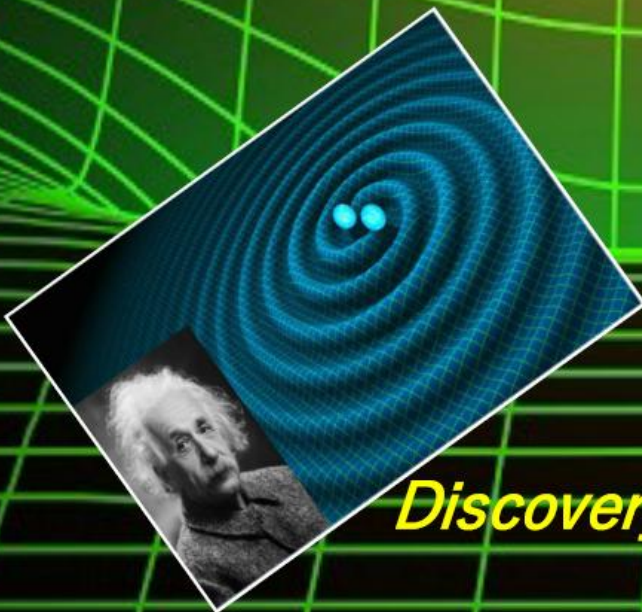# THE BYTE

An e-Magazine of CSE Department of IMSEC GHAZIABAD

March 2016

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Discovery Of Gravitational Waves

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THE BYTE TEAM

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MARCH 2016,ISSUE XIX

THE BYTE

ARTICLES

GRAVITATIONAL WAVES DISCOVERY

By : Amit Kr. Gautam , Asst. Proff, Dept. of CSE

What are gravitational waves?

A: Albert Einstein predicted gravitational waves in his general theory of relativity a century ago. They are ripples in space-time, the very fabric of the Universe.

The game-changing theory states that mass warps space and time, much like placing a bowling ball on a trampoline. Other objects on the surface will "fall" towards the centre -- a metaphor for gravity in which the trampoline is space-time.

When objects accelerate, they send ripples along the curved space-time fabric at the speed of light -- the more massive the object, the larger the wave and the easier it would be for scientists to detect. Gravitational waves do not interact with matter and travel through the Universe completely unimpeded.

The strongest waves are caused by the most cataclysmic processes in the Universe -- two black holes colliding, massive stars exploding, or the very birth of the Universe some 13.8 billion years ago.

Q: Why would detection of gravitational waves be important?

A: Finding proof of gravitational waves will end the search for a key prediction in Einstein's theory, which changed the way that humanity perceived key concepts like space and time.

If gravitational waves become detectable, this would open up exciting new avenues in astronomy -- allowing measurements of faraway stars, galaxies and black holes based on the waves they make.

So-called primordial gravitational waves, the hardest kind to detect, would boost another leading theory of cosmology, that of "inflation" or exponential expansion of the infant Universe.

Primordial waves are theorised to still be resonating throughout the Universe today, though feebly. If they are found, they would tell us about the energy scale at which inflation occurred, shedding light on the Big Bang itself.

Q: Why are they so hard to find?

A: Einstein himself doubted gravitational waves would ever be detected given how tiny they are. Ripples emitted by a pair of orbiting black holes, for example, would stretch a one-million-kilometre (621,000-mile) ruler on Earth by less than the size of an atom.

Waves coming from tens of millions of lightyears away would stretch and squeeze a four-kilometre light beam such as the ones used at the Advanced Laser Interferometer Gravitational Wave Observatory (LIGO) at the centre of Thursday's announcement, by about the width of a proton.

Q: How have we looked for them?

A: So far, gravitational waves have only been detected indirectly.

In 1974, scientists found that the orbits of a pair of neutron stars in our galaxy, circling a common centre of mass, were getting smaller at a rate consistent with a loss of energy through gravitational waves.

That discovery earned the Nobel Physics Prize in 1993. Experts say the first direct detection of gravitational waves is likely to be bestowed the same honour.

After American physicist Joseph Weber built the first aluminium cylinder-based detectors in the 1960s, decades of effort followed using telescopes, satellites and laser beams. Earth- and space-based telescopes have been trained on cosmic microwave background, a faint glow of light left over from the Big Bang, for evidence of it being curved and stretched by gravitational waves.

Two years ago, American astrophysicists announced they had finally identified gravitational waves using a telescope called BICEP2, stationed at the South Pole.

But they later had to admit they made an error.

Another method involves detecting small changes in distances between objects.

Gravitational waves passing through an object distort its shape, stretching and squeezing it in the direction the wave is travelling, leaving a telltale, though miniscule, effect.

HOW WILL THE DISCOVERY CHANGE SCIENCE & OUR WORLD?

WE WILL BE ABLE TO...

▶ For the first time **receive cosmic signals** that were previously **entirely hidden** from us, revealing an entirely new layer of reality

▶ **Track supernovas** hours before they're visible to any telescope because the waves arrive at Earth long before any light does, giving astronomers time to point telescopes like Hubble in that direction

▶ **Measure the frequency of major cosmic phenomena** such as supernovas or merger of black holes — events that shape star systems and galaxies

▶ **Hear the noises produced by gravitation of celestial bodies** on the fabric of space-time. Since the star or black hole does not stop these waves, which move at the speed of light, they come right to us and we can therefore make models... to distinguish and detect their signatures
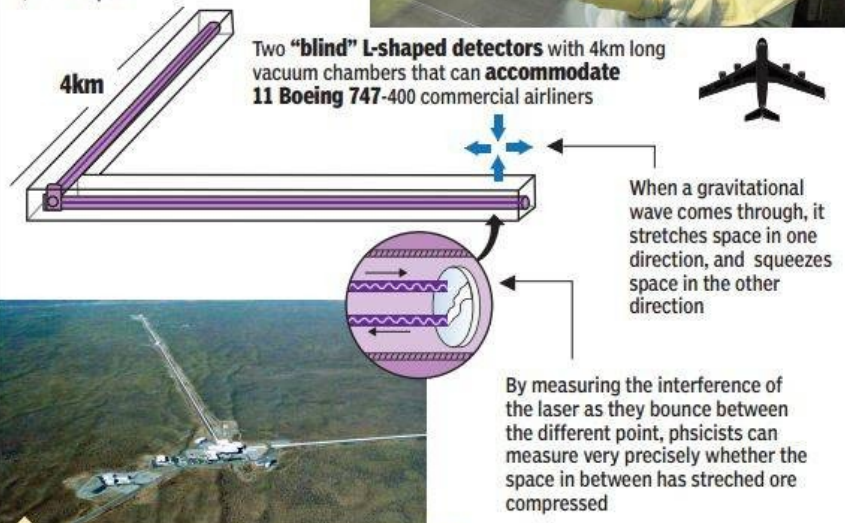
Source: TNN, phdcomics.com, LIGO, Scientific American, phys.org, aps.org, symmetrymagazine.org

WHAT IS LIGO?

The advanced Laser Interferometer Gravitational Wave Observatory (or LIGO) is at the centre of the path-breaking find:

The LIGO experiment is an example of extreme engineering chasing an impossible dream

The twin LIGO installations — one in Livingston, Louisiana, and the other in Hanford, Washington — are located 3,000km apart

4km

Two **"blind"** L-shaped detectors with 4km long vacuum chambers that can **accommodate 11 Boeing 747**-400 commercial airliners

When a gravitational wave comes through, it stretches space in one direction, and squeezes space in the other direction

By measuring the interference of the laser as they bounce between the different point, phsicists can measure very precisely whether the space in between has streched ore compressed

▶ Built **3,000km** apart, operating in unison
▶ To make the smallest measurement ever attempted by science — **a motion 10,000 times smaller than an atomic nucleus**
▶ Caused by the most violent and cataclysmic events in the Universe occurring millions of light years away
▶ Can detect gravitational waves in a volume of 1 billion cubic light years – **covering about 1 million Milky Way type galaxies**

▶ To detect a gravitational wave we should be able to tell when something changes in length by a few parts in 10 to the power 23
▶ LIGO makes the smallest measurement ever attempted — a motion 10,000 times smaller than an atomic nucleus
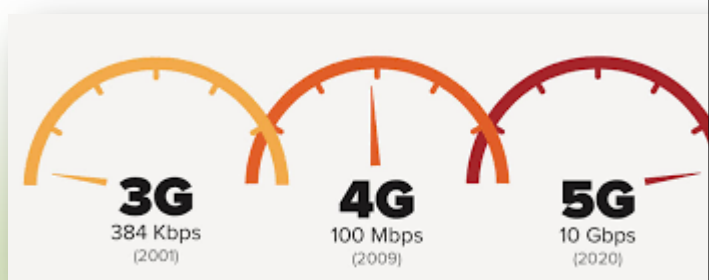▶ It's like trying to hear a song being hummed in a very, very noisy party

*I*ndia's first rail auto hub, boost to e-catering, connectivity to North-East and no hike in passenger fares. Here's a quick recap of all major announcements made by Railway Minister Suresh Prabhu.

This is Mr. Prabhu's second rail budget.

1   No hike in passenger fares.
2   Action has been initiated on 139 budget announcements made last year.
3   Eliminate all unmanned level crossings by 2020.
4   Swacch Bharat: 17000 biotoilets and additional toilets in 475 stations before the close of this financial year.
5   Increased quota for senior citizens and women travellers this year.
6   Wifi at 100 stations this year and 400 stations next year.
7   Enhanced capacity of e-ticketing system from 2,000 tickets/min to 7,200/min. Supporting 1.2 lakh concurrent users now, as opposed to 40,000 earlier.
8   All major stations to be brought under CCTV surveillance in a phased manner.
9   Deen Dayal coaches for long distance trains for unreserved passengers. These coaches will include potable water and higher number of mobile charging points.
10   IRCTC to manage catering service in phased manner. Local cuisine of choice will be made available to passengers.
11   Cleaning of toilets by requests through SMS.
12   Children's menu, baby foods, baby boards to be made available for travelling mothers.
13   GPS-based digital display in coaches for showing upcoming stations.
14   Will open cancellation facility through 139 helpline number.
15   Introduce bar-coded tickets on pilot basis to tackle menace of ticketless travel.
On new projects to be implemented this year:

1   Overnight double-decker trains to be introduced on business travel routes.
2   1,600 km of electrification this year and 2,000 km proposed for the next year.
3   Broad Gauge Lumding-Silchar section in Assam, connecting Barak Valley with rest of country.
4   North-East India, especially Mizoram and Manipur, to be connected through broad gauge soon.
5   Special purpose vehicle for the Ahmedabad-Mumbai high speed corridor registered this month.

5G Technology

What is 5G? Everything you need to know

If you live in one of the more populated areas of the UK, the chances are you have access to a 4G network - at least some of the time. But what's next for mobile connectivity?

Why, 5G of course!

The next generation of mobile network has a long way to go before it's a reality, but tests and plans are underway to set the terms for such an upgrade. In fact, they've been going on for years.

WHAT IS 5G?

5G is a term used to describe the forthcoming fifth generation of mobile network technology.

Right now, it doesn't signify any particular type of technology. While 4G has become synonymous with LTE, there's been no publicly agreed upon standard for 5G networks. However, a couple of likely technologies are emerging.

The main quality of 5G networks compared to 4G will be speed. It's going to be many times quicker than what we have now, and by quite a way.

HOW FAST IS 5G?

Estimates have varied over recent years, but some of the industry's established players can give us an idea of where 5G's at.

We've actually seen claimed speeds of 7.5Gbps from Samsung and 10Gbps from Nokia (these days quite the network infrastructure specialist), while this time last year the University of Surrey managed to obtain a staggering 1Tbps - the same capacity as fibre optics. For a wireless network connection. Mental.

However, all of these tests were conducted under laboratory conditions. What we need in estimating the final speed of a 5G network is a practical field test.

Back in October we reported on just such tests conducted by China's Huawei and Japan's NTT Docomo network. They had managed to hit peak data speeds of 3.6Gbps using a sub-6GHz band.

Compare that to the 300Mbit/s currently offered by EE's LTE-A network, and you'll see that we're talking about a 12-fold speed increase over 4G here.

A realistic, nicely rounded final figure for 5G speeds, then, could be in the region of 10Gbps.

HOW FAST IS 5G? LOW LATENCY, HIGH CAPACITY

Besides raw speed, the other main benefits of 5G will be low latency and high capacity.

Low latency means that not only will download and upload speeds be fast, but the response times for starting those data transfers will be similarly snappy. There'll be less of a pause between pressing play on Netflix and that crisp 4K content starting to stream to your phone, in other words.

The other benefit relates to the biggest issue with current mobile network standards - a critical lack of bandwidth. The radio frequencies that our 3G and 4G networks operate on are overcrowded to say the least.

With more and more people and devices set to be connected over the next five years or so - 5G will likely be the network that has to handle the dawn of driverless cars - this will be a critical problem before too long. Whatever technology 5G employs, expect it to address this either through an all new spectrum, or through smarter use of the existing spectrum (only assigning the amount that's needed for each task).

ALTERNATIVE 5G TECHNOLOGY

You can always trust Google to come up with flighty alternatives to current thinking.

Towards the end of January, it emerged that the company's project SkyBender was yielding some interesting results over in New Mexico. Google is employing drones to transmit high-frequency millimetre waves, which could potentially offer speeds of 40 times that of today's 4G/LTE networks.

What's more, millimetre waves transmit on a whole new spectrum, which could provide blissful relief to our overcrowded mobile networks. The main downside - other than the prospect of relying on a bunch of flying automated machines when you want to stream the next episode of House of Cards - is that the transmission range for millimetre waves is about a tenth that of 4G.

Also, millimetre wave frequencies don't pass through solid objects very well, which would prove a problem for indoor and urban reception.
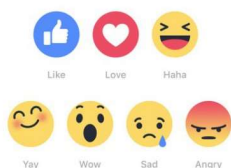
Facebook adds emotion reaction buttons

Latest Facebook announcements and everything you need to know

Facebook on Wednesday rolled out a new set of options for its 1.5 billion monthly users to use when responding to posts in their News Feeds.

The six "Reactions," as Facebook has termed them, allow users to make more nuanced responses to posts rather than simply clicking on "Like."

"We've been listening to people and know that there should be more ways to easily and quickly express how something you see in News Feed makes you feel," explained Sammi Krug, product manager at Facebook. "That's why today we are launching Reactions, an extension of the Like button, to give you more ways to share

your reaction to a post in a quick and easy way."

The additional options are Love, Haha, Wow, Sad and Angry. When users scroll over the standard Like button, the new emojis pop up. If you're using Facebook on a laptop or PC just hover over the 'like' button to choose your emotion and if using the Facebook app on your phone, hold down the 'like' button to reveal the latest five emotions

From-Ankit Kumar Chaturvedi

ME-1, 1ᵗ Year

Advertising Reactions

• • •

The Reactions aren't for users alone. They will provide Facebook with a deeper understanding of how people feel toward various posts -- data Facebook potentially could use to help marketers create more meaningful content and ads, said Neal Schaffer, president of Maximize Your Social

THE BYTE

LITERARY

[1st Prize won in poetry writing competition in Abhivayakti-2K16]

Let's Escape The Planet

By : Harshita Agarwal ,3rd yr CS1

If we could all leave this world
There won't be any more pain left for anyone
This life is not an ending war
Been fighting but never won
My only break is when I mourn

Again and again it keeps going on,
to run i tried
but to my hiding camp i never arrived.
War be everywhere,
in the dark, in the light,
here and there

Nobody warned me about the world's natural, emotional and mental disasters
But I find comfort in looking up the stars
Saying to myself, I'll get there
Trying to make it to my hiding camp before I cough out my last breath
But am I even heading there?

Will i even know I'm there?
Will there be beings who are fair?
Whose ears can hear.
For I have cried enough yet none gave me comfort.
For I've fought more yet none compliments my effort.
O! How i Wish i find a transport, ride and disappear
my biggest fear; to where?

What if I'm closest to the last round?
Would I even win when all I know is the smell of the ground?
Honestly if I was warned about the world
I would have turned to Hitler a long time ago

Call me heartless, if u think it's painless watching people living a meaningless life.
My wish remains, for all of us to leave this world

2nd prize in poetry writing competition
Abhivayakti-2K16

By : AMIT KUMAR, CS-1

Reaching a sight full of tides..
It's not the ocean its the skies..
Want to fly high without being shy..
I want to reach a place where no on can take by..
It's not the height that describes my place..
It's my destiny which shows my faith..
Sometimes it's blue sometimes it's white..
But moon and sky are always so high..
Moon symbolises love and love defines the
connection..
It's the only thing which shows some innovation..
It's the sky that gives me wings..
I would love to be true in all my things..
Extended to infinity these skies are blue..
To be successful is the nearest clue..
Clues can be true if you go it through..
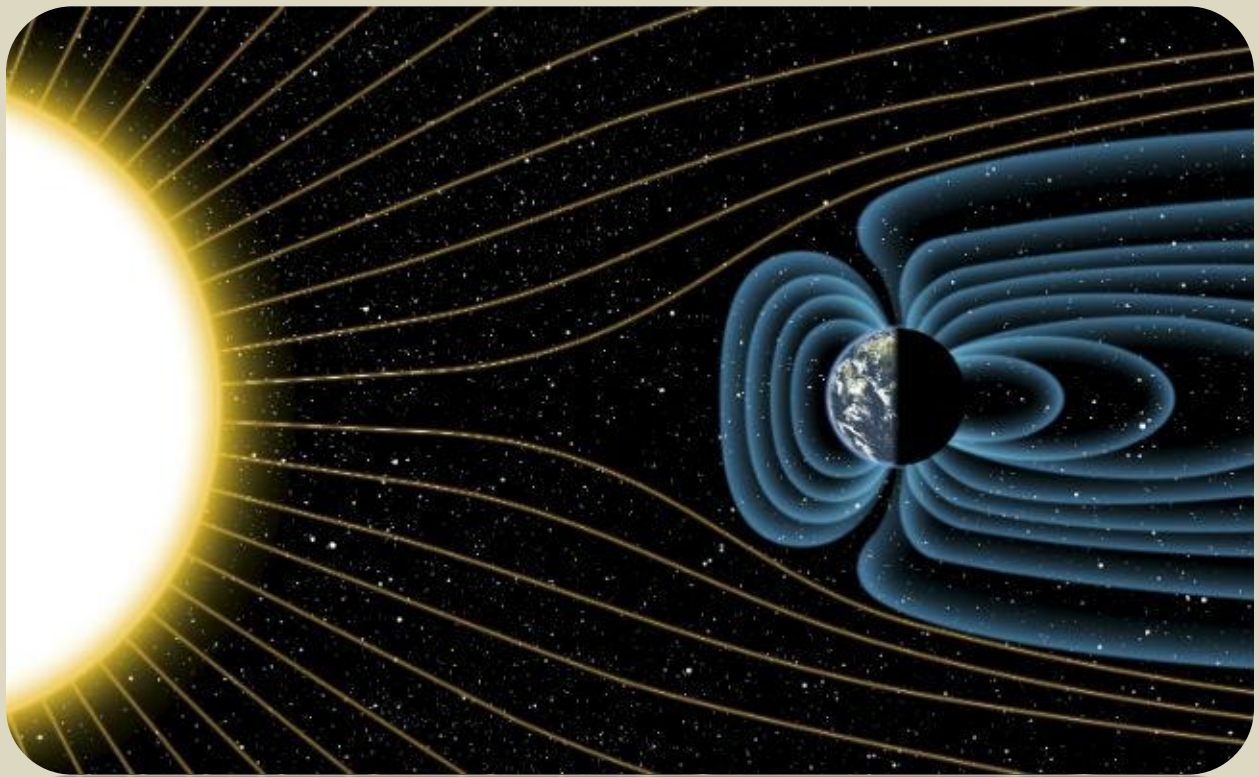Be a gentlemen so that no one can sue..

By : Priya Maurya , 1st yr EC-1

Raise over the earth and let's fly high,
From this playground of illusion under the sky!
Let your dreams take you away,
open up your mind and soar high.
Forget about the troubles and never sigh!
I am not coward or running away,
It's a real freedom to explore and it's the only way!
Let's spread our wings and get free,
Doing this daring adventure, you and me!
Landing on the moon you will find us soon.

On the wings of imagination,
let us fly to the destination!
Delight the moon with your bare feet.
There the peace prevails, and we will dwell!

THE BYTE

LATEST

TECHNOLOGY

LI-FI

LIGHT FIDELITY

LI-FI

By : Prof. Mukesh Kumar
Asst. Proff.
Dept. of CSE

A GREEN AVATAR OF WI - FI

Year 2015 has been all about the introduction of new technologies. Li-Fi has been a buzzword for a few years now and took center stage in 2015. Li-Fi, or light fidelity, invented by German physicist and professor Harald Haas, is a wireless technology that makes use of visible light in place of radio waves to transmit data at terabits per second speeds—more than 100 times the speed of Wi-Fi. Though it was discovered in the last decade, proofs of concept to test commercial utilization started emerging only in 2015.

Li-Fi is a Visible Light Communications (VLC) system. This means that it accommodates a photo-detector to receive light signals and a signal processing element to convert the data into 'stream-able' content. Unlike Wi-Fi, which uses radio waves, Li-Fi runs on visible light.

Here, data is fed into an LED light bulb (with signal processing technology), it then sends data (embedded in its beam) at rapid speeds to the photo-detector (photodiode). The tiny changes in the rapid dimming of LED bulbs is then converted by the 'receiver' into electrical signal. The signal is then converted back into a binary data stream that the user would recognise as web, video and audio applications that run on internet enables devices.

An LED lightbulb is a semi-conductor light source meaning that the constant current of electricity supplied to an LED lightbulb can be dipped and dimmed, up and down at extremely high speeds, without being visible to the human eye
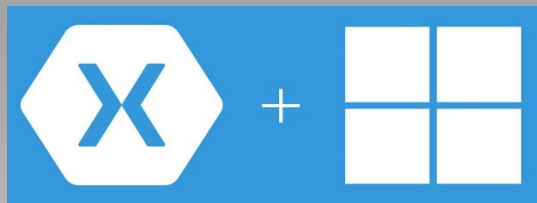
Advantages:
- ✓ Li-Fi could make a huge impact on the internet of things too, with data transferred at much higher levels with even more devices able to connect to one another.
- ✓ Li-Fi offers great promise to overcome the existing limitations of Wi-Fi by providing for data-heavy communication in short ranges.
- ✓ Due to its shorter range, Li-Fi is more secure than Wi-Fi.
- ✓ Since it does not pollute, it can be called a green technology for device-to-device communication in the Internet of Things (IoT).
- ✓ Li-Fi systems consume less power.

Limitations of Li-Fi:
- ✓ As visual light can't pass through opaque objects and needs line of sight for communication, its range will remain very restricted to start with. In order to enjoy full connectivity, more capable LED bulbs will need to be placed at various places.

- ✓ Li-Fi requires the lightbulb is on at all times to provide connectivity, meaning that the lights will need to be on during the day.

Li-Fi is likely to face interference from external light sources, such as sunlight and bulbs, and obstructions in the path of transmission, and hence may cause interruptions in communication.

WiFi ((•)) Li Fi

Microsoft

Microsoft Buys Xamarin to Boost Cross-Platform Development.

Microsoft on Wednesday announced that it has reached an agreement to acquire Xamarin', a platform provider for mobile app development.

Xamarin's platform will be used in conjunction with Microsoft's Visual Studio, enabling developers to build apps using C# to deliver fully native mobile app experiences across platforms, including Android and iOS, said Scott Guthrie, executive vice president for the cloud and enterprise group at Microsoft.

Its technology could further allow developers to take advantage of the productivity of .Net in building apps that utilize C# to write a full set of native APIs, he added. Xamarin, which was launched in 2011 and employs more than 350 people, has more than 15,000 customers in 120 countries. Its relationship with Microsoft already has allowed for Xamarin integration into Visual Studios, Microsoft Azure, Office 365 and the Enterprise Mobility Suite.

Microsoft will provide more information on how Xamarin's platform will be utilized at the Microsoft Build conference in the coming weeks, Guthrie said. The closing of the acquisition is subject to regulatory approval.

More for Windows

Microsoft was quick to tout how the acquisition would allow greater cross-platform app development, but the heart of it likely is supporting Microsoft's own platforms.

"This acquisition is all about getting more apps on Windows Mobile," said Roger Entner, principal analyst at Recon Analytics. "Xamarin has worked with Microsoft already for quite a while, and they helped Microsoft and other companies to port their applications to other OSes," he told the E-Commerce Times.

"In order to make it easier for developers to develop once and deploy in multiple environments, Xamarin has been a good solution," Entner added.

Leveling The Playing Field

Microsoft has struggled in the mobile space, and the Windows Phone platform trails those of Apple and Google in terms of OS market share. The acquisition could give Microsoft an advantage in what it does best -- namely software.

"Now that Windows faces competition from Apple and Google in the mobile arena, Microsoft is rapidly evolving into a platform-agnostic software developer," said Josh Crandall, principal analyst at NetPop Research.

By-shivam sinha

Cs 2,4ᵗʰ yearr.

Google Brings Project Shield to DDoS Battlefield

Google on Thursday announced that it was expanding its Project Shieldprogram, offering to protect news and human rights websites from distributed denial of service attacks for free.

Project Shield uses Google's security infrastructure to detect and filter DDoS attacks, which flood websites with Internet traffic or service requests in order to impair their functioning or take them down altogether.

"A simple, inexpensive distributed denial of service attack can be carried out by almost anyone with access to a computer -- and take a site completely offline before its owners even know they've been attacked," noted Jared Cohen, president of Jigsaw and advisor to Alphabet Executive Chairman Eric Schmidt.

"These attacks threaten free expression and access to information -- two of Google's core values," Cohen pointed out. "With this expansion, tens of thousands of news sites will have access to Project Shield. And because Project Shield is free, even the smallest independent news organizations will be able to continue their important work without the fear of being shut down."

Cheap DDoS

"Project Shield is a valuable solution that highlights an important issue: the existence of cheap DDoS-for-hire services that enable anyone to launch DDoS attacks of substantial size, against any target," said Igal Zeifman, senior digital strategist at Imperva.

Google is also correct in assuming that news sites are amongst the most prominent targets for DDoS offenders.

Google's action appears to be well-timed, as DDoS attacks have become larger and more frequent.

Infrastructure Muscle

"Google's DDoS defenses are likely to be extremely effective," added Sumit Agarwal, vice president of strategy at Shape Security, and former leader of mobile project management at Google.

Defending against DDoS attacks requires two things: massive scale, and broad visibility over the entire Internet. "Google likely has more of both attributes than anyone on the Web."

The solution Google offers combines traffic filtering and the ability to present cached content while a website is dealing with more traffic that it can handle. "This can help against certain attack vectors, but it doesn't fully address the different DDoS threats that websites are facing today."

The Stale News Solution

Project Shield cannot mitigate network layer attacks, especially direct-to-IP attacks that target specific IP addresses and elements of a network's infrastructure, according to Zeifman.

"There is also the question of attack duration, as many DDoS assaults can be easily sustained for days, weeks or even months at a time," he pointed out.

"For attacks like these, serving stale cached content is a hard compromise -- perhaps even more so for a news organization," he said.
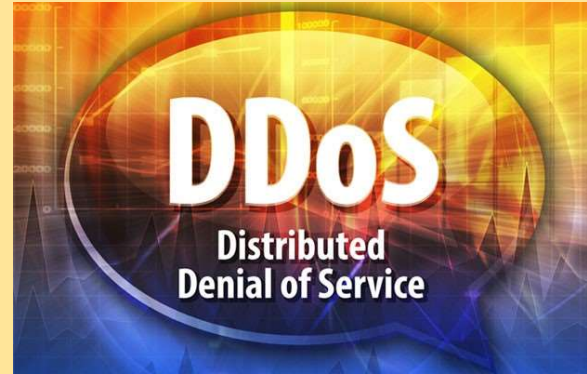
News sites vulnerable to DDoS attacks won't be the only beneficiaries of Google's expansion of Shield.

Google's Angle

Project Shield also could improve Google's search results, noted Anthony Khamsei, CEO of Gold Security.

Google wants to show the most relevant search results, so showing a site that's not accessible is not desirable. "Therefore, Google has a lot to gain by making the Web a safer place."

When Internet companies offer something for free, some skepticism may be in order, but "I don't see that to be the case here," said A10's Paap. "This seems like it's focused on making the Internet a better place."
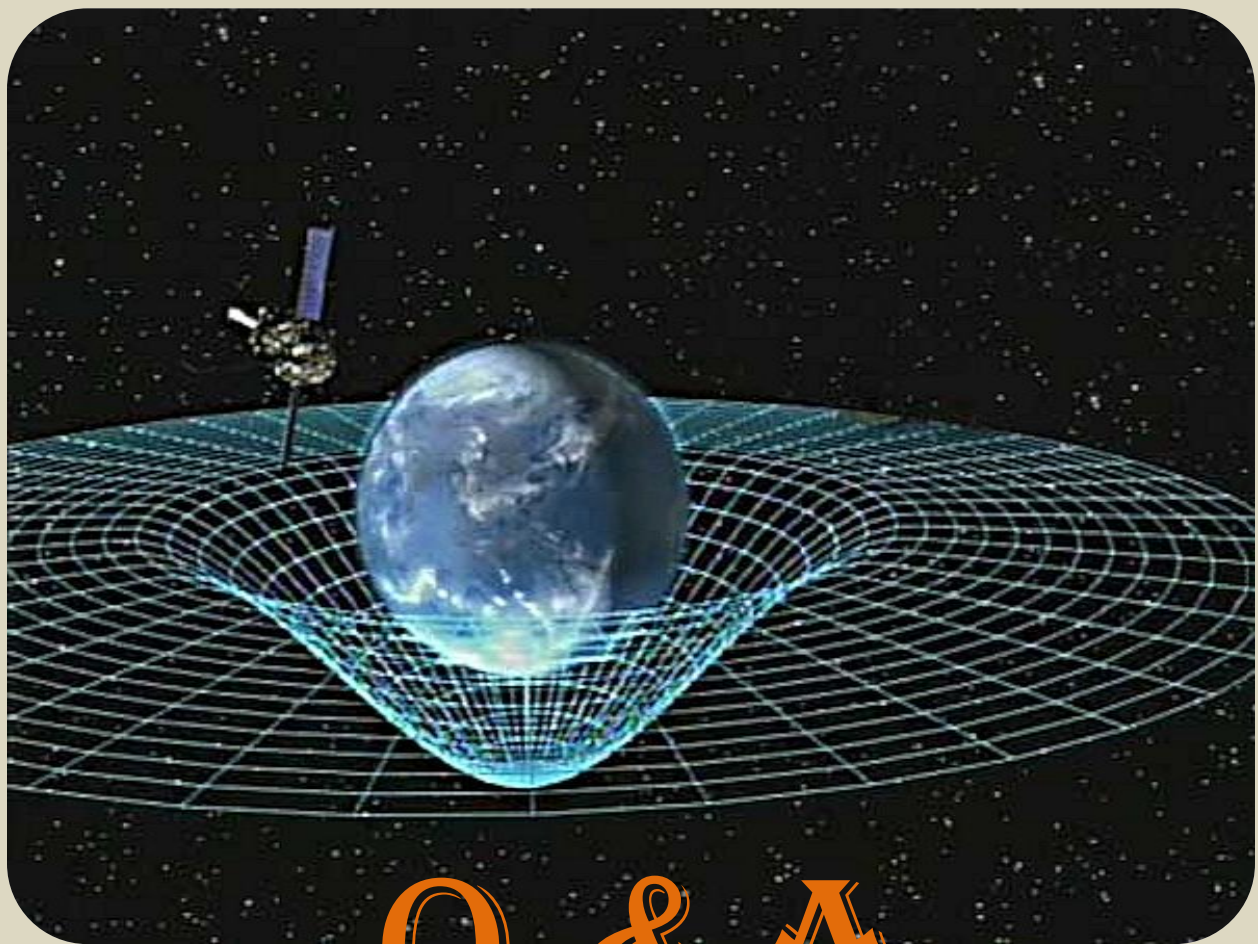

Vaishnavi Varshney

Cs3-2nd Year.

THE BYTE

Q & A

Social Media Security Tips.

1. Realize that you can become a victim at any time. Not a day goes by when we don't hear about a new hack. With 55,000 new pieces of malware a day, security never sleeps.

2. Think before you post. Status updates, photos, and comments can reveal more about you than you intended to disclose. You could end up feeling like some silly politician as you struggle to explain yourself.

3. Nothing good comes from filling out a "25 Most Amazing Things About You" survey. Avoid publicly answering questionnaires with details like your middle name, as this is the type of information financial institutions may use to verify your identity.

4. Think twice about applications that request permission to access your data. You would be allowing an unknown party to send you email, post to your wall, and access your information at any time, regardless of whether you're using the application.

5. Don't click on short links that don't clearly show the link location. Criminals often post phony links that claim to show who has been viewing your profile. Test unknown links at Siteadvisor.com by pasting the link into the "View a Site Report" form on the right-hand side of the page.

6. Beware of posts with subjects along the lines of, "LOL! Look at the video I found of you!" When you click the link, you get a message saying that you need to upgrade your video player in order to see the clip, but when you attempt to download the "upgrade," the malicious page will instead install malware that tracks and steals your data.

7. Be suspicious of anything that sounds unusual or feels odd. If one of your friends posts, "We're stuck in Cambodia and need money," it's most likely a scam.

8. Understand your privacy settings. Select the most secure options and check periodically for changes that can open up your profile to the public.

9. Geolocation apps such as Foursquare share your exact location, which also lets criminals know that you aren't home, so reconsider broadcasting that information.

10. Use an updated browser. Older browsers tend to have more security flaws.
11. Choose unique logins and passwords for each of the websites you use. I'm a big fan of password managers, which can create and store secure passwords for you.

12. Check the domain to be sure that you're logging into a legitimate website. So if you're visiting a Facebook page, look for thewww.facebook.com address.

13. Be cautious of any message, post, or link you find on Facebook that looks at all suspicious or requires an additional login.

14. Make sure your security suite is up to date and includes antivirus, anti-spyware, anti-spam, a firewall, and a website safety advisor.
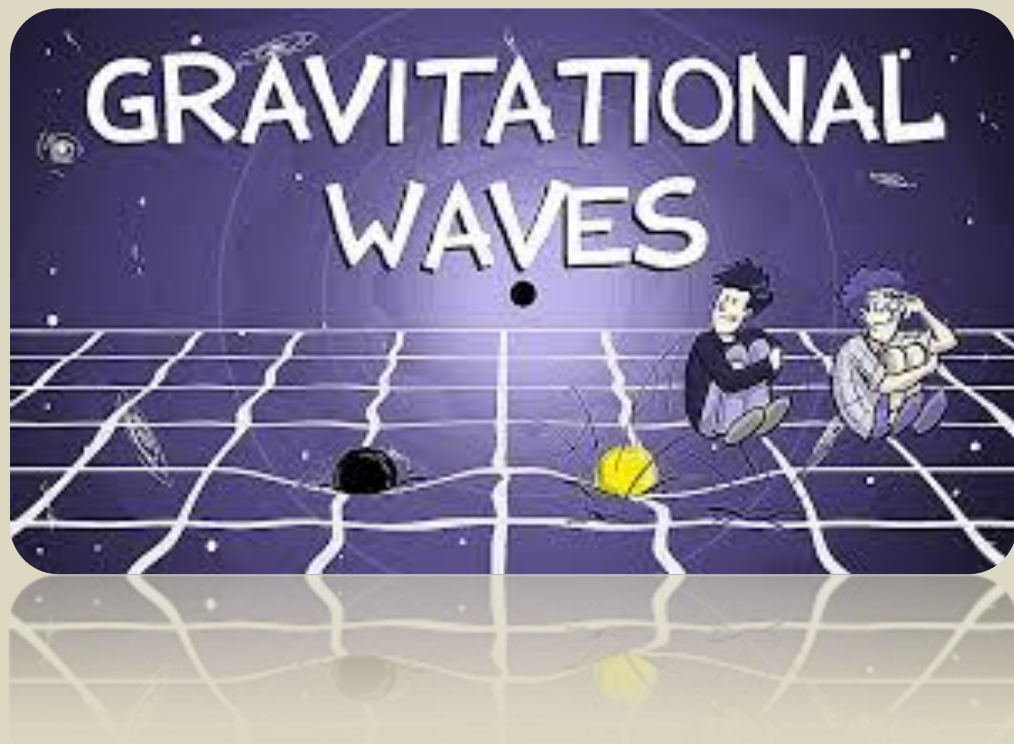
15. Invest in identity theft protection. Regardless of how careful you may be or any security systems you put in place, there is always a chance that you can be compromised in some way. It's nice to have identity theft protection watching your back.

From-Prachi,

IT2, 2nd Year.

THE BYTE

GRAVITATIONAL WAVES

DEPARTMENTAL EVENTS

Departmental events

INDUSTRIAL VISIT AT CETPA INFOTECH PVT. LTD

Department of Computer Science & Engineering organized an Industrial Visit for BTech 3rd year students to Cetpa Infotech Pvt. Ltd , Noida on 13th & 20th February 2016.

The students were guided in the following ways:

• Seminar was conducted on the relevant ongoing projects at their organization, the technical processes involved, and current practices/standards followed, involved challenges and other related technical inputs.

• A technical session on DRUPAL was conducted.

• Students visited various sections of the organizations that were directly or indirectly involved in the development of the end product.

• Motivational lecture was delivered to make them aware of the involved challenges & expected requirements from an employee at entry level.
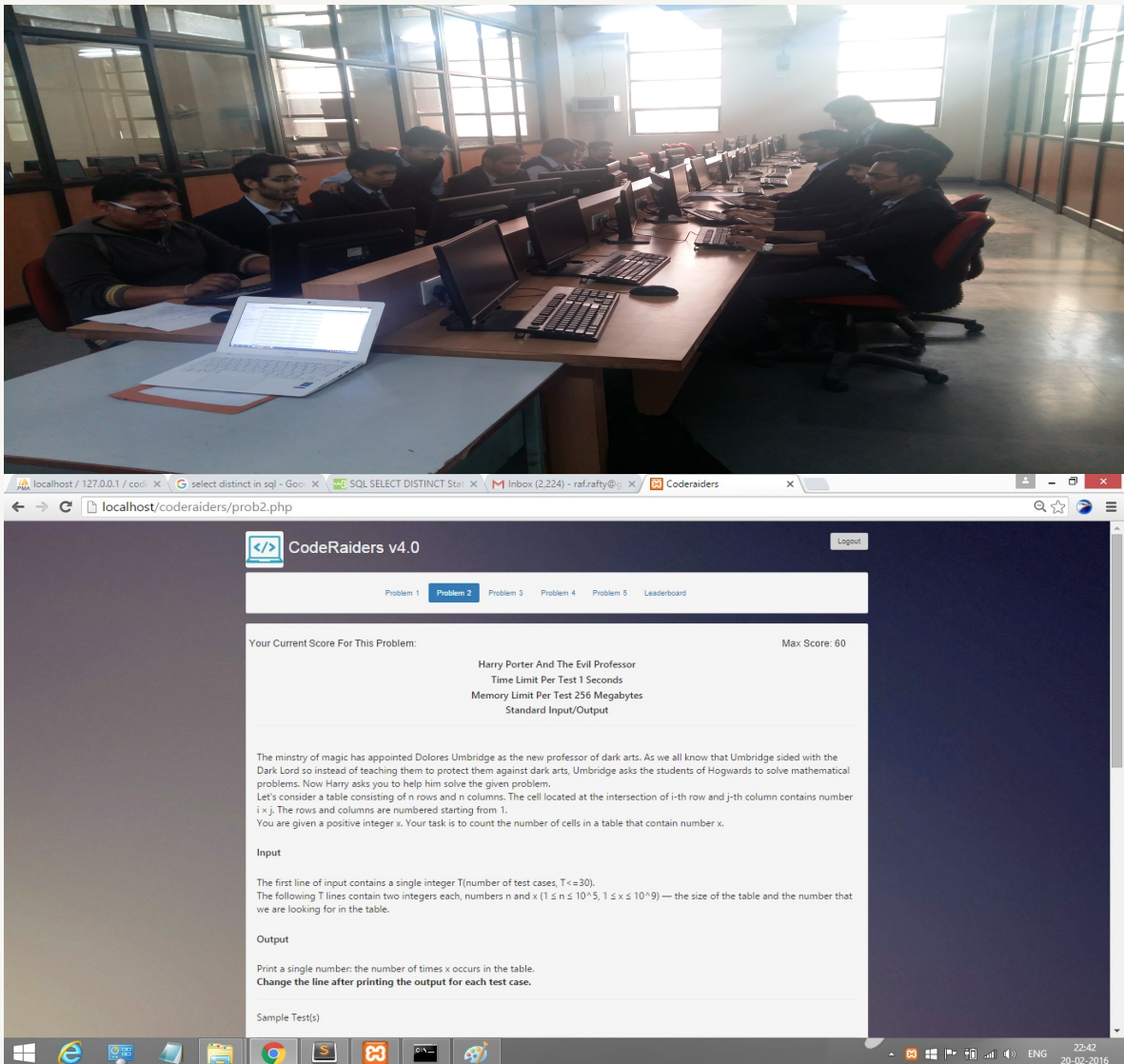
CodeRaiders v4.0

The CodeRaiders Programming Club of Department of Computer Science and Engineering organized an offline programming competition which was coordinated by 3rd year students. The competition was held on 20th Feb 2016 at 9:30 a.m in the college premises.

The event CodeRaiders v4.0 was a 2 hours competition where 110 students of 2nd and 3rd year participated. The contest comprised of 5 questions from different categories of programming such as basic math, sorting, string handling etc. The event was basically to make the students familiar of the coding competitions going on in the current scenario. The event was held on an online portal made by the club where participants submitted their solutions online and it was checked automatically.

The event saw huge number of submissions from the participants and at the three two teams managed to solve 4 questions each. Mohd. Kamran and Rohit Kumar were the winners from 3rd year and students Rishabh Prabhu and Shahzaib Khan were winners from 2nd year.

All participants received participation certificates and the top three teams from each year received merit certificates for their excellent performance.

ABHIVYAKTI-2016

"THE BYTE" an e-magazine of CSE department IMSEC has organised ABHIVYAKTI-2016 non-technical events on Saturday Feb 20, 2016 , open for all years and branch students . The events will comprise of total 4 events as follows :

- Online Cover Page Designing

- Online Pictorial Poetry

- Personality Hunt

Workshop on Image Processing with MATLAB by APTRON

Interested students may register themselves outside C block at registration desk. GP marks and certificate of participation will be given to all and merit certificates for all winners will be awarded.

Faculty Coordinators:

Mr. Amit Kumar Gautam

Ms. Lipika Bose

Volunteers:

AkankshaSrivastava(cs-1 3rdyr)

Aarohi(cs-1 3rdyr)

Apeksha Saroha(cs-1 3rdyr)

Ankita(cs-1 3rdyr)

Aayushi(cs-1 3rdyr)

Charchit(cs-1 3rdyr)

Student Coordinators:

Akshya Agarwal (cs1 – 3rdyr)

Anmoal Agarwal (CS-1 3rdyr)

AyushiGahlot (cs-1 3rdyr)

Purvi Agarwal (cs-1 3rdyr)

PIYUSH AGGARWAL AND HIS TEAM SELECTED IN TOP 10 MAKE IN INDIA HACKATHON 2016 (9ᵀʰ FEBRUARY -16ᵀʰ FEBRUARY 2016) IN IIT BOMBAY ORGANISED BY -

DEPARTMENT OF INDUSTRIAL POLICY & PROMOTION, MINISTRY OF COMMERCE & INDUSTRY, GOVERNMENT OF INDIA
सत्यमेव जयते

GOVERNMENT OF MAHARASHTRA
महाराष्ट्र शासन

CII
Confederation of Indian Industry

- In the Early Stage **300+ Colleges**Partcipated in Submitting different Techanical Paper based on their Ideas. Including IIT's,NIT's and other Foreign Universities.

- Out Of which Our Idea was selected in **TOP 10IDEAS** . Now **These TOP 10 teams has to compete with each Other in IIT Bombay** by Making the Product from 10 Feb 2016 – 16 Feb 2016.

- Under the Make in India Week,Government of India organised a Make in India Hackathon in which **Top 10 Teams of Different Themes has to develop a Product for Smart City.**

- We were Mentored by **Prime Minister Narendra Modi** and got a chance to speak with him discussing about India as a Smart Country.
- **After 6 days of Hard Work**, We Finally Made the **Product Rescue App for Flood Scenario under Water Theme.**

- Our Product was Appreciated by the **JURY MEMBERS, RESEARCH SCHOLARS OF IIT BOMBAY AND FACULTIES OF IIT BOMBAY.**

- **Our Product got Best Idea and Public Choice Award Theme**. We were Interviewed by various Media Channels including NDTV and IBN7.

- National Disaster Management Authority also appreciated our Idea.
- We were **Rewarded Cash Prize- 10000, Amazon Money – 5000+ 5000 and Great Make India Goodies for our Product.**

- We were Completely **SPONSORED BY GOVT. OF INDIA** . FROM OUR **FLIGHT TICKETS , FOOD, ACCOMODATION.**

PLACEMENT NEWS CONT...

DRDO JOBS FOR SCIENTIST/ENGINEER- B IN DELHI

LOOK UP INSIDE

UCO BANK

DRDO

Important Dates :

Online submission starts on : 20 March 2016 at 1700 Hrs (IST)

Online submission closes on : 10 April 2016 at 1700 Hrs (IST)

Personal interview schedule (Tentative) : May 2016 onwards for Subjects/Disciplines in Part I

Scientist/ Engineer Eligibility :
MSc(Chemistry, Mathematics / Applied Mathematics, Phy),BE/B.Tech (Aero, chemical engineering, Civil, CSE, ECE, Mechanical Engineering, Metallurgical, Textile /Leather Technology, Fire & Safety, Electrical)
Location : Delhi
Last Date : 10 April 2016
Hiring Process : Written-test

Advt.No.120
Scientist/Engineer 'B' Job Position in Defence Research & Development Organisation
A: Part I – Screening Based on Valid GATE 2015/ 2016 Score
Gate Paper Code : Computer Science & Information Technology (CS)

Computer Science & Engg./26 Post
Qualification : At least First Class Bachelor's Degree in Engineering or Technology in Computer Science & Engg from a recognized university or equivalent.
Age : 28 years
Pay Scale : Rs.15600-39100

Selection Process :

The shortlisted candidates will be required to appear in the personal interview to be held at Delhi/Bangalore/Hyderabad/Pune or any other place as decided by RAC/ DRDO from May 2016 onwards tentatively. Shortlisted candidates shall be able to download their interview call letter along with date/ venue of personal interview and other relevant documents through the candidate login. ii) Candidates serving in Govt. Service or in Govt. owned organisations will be required to produce "NOC" from their respective Department/Employer at the time of interview failing which candidate will not be allowed to appear for the interview.

Fee : General/OBC candidates are required to pay a non-refundable non-transferable application fees of Rs.100/- (Rs. Hundred only) payable online only. However there is no application fees for SC/ST /PWD and women candidates.

Training : All selected Scientists 'B' for DRDO may be required to initially undergo Post Induction Training.

PLACEMENT NEWS CONT...

Indian Council of Forestry Research and Education (ICFRE) Dehradun (Uttarakhand State) invites applications from Indian Nationals for appointment of Scientist-B for filling up 08 Vacancies. The last date for submission of applications is 22nd March 2016.

Essential - First Class B.E./B.Tech. degree in Computer Science from a recognized University. (OR) First Class in Master of Computer Applications or equivalent from a recognized University

ICFRE Dehradun Recruitment 2016 Scientist-B (08 Vacancies)

Age Limit: 30 Years as on 22/03/2016.

Place of Posting: The persons selected against the posts in the above disciplines will be posted at Rain Forest Research Institute. Jorhat. All posts carry liability to serve anywhere in India.

Selection Process: Written Exam and / or Interview. Date and Time of written examination and/ or interview to be intimated later to the eligible candidates, separately.

Place of Written Examination:

The written examination will be conducted at Forest Research Institute (FRI), Dehra Dun and at Rain Forest Research Institute (RFRI), Jorhat. The candidates are required to indicate choice of two (02) Centres in order of preference.

Place of interview: ICFRE (Hqrs.), P.O. New Forest, De-

Application Fee: ₹ 200/- through bank Demand Draft (DD) drawn in favour of the "Drawing & Disbursing Officer (DDO), FCFRE" payable at Dehradun issued by any Nationalized Bank. No other mode of payment of application fee is acceptable. Separate applications should be submitted along with Demand Draft of ₹ 200/- for each post, if a candidate wishes to apply for more than one post. The SC/ ST/ PH/ Women candidates are exempted from the payment of the application fee.
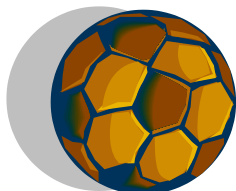
How to Apply: Interested candidates should submit their application typed on A-4 size paper as per the prescribed proforma along with attested copies of:

(1) Certificate of proof of age.

(2) Certificates, Degrees. Marksheets etc. of educational qualification; proof of specialization in required discipline

(3) Certificate issued by the competent authority in prescribed format in support of claim to belong to SC/ST/OBC/PH, as applicable. En case the certificate is in a local vernacular language, its English translation duly attested by a Gazetted Officer should be submitted.

(4) A Certificate in support of claim for age relaxation/fee concession, as applicable. In case the qualifying degree (M.Sc/B.L./B.Tech etc.) carries a Grade Point Average (CPA) system instead of Percentage system, the duly certified conversion syslem prescribed by the educational institution must be submitted to ascertain requisite qualification of "First Class degree' from the said educational institution.

The application form, complete in all respect, should be sent to the ASSISTANT DIRECTOR GENERAL (EDUCATION & RECRUITMENT BOARD), INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION, P.O. NEW FOREST DEHRADUN-248006 (UTTARAKLIAND) on or before 22/03/2016.

Current Affairs

BY : MUKESH KR. SINGH , ASST. PROFF. ,DEPT. OF CSE

Resul Pookutty becomes first Asian to win Golden Reel Award

Oscar-winning sound designer Resul Pookutty has won the prestigious American Motion Picture Sound Editors' (MPSE) Golden Reel Award. He won the best sound for documentary "India's Daughter" directed by Leslee Udwin. It is based on the Delhi gangrape incident of December 2012. Government has banned public screening airing of the documentary. With this, he becomes the first Asian to win the coveted award from the Motion Picture Sound Editors' (MPSE) of United States for best sound.

Oscar Awards: 88th Academy Awards

The 88th Academy Awards ceremony, presented by the Academy of Motion Picture Arts and Sciences (AMPAS) was held at the Dolby Theatre in Hollywood, Los Angeles. The Academy Awards (commonly referred as Oscars) were presented in twenty four categories. They are Best Picture: Spotlight. Best Actor: Leonardo DiCaprio (The Revenant). Best Actress: Brie Larson (Room). Best Supporting Actor: Mark Rylance (Bridge of Spies). Best Supporting Actress: Alicia Vikander (The Danish Girl). Best Director: Alejandro G. Iñárritu (The Revenant). Best Original Screenplay: Tom McCarthy (Spotlight). Best Adapted Screenplay: Adam McKay (The Big Short).

Sanjay Leela Bhansali and Ranveer Singh chosen for 2016 Dinanath Mangeshkar Award

Filmmaker Sanjay Leela Bhansali and actor Ranveer Singh have been chosen for the prestigious 2016 Pandit Dinanath Mangeshkar Award. The award will be bestowed upon them by Lata Mangeshkar at a function to be held in Pune on 24 April to commemorate Pandit Dinanath Mangeshkar's death anniversary.

East coast of India to get sixth Doppler Radar for weather forecasting

The cycloneprone eastern coast of India will get a new doppler radar to boost the weather forecasting system. It will be commissioned by the India Meteorological Department (IMD) in Gopalpur in Odisha which had faced the severe cyclonic storm Phailin in October 2013. It will be the sixth such radar on the country's east coast and the other such 5 radars are located in Kolkata, Chennai, Visakhapatnam, Machilipatnam and Paradip.

President Pranab Mukherjee inaugurates Kerala Tourism's Muziris Heritage Project

President Pranab Mukherjee inaugurated the first phase Kerala Tourism's Muziris Heritage Project (MHP) at Trissur in Kerala to reinstate the historical and cultural significance Muziris. The project is Kerala Government's first green Project and India's largest heritage conservation project. President also launched the website of the MHP.

28 February: National Science Day

In India February 28 is celebrated as the National Science Day i.e. Rashtriya Vigyan Diwas every year. Significance of Day: It aims to impart scientific temper in the minds of people of all age groups. The theme for year 2016 is "Scientific Issues for Development of the Nation" that aims at raising public appreciation. This day is celebrated as science festival in the entire nation by organising science exhibitions, seminars, workshops, symposiums and many other activities.

President Pranab Mukherjee declares Kerala as first digital state

President Pranab Mukherjee has formally declared Kerala as the country's first digital state. It was announced by President after launching a digital empowerment campaign of state at a function to be held in Kozhikkode. The campaign aims at bridging the digital divide by 2020.

E-Tourist Visa Scheme extended to 37 more countries

The Union Government has extended e-Tourist Visa Scheme to 37 more countries. With this, the total count of countries under the scheme will become 150.

India losses solar case against US at WTO

India has lost solar case against United States at the World Trade Organisation (WTO) for in breaching of international trade rules. In this regard, WTO's Dispute Settlement Body (DSB) ruled that India's domestic content requirement for National Solar Mission (NSM) discriminated against imported solar technology.

ISRO gears up for launch of India's first solar mission Aditya-L1

The Indian Space Research Organisation (ISRO) is set to launch the country's first solar mission called Aditya-L1. It was announced by Union Minister of State (MoS) in PMO Jitendra Singh in the Lok Sabha. About Aditya-L1 mission As part of the mission, Aditya-L1 satellite will be placed in an orbit about 15 lakh kilometres from the earth in a halo orbit around the L1 Lagranian point. It will be launched by using the PSLV XL. Its primary objective will be to study the solar corona and the chromosphere in different wavebands, dynamic nature of the sun's outer most layers, and collect data about Coronal Mass Ejections (CME). The mission is

a joint venture between ISRO and physicists from various institutes including Indian Institute of Astrophysics (Bengaluru), Tata Institute of Fundamental Research, (Mumbai) and Inter University Centre for Astronomy and Astrophysics (Pune).

RBI extends Currency Swap Arrangement with SAARC nations

The Reserve Bank of India (RBI) has extended currency swap arrangement to South Asian Association for Regional Cooperation (SAARC) nations till mid-November 2017. All 7 SAARC member countries including Bangladesh, Afghanistan, Maldives, Bhutan, Nepal, Pakistan and Sri Lanka can avail the facility. Under the arrangement, RBI will be offering swap arrangement up to an overall amount of US 2 billion dollars both in foreign currency and Indian rupee. This move of RBI aims at enhancing economic cooperation and strengthening financial stability among the SAARC countries.

Naval Exercise IBSAMAR 2016 between India, South Africa, Brazil kicked off in Goa

The fifth edition of IBSAMAR 2016 trilateral naval exercise between Brazil, India and South Africa kicked off in Goa. IBSAMAR is abbreviated as India-Brazil-South Africa Maritime. This is the for the first time the exercise is held in India as all the previous editions were held in South Africa since it began in 2006.

India's first nuclear submarine INS Arihant passes deep sea tests

India's first indigenously built nuclear armed submarine INS Arihant has successfully passed several deep sea diving drills as well as weapons launch tests. These successful tests undertaken off Vishakhapatnam coast where the submarine was build. These tests makes it ready for formal induction into the Naval Fleet

India to host 3rd Asia Ministerial Conference on Tiger Conservation
India is going to host Asia Ministerial Conference on Tiger Conservation from 12 April 2016 to save tigers. It will be inaugurated by Prime Minister Narendra Modi. It will the third such conference on tiger conservation to be hosted by India that will see the participation of all 13 tiger range countries (TRCs). They are Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Russia, Thailand, and Vietnam.

KN Vyas appointed as Director of Bhabha Atomic Research Centre

Distinguished scientist KN Vyas has been appointed as Director of Bhabha Atomic Research Centre (BARC) for a term of three years His appointment was confirmed by the Appointments Committee of the Cabinet (ACC) presided by Prime Minister Narendra Modi in New Delhi. He succeeds Shekar Basu who was appointed as Atomic Energy Secretary and Chairman of Atomic Energy Commission (AEC) in October 2015.

Five hot Jupiter like planets discovered
Scientists have discovered five new Jupiter-like planets that are similar in characteristics to our solar system's biggest planet. The newly discovered planets were designated as WASP-119 b, WASP-124 b, WASP-126 b, WASP-129 b and WASP-133 b. They orbit very close to their host stars and hot compared to Jupiter.

Google's Project Loon begins its operations in Sri Lanka

Google's Project Loon began its operations in Sri Lanka after first helium-filled balloon landed in Pupuressa area in Gampola town. It was one of three balloons that were put up in Sri Lankan airspace for trials to provide high-speed internet service after it was launched from South America.

NASA finds first super-Earth exoplanet with an atmosphere

Astrophysicists at NASA have found a super-Earth exoplanet dubbed as 55 Cancri e with an atmosphere for the first time. These NASA astrophysicists were working with the European Space Agency (ESA) and the University College London.

Union Cabinet gives nod to LIGO-India mega science proposal

The Union Cabinet has approved the LIGO-India project (Laser Interferometer Gravitational-wave Observatory in India) proposal for research on gravitational waves. The approval coincides with the historic first time detection of gravitational waves that had opened up of a new window on the universe to unravel some of its greatest mysteries.

DRDO to conduct captive flight trails of Anti-Radiation Missile

Defence Research and Development Organisation (DRDO) has decided to conduct captive flight trials of an advanced, state-of-the-art Anti-Radiation Missile (ARM) in April-May 2016. During captive flight trials DRDO scientist will evaluate performance of the missile's heat seeker, structural capability, navigation and control system and aerodynamic vibrations. Later by end of 2016, actual ground testing will be conducted and later it will be fired from Su-30 during the actual flight trial.

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