The Cyber Time

Issue 3

10/15/2014

An initiation towards cyber security…

Message to the readers

When this newsletter's first edition was inaugurated on the 68th auspicious day of our independence, by the hands of a living legend Sh. M.L. Kumawat, Hon'ble Vice-Chancellor of Sardar Patel University of Police, Security and Criminal Justice, there was a sense of responsibility arose in all of the members of Computer Science & Cyber Security Department that each and every body need to play their role for spreading awareness about the issues pertaining to the Cyber Security. I must say that this effort is not just an initiation in the direction to make people aware about the issues, but coming years I dream that this newsletter will be having such an impact factor for each subscriber that people will also start talking in their daily life about the issues related to cyber security affecting their daily life.

This edition is coming in the month when everybody is talking about the e-commerce websites' sale bonanza offers and their war. So just hoping to see that day very soon when a layman person would also talking this topic of cyber security.

My best wishes for the team and every contributor.

Sh. Arjun Choudhary
Asst. Professor

Edition Highlights

- ✓ Just what is wrong with India's engineering graduates?
- ✓ 'Bigger than Heartbleed': Bash bug could leave IT systems in shellshock
- ✓ India & Cyber Security
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- ✓ Some Coolest features in Microsoft's Windows 10
- ✓ Personality Profile: Julian Assange
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Just what is wrong with India's engineering graduates?

-Arjun Choudhary

In 2008, when textile engineering student Lakshmi Priya did not get a job through campus placements, she was convinced by her peers and parents to blame it on the recession. They told her not to lose heart and focus on pursuing her master's degree. But after repeated rejections and lack of response from head hunters, the 21-year-old from Mumbai sensed that there must be more to her situation than the economic downturn. After conducting her own research on textile engineers and interacting with seniors and career consultants, Priya was convinced that her engineering degree was a mere rubber stamp. What she really lacked was the skills required for the job.

"One company wanted to know if I knew how to mix dyes and had enough designer and garment manufacturer contacts. Since I had never worked in a garment firm before and did not even have internship experience, I was at a loss," says Priya, who after switching four jobs in the last three years is now preparing for her MBA entrance exam this year. While Priya's may sound like the classic case of a career decision gone wrong, it is not unique in the least. At least not to the 83 per cent of engineering graduates in our country who, as per the 2012 National Employability Report, are unfit for employment.

The report, released by employee assessment service provider Aspiring Minds, revealed that among the five lakh technical engineers who graduated in 2011, only 17.45 per cent are fit for employment. The NASSCOM (*National Association of Software and Services Companies*) survey of 2011 first brought the situation to light, claiming that over 75 per cent of technical graduates are not ready for jobs. It also explained how India's $60 billion outsourcing industry is spending almost $1 billion a year training these graduates for jobs. Other surveys have alarming findings too. An IRIX (Industry Readiness Index) survey conducted in 2012 by Purple Leap, an organization that trains students to be job-ready, revealed that one third of graduates from the Tier 2, 3 and 4 engineering colleges are not employable even after interventional training.

It reported that students across the country fall short of desirable levels in generic abilities, including communication skills and problem-solving capabilities in particular. Before you draw conclusions about the academic profiles of these graduates, however, Amit Bansal, CEO of Purple Leap, explains that the survey was conducted among students who scored above 60 per cent.

Earlier this year TeamLease, a private staffing company, published a report stating that although it claimed to hire somebody every five minutes for the last five years, only five per cent of its recruits were fresh graduates who applied for a job. In its India Labour Report for the year 2012, TeamLease clearly stated that unemployability is a bigger issue than unemployment.

Submitted by Divya Nair at Getahead, Rediff.com

My Opinion about the issue

As it is being discussed everywhere about this hot topic that the engineers coming out of the "engineering colleges", which in the start of this century were known as prestigious colleges where only the lucky or wealthy people would be able to take education.

Everybody, whether it is media or the industry or the government counterpart or the engineers itself is just putting emphasis over that what is wrong with India's Engineers?

But nobody dares to clarify the basic situation i.e. the root cause, the education system and its implementing agency. When in the late 80s it was imperative that we need more engineers for making India a strong nation, nobody gave a second thought to oppose the idea of establishing more engineering colleges in each state or giving their valuable suggestion for establishing a model to develop it in an organized manner.

India is now or even then was known a nation of "jugaad" and when it was decided to establishing more engineering colleges nobody raised their hand or shrink their eyebrows in way of asking the administrators that without proper infrastructure and teaching assistantship how we are going to train those students, who are just getting to know the word "engineer", not its professional meaning and vision.

This happened that time and it happened again and again, the latest one is the introduction of IT (information technology) as a new engineering stream and we all know what happened to those "bright career" aspiring students or so called engineers. It was not just because that the students failed to perform. This failure or failed experiment did not fail because the students did not performed well. It was just due to those policy makers, who after announcing new fields in engineering failed or forgotten to create the proper infrastructure to train them, proper training staff, and the foremost thing vacancies for the IT engineer.

I myself has noticed that whenever the administrators or to say the decision makers or policy makers started something new with pomp and show, they fail to implement the background management and self-assessment plans. Present scenario is no different to past

50 years, things which have changed is only the number of engineers which are jobless.

My suggestion is that we can still overcome with this misery of every engineer and every engineering college by just strengthening the infrastructure and the teaching aid by making them the part of policy making. As well industry can be encouraged to invest their R&D capital to these education institutions, in this way we would be achieving two goals, infrastructure and the jobs' offerings.

We the Indians are always known for our hard work. So this would not be so difficult to achieve in the next few years.

Q.1. this network is purely IP based. You are troubleshooting some IP connectivity issues. You are using some of the command line utilities on a connected WinXP PC. Refer to the exhibit. What command can you use to display such result?

A. ping local host

B. tracert local

C. ipconfig -p

D. ipconfig /all

'Bigger than Heartbleed': Bash bug could leave IT systems in shellshock

-Pragya Johari

A new security vulnerability known as the Bash or Shellshock bug could spell disaster for major digital companies, small-scale Web hosts and even Internet-connected devices.

The quarter-century-old security flaw allows malicious code execution within the bash shell to take over an operating system and access confidential information. Bash shell is commonly accessed through Command Prompt on PC or Mac's Terminal application. Red Hat warned that "it is common for a lot of programs to run Bash shell in the background," and the bug is "triggered" when extra code is added within the lines of Bash code. The Bash bug is bigger than Heartbleed because "the bug interacts with other software in unexpected ways" and because an "enormous percentage" of software interacts with the shell. The Bash bug was also particularly dangerous for connected Internet-of-things devices because their software is built using Bash scripts, which are "less likely to be patched and more likely to expose the vulnerability to the outside world".

The affected software, Bash, is widely used so attackers can use this vulnerability to remotely execute a huge variety of devices and Web servers. Using this vulnerability, attackers can potentially take over the operating system, access confidential information, make changes etc. Anybody with systems using bash needs to deploy the patch immediately."

Shellshock a bigger bug than Heartbleed because Heartbleed opened up massive privacy concerns, but hackers could only spy on computers not control them, but with Shellshock, information and files on a properly accessed computer could be manipulated, not just watched. Shellshock is also worse than Heartbleed because it's so simple: an attacker could exploit the flaw with just three lines of code, US-CERT, issued an alert saying the vulnerability affected Unix-based operating systems including Linux and Apple Inc's Mac OS X.

Tod Beardsley, an engineering manager at cybersecurity firm Rapid7, warned the bug was rated a "10" for severity, meaning it has maximum impact, and rated "low" for complexity of exploitation, meaning it is relatively easy for hackers to launch attacks. "Using this vulnerability, attackers can potentially take over the operating system, access confidential information, make changes, et cetera," Beardsley said. "Anybody with systems using Bash needs to deploy the patch immediately." US-CERT advised computer users to obtain operating systems updates from software makers.

Q.2. How many logical drives is it possible to fit onto a physical disk?

A. Maximum of 4 logical drives

B. Maximum of 8 logical drives

C. Maximum of 16 logical drives

D. Maximum of 24 logical drives

India & Cyber Security

-Vikas Yadav

"India has faced a huge devaluation instead of playing with snakes we have started playing with mouse."

A fabulous line said by our Hon'ble PM Shri Narendra Modi lately at Madison square. After this serious devaluation a major risk has grown in front of us.

o How secure are we in this cyber world?
o India ranks 11th in cybercrime affected countries.
o We share around 3% of malicious computer activity in the whole world.
o We rank 3rd in malicious code, 11th in spam zombies, 22nd in phishing website hosts, 7th in bots, and 17th in attack origin.

These facts did shock us because our country was the first to give the world a youngest hacker.

FACTS

o The most visited sites in India are social networks & online shopping sites other than Google
o The most searched question is "How to hack fb account/Facebook account hack"

The security issues that confront us after these facts are

o Identity Theft
o Credit card frauds.

We all even came across the shocking revelation by Edward Snowden that NSA spies on all internet users. The question that strikes us is "What the government is doing to safeguard us?"

o The answer to the question is a bit disappointing "Nothing".

But there are IT laws in our country.

The main drawback in our country can easily be understood by this image.

Reference: http://securedsector.in/india-cybersecurity/
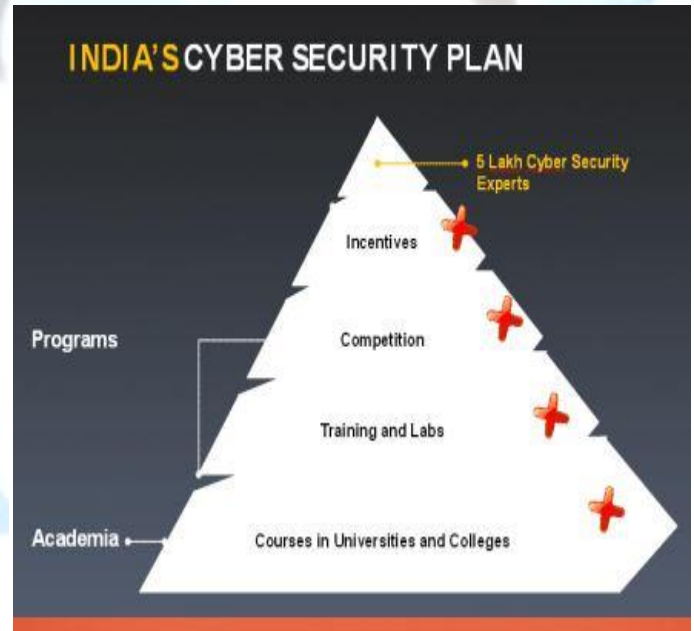
Previous Quiz Answer

1. C. Retail
2. C.130 million (heartland reach)
3. D. Yes, provided the device is encrypted
4. D. Encryption

5. D. Create a checksum, append it to the message, encrypt the message, and then send to recipient.

The SQL Injection

- **Nishant Grover**

SQL is a standard language to query a database. A database is a collection of rows and columns to store information in tabular form and query is a statement used to perform tasks such as update data on a database, or retrieve data from a database. When a web application (website) is developed, in most of the cases, it is assumed that the user will supply correct data and values which are directly passed into the statements to generate queries, which in turn are passed to database directly and therefore in response, produce the expected result from the application. But when it comes to real world, you cannot assume that every single person who will visit your website is a "user". For instance, if an invalid input is submitted and is not handled properly, your application can generate queries which can produce information that allows an attacker to steal data (or manipulate it), and later on, if possible take control of your website. This type of attack is known as SQLi or SQL Injection. If you want to test a website for this vulnerability, try finding a url which looks like

www.site.com/somepage.php?id=someva lue

After "=somevalue", add a single quote (') and hit enter. If the response generated by the page is either blank (some data is missing) or contains some text such as "SQL ERROR" or "There is some error in SQL Query", then that link is vulnerable to SQLi. This attack can be classified into two types on the basis of response generated by victim website:

Visible SQL Injection:
Here, the result of manipulated query is directly visible to hacker. This result is further used to get more information out of database like if the name of database is known to hacker, he can further exploit it to know the tables inside it and further to know usernames and passwords of users. This type of attack is very frequent on websites and happens when a website directly display the result of query to the page. It is easier to conduct even manually and is less time consuming. SQL allows us to combine queries, when the input is not validated, attacker can attach his own query in the input which allows him to get additional information out of the database.

Blind SQL Injection:
Blind SQL Injection is used when a web application is vulnerable to an SQL injection but the results of the injection are not visible to the attacker. The page with the vulnerability may not be one that displays data but will display differently depending on the results of a logical statement (Yes or No) injected into the legitimate SQL statement called for that page. This type of attack can become time-intensive because a new statement must be crafted for each bit recovered. Since attacker cannot directly see the data, hence he tries to obtain username and password of administrator which will allow him to access administrative privileges to obtain information.

There are tools available on web to automate the process, I won't be mentioning any. If you have a website and you filter some basic symbols in the url, it is not guaranteed that you are out of reach of SQLi. An attacker can take advantage of inbuilt functions to convert the code in a form that may appear normal to filter but when executed it can display same result as any other malicious query. Until then stay secure, stay protected and always validate the input!!

Some Coolest features in Microsoft's Windows 10

-Vikas Yadav

Microsoft recently launch its latest Windows 10 OS. In windows 10 user interface redesigned the user interface in its next generation desktop OS. Some features are added which were missing in its previous Windows 8.1 OS.

Let's take a look at some key features that Windows 10 will offer.

1. Start Menu

In previous version windows 8 start menu is missing. But, considering huge demand form users, MS has brought back Start Menu in Windows 10. The menu is similar as previous generation OS. But, the new menu features inbuilt sear bar. Windows 10 will sport same Start Screen instead of this new Start Menu on touch screen devices.

2. Windows Desktop Apps UI

Microsoft has improved the UI of apps from Windows Market. All apps now can be opened in desktop apps UI. Users can resize, move around all these apps in Windows 10. The company has implemented standard UI for all apps in new OS.

3. Snap Enhancement

Users can run up to 4 apps in snapped view on the same screen now. Microsoft has named this as quadrant layout. Windows 10 will sport addition snapping feature and smart suggestions on snapping according to available space on screen.

4. Multiple Desktops

Users can create virtual desktops for some apps and projects and can also switch between desktops without losing the work progress. The company has added task view that can display all open windows and desktops.

5. Continuum

Windows 10 offers Continuum. This smart module is capable of detecting the different devices. It will help users to run same version of Windows on multiple different devices. It runs Windows 10 on devices of different form factors.

6. Enterprise

Windows 10 will offer number of features for enterprise users. Corporate data protection, customized store for enterprise users are some examples of it. Enterprise admin user can use Mobile Device Management feature to manage all devices.

7. Universal Search

Windows 10 now features universal search box. It is similar to the spotlight in OSX. Universal search bar also offers web results along with files, apps and settings.

8. New Command Prompt

this is the great news for developers and power users. The updated command prompt has new improvements such as copy, paste keyboard shortcuts can now be used in command prompt. Which means, now users can use Ctrl+C, Ctrl+V to copy-paste commands in command prompt.

Q3. How do you clear CMOS password?

A. by changing the jumper setting in the motherboard

B. by formatting the system

C. by removing Bios Battery

D. by formatting only OS

Personality Profile: Julian Assange

Computer Programmer, Activist, Journalist

To his supporters, Julian Assange is a valiant campaigner for truth. To his critics, he is a publicity-seeker who has endangered lives by putting a mass of sensitive information into the public domain. He is known as the editor-in-chief of the website WikiLeaks, which he co-founded in 2006 after an earlier career in hacking and programming.

Synopsis

Born on July 3, 1971, in Townsville, Australia, Julian Assange used his genius IQ to hack into the databases of many high profile organizations. In 2006, Assange began work on WikiLeaks, a Web site intended to collect and share confidential information on an international scale. The information his organization released earned him strong supporters and powerful enemies. For his efforts, the internet activist earned the Time magazine "Person of the Year" title in 2010. After arriving at the Ecuadorean Embassy in London in June 2012, seeking to avoid extradition to Sweden, Assange was granted political asylum by the Ecuadorean government in August 2012.

Julian Assange is known for Hacking, Programming and WikiLeaks:-

Hacking:-

In 1987, Assange began hacking under the name Mendax (from Horace's splendide Mendax: "nobly untruthful"). He and two others—known as "Trax" and "Prime Suspect"—formed an ethical hacking group they called the International Subversives. During this time he hacked into the Pentagon and other U.S. Department of Defense facilities, MILNET, the U.S. Navy, NASA, and Australia's Overseas Telecommunications Commission; Citibank, Lockheed Martin, Motorola, Panasonic, and Xerox; and the Australian National University, La Trobe University, and Stanford University's SRI International. He is thought to have been involved in

the WANK (Worms Against Nuclear Killers) hack at NASA in 1989, but he does not acknowledge this.

In September 1991, he was discovered hacking into the Melbourne master terminal of Nortel, a Canadian multinational telecommunications corporation. The Australian Federal Police tapped Assange's phone line (he was using a modem), raided his home at the end of October, and eventually charged him in 1994 with thirty-one counts of hacking and related crimes. In December 1996, he pleaded guilty to twenty-five charges (the other six were dropped), and was ordered to pay reparations of A\$2,100 and released on a good behavior bond, avoiding a heavier penalty due to the perceived absence of malicious or mercenary intent and his disrupted childhood. After the trial, Assange lived in Melbourne, where he survived on single-parent income support.

Programming-

In 1993, Assange gave technical advice to the Victoria Police Child Exploitation Unit and assisted with prosecutions. In the same year he was involved in starting one of the first public internet service providers in Australia, Suburbia Public Access Network. He began programming in 1994, authoring or co-authoring the Transmission Control Protocol port scanner strobe.c (1995); patches to the open-source database PostgreSQL (1996); the Usenet caching software NNTPCache (1996); the Rubber hose deniable encryption system (1997) which reflected his growing interest in cryptography; and Surf raw, a command-line interface for web-based search engines (2000). During this period he also moderated the AUCRYPTO forum; ran Best of Security, a website "giving advice on computer security" that had 5,000 subscribers in 1996[and contributed research to Sublette Dreyfus's Underground (1997), a book about Australian hackers, including the International Subversives. In 1998, he co-founded the company Earthmen Technology.

In 1999, Assange registered the domain leaks.org, but, as he put it, "I didn't do anything with it."] He did, however, publicize a patent granted to the National Security Agency in August 1999 for voice-data harvesting technology: "This patent should worry people. Everyone's overseas phone calls are or may soon be tapped, transcribed and archived in the bowels of an unaccountable foreign spy agency." This would remain an abiding concern, to which he returned more than a decade later in Cypherpunks (2012), foreseeing a dystopian future in which, "the Internet, our greatest tool for emancipation, has been transformed into the most dangerous facilitator of totalitarianism we have ever seen".

Wikileaks:-

After his period of study at the University of Melbourne, Assange and others established WikiLeaks in 2006. Assange is a member of the organization's advisory board and describes himself as the editor-in-chief. From 2007 to 2010, Assange travelled continuously on WikiLeaks business, visiting Africa, Asia, Europe and North America.

WikiLeaks posted large amounts of material exposing government and corporate wrongdoing between 2006 and 2009, attracting various degrees of publicity. But it was only when it began publishing documents supplied by Chelsea Manning that WikiLeaks became a household name. The Manning material included the Collateral Murder video (April 2010), the Afghanistan

war logs (July 2010), the Iraq (October 2010), a quarter of a million diplomatic cables (November 2010), and the Guantánamo files (April 2011).

Opinions of Assange at this time were divided. Australian Prime Minister Julia Gillard described his activities as "illegal," only to be told that he had broken no Australian law. U.S. Vice President Joe Biden and others called him a "terrorist." Some called for his assassination or execution. Support came from people including the Brazilian President Luiz Inacio Lula da Silva, Russian Prime Minister Vladimir Putin, and activists and celebrities including Tariq Ali, John Perry Barlow, Daniel Ellsberg, Mary Kostakidis, John Pilger, Vaughan Smith, and Oliver Stone.

The year 2010 culminated with the Sam Adams Award, which Assange accepted in October, and a string of distinctions in December—the Le Monde readers' choice award for person of the year, the Time readers' choice award for person of the year (he was also a runner-up in Time's overall person of the year award), a deal for his autobiography worth at least US$1.3 million, and selection by the Italian edition of Rolling Stone as "rockstar of the year."

The following February he won the Sydney Peace Foundation Gold Medal for Peace with Justice, previously awarded to only three people—Nelson Mandela, the Dalai Lama, and Buddhist spiritual leader Daisaku Ikeda. Two weeks later he filed for the trademark "Julian Assange" in Europe, which was to be used for "Public speaking services; news reporter services; journalism; publication of texts other than publicity texts; education services; entertainment services." For several years a member of the Australian journalists' union and still an honorary member, he picked up the Martha Gellhorn Prize for Journalism in June, and the Walkley Award for Most Outstanding Contribution to Journalism in November, having earlier won the Amnesty International UK Media Award (New Media) in 2009.

References: - Wikipedia, Biography.org

Q.4. what is the difference between fat32, ntfs?

A.Fat32- It supports limited capacity of partition. NTFS- It supports large capacity of partition. it has security, compression, disk quota.

B.Fat32-Having Less Security NTFS- It supports large capacity of partition. it has encryption, compression and security

C.Fat32- File Allocation Table- It supports limited capacity of partition. Having Low Security and Encryption NTFS- New Technology File System- It supports large capacity of partition. it has security, compression, disk quota.

D.A & B

CyberSec Puzzle:
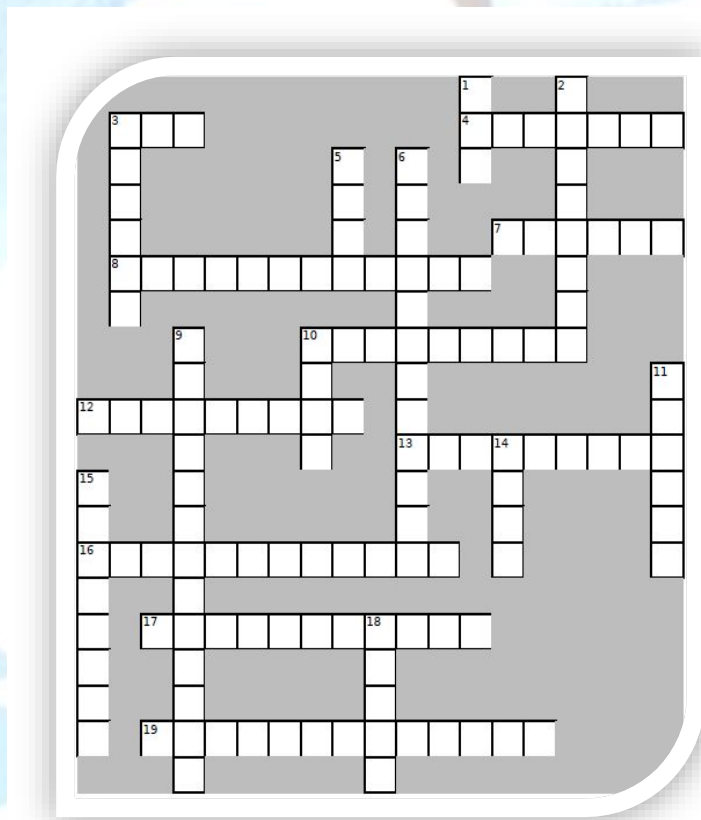
Across

3. Random Access Memory

4. Setting that is automatic unless changed by user

7. Electronic Mail

8. Printers and Monitors (2 words)

10. Area on Screen where the user interacts with the software application

12. A small windows with options for completing an action (2 words)

13. Miniature version of the document

16. Allows more than one application to run at a time

17. Keyboard, Mouse, Disk Drive, USB (2 words)

19. A tab added to the Ribbon for certain activities (2 words

18. Malicious code that appears like a useful program

Down

1. Format widely used because all document formatting is preserved

2. Expands the window to fill the screen

3. Related commands that are divide into tabs

5. Collection of related data stored on a hard disk

6. Displays a menu of commands for opening, saving, and printing (2 words)

9. Indicates the file type and is used by the application to recognize files (2 words)

10. Little pictures that represent programs on the desktop

11. Used to organize files

14. A list of commands

15. Follows a program; designed to compute

Previous Crossword Answer
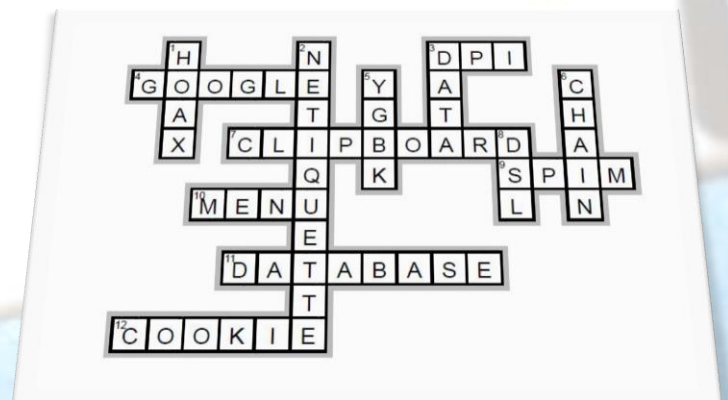
Contributed By: Yogendra Singh

Departmental News:

1. MoU with National Law University Jodhpur on 19th Sept. 2014 (Friday

2. Earn While You Learn Program for student of SPUP introduced.

3. Swachh Bharat Mission by university on 02 October 2014.

4. University visit by **Shri Omendra Bhardwaj**, IPS, Director General of Police, Rajasthan

5. Visit to CR Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS), Hyderabad

Call for articles:

Students are invited to get involved in the TechNewsletter activities by providing articles and other related materials. Suggestions and feedbacks for the improvement of the newsletter are most welcome and contributions are invited from the faculty and students of the department. Contributions can be from any of the whole gamut of activities in the department like any special achievement, an admirable project, a publication, and Cyber Crime case, Quiz, puzzles or even the fun section material like jokes, cartoons, interesting facts or poems. You can also report any interesting workshops or talks taking place in the department.

You can send your material on: - **editors@policeuniversity.ac.in** by November 5, 2014.

Editorial Board:

Hetram Yadav   **Nitish Vyas**   **Vikas Yadav**   **Pragya Johari**

Please send the answers of quiz and crossword on editors@policeuniversity.ac.in till October 30, 2014. The winner will be declared on the basis of first come first serve with right answers. The name of the winners and answers will be published in the next edition.

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