapdragon 820 processor, which will enter production later this year. The chip and the Zeroth software are also aimed at manufacturers of drones and robots.

Normally an app has to send data out over the Internet to a powerful server in order to perform such tricks .By doing such computation on the phone itself, the software should be better at interpreting data from location and motion sensors on a device, Leland says. He predicts that one of the first applications of Zeroth will be extending the battery life of devices by tracking the way a person uses a phone and learning when it could power down to save energy without affecting the user experience. Qualcomm is also experimenting with chips that have physical networks of "neurons" made from silicon that communicate with spiking electrical signals.

MR.SUJIT JADHAV

TE-INFT

Reference:(http://www.technologyreview.com)



Virtual Creatures in a Box, Controlled by You

A startup uses an old parlor trick and smartphone sensing to let you control virtual objects in a see-through box.

H+ Technology is building Holus, a tabletop box that can project virtual images that users can interact with.

A Canadian startup is working to make monsters, fish, and other creatures seem to come alive inside a tabletop box. The company, H+, hopes you'll use the device to play games and do other activities with friends.The startup is still in the prototype stage with Holus—a see-through box roughly the size of a microwave. Inside is a coated plexiglass prism within which projected images appear, allowing you to see virtual characters and content from different viewpoints. The company has built five Holus units so far, and hopes to start shipping them next year.

H+'s chief technology officer, Dhruv Adhia, says Holus combines elements of 3-D projection with an old optical trick called "Pepper's Ghost," wherein a hidden object is reflected on a glass panel to make it appear to be in the room with you. (More recent applications of Pepper's Ghost use digital images rather than real objects, such as a projected performance by deceased rapper Tupac at the Coachella music festival in 2012).

A projector inside the lid of Holus beams four images of the same object onto the walls of the prism, and to the user they appear to form a single image. Users can control the images with a smartphone connected via Bluetooth or Wi-Fi. A tablet computer or laptop attached to the box runs an app that feeds images to the projector, and adjusts what you see based on input from the controller.

A woman gazes at a demo game for Holus, in which players must work together to defeat a monster.

In a video chat, Adhia gave me a sense of how this looks. He demonstrated characters like a woman in a sort of spacesuit and a sword- and shield-wielding skeleton, whose positions he could change by moving an iPod Touch. He said the Holus app determines the user's perspective by tracking the controller's motion, then adjusting in real time.

Images appeared to be visible from multiple angles, and were responsive to swipes and movements he made with the iPod. But it looked far more primitive than some other 3-D augmented-reality efforts. Microsoft unveiled a sophisticated augmented reality headset called HoloLens in January (see "Microsoft Headset Rewrites Reality with Holograms"); while Magic Leap, a startup, showed me impressive imagery when I visited the company late last year (see "10 Breakthrough Technologies 2015: Magic Leap"). Another company, called Leia, is developing a new optical technique that brings glasses-free holographic images to mobile gadgets (see "New Display Technology Lets LCDs Produce Princess Leia-Style Holograms").

Michael Bove, the leader of the object-based media group at the MIT Media Lab, also noted that the H+ technology appears to be neither holographic nor actually 3-D, meaning you couldn't walk around it and see a smooth 360-degree view of the image being projected. H+ hopes to drum up interest by selling its device through Kickstarter this spring. It wants to convince people to shell out about $850 or $950 for their own Holus, depending on whether buyers want a "home" version or a larger one geared toward developers.

KUNAL MALI
TE-INFT
Reference:(http://www.technologyreview.com)

Big Bang, Deflated? Universe May Have Had No Beginning

If a new theory turns out to be true, the universe may not have started with a bang. In the new formulation, the universe was never a singularity, or an infinitely small and infinitely dense point of matter. In fact, the universe may have no beginning at all.

According to the Big Bang theory, the universe was born about 13.8 billion years ago. All the matter that exists today was once squished into an infinitely dense, infinitely tiny, ultrahot point called a singularity. This tiny fireball then exploded and gave rise to the early universe. The singularity comes out of the math of Einstein's theory of general relativity, which describes how mass warps spacetime, and another equation (called Raychaudhuri's equation) that predicts whether the trajectory of something will converge or diverge over time. Going backward in time, according to these equations, all matter in the universe was once in a single point — the Big Bang singularity. But that's not quite true. In Einstein's formulation, the laws of physics actually break before the singularity is reached. But scientists extrapolate backward as if the physics equations still hold, said Robert Brandenberger, a theoretical cosmologist at McGill University in Montreal, who was not involved in the study. "So when we say that the universe begins with a big bang, we really have no right to say that," Brandenberger told Live Science. There are other problems brewing in physics — namely, that the two most dominant theories, quantum mechanics and general relativity, can't be reconciled. Quantum mechanics says that the behavior of tiny subatomic particles is fundamentally uncertain. And neither theory explains what dark matter, an invisible form of matter that exerts a gravitational pull on ordinary matter but cannot be detected by most telescopes, is made of. Quantum correction Das and his colleagues wanted a way to resolve at least some of these problems. To do so, they looked at an older way of visualizing quantum mechanics, called Bohmian mechanics. In it, a hidden variable governs the bizarre behavior of subatomic particles. Unlike other formulations of quantum mechanics, it provides a way to calculate the trajectory of a particle. Using this old fashioned form of quantum theory, the researchers calculated a small correction term that could be included in Einstein's theory of general relativity. Then, they figured out what would happen in deep time. One way to test the theory is to look at how dark matter is distributed in the universe and see if it matches the properties of the proposed superfluid, Das said.

RUCHITA MALL
SE-IT

Reference:(http://www.livesience.com)

Coolest Eco-Friendly Technologies at CES 2015

Some of the biggest names in tech announced that they're embracing more eco-friendly designs for their products. For instance, Samsung introduced a computer monitor made of 30 percent recycled plastic that runs on less energy when it's not in use than conventional monitors being showcased at CES. Electronics company LG announced a whole line of "greener" home appliances that use less energy and water than the company's previous models, and Mercedes announced a new luxury vehicle powered by hydrogen fuel cells.Lots of small companies are getting in on the action too, introducing products — from solar-charging stations to pollution sensors — that put the environment first. Here are some of the coolest green tech products

EcoATM is a stand-alone machine (it looks kind of like a Redbox or CoinStar machine) that allows users to exchange old electronics for cold, hard cash. While it's not exactly new (the first eco ATM launched in 2009), this product was a hit this year at CES, where onlookers crowded around to watch the machine assess the value of beloved smartphones.The electronics that ecoATM reclaims can be mined for the valuable and rare metals they contain. By recycling your old devices, you can prevent toxic mining waste from being poured into the environment, according to the company. And by keeping electronics out of the garbage dump, you also prevent the toxic materials found inside these devices (things like mercury and cadmium) from leaking into the ground.Of course, not all of the electronics that find their way into the ecoATM are actually taken apart and used for parts. Most of them are resold to new owners, a company spokesperson told Live Science. (Photo Credit: EcoATM)

Automatic lets you harness the computing power of your car for the sake of fuel efficiency. This little device plugs into the diagnostic port of your vehicle, which is typically tucked between the dashboard and the brake pedal. Once plugged in, Automatic connects the car's computer system to your smartphone, relaying data about all of your car's subsystems — from the gas tank to the engine.With this data at the ready, the device can tell you when there's something wrong with your car before it becomes a major issue, a company spokesperson told Live Science. In addition to letting you know when there's something wrong with your car, Automatic also notifies you when there's something wrong with your driving. If you tend to accelerate too quickly, Automatic will inform you that this bad habit wastes gas. In fact, the company claims that the device can help you spend up to 33 percent less on fuel each year just by getting you to avoid a few gas-guzzling habits .

SAYLI DALVI
TE-IT
Reference:(http://www.livesience,com)

Online Match-Making with Virtual Dates

Users of online dating sites often struggle to find love because the sites themselves make it more difficult than it needs to be. To the rescue: Virtual Dates, an online ice-breaker from Jeana Frost of Boston University, Michael Norton of HBS, and Dan Ariely of MIT. Key concepts include:

- Technology influences the tone and trajectory of relationships.
- The interface of online dating sites should be improved to help people filter better.
- Virtual Dates is an experimental interface that allows couples to communicate in real time using colors, words, and images.
- The idea of virtual spaces for natural interactions may have applications for managers and entrepreneurs.

Literally millions of people have found dates through online match-making services, so who says the Internet is isolating? The problem for many users, however, is that initial matches are often imperfect—even frustrating—because the services may shoot Cupid's arrow in the wrong direction."The current model is artificial and static, and far removed from everyday social interaction," says Jeana H. Frost, who along with Michael I. Norton and Dan Ariely is taking an academic look at online dating and how it can be improved. They describe their results in a new HBS working paper, "Improving Online Dating with Virtual Dates." Frost, now at Boston University, wrote her PhD dissertation at MIT's Media Lab on the topic, discussing the broader issues of impression formation, navigating options, managing expectations, and informing decisions in mediated environments. Norton is an assistant professor at HBS in the marketing unit while Ariely is a professor of management science at MIT.

While fascinated by the psychological underpinnings of online interactions, Frost and Norton are also exploring the social implications of people seeking relationships online and the possibility for technology to influence the initial tone and trajectory of relationships. One obstacle they noticed is that the main dating sites are designed as if looking for love is a variation of online shopping.Rather than just study the problem, they also came up with a possible solution: Virtual Dates.The researchers began their work by talking to online-dating-site users about their experiences, supplementing these conversations with surveys advertised on several commercial dating sites. What they found was a high level of dissatisfaction."People spent hours and hours and hours a week online to generate one cup of coffee with one person. That's not a very good system," says Norton.

MAKING THE CONNECTION

Here's how it works: After two dating-service customers find what looks like a good match, the couple meets over their computers for a five-minute Virtual Date, a kind of online ice-breaker that allows two people to communicate in real time using colors, words, and images.
Although a number of dating sites come with chat clients, the interfaces are often quite impersonal and lead to vague conversations, according to the researchers. Virtual Dates goes beyond those by providing pictures around which people can socially interact, as if the couple is going to a museum together and chatting about the art work."We wanted to give people

something more specific to talk about, help them find common interests and points of divergence, and give them some content for discussion. Ideally we wanted to simulate a standard first date," Norton says.To test the product, Frost and Norton conducted speed-dating events to introduce couples who had already met through the interface. Their goal was to see if Virtual Dates made any difference in stoking a romance. Preliminary data indicates that it may."In our experiment, two people would arrange a Virtual Date and then we would use a speed-dating event to bring them together so we could compare the online impression to the offline impression," says Frost.

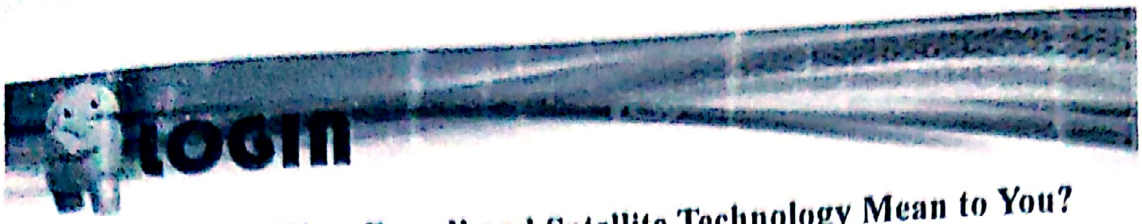
APPLICATIONS FOR ENTREPRENEURS

If Virtual Dates could lead people to love, the concept behind it—creating virtual spaces for easy, natural interactions with others—may also inspire non-dating-related applications for managers and entrepreneurs.

ADVICE FOR THE LOVELORN

With their extensive research on the subject, Frost and Norton have advice for online daters. "Remove yourself as much as possible and don't invest your ego in one particular date," Frost offers. "Remember that it's very easy to get carried away and imbue a profile with overly favorable qualities. My advice is to try to stay calm and resist being invested in one person until you've actually gotten to know them. Avoid long e-mail correspondences because they tend to heighten expectations.""It also takes resilience to go on a lot of dates and spend time actually arranging to meet rather than spending hours a week just searching. The people who go on a lot of dates are the people who find someone. In some sense it's a numbers game.

Kaustubh Chaudhary
BE-IT
Reference:(http://www.hbswk.hbs.edu)



What Will 100 Gbps Broadband Satellite Technology Mean to You?

In planes, trains, ships, and automobiles, the advent of 30-100 Gbps connectivity via satellite will redefine "access." It's not just consumers either, as 50% of enterprise terminals are predicted to use high-capacity satellite platforms by 2020. What does the advent of 100 Gbps over satellite mean to us—and what will it cost? Technical futurist Leo Wrobel explains in this article.

On planes, trains, ships, and automobiles, from consumer living rooms to corporate boardrooms, the advent of 30-100 Gbps connectivity via satellite will redefine broadband "access." Indeed, more than half of the world's satellite operators have ordered (or plan to order) high-capacity satellites, and 14 million households and 50% of enterprise terminals are predicted to be using high-capacity satellite platforms by 2020. Part of this is due to pure economics associated with the cost of such services. For example, some broadcasters have seen the price of satellite news feed slide from more than $100,000 to less than $20,000—an 80% reduction in price. The other driving factor, however, is the desire by various market segments to access any service, any time, anywhere. From this perspective, satellite boasts some significant advantages.

Emergency responders have powerful new options to deploy after disasters. Wireless operators are broadening their footprint and tapping markets that were previously unreachable through satellite back haul. And for consumers in particular, this is all good news as well. These days, regardless of proximity to major population centers, affordable broadband connectivity is within reach of everyone.

WHAT IS HIGH THROUGHPUT SATELLITE? (HTS)

High throughput satellites (HTS) is a classification for communications satellites that provide at *least*twice (and often 20 times or more) the nominal throughput of a classic satellite in the same amount of orbital frequency spectrum. Packing more bits into the same frequency spectrum significantly reduces the cost per bit. Leading-edge technologies such as ViaSat-1 and EchoStar XVII (also known as Jupiter-1) are capable of providing more than *100 Gbit/s* of carrying capacity. Stated another way, this technology represents more than 100 times the capacity offered by a conventional Ku-band satellite. In fact, the 140 Gbit/s ViaSat-1 launched in October 2011 had more capacity than all other commercial communications satellites over North America *combined.*

Adaptive Coding Modulation (ACM)

Like space diversity, ACM is also not a new concept. ACM has been used for many years in other wireless communications applications, including microwave radio. More recently, ACM has found favor in use over satellite links. The primary function of ACM is to optimize throughput in a wireless data link. ACM adapts the modulation order used, and also employs the Forward Error Correction code rate, which both affect spectral efficiency expressed in bits per second per Hertz. The adjustments take place based on the noise conditions or other impairments on the link. In this manner, ACM maximizes throughput regardless of link conditions such as noise, rain fade, etc.

PROS AND CONS

On the pro side, HTS transmits more power and packs a large amount of data into the signal than its counterpart, C Band satellites. HTS provides a powerful spot beam as well as excellent VoIP quality. Dishes are smaller in size, generally 2-5 feet in diameter in comparison to C band's "hard-to-hide" 8-foot dishes.

If you are looking for a con, rain fade (when it occurs) is more prevalent with the higher Ka band high frequencies than on classical C-band. However, as stated earlier, Ka band is improving. Ka band coverage is also not as wide-ranging as C band satellites. Latency can also be a problem, especially if you are into online gaming.

WHAT DOES THE FUTURE HOLD FOR HIGH CAPACITY SATELLITE?

While the future looks bright for HTS, a number of questions remain. We now need to draw on the experiences of those doing it already to find the best way forward. The GVF High Throughput Satellite Conference serves as a forum where these trends, companies, and customers will provide insights into how this exciting new chapter in satellite communications is being written. Suffice it to say that HTS offers an exciting new the way for applications to be delivered in the world today. For example, new alternatives for airlines will provide faster, cheaper, and higher quality Internet to customers on long flights. JetBlue announced just such a deal with ViaSat.

Allwyn D'souza
BEIT
Reference:(http://www.livesience.com)

Windows 10-The Dawn Of Virtualized Desktop

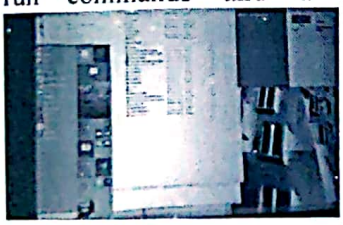
Yes, the Start menu is back. Yes, there are virtual desktops. No, the Charms bar hasn't gone away. And no, we don't know when Windows 10 will ship or what it will cost. But we've seen the technical preview of Windows 10 and the word to bear in mind for this release is productivity.

Microsoft's Joe Belfiore repeatedly emphasized that this is a very early build without even all the features that have been announced, and that there might be rough spots. We didn't see any problems in the time we had to try it out at Microsoft's San Francisco event, but what's clear is that there is plenty more to come.

This isn't the place to look for changes in Explorer or the control panel, let alone desktop tools like Paint and Notepad or Store apps like Music and Video. The technical preview is about the core features that are supposed to prove Microsoft can balance touch, mouse and keyboard without making any users feel abandoned.

Start-Menu

As expected, the Start menu is the default if you use Windows 10 with a keyboard and mouse, though you can keep the full-screen Start screen if you prefer it. Even on the Start menu, you can pin Live Tiles in multiple sizes on the right, but on the left you also get the familiar list of pinned and recentapplications, complete with jump lists for files, the search box that you can also use to run commands and a power button for shutting down or restarting your PC.

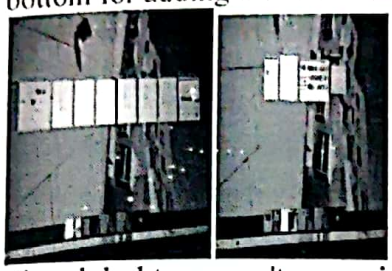


Snaps, apps and virtual desktops

As with Windows 8.1, those now include any modern apps you have running, and those now open as windows on the desktop like any other software you're running, ready to be resized or snapped side by side. The new Task View button on the taskbar is there to introduce the idea of moving between windows to the vast majority of Windows users who've never tried Alt Tab.

Snapping does more than the 'two desktop apps getting half the desktop' layout that you get in Windows 8. If you have one narrow window, the second window can take up all the rest of the space, or you can snap four apps, one in each corner. Windows will even show thumbnails of open windows to help you pick the one you want to snap without rearranging everything.

But you can also get more complicated. The Windows-Tab keyboard shortcut introduced in Windows Vista for the 3D Flip Explorer and reused for the Windows 8 modern task switcher now gives you a view that's almost exactly the same as Alt-Tab except for the button at the bottom for adding a virtual desktop - and the list of any virtual desktops you already have open.



Virtual desktops aren't a new idea but they never graduated from utility to main Windows feature because they can be confusing to manage. There's a subtle clue in the taskbar to help you; if an app is open but not in the current desktop, it shows up as underlined rather than outlined in the taskbar - and if you click on its icon you go straight to it, and the rest of that desktop

Charms

If you have a mouse and keyboard and the window that's active is a modern app like the Windows Store, that keyboard shortcut brings up a mini Charms menu hanging off the top left corner of the app instead.

This has the three dots that give you any extra commands, now clearly labeled as App Commands, the Search, Share and Settings charms that are usually on the Charms bar, plus other useful commands like Play, Print and Project, plus the option of running the app Full Screen. If you can't print from the app, the Print charm is on the menu but greyed out.

Command prompt

At the other extreme from Charms is the command prompt, where you go to run scripts and batch files. In recent years the emphasis has been on the far more powerful PowerShell automation system, but in the spirit of "no feature left behind" the humble command line is

getting the same harmonization as the rest of Windows 10. You can finally use familiar keyboard shortcuts to select a line or a word at a time, and to copy and paste text.

Management and data containers

Being able to upgrade PCs using management tools, being able to manage PCs thought the same Mobile Device Management systems you use for smartphones and tablets, an enterprise app store that lets businesses manage volume licenses for modern apps instead of making users sign in to a work PC with a personal Microsoft account, and separation of personal and business data using encrypted containers that doesn't mean changing all your applications but persists even when you copy files onto a USB stick or cloud service will all appeal to businesses.

Tushar Patil
BEIT
Reference:(microsoft.com)

Facebook will let you send money through Messenger app Coming soon to Android, iOS

Facebook said it is adding a new feature to its messaging app that allows friends to send and receive money through it.

Users can tap or click a dollar icon in a new chat window to send money to their friends, after they link a Visa or MasterCard debit card issued by a U.S. bank to their accounts.

The free feature will roll out over the next few months for users in the United States who access Facebook Messenger through desktop computers or Google's Android and Apple's iOS operating systems on mobile devices.

Users can create a PIN or enable Touch ID if they have an iPhone to add a level of security to the payments.Snapchat had launched a similar service last November, called Snapcash.

The mobile messaging company partnered with online payments company Square to allow Snapchat users to link their debit cards to their account and quickly send money to a contact by starting a chat on a smartphone.

DARSHANA SAKHIYA
BE-IT
Reference:(http://www.informit.com)

JSH Algorithm: A Password Encryption Technique using Jumbling-Salting-Hashing.

ABSTRACT

Presenting a new algorithm for improvising password encryption using Jumbling-Salting-Hashing technique. One of the most important password protection issue is to secure encrypted passwords on server's database. In cryptanalysis, a dictionary attack or brute force attack are the most common ways of guessing passwords. In order to augment the security aspect regarding passwords, we are devising JSH algorithm which will be responsible for preventing dictionary or brute force attacks on the passwords. In this algorithm, the jumbling process consists of randomly selecting characters from predefined character set and adding them into the plain password; salting comprises of prepending a random string and hashing process is implemented using cryptographic hash function to obtain a fixed length "fingerprint" which is stored in the server's database. As JSH algorithm deals with randomization, the password encryption technique forms a highly secured form of encrypted password which makes it difficult to decrypt reducing the probability of guessing password.

INTRODUCTION

According to Bruce Schneider "Security is a process, not a product." This famous quote is well echoed by the phenomenon that although there exist umpteen number of security techniques today, none of these tools can singlehandedly address all the security goals of an organization. As password is an authentication technique which provides the claimant access to system resources, it is an important aspect of security. Being the simplest form of authentication technique used, the probability of attacking the password is considerably high. The most common attack to obtain a password is by attacking the server's database consisting of a list of passwords. Although password encryption provides solution to prevent such attacks, "brute force attack" or "dictionary attack" have proven this password encryption technique to be futile. To overcome the problem of securing encrypted password, we are developing JSH technique which will provide additional security to the stored passwords. JSH algorithm consists of three techniques namely jumbling, salting and hashing. In the jumbling part, the password undergoes "addition", "selection" and "reverse" processes. Addition process is responsible for generating a value required for determining the number of characters to be added to the password. Selection deals with selecting characters to be added to the password from predefined character set.

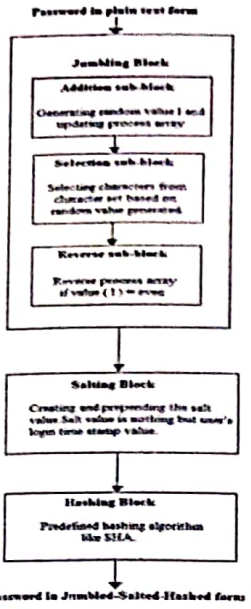
Reverse process is responsible for reversing the output of selection process on some condition. In salting part, random salt is added to the jumbled password. Selection of salt is based on timestamp value which is determined when the user creates an account. Finally, jumbled and salted password is given to the hashing procedure where predefined hashing algorithm such as SHA algorithm is implemented. Randomized algorithms are particularly useful when attacker who deliberately tries to perform dictionary or brute-force attack. It is for this reason that randomness is ubiquitous in cryptography. At the heart of all cryptographic systems is the generation of secret, pattern. Each and every stage of JSH algorithm is randomized, hence we can achieve "Randomness in Security".

predefined

Table1. Comparison between JSH and other existing hashing algorithms.

Functions	**JSH Algorithm**	**Existing algorithms (SHA, MD5)**
Decryption Level	Difficult , due to addition of jumbling block	Can be decrypted using Dictionary attack
Randomness	More randomized	Less randomized
Implementation level	More difficult due to randomization in jumbling technique, production of salting and hashing	Difficult , due to the production of hash value
Cryptographic processes involved	Jumbling + Salting + Hashing	Salting (Optional) + hashing
Selection of salt	User's sign-up timestamp value	Any random string

FLOW DIAGRAM



ALGORITHM

The pseudo code implementation of JSH is given below:

// Random ( ): It is a predefined method which is responsible for calling random value from predefined set of objects.

// Process array P [ ]: This array stores the actual plain-text password along with randomly generated characters. We are using this array for actual encryption process.

// Salt array S[ ]: This is use for storing timestamp value from user. In this case, timestamp value will be nothing but user's sign-up time value.

// input: password in plain-text form.

// output: password in Jumbled, salted and hashed form.

INITIALIZE 'x' to 0;

STORE the length of plain text input password in variable „x";

CREATE an Process array P[ ] such that P[length =x];

STORE each character in an array block;

// P {0, 1, 2... x-1) = {characters in password}

/* implementation of Jumbling Technique */

function jumbling (P[ ])

{

// implementation of jumbling technique: Addition Process

A.

Label 1 :CALL Random() function;

// Random function returns any random value from predefined set of integers.

SET 'l' as principle random value;

If (l >= x)

STORE random number value generated from random() function;

Else

goto**Label 1** ;

break;

End If

B.

UPDATE an array P[ ] of size (x + l) as shown :

// this array is referred as "Process array"

-- Process array of size (x + l)

--

C.

DEFINE the set of characters A.

Size (A) = M;

M = any large value;

A = {A....Z, a....z, 0....9, special characters, operators};
//Character set for a particular password entry should be different;
//implementation of jumbling technique: Selection Process
/* This process is responsible for selecting characters from given character set. All these symbols later on added with plain-text password. These process is also randomized */
A.
CALL random ( ) function 'l' times;
// At each iteration, random value is generated which acts as an index of the character in character set.
/* for Example : character set A ={ %,$,C,7,*,y,W,8,+, |, @ }
temp = P [j] ;
P [j] = P [i];
P [i] = temp;
l= l-1;
End While
End For

// implementation of jumbling technique: Reverse process
A.
If (l mod 2 == 0)
Reverse the process array; // l is EVEN number
Else
Do not reverse the process array; // l is ODD number
return (P); // pass the process array to salting function
End If
}
// end of jumbling function
/* implementation of Salting Technique */

CALL Random( )
number generated: 2
hence character selected : C */
B.
FILL the process array with characters as shown:

x(password characters)	l (selected characters)

C.
STORE the original length of an array (x + l) in variable „FIX"
For i= 0 to (x+l-1)
While (l !=0)
SET j to 0;
j= (FIX mod l);
Create 'temp' variable;

function salting(P[ ])
{
A.
STORE Timestamp value of Sign-up process OBTAIN the length of timestamp as „t";
CREATE Salt [size=t] array which stores random salt characters; Salt [ ] = {characters obtained from Timestamp value}; UPDATE an array P of size (x +l + t) as shown: Process array will become ---------- ---------- Process array of size (x + l + t) - ---------- B. FILL the process array with ---------- ---------- Jumbled password of size (x + l) | salt characters of size t ---------- ---------- return (P);

// pass the process array to hashing function
}

// end of salting function /* implementation of Hashing Technique */
function hashing(P [ ]) { A. Use of predefined SHA algorithm (SHA0, SHA1, SHA2, and SHA3) can be implemented in Hashing function; [2] }

// end of hashing function

PROF.PRATHAMESH CHURI
(IT-DEPT)

Reference:(Research article published in IJCA, ISSN no: 0975-8887)

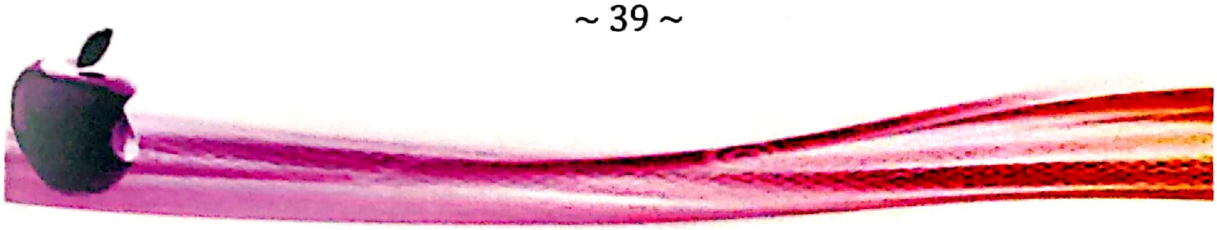
LIST OF MTA CERTIFIED STUDENTS (B.E. 2014-2015)

SQL

NAME OF STUDENTS	SCORE
ABHINAV PANDEY	97
ADITYA LAD	88
ALLWYN D'SOUZA	92
ALQAMAR SHAIKH	85
ANERI BHARBHAYA	97
ANKIT CHAVAN	94
ANKIT LOKHANDE	94
APARNA NAIR	97
ARCHANA SONI	82
ASHWIN NAIR	85
BHUMIKA PANCHAL	97
CAREN MENON	94
DARSHANA SAKHIYA	91
DHAVAL UNADKAT	94
DIPASHRI MHATRE	82
HANIF KHAN	94
HEMAL SAMANT	94
JYOTSNA DEVALE	97
KARISHMA KARANDE	94
MAYANK JAIN	82
MAYURI MORE	91
MINAL KADULKAR	94
MINAL SAVANT	97
MITALI RATHOD	100
NEHA RAO	94
NILESH JAIN	95
POURNIMA SHEGAR	97
PRASAD DIWAN	100
SAVAN KARKAR	100
SAYALI KUDU	58
SHERIN BENCHAMAN	97
SHIVANI THAKUR	91
SONALI SAGAR	94
SRIJESH NAIR	97
SUMIT BHANDGAR	79
TANVI MHATRE	100
TUSHAR PATIL	100
VAIBHAV BHAGAT	94
VENKATESH BANGERA	85
VIKAS DUBEY	91

ASP.NET

NAME OF STUDENTS	SCORE
KAUSTUBH CHAUDHARY	76
SUMESH VALANJU	83
RAHUL JAIN	82
RIZAAN KERAWALA	82
SHIVARAJINI BHAT	76
SAKIR SATHE	70
AVINASH PANDEY	79

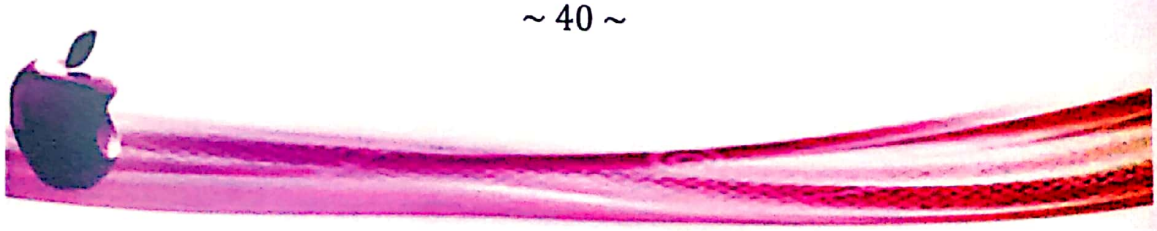


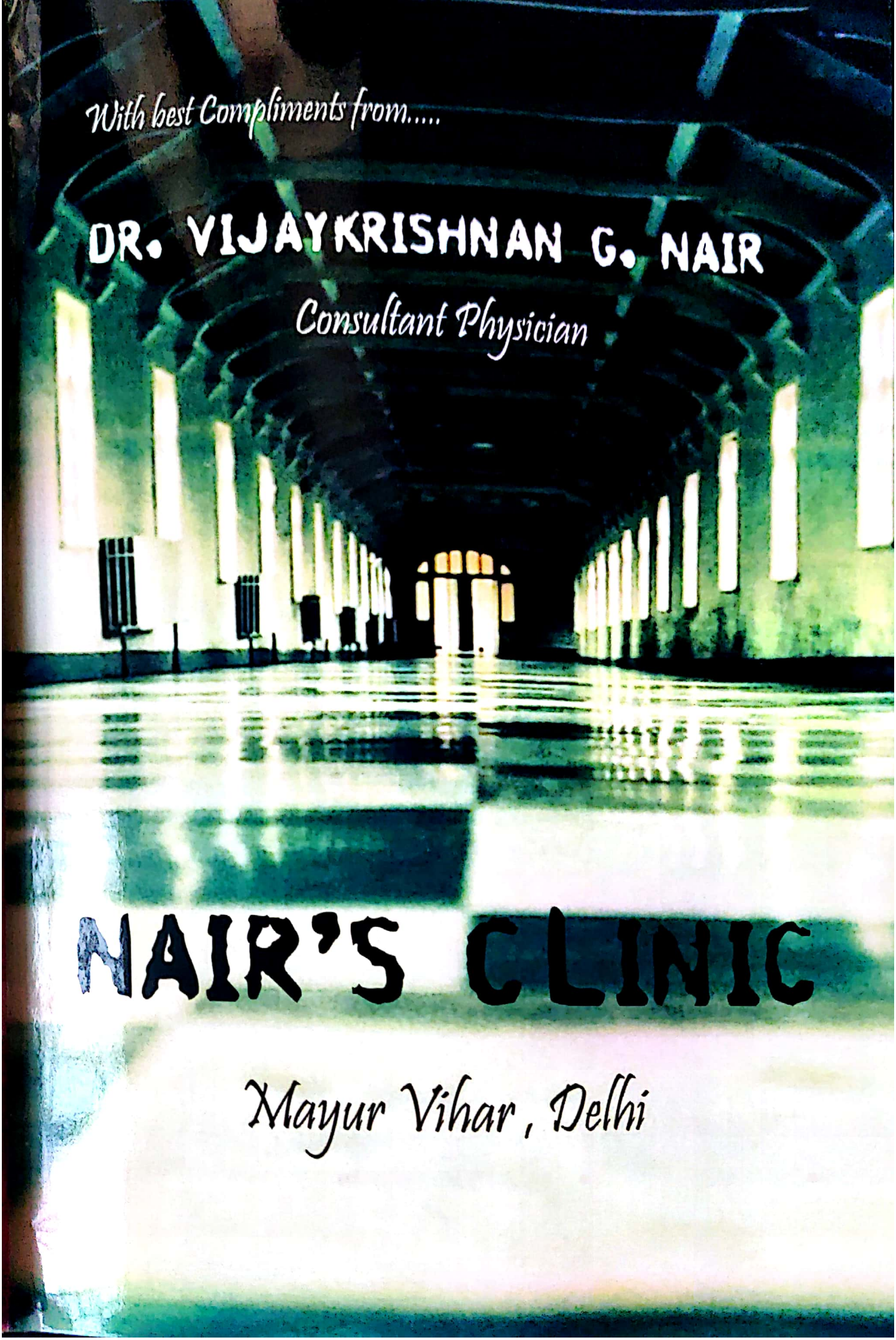
INFORMATION TECHNOLOGY TOPPERS
(2013-2014)

RANK	NAME	PERCENTAGE
1.	Nair Aparna	75.83%
2.	Kerawala Rizaan	74.88%
3.	Devale Jyotsna	73.16%

PLACEMENT RECORD OF INFORMATION TECHNOLOGY
(2014-2015)

Sr No.	Name	Company
1.	Ambadaskar Nikita	Neebal , LNT
2.	Barbhaya Aneri	Capgemini
3.	Bhat Shivaranjini	Neebal , LNT
4.	Chavan Ankit	Infosys
5.	Gohil Zankhana	Britslecone
6.	Jain Nilesh	Capgemini
7.	Jain Rahul	Mphasis
8.	Karkar Savan	Capgemini
9.	Kerawala Rizaan	Neebal , LNT
10.	Lokhande Ankit	Capgemini
11.	Mhatre Tanvi	LNT
12.	Modi Urvi	Infosys
13.	Nair Aparna	LNT
14.	Nair Ashwin	Mphasis
15.	Nair Srijesh	Infosys , LNT
16.	Pai Gopal	Infosys
17.	Panchal Bhumika	LNT
18.	Pandey Avinash	Infosys , LNT
19.	Patil Amey	Capgemini
20.	Patil Prasad	Britslecone
21.	Patil Tushar	Vistaar
22.	Purandare Sanket	Infosys
23.	Samant Hemal	Infosys
24.	Sathe Shakir	LNT
25.	Shah Siddharth	Britslecone





With Best Compliments From :-

Udyog Rattan Award by Institute of Economic Studies

Indian Achiever Award 2009 by Indian Organisation for Commerce & Industry

Udyog Shree Vishesh Gaurav Sanmaan Award by Udyog Shree Prakashan

Best Outstanding Performance Panchratna Award 2009-10 by Mahindra & Mahindra

Best Performance Award
Product Development
2006-2007

Plastic Injection & Blow Moulds and Moulded Parts

Mahindra · Visteon · LEAR · PIAGGIO · LUMAX · STANLEY · IFB · HONDA · Godrej · TATA · GM · ANTOLIN · HONDA · HERO HONDA · YAMAHA · Whirlpool · DENSO · BLUE STAR

ISO 9001:2008

Mr.Naresh Raut,Managing Director.
Abhijeet Dies & Tools Pvt.Ltd.,
Plot No.83-C,Govt.Indl.Estate,Charkop,Kandivali(West) Mumbai 67
Tel.:91-22-2868 2837/3482/3099 9600-699Fax.:91-22-2868 3281
E-mail:contact@abhijeetplastics.co.in
Website:www.abhijeetplastics.co.in

ABHIJEET