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EDITORIAL …

Every one of us know that every computer connected to the internet has a unique IP address. The Number Resources Organization (NRO) has recently found that only 10% of the IP addresses remain unused. The present IP version 4 uses 4 octets for an IP address and the NRO has urged the Internet Corporation for assigning names and numbers and to change the IP version to 6, which would provide more addresses by using 6 octets. Let us expect a new address with 6 octets sooner or later. More interesting and useful articles are in this issue. Read and enjoy. Don't forget to send us your feedback to make the forthcoming issues better than the best ksrcas.ishare@gmail.com.

By,

Editorial Board

CONTENTS

CHINA'S FASTEST SUPERCOMPUTER

Author

**S.Sasikala,
Lecturer, CS**

Article Title
　　　Fastest Super Computer by China

Article Description
　　　This article gives information about Tianhe and its uses.

MASSIVE DEVICE:

China's fastest super computer Tianhe on the NUDT campus in Changsha, Hunan Province.

The National University of Defence Technology (NUDT) unveiled China's fastest supercomputer, which could rival the world's most powerful computing devices.

The supercomputer named Tianhe, meaning Milky Way, will in theory do more than 1 quadrillion calculations per second (one petaflop) at peak speed.

A single-day task for Tianhe might take a mainstream dual-core personal computer 160 years to complete, working non-stop — if it can last that long.

Multiple functions

155-tonne system, with 103 refrigerator-like cabinets lined up in an area of about 1,000 square metres, was expected to process seismic data for oil exploration, conduct bio-medical computing and help design aerospace vehicles.

China's national high-technology research and development programme and the Binhai New Area, a major economic development zone in the northern port city of Tianjin, jointly financed Tianhe, which cost at least 600 million yuan ($88.24 million).

Tianhe's peak performance reaches 1.206 petaflops, and it runs at 563.1 teraflops (1,000 teraflops equal one petaflop) on the Linpack benchmark, which was originally developed by U.S. computer scientist Jack Dongarra and has become an internationally recognised method to measure a supercomputer's performance in practical use.

The technical data of Tianhe had been submitted to the world Top 500 list, compiled by the University of Mannheim in Germany, the National Energy Research Scientific Computing Centre, the Lawrence Berkeley National Laboratory, and the University of Tennessee in the United States.

Tianhe's performance would make it the world's fourth most powerful supercomputer, according to the most recent ranking.

The giant device, a product of two years of work by 200 computer scientists, is housed on the NUDT campus in Changsha, Hunan Province,

and would be moved to the National Supercomputing Centre in Tianjin by the end of 2009. Equipped with 6,144 Intel CPUs and 5,120 AMD GPUs, Tianhe was able to store all 27 million books in the National Library of China four times over.

January 1, 1920

Mailufterl's Developer Heinz Zemanek is Born
Heinz Zemanek, one of the European pioneers in computer technology, is born in Vienna, Austria. He studied at the University of Technology Vienna and received a doctorate degree in 1951.

WINDOWS HISTORY

Author

G.BALAMURUGAN
III-BSC-CS-C

Article Title
History of Windows

Article Description
This Article provides information about the history of Windows.

Widows   -1983

Windows 1   -1985

Windows 2   -1987

Windows 3   -22 may 1990

Windows(with multi media)-
                    october 1991

Windows 3.1 -april 1992(in the world history,while   published   this edition within two months the sales rate   is   above   ten   lakhs)

Windows   work   groups   3.1-oct   1992

Windows   N.T.   3.1-aug   1993
This windows edition was used with original license people number was crossed   above
2.5 crores

Windows work groups 3.11-feb 1994

Windows N.T. 3.51-june 1995

Windows   95-aug   1995
This edition create a great achievement after   published   this   folder within four days the sales is above ten lakhs.

Windows N.T. 4-1996

Windows C.E.-nov 1996

Windows C.E. 2-nov 1997

Windows 98-june 1998

Windows C.E. 2.1-july 1998

Windows 98 M.E.-may 1999

Windows C.E. 3-1999

Widows 2000-feb 2000
Windows millinieum-june 2000
Windows xp-oct 2001
Windows server 2003-2003
Windows vista-nov 2006

SINGLE-MOLECULE TRANSISTOR

Author

G.Anwar Basha,
Lecturer, CS

Article Title
        Single-molecule transistor

Article Description
        This article give information about the researcher's single-molecule transistor.

Researchers from Yale University and the Gwangju Institute of Science and Technology in South Korea have successfully created a transistor made from a single molecule.

The researchers showed that a benzene molecule attached to gold contacts could behave just like a silicon transistor.

They were able to manipulate the molecule's different energy states depending on the voltage they applied to it through the contacts. By doing so, they were able to control the current passing through the molecule.

The team included Mark Reed, the Harold Hodgkinson Professor of Engineering & Applied Science at Yale whose previous research in the 1990s demonstrated that individual molecules

January 4, 1972
Hewlett-Packard introduces the HP-35
Hewlett-Packard introduces the HP-35, the first scientific handheld calculator. The HP-35 was named for its 35 keys, weighed nine ounces, and sold for $395.

could be trapped between electrical contacts.

Since then, he and Takhee Lee, a former Yale postdoctoral associate and now a professor at the Gwangju Institute of Science and Technology, developed additional techniques over the years that allowed them to "observe" what was happening at the molecular level.

Key developments to the work were fabricating the electrical contacts on small scales, identifying the ideal molecules to use, and figuring out where to place them and how to connect them to the contacts.

"There were a lot of technological advances and understanding we built up over many years to make this happen," Reed said in a statement.

Reed stressed that this is strictly a scientific breakthrough and that practical applications are many decades away.

"We have fulfilled a decade-long quest and shown that molecules can act as transistors."

The research results were published in the December 24, 2009 issue of the journal Nature.

Getting a grip on school timetables

A new approach to solving the problem of school timetabling, known as a GRASP, has been developing by researchers in Brazil. They report details in a forthcoming issue of the **International Journal of Operational Research.**

Educational administrators everywhere will attest to just how difficult it is to solve the perennial problem of school timetabling: How to ensure adequate teaching resources and teachers are available in the appropriate classrooms with the appropriate students. Indeed, mathematicians have proved the school timetabling problem to be "NP-hard", which means it is the kind of problem that ranks alongside the classic

logistics problem known as the traveling salesman problem and the crystal packing problems (akin to the game Tetris). As there seems to be no shortcut or easy solution to NP-hard problems, finding a single, simple answer, even with a supercomputer, is probably impossible when the input instanves are realistically large. Hence the educators' perennial headache.

Now, Arnaldo Vieira Moura and Rafael Augusto Scaraficci of the Institute of Computing, at the University of Campinas, in Brazil, have developed a GRASP (i.e., Greedy Randomized Adaptive Search Procedure) heuristic for the school timetabling problem. This approach, like any other heuristic method, is not guaranteed to find a best answer for each school timetable, but it does help solve the problem for Brazilian high school timetables efficiently and quickly, given their specific requirements.

Educational timetabling problems involve scheduling a number of "meetings" among different resources without them overlapping, so that a suitable teacher is available for a particular subject class at a given time. Until now, solving the school timetabling problem was done manually, or at best with the help of a spreadsheet program. Typically, a manual solution requires expert attention and can take many weeks for large educational establishments. Moreover, because of the problem complexity, planners are not always able to take the best decisions, building schedules that are inconsistent with teaching requirements and do not satisfy all teachers' needs.

"An optimization tool could assist these planners in order to reduce the time they need to build the timetables and to improve the quality of the solutions," the researchers explain. The timetabling problem is defined in terms of a set of "m" disjoint classes of students, "n" teachers, "s" subjects and

"p" weekly time periods. The latter are prefixed for each class. The tool must then find a slot for each teacher and ensure that all students receive the requisite lectures each week while simultaneously satisfying a complex set of constraints, like with teachers' preferences and availability, adequate daily balancing of class subjects and collective sport classes. Besides, time grids for different grades might also conflict.

Problems arise because teachers often teach several subjects to students in different classes, students must generally not receive more than 2 or 3 same subject lectures in the same day and they must be back to back, teachers must fulfill their workload requirements and waiting times between lectures must be minimized for both teacher and student. These and other criteria are assigned a degree of importance and the team applies their algorithm, embedded in computer software, by allowing it to pick a given lecture and seeing how well it fits with the "hard" criteria and endeavors to fit it to the "soft" criteria.

GRASP repeats a basic three-step cycle. First, it selects a random lecture and assigns it resources, then adds the next lecture and ranks the options and so on. The growing list of assigned lectures is sorted with those that score the highest in terms of the different criteria moving up the priority list, this is the "greedy" part. The addition of each subsequent lecture must then adapt to fit unless it scores more highly than the others in which case it moves up the list. The second phase improve the list using a "local search procedure" that compares neighboring lectures and re-ranks them in pairs. This phase continues until no further improvements are possible. Finally,a so-called "path-relinking strategy" is used to spot the almost optimum solutions, which are then used to guide the final solution. "The basic cycle is repeated a number of times and the overall champion solution is returned

as the final answer of the algorithm," explains Moura.

The team successfully tested their GRASP algorithm on the timetabling problem at three Brazilian high schools. The same algorithm should be adaptable to other educational establishments and other timetabling problems.

"A GRASP strategy for a more constrained School Timetabling Problem" in Int. J. Operational Research, 2010, 7, 152-170

PUZZLE PATTERN

Author

S.Prema,
Lecturer, CS
Article Title
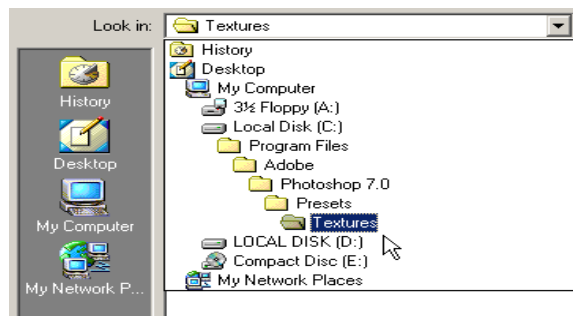   Puzzle pattern
Article Description
        This article is used to
change the images like puzzle.

Here's simple 'Texture/Pattern' affect to make your photos look like a puzzle using the below image.

1. Start by going to the **'Filter/ Texture/Texturizer...'** option as I have captured below.

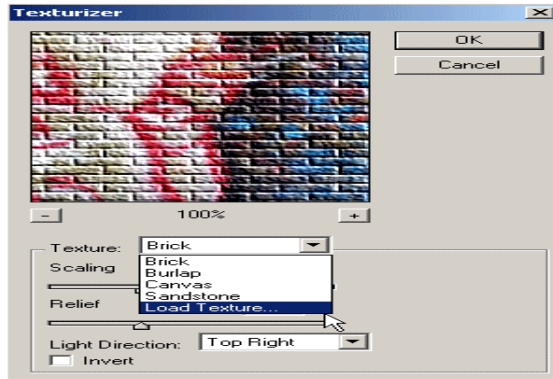**2.** Then in the 'Texturizer' Control Panel select 'Load Texture' from the 'Texture' drop down list.

3. Next, browse to your Adobe Photoshop '...Presets/Texture' folder on your hard rive, then locate and select a file called 'Puzzle.psd' that should have been installed with the original
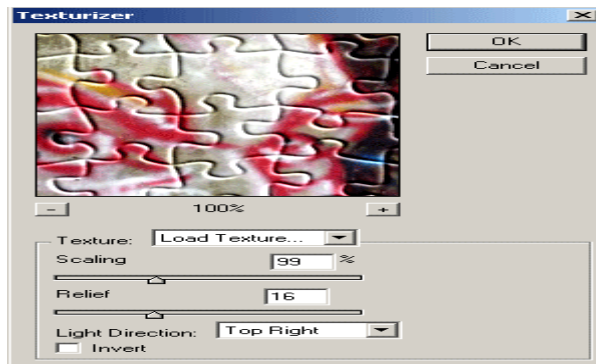
program.

Selecting it automatically loads it back

into the 'Texturizer' filter panel.

4. Next, toy with the additional settings ('Scaling/Relief/Light Direction')in the 'Texturizer' control panel until your content with the result.
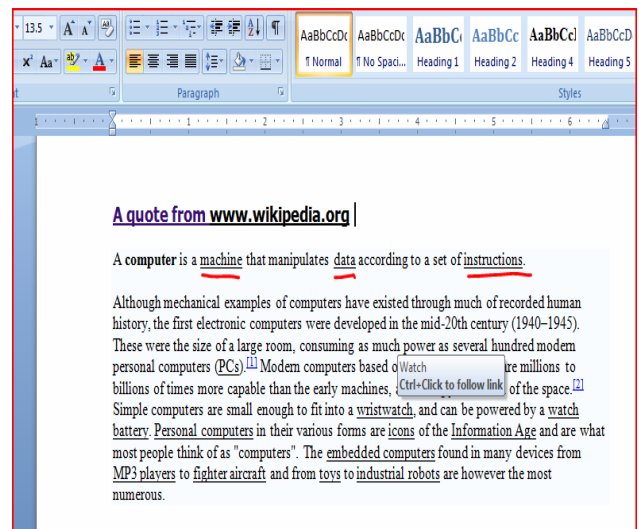

Here's the final result.

Author

R.Renugadevi
Lecturer, CS

Article Title
Word Shortcut

Article Description
This article provides information to delete html hyperlinks from word document

Sometimes when you copy text from a webpage, (which could be breaching copyright laws) there will be html hyperlinks included in the text. If you

paste this text to a Word Document the hyperlinks will now be in your document. These links will lead to wherever the original author intended.

Why would you want to delete all html hyperlinks from a Word document?

For example if you copy text from www.wikipedia.org to paste into a Word document it usually has a million html links in just a small paragraph. See my screenshot below. If you just wanted to quote a definition from the website it is common courtesy to leave a back link to the original author, but not as many as shown in this screenshot. Note that I started to underline the html links in red to show

you how many there is in this block of text. There were three in the first line.

How to delete a html hyperlink from a word document?

1. To remove a html hyperlink you can simply *right click on the link*
2. A menu will appear. Choose *Remove hyperlink.*
3. That's it...
4. See the *screenshot below.*

This method only removes one hyperlink at a time and in the example piece of text alone it would be time consuming to remove html hyperlinks this way.
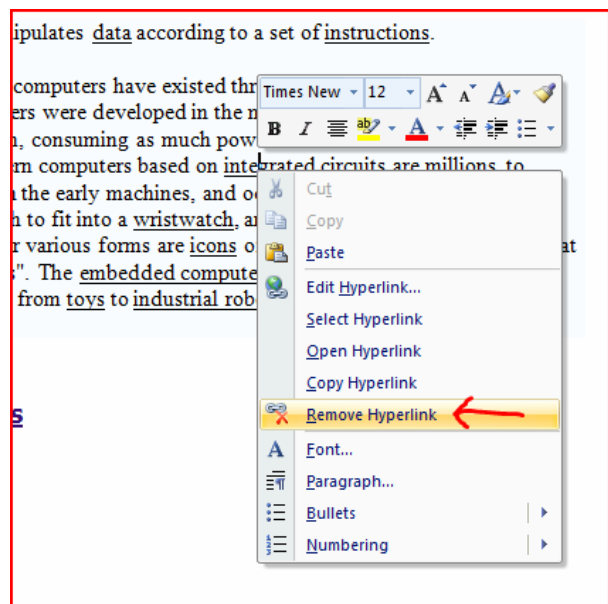
How to delete multiple html hyperlinks all at once with a simple keyboard shortcut?

1. *Select the text* where you want to *remove the html hyperlinks from* by making the selection blue. See the screenshot below.

2. Then press the *CTRL*, *Shift* and *F9* keys on your keyboard. All at the same time. This will remove all the html hyperlinks from the text you have selected in you r Word 2007 document.

January 5, 1962

The First Reference to Simula in Writing is Made

The simula early object-oriented language was written by Kristen Nygaard and Ole-John Dahl of the Norwegian Computing Center in Oslo. Simula grouped data and instructions into blocks called objects, each representing one facet of a system intended for simulation.

January 6, 1942
Peter Denning, a Developer of Virtual Memory, is Born.

CYBER ETHICS

January 9, 1925

IBM's 360 Team Member Erich Bloch is Born

Erich Bloch, a member of the team that engineered IBM's System/360 familty of computers, is born. In 1962 IBM chose Bloch to head its Solid Logic Technology (SLT) program.

January 11, 1960
ACM/GAMM Committee Convenes to Develop Algol
ACM/GAMM committee, a team of computer industry luminaries, convenes to develop Algol 60, the first block-structured language.. Algol (Algorithmic Language) and Algol 60 were designed to solve scientific computations.

Author

**Ms.F.Reginamary
Lecturer, CS**
Article Title
Cyber Ethics
Article Description
This article gives information about Cyber Ethics and security tips for prevention.

What is Cyber Ethics?

Cyber ethics refers to the code of responsible behavior on the Internet. Just as we are taught to act responsibly in everyday life, with lessons such as "Don't take what doesn't belong to you," and "Do not harm others," -- we must act responsibly in the cyber world as well.

What are Responsible Behaviors on the Internet?

Responsible behavior on the Internet in many ways aligns with acceptable behavior in everyday life, but the consequences can be significantly different. For example, verbal gossiping is generally limited to the immediate audience (those within earshot) and may well be forgotten the next day. However, gossiping on the Internet can reach a far wider audience. The "words" are not forgotten the next day, but may live on the Internet for days, months or years and cause tremendous harm.

Some people try to hide behind a false sense of anonymity on the Internet, believing that it does not matter if they behave badly online because no one knows who they are or how to identify them. That is not always true. Computers, browsers, and Internet service providers may keep logs of their activities which can be used to identify illegal or inappropriate behavior.

The basic rule is do not do something in cyber space that you would consider wrong or illegal in everyday life.

When determining responsible behaviors, consider the following:

- Do not use rude or offensive language.
- Don't be a bully on the Internet. Do not call people names, lie about them, send embarrassing pictures of them, or do anything else to try to hurt them.

- Do not copy information from the Internet and claim it as yours. That is called plagiarism.
- Adhere to copyright restrictions when downloading material including software, games, movies, or music from the Internet.
- Do not break into someone else's computer.
- Do not use someone else's password.
- Do not attempt to infect or in any way try to make someone else's computer unusable.

We were taught the rules of "right and wrong" growing up. We just need to apply the same rules to cyber space!

Cyber Security Tips

1. Think before You Click
Always think before you click on links or images in an email, instant message, or on web sites. Be cautious when you receive an attachment from unknown sources. Even if you know and trust the sender of the email, instant message, web site, or a friend's social networking page, it is still prudent to use caution when navigating pages and clicking on links or images.

2. Use Hard to Guess Passwords
Developing good password practices will help keep your personal information and identity more secure. Passwords should have at least eight characters and include uppercase and lowercase letters, numerals and symbols.

3. Avoid Phishing Scams
Phishing is a form of identity theft in which the intent is to steal your personal data, such as credit card numbers, passwords, account data, or other information. Do not reply to emails that ask you to "verify your information" or to" confirm your user-id and password."

4. Shop Safely Online
When shopping online always know with whom you're dealing. When

submitting your purchase information, look for the"lock" icon on the browser's status bar to be sure your information is secure during transmission. Always remember to pay by credit card and keep a paper trail.

5. Protect Your Identity
When visiting web sites, it's important to know what information is being collected, by whom and how it will be used. Web sites track visitors as they navigate through cyberspace, therefore, data may be collected about you as a result of many of your online activities. Please keep in mind most legitimate web sites include a privacy statement. The privacy statement is usually located at the bottom of the home page and details the type of personally identifiable information the site collects about its visitors, how the information is used - including with whom it may be shared - and how users can control the information that is gathered.

6. Dispose of Information Properly
Before discarding your computer or portable storage devices, you need to be sure that the data contained on the device has been erased or "wiped." Read/writable media (including your hard drive) should be "wiped" using Department of Defense (DOD) compliant software.

7. Protect Your Children Online
Discuss and set guidelines and rules for computer use with your child. Post these rules by the computer as a reminder. Familiarize yourself with your child's online activities and maintain a dialogue with your child about what applications they are using. Consider using parental control tools that are provided by some Internet Service Providers and available for purchase as separate software packages.

8. Protect Your Portable Devices
It is important to make sure you secure your portable devices to protect both the device and the information

contained on the device. Always establish a password on all devices. If your device has Bluetooth functionality and it's not used, check to be sure this setting is disabled. Some devices have Bluetooth-enabled by default. If the Bluetooth functionality is used, be sure to change the default password for connecting to a Bluetooth enabled device. Encrypt data and data transmissions whenever possible.

9. Secure Your Wireless Network
Wireless networks are not as secure as the traditional "wired" networks, but you can minimize the risk on your wireless network by enabling encryption, changing the default password, changing the Service Set Identifier (SSID) name (which is the name of your network) as well as turning off SSID broadcasting and using the MAC filtering feature, which allows you to designate and restrict which computers can connect to your wireless network.

10. Back-Up Important Files
Back-up your important files minimally on a weekly basis. Don't risk losing your important documents, images or files

Author

**S.S.Kavitha
Lecturer, CS**

Article Title
Integrated Development Environment
Article Description
This article provides information about IDE, products and applications.

What is IDE ?

An IDE which is also known as integrated design environment, is a set of tools which integrate different development environment.

A cross-platform solution, that aids web and desktop application development easy.

Why IDE ?

IDEs typically present a single program in which all development is done. This program typically provides many features for authoring, modifying, compiling, deploying and debugging software. The aim is to abstract the configuration necessary to piece together command line utilities in a cohesive unit, which theoretically reduces the time to learn a language, and increases developer productivity. It is also thought that the tight integration of development tasks can further
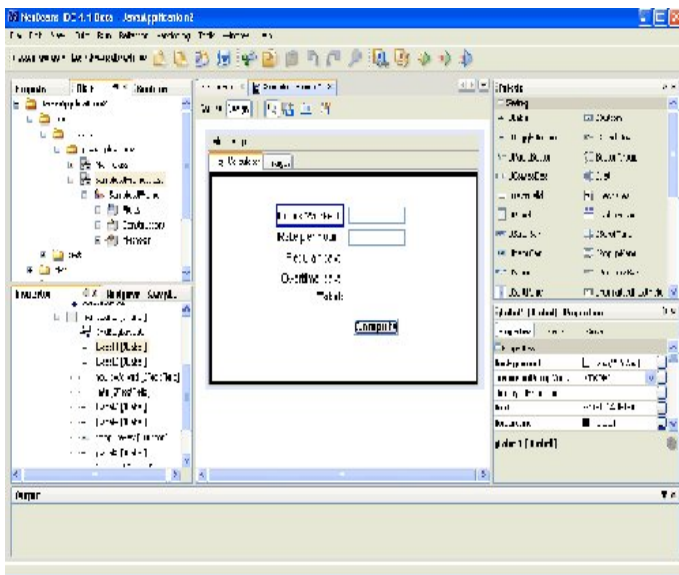
January 14, 1919

IBM's 701 Chief Architect Nathaniel Rochester is Born.

January 15, 1986

The National Science Foundation Opens the National Center for Supercomputer Applications (NCSA).

January 16, 1956

SAGE is Disclosed to the Public

The U.S. government's Semi-Automatic Ground Environment (SAGE) is disclosed to the public. SAGE, an air defense system, linked hundreds of radar stations in the United States and Canada in the first large-scale computer communications network.

January 17, 1996

Computer is Used in the Discovery of New Planets.

Paul Butler and Geoffrey Marcy announced to the American Astronomical Society that they had discovered two new planets using an unconventional computer technique to analyze the movement of stars.

January 18, 1938

J.W. Bryce outlines the Harvard Mark I

The Harvard Mark I was the first fully automatic machine to be completed and computed three additions or subtractions a second; its memory stored 72 numbers.

January 19, 1983

Apple Introduces Lisa Computer.

increase productivity. For example, code can be compiled while being written, providing instant feedback on syntax errors.

An IDE normally consists of:

- a source code editor
- a compiler and/or an interpreter
- build automation tools
- a debugger

IDE Product:

IDE Product for Ada:

- IBM Rational Ada Developer : For software developers using the Ada programming language, an IDE that supports modern software development practices throughout the development life cycle.

IDE Product for C and C++:

- New in C++Builder 2010: Reduce development time with new IDE and debugging tools. New and enhanced tools for coding, debugging and compiling.

IDEs for the Java platform:

Sun Microsystems supports three: NetBeans, Sun Java Studio Creator, and Sun Java Studio Enterprise.

- The NetBeans Platform and IDE

provides the services common to desktop applications, such as window and menu management, settings storage, and so forth.it also provides support for CVS/Version control access, FTP functionality, databases, scripting, and servlet and JavaServer Pages support through Tomcat.

NetBeans contains extensions to the
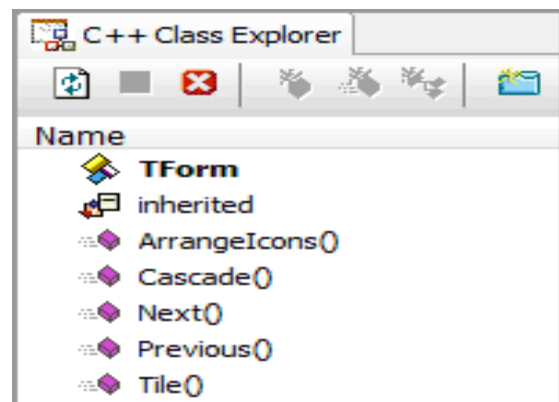
Swing APIs that make it easier to write in a syntax-highlighting code editor.

- Sun Java Studio Creator IDE
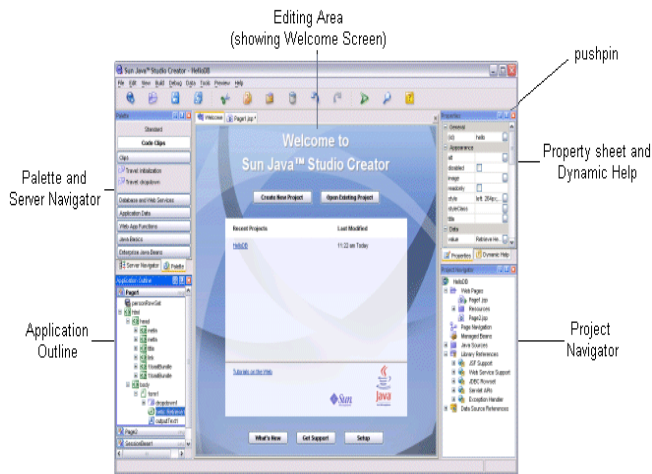
The Sun Java Studio Creator IDE is great for quick and easy web application development.

For programmers and developers new to the Java platform, Java Studio Creator is an easy-to-use and powerful tool for building web applications.

- Sun Java Studio Enterprise

This IDE is a powerhouse set of tools that provides a powerful, integrated framework for enterprise-grade, rapid web application development, offers enhanced debugging and development support for Web services and Java 2 Platform, Enterprise Edition (J2EE) application development.
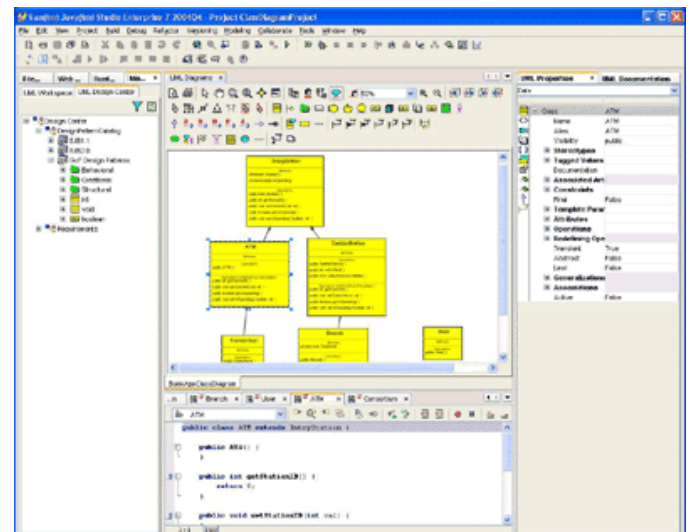
Java Studio Enterprise provides a model-driven analysis, design, and development environment that leverages Unified Modeling Language (UML).

J2ME IDE:

BlackBerry® : applications for Java® based BlackBerry® smartphones.

Embedded Integrated Development Environment MPLAB Integrated Development Environment : for the development of embedded applications

employing Microchip's PIC® and dsPIC® microcontrollers.

IDEs for Web Page Development:

- Eclipse: to develop PHP-based Web Applications and will facilitate extensibility

- Zend Studio 7.0: for PHP 5.3, source code editing, easy debugging source code editing, easy debugging

- DreamWeaver: for JSP, HTML, PHP languages

- Ms-Office Front Page: for JSP, HTML, PHP languages

- Editplus: is a text editor, HTML editor, PHP editor and Java editor for Windows

Perl IDE:

Padre: a text editor that is simple to use for new Perl programmers but also

supports large multi-lingual and multi-technology projects.

CROSSPLAT FORM IDEs:

- IBM Rational Business Developer : A rapid development workbench for delivering cross-platform Web and service-oriented applications.

- IBM Rational Developer for System z : An IDE for traditional mainframe, Web development, and integrated mixed workload. Accelerates the development of Web applications, traditional COBOL and PL/I applications, Web services, and XML-based interfaces

- IBM WebSphere Development Studio for System i : A suite of tools for e-business and i5/OS® server development containing a

complete set of server and workstation components optimized for i5/OS development, including traditional RPG and COBOL development tools.

DISTRIBUTED APPLICATIONS:

- OpenEdge: A single, unified environment allows developers to build Web-based applications, distributed applications or client-server applications, to create XML, Java-based messaging, and Web services, and to integrate .NET and Java clients.

- M2M: Replacing the existing Open AT® IDE, M2M Studio fully integrates previously isolated tools such as the source code editor, project build wizard, target download, RTE mode monitor, JTAG debugger, traces

- BVRDE : This tool is to allow a developer to compile and debug applications entirely on a remote computer. This includes FTP and secure & encrypted protocols such as SSH and SFTP.

BIOS Firmware

Author

**P.Gowri Shankar
Programmer**

Article Title

BOIS Firmware

Article Description

This article provides information about BIOS functions in Various Hardware.

BIOS stands for Basic Input/Output System. It contains basic instructions to interact with various hardware modules such as Motherboard controllers or that of interface cards. BIOS is the software that is run by a computer when first powered on.

A computer motherboard inevitably contains a BIOS chip in the form of an onboard PROM, EPROM or flash memory. When the computer is powered on, it performs diagnostic tests on the computer hardware devices such as hard drive, FDD, and memory. It searches for other BIOS's on the plug-in boards, and takes care of them. It then loads the operating system and passes control to OS. The BIOS accepts requests from the drivers as well as the applications as shown in the figure below.
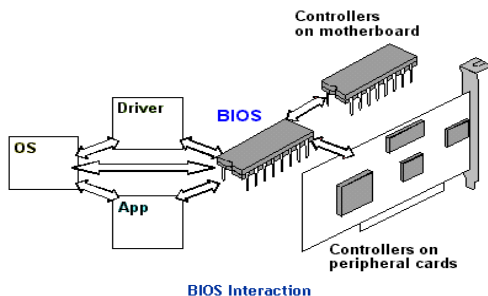
BIOS is also known as PC firmware because it is an integral part of the motherboard.

Firmware on adapter cards: A computer can contain several BIOS firmware chips. The motherboard BIOS is normally used to access basic hardware components such as the keyboard, floppy drives, and hard disk controllers. Adapter cards such as SCSI, RAID, and video boards may include their own BIOS software.

Firmware generally available in different forms:

1. EPROM (Erasable Programmable ROM), for updating a BIOS firm using EPROM, you may need to get a new chip from the manufacturer.
2. EEPROM (Electrically Erasable Programmable ROM), you can update a BIOS firmware using EEPROM using "boot to floppy", and running the Firmware update program.

Controllers on motherboard

Driver

BIOS

OS

App

Controllers on peripheral cards

BIOS Interaction

3. Flash ROM - faster at rewriting the chip

A typical BIOS chip used on motherboards is shown in the figure below. Though it is a square-type PLCC package, BIOS chips come in different forms. Figure 2 shows the BIOS after insertion into the socket.

BIOS chip
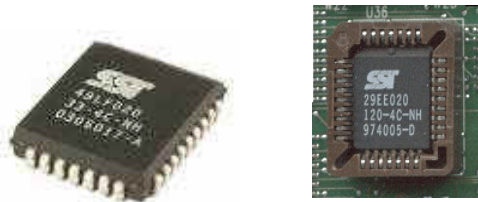
BIOS chip after insertion into a socket.

MOUSE INVENTION

Author

Sarankumar
I BCA 'C'

Article Title
        History of Mouse
Article Description
        This article provides information about the history and working process of mouse.

Mice are not vital computer accessories as long as you know how to use key combinations to open files, but what do you do if your keyboard breaks? In this case a mouse becomes the single device with which you can control your computer. We have all seen different types of mice on Mouse

Arena ranging from concepts and fashionable mice to high-end devices like gaming mice, but we didn't know much about them besides their specifications. I think that now it is time to go deeper into this subject and learn all about our personal computer mouse.

Mouse Definition

<-125x125   Button - left->
A computer mouse is a pointing device that detects 2D motion relatively to a surface and translates it into the pointers motion on the display. You

will tell me about the Logitech mouse that works in the air. We all get to that too,   soon.

Computer   Mouse   History

The history of the computer mouse starts at the Stanford Research Institute in the United States, where many technologies and solutions that are the base of today's products were invented, such as the Electronic Recording Machine Accounting, the magnetic ink character recognition, the first mobile robot to reason about its actions, the world's first all-magnetic digital computer, world's first electronic computer network, remote surgery, the speech recognition, and many, many others which you can read about   on   Wikipedia. One of their innovations is, of course,

the first computer mouse designed by Douglas Engelbart in 1963. The patent was published in 1970 and described a wooden shell with 2 metal wheels working as an X-Y position indicator for a display system. Its nickname was â€œmouseâ€ because of the tail coming out the end. Unfortunately he never received great recognitions for inventing the computer mouse as the patent expired in 1987 and other came out with new designs and different configurations that did not infringe upon the original patent.

William Bill English worked together with Douglas Engelbart at the worlds first mouse design and he built the first prototype, while later, after moving to Xerox PARC, he developed the first mouse ball.
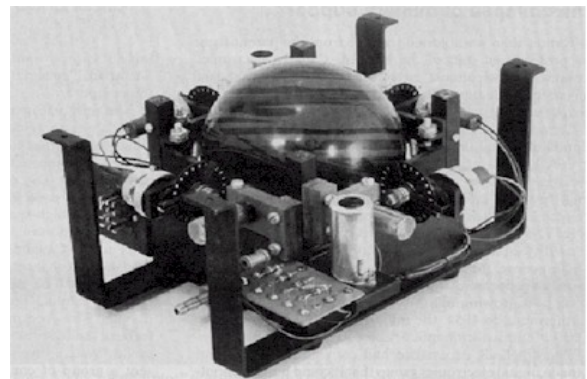
In 1981, the Xerox 8010 Star Information System brought the first computer mouse on the market as part of the Xerox Corporationâ€™s system, which consisted of a bitmapped display, a window-based graphical user interface, mouse, icons, folders, Ethernet networking, file servers, print servers and e-mail.

There were a few mouse designs which could be considered the worlds first but as they didn't get the publics attention and no patent, they just vanished in time. One interesting mouse came from Tom Cranston, Fred Longstaff and Kenyon Taylor, who designed the first trackball in 1952, but as it was included in a secret military project, it wasn't patented.

How Does a Computer Mouse Work?

In the history of the computer mouse are several types of mice and I will provide you a brief description. Mechanical mice like the ball mouse invented by Bill English had a single
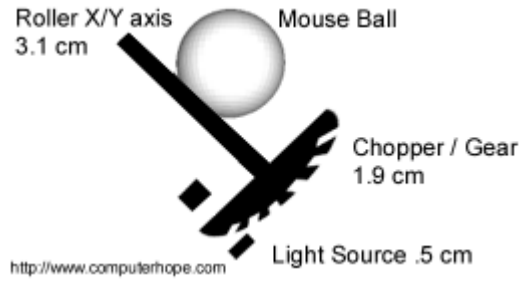
rotatable ball instead of the external wheels, and as you moved the mouse the ball was turned. It used X and Y rollers, optical encoding disks with light holes, infrared LEDs illuminating the disks, and sensors in charge with gathering light pulses to convert to X and Y velocities.

One of the rollers was detecting the horizontal motion and the other one the vertical motion, which was rotating the encoder wheels to interrupt the optical beams, generating this way electrical signals. The generated signals were then sent to the system via the connection wires, and converted into

the cursors motion with the help of driver software.

The opto-mechanical mice were an improved version of the incremental rotary encoder-based mechanical mice, and use the ball or closed wheels, but they can detect the shaft rotation with the help of an optical encoder, for more reliability.Optical mice have the LED technology and photo diodes which detect the movement on a surface, replacing the need for moving parts.

At the beginning, optical mice used either infrared LED and a 4-quadrant infrared sensor to detect grid lines printed with infrared absorbing ink on a special metallic surface, while algorithms in the processing unit were calculating the speed and direction, or were based on a 16-pixel visible-light image sensor with integrated motion detection on the same chip, tracking the light dots motion on a dark field or printed paper. The first concept couldn't work perfect if the user moved the pad, and the second one was based on mechanical mice's system.

Later these optical mice were improved and the modern mouse was created. It is independent of the surface and uses an optoelectronic sensor to take successive pictures of the surface. Optical mice work by illuminating this surface with a LED, while frames changes are processed by the image processing unit from the chip, and then translated into movement on the X/Y axes using an algorithm. Laser mice replace the LED with an infrared laser diode to illuminate the surface and track 20 times more surface than the optical mice, being
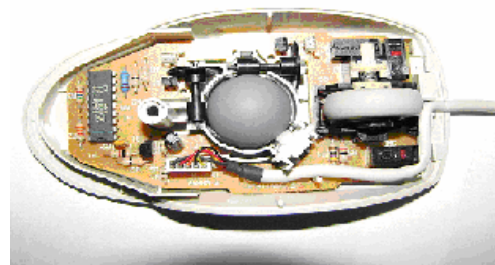
more sensitive and increasing the resolution.

Cordless mice used at first a tuning

fork to detect movement and featured a switch to deactivate the movement circuitry between uses. Advanced cordless mice were transmitting the data through infrared radiation or radio.

3D mice work with ultrasound and the first model released on the market was the 3D Ring Mouse. It is wireless and to use it you would have to use a ring on your finger. The ring permitted you to access 3 buttons while keeping it in the air, and the tracking happened in a base station. It disappeared on the market because it didn't provide enough resolution. Later the double mice systems appeared and were operable by 2 users in the same time on the same system.

I was saying earlier that the coolest mouse of the moment, in my opinion, is the Logitech MX Air Rechargeable Cordless Air, featured in one of our previous articles. You can use it in the air and this is possible thanks to the unique Free space motion sensing technology developed by Hillcrest Labs, which consists of a 3D motion sensor capable of translating human natural motions into screen cursor movement.

It is based on several new technologies such as Orientation Compensation for the natural motion control via Micro Electrical Mechanical Systems sensors mixed with special designed algorithms for strong control from any position and regardless of the devices orientation. The Tremor Cancellation permits the mouse to make differences between the intentional and unintentional human movements so that the device will always respond to those intentional only. According to tests results, Free space motion technology is producing 50% fewer pointing errors than mechanical gyroscope based devices, improving the pointing speed with up to 20%. You can read more about it here.

In the present day you can find different types of mice and unique designs on the market including washable mice, foldable mice with calculator, phone-mice, mice with fingerprint reader, cool trackball mice, wireless mice, and mice created with best ergonomics in mind.

January 21, 1888

Babbage's Analytical Engine Passes the First Test

The Analytical Engine of Charles Babbage was never completed in his lifetime, but his son Henry Provost Babbage built the mill portion of the machine from his father's drawings, and on January 21, 1888 computed multiples of pi to prove the adequacy of the design. Perhaps this represents the first successful test of a portion of a modern computer.

January 22, 1984

Apple Computer Launches the Macintosh

Apple Computer launches the Macintosh, the first successful mouse-driven computer with a graphic user interface.

January 23, 1959

Robert Noyce Conceives the Idea for a Practical Integrated Circuit

Robert Noyce, as a co-founder and research director of Fairchild Semiconductor, was responsible for the initial development of silicon mesa and planar transistors, which led to a commercially applicable integrated circuit. In 1968 Noyce went on to found Intel Corp. with Gordon Moore and Andy Grove.

January 24, 1948

IBM dedicates the SSEC

IBM dedicates the Selective Sequence Electronic Calculator (SSEC). The SSEC produced the moon-position tables used for plotting the course of the 1969 Apollo flight to the moon.

January 25, 1979

Robot Kills Auto Worker

Robert Williams of Michigan was the first human to be killed by a robot. He was 25 years old.

January 29, 1957

SRI and GE Meet to Choose a Place for ERMA's MICR Encoding

ERMA (Electronic Recording Machine - Accounting), developed by SRI and General Electric for the Bank of America in California, employed Magnetic Ink Character Recognition (MICR) as a tool that captures data from checks.

January 30, 1925

Douglas Engelbart is Born

Doug Engelbart, best known for inventing the mouse, is born.

January 31, 1995

AT&T and VLSI Protect Against Eavesdropping

AT&T Bell Laboratories and VLSI Technology announce plans to develop strategies for protecting communications devices from eavesdroppers. The goal would be to prevent problems such as insecure cellular phone lines and Internet transmissions by including security chips in devices.

Nessus

Author

S.Nithya
Lecturer,CS

Article Title
    Security Software
Article Description
    This article provides information about NESSUS the security software and

Introduction

There are a number of security scanners available. Most are vendor specific and charge by the number of IP addresses it can scan. The most popular alternative to these scanners is Nessus. Nessus is public domain software released under the GPL. Nessus is designed to automate the testing and discovery of known security problems. Allowing system administrators to correct problems before they are exploited. Historically,

many in the corporate world have frowned on such public domain software, instead choosing "supported" products developed by established companies. Usually these packages cost thousands of dollars and the license is based upon the number of IP addresses scanned. However, many in the corporate world are now starting to realize that public domain software, such as Nessus, NMap, Apache, and MySQL, is often superior to similar commercial products.

One of the very powerful features of Nessus is its client server technology. Servers can be placed at various strategic points on a network allowing tests to be conducted from various points of view. A central client or multiple distributed clients can control all the servers. The server portion will run on most any flavor of Unix. It even runs on MAC OS X and IBM/AIX, but Linux tends to make the installation simpler. These features provide a great deal of flexibility for the penetration

tester. Clients are available for both Windows and Unix. The Nessus server performs the actual testing while the client provides configuration and reporting functionality.

Features of Nessus

➢ **Up-to-date security vulnerability database**

The Nessus security checks database is updated on a daily basis and can be retrieved with the command nessus-update-plugins. An RSS feed of all the newest security checks allows you to monitor which plugins are added and when.

➢ **Remote AND local security**

Traditional network security scanners tend to focus on the services listening on the network - and only on these. Now that viruses and worms are propagating thanks to flaws in mail clients or web browsers, this conception of security is getting outdated.

Nessus 2.1 is the only security scanner that has the ability to detect the remote flaws of the hosts on your network, but their local flaws and missing patches as well - whether they are running Windows, Mac OS X or a Unix-like system.

➢ **Scalable**

Nessus has been built so that it can easily scale down to a single CPU computer with low memory to a quad-CPUs monster with gigabytes of RAM. The more power you give to Nessus, the quicker it will scan your network.

➢ **Plug-ins**

Each security test is written as an external plugin, written in NASL. This means that updating Nessus does not involve downloading untrusted binaries from the internet. Each NASL plugin can be read and modified, to better understand the results of a Nessus report.

➢ **NASL**

The Nessus Security Scanner includes NASL, (Nessus Attack Scripting Language) a language designed to write security test easily and quickly. NASL plugins run in a contained

environment on top of a virtual machine, thus making Nessus an extremely secure scanner.

➢ **Smart service recognition**
Nessus does not believe that the target hosts will respect the IANA assigned port numbers. This means that it will recognize a FTP server running on a non-standard port (ie: 31337), or a web server running on port 8080. Nessus is the first scanner on the market to have implemented this feature for all the security checks (and has been copied by many since then).

➢ **Multiples services**
If a host runs the same service twice or more, Nessus will test all of them. Believe it or not, several scanners on the market still consider that a host can only run one server type at once.

➢ **Full SSL support**
Nessus has the ability to test SSLized services such as https, smtps, imaps, and more. You can even supply Nessus with a certificate so that it can integrates into a PKI-fied environement. Nessus was one of the first security scanner on the market to provide this feature.

➢ **Non-destructive OR thorough**
Nessus gives you the choice between performing a regular non-destructive security audit on a routinely basis, or to throw everything you can at a remote host to see how will it withstands attacks from intruders. Many scanners consider their users to be too inexperienced to make that kind of choice, and only offer them to perform "safe" checks.

➢ **The biggest user base**
The most pessimistic computations, based on the number of downloads every day, give Nessus at least 50,000 users worldwide, but there might be even more - after all, Nessus is downloaded over 2,000 times every day. The huge user base allows them to get the best feedback regarding security checks - and therefore to offer security checks which are reliable, non destructive and not prone to false positives.

➢ **Proven maturity**

The first public release of Nessus was in 1998. The technology behind it has been extensively tested and proven over time, on huge networks.

➢ **Overview of the Nessus Assessment Process**

While running Nessus you are doing a vulnerability assessment (or audit). This assessment involves three distinct phases.

Scanning

In this phase, Nessus probes a range of addresses on a network to determine which hosts are alive. One type of probing sends ICMP echo requests to find active hosts, but does not discount hosts that do not respond - they might be behind a firewall. Port-scanning can determine which hosts are alive and what ports they have open. This creates a target set of hosts for use in the next step.

Enumeration

In this phase, Nessus probes network services on each host to obtain banners that contain software and OS version information. Depending on what is being enumerated, username and password brute-forcing can also take place here.

Vulnerability Detection

Nessus probes remote services according a list of known vulnerabilities such as input validation, buffer-overflows, improper configuration, and many more.

➢ **Configuring Nessus**

Once the server is installed, some basic configuration is required. First, if the server isn't started type nessusd -D Then, you need to add a user. A new user can be added by the nessus-adduser command. The script will question you for the authentication method. Authentication can be performed by several means, however a password is the simplest. The next question queries about rules to restrict the user account. When used across an

enterprise, a user can be restricted and only allowed to scan specified IP addresses. However, for most uses this will be left blank, allowing the user to scan anything. A certificate also needs to be generated as well to be used to encrypt the traffic between the client and server. The nessus-mkcert command accomplishes this.

➢ **Updating Nessus Plug-Ins**
Plug-in updates should be done frequently. New vulnerabilities are being discovered and disseminated all the time. Typically after a new vulnerability is released to the public, someone in the Nessus community writes a NASL plug-in, releases it to the public and submits it to www.nessus.org. It is then reviewed by the developers and added to the approved plug-in list. For high risk, high profile vulnerabilities a plug-in is often released the same day the vulnerability information is publicly released. Updating plug-ins from the maintained list is fairly simple involving a simple command: nessus-

update-plugins. This command must be done as root.

➢ **Using the Nessus Client**
There are three primary Nessus clients. This tutorial will cover using the native Unix GUI version, which is installed at server install time. In the native client, enter the server IP, username and password (created with the nessus-adduser command) and hit login.

If you have trouble logging in the try the following steps:

Ensure the server daemon is running. Type: ps -A | grep "nessusd" If "nessusd" does not exist, start the nessus daemon with the command: nessusd -D (assuming that "nessusd" is in your PATH and you have enough priviliges to start "nessusd".) If "nessusd" does exist, verify the port number in use. The comand netstat -na may be usefull in this. The traditional port is 3001. The IANA assigned port is 1241. Make sure that versions of the client and the server are in sync. Running a

v1.0.x client against a v1.1.x server will not work

➢ **Starting a Nessus Scan**
After you connect the Nessus client to the server then you should take a look at the different plugins available in the Plugins tab.

Use the Filter button to search for specific plugin scripts. For example, it is possible to search for vulnerability checks that have a certain word in their description or by the CVE name of a specific vulnerability. It is up to the author of each specific vulnerability check to make sure he provides all appropriate information and places his script under the proper category. As you will note by looking at the descriptions of some of the vulnerability checks, some authors do not do a good job of filling in this information, so be careful.

There are also buttons to "Enable all plug-ins" or just "Enable all but dangerous plug-ins". Note that the author of the plug-in decides if it is dangerous or not. Most of the time, this has been very well chosen. However there are instances where the plug-in causes a DOS but it is not listed as dangerous. The native client denotes dangerous plug-ins with a caution triangle.

When starting a new scan session there are several optional areas to become familiar with (depending on your needs.) The wise decision is to go with the default options and test on non-production devices.

➢ **Generating Reports**
When Nessus finishes its scan, it will present you with a report. You can save it in a variety of formats: HTML (with or without graphics), XML, LaTeX, ASCII, and NBE (Nessus BackEnd). The items with a light bulb next to them are mere notes or tips that provide information about a service or suggest best practices to help you better secure your hosts. The items with an exclamation next to them are

findings that suggest a security warning when a mild flaw is detected. Items that have the no-entry symbol next to them suggest a severe security hole. In case you are wondering, the authors of the individual scripts used by the Nessus plugins decide how to categorize the findings.

➢ **Conclusion**

To see how a particular vulnerability scan works, take a look at its corresponding .nasl script file located in /usr/local/lib/nessus/plugins. This can assist you in determining whether or not a finding is actualy a false positive. As mentioned previously, you should always test new scanning preferences on a non-production devices. The author of this tutorial has crashed several production servers by not following this advice (even with safe checks enabled, and no dangerous plugins enabled).

POWER CONSUMPTION

Author

**Dinesh Govindaraj
III BCA 'C'**

Article Title
        Power Consumption
Article Description
        This article is used to know the Power saving colors to be used in our desktop

Color	Watt
White	74W
Fuchsia	69W
Yellow	69W
Aqua	69W
Silver	67W
Blue	65W
Red	65W
Lime	63W
Gray	62W
Olive	61W
Purple	61W
Teal	61W
Green	60W
Maroon	60W
Navy	60W
Black(Least Power Consumption)	59W

The amount of power consumption varies according to the colors used.

Mailing List

To whom we send

- The Vice-Chancellor, Periyar University ,Salem-11
- The Registrar, Periyar University ,Salem
- The Controller of Examination, Periyar University ,Salem-11
- The HOD, Department of Computer Science, Periyar University,Salem-11
- The Principal, Government Arts College for Women, Salem-8
- The Principal, Government Arts College for Women , Krishnagiri
- The Principal, Government Arts & Science College (W), Burgur, Kirshnagiri
- The Principal, J.K.K Nataraja College of Arts & Science
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- The Principal, St.Joseph's College of Arts & Science for (W)
- The Principal, Vysya College of Arts &, Science
- The Principal, NKR Government Arts College for Women
- The Principal, Arignar Anna Government Arts College
- The Principal, Salem Sowdeswari College

- **The Principal, P.G.P College of Arts & Science**
- **The Principal, Attur Arts & Science College**
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- **The Principal, Sri Vidhya Mandir Arts & Science College**
- **The Principal, *St*.John's College *Palayamkottai* - 627 007**
- **Mr. S.T.Rajan, St. Joseph's College, Trichy**

Happenings

SEMINAR
"Knowledge Is Power"
K.S.RANGASAMY COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

Innovative Seminar on
"C WITH LINUX"
By
T.Hariharasudhan,
Center Manager,
Mazenet Solutions

Venue: A.C Gallery Hall
Time: 11:00 am
Date: 23rd December 2009
Organized By
Department of Computer Science and Applications
Audience: I B.Sc(CS) & I BCA Students

We welcome your valuable comments, suggestions & articles to
Ishare, Department of Computer Science & Applications (UG)
K.S.R College of Arts and Science, Tiruchengode-637215
Phone: 04288 -274741(4), Mail : ksrcas.ishare@gmail.com

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