VIBRANCE

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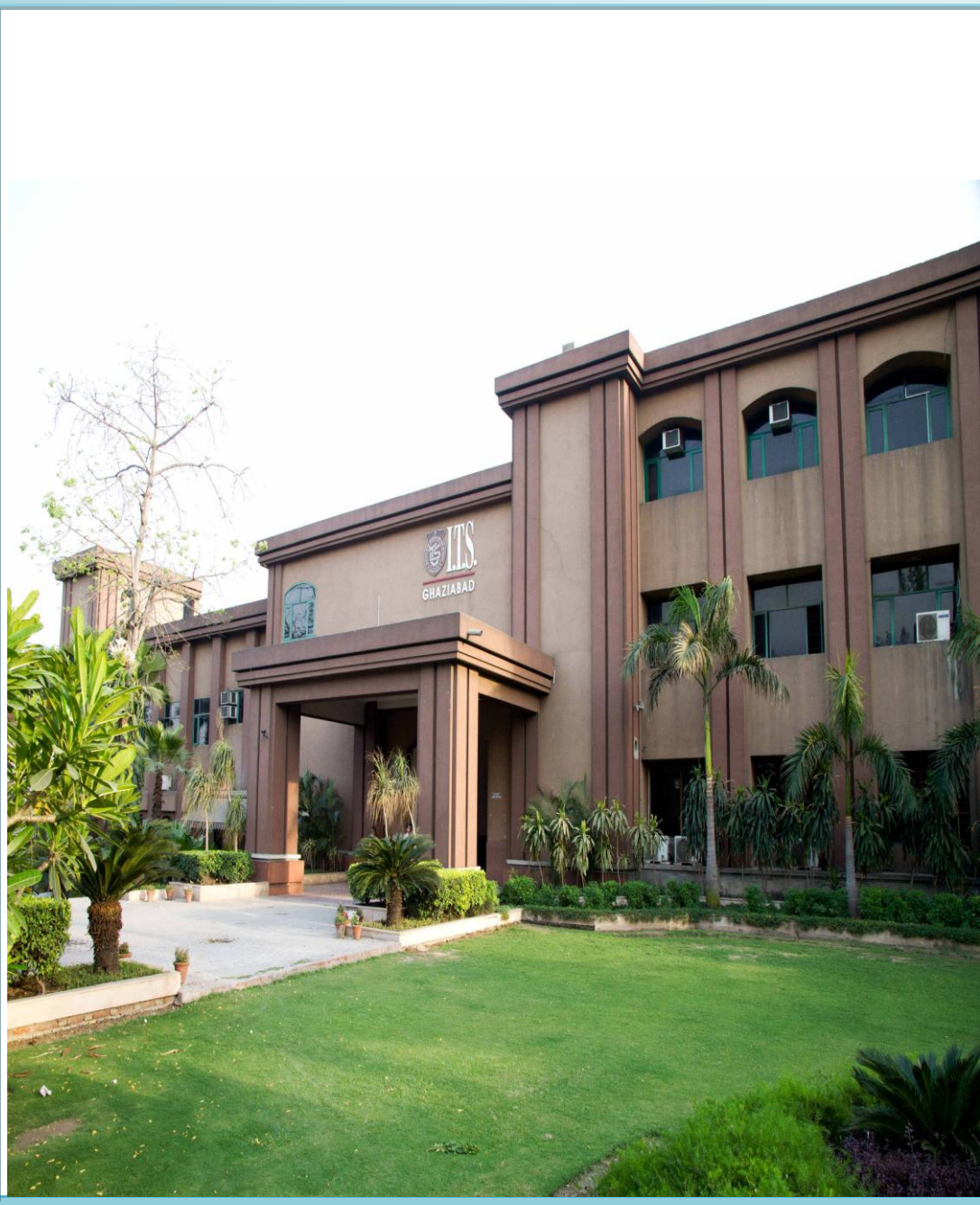
In this Issue!



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In this Issue!

Alternative energies to charge your devices

Instead of rummaging through the house for your third lost iPhone charger, imagine simply placing the device on your windowsill for some juice. It got us thinking: what other ways are alternative energy sources changing the way we use technology? We found some fascinating ones: you may eventually be able to fuel anything from smartphones to homes with sugar, wind, trash, or even body movement. According to the U.S. Energy Information Administration, alternative energy solutions will grow by about 3 percent in 2014, and will account for up to 28 percent of electricity growth by 2040.

Some of the most interesting ways we are harnessing alternative energy are:

Sugar-powered batteries

There's some sweet news for alternative energy. A Virginia Tech research team, led by Percival Zhang, has created a sugar-powered battery. It is the first of its kind to maximize the energy output of sugar as a fuel source. Zhang said it has 10 times the energy of the lithium-ion batteries found in cell phones. The sugar battery is about the size of AA-battery with .5 volts right now, but the team plans to prototype and unveil a cell phone charger relatively soon. It should be made commercially in three years, and Zhang hopes to charge other small devices such as clocks before working seriously to power small car batteries.

Solar-panel paint

According to the Solar Energy Industries Association, the average price of a solar panel has declined 60 percent since 2011, and new technology is making them even easier to use. New Energy Technologies developed a coating for see-through glass called SolarWindow, made from the world's smallest organic solar cells, which are about a quarter of the size of a grain of rice. The University of Sheffield and University of Cambridge have also created solar cells that can be sprayed onto various surfaces including windows, car roofs, and buildings. The overarching idea is to produce low-cost solar technology so it will become more widespread, especially in developing countries.

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Footsteps to fuel electricity

We covered energy inside the body, but physical movement can also be harvested as power. Riverdale Country School in New York City is the first school in the United States to install tiles that convert kinetic energy into electricity through a mechanical system rather than piezoelectric technology. The tiles, which are connected to a LED board that displays the amount of energy, power a phone-charging station solely through students' footsteps. U.K.-based Pavegen helped develop the tiles, which can work indoors and outdoors, but work best where there is a high footfall rate such as transportation hubs or schools.

Grid-based power electronics

Gridco Systems, a leader in electricity grid infrastructure solutions, just launched its first line of products. The emPower Solution uses pole-mounted and in-ground devices, which have a 25-year life span, and backend software to monitor the flow of power to homes and buildings. The Massachusetts-based startup has raised more than $30 million from venture capitalists in four years. Gridco claims it can assist utilities and companies in tightly controlling power on the edge section of the grid, while also maintaining a more consistent flow to wind and solar farms and plants, whose voltages often spike throughout the day.

Hydrogen fuel cell cars

There's some tension brewing in the electric car industry. Toyota announced it will sell its first hydrogen fuel-cell vehicle in 2015, and Hyundai said it will release its hydrogen-powered Tucson SUV later this year. Hydrogen fueling stations are near impossible to find. There's only a dozen in California, and that's far more than anywhere else, whereas electric ones are becoming more widely available.

Solar panels on top of cars

Ford has developed a model that runs primarily on solar power from panels on the roof. The C-MAX Solar Energi Concept, released at CES, is a project with SunPower Corp. and the Georgia Institute of Technology. A concentrator on the roof acts like a magnifying glass to produce energy. It's marketed as an alternative for those living off-the-grid who want an alternative energy-powered vehicle but can't reach an electric charging station.

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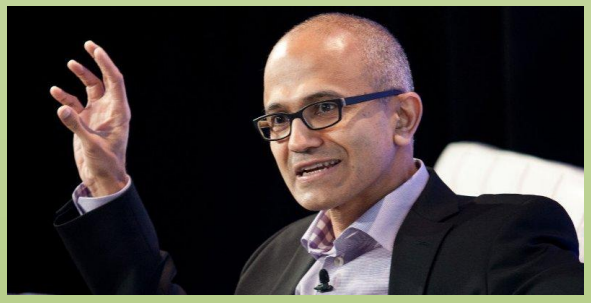


SATYA NADELLA, MICROSOFT NEW CEO

WASHINGTON: Microsoft's board on 4th February, 2014 named Hyderabad-born Satya Nadella as chief executive of the legendary tech giant that has given the world products which have become household names like Windows, Word, Excel, PowerPoint and Outlook Express. The announcement elevates Nadella, an offspring of the Indian system, to one of the highest-profile corporate jobs globally.

Satya Narayana Nadella was born in 1967 in Hyderabad, India is an American business executive, engineer and the current chief executive officer of Microsoft. Previously, he was executive vice president of Microsoft's Cloud and Enterprise group, responsible for building and running the company's computing platforms, developer tools and cloud services.

Nadella, 46, will be only the third CEO of Microsoft after founder Bill Gates and Steve Ballmer, the man he is succeeding.

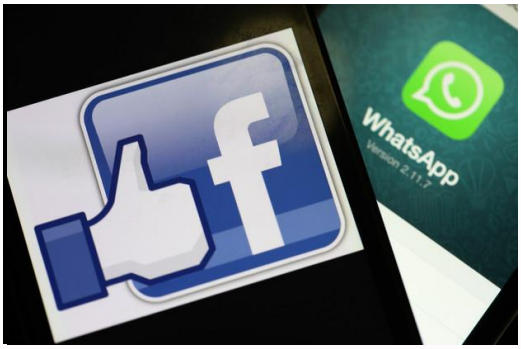
Nadella worked with Sun Microsystems, as a member of its technology staff, prior to joining Microsoft in 1992.

In Microsoft he led major projects including the company's move to the cloud computing and the development of one of the largest cloud infrastructures in the world.

Nadella said he "always wanted to build things." He knew that computer science was what he wanted to pursue. He has proved the saying “Be what you want to be”

We wish Mr. Nadella best luck for his new journey.

In this Issue!



Facebook Bulls Buy WhatsApp

More than a few people were surprised when Facebook said it would pay $19 billion for messaging app startup WhatsApp.“If we can do a good job with WhatsApp [and] grow it, it will be a huge business,” Zukerberg said during a keynote presentation at Mobile World Congress in Barcelona.

WhatsApp, based in Mountain View, California, is popular in a crowded field. It competes with apps from Twitter Inc., Kik Interactive Inc. and Snapchat Inc., a startup that rebuffed a $3 billion Facebook bid last year. Similar apps include Tencent Holdings Ltd.’s WeChat in China, KakaoTalk in Korea and Line in Japan and Facebook’s own Facebook Messenger.

The service is displacing traditional text-messaging as the preferred method for young people to stay in touch on mobile devices. Unlike conventional text messages, which people pay for through their mobile-phone plans, WhatsApp’s are free for the first 12 months; after that, a subscriber pays 99 cents a year.

At a fee of 99 cents a year, 1 billion paying WhatsApp users would translate into about $1 billion in annual sales, bringing the projected revenue multiple that Facebook is paying to 19, data compiled by Bloomberg show. Only Vertex Pharmaceuticals Inc., a maker of drugs for Hepatitis C, trades at a higher ratio of estimated sales to price among stocks in the S&P 500, according to data compiled by Bloomberg.

Facebook CEO, Mark Zukerbergo shed a bit of light on why WhatsApp, led by co-founder Jan Koum, became interested in a Facebook exit — by all accounts, a tie-up that Koum in 2012 claimed was not a route he would have wanted to take: it was because of Internet.org, the Facebook-led initiative to bring internet connectivity to developing economies.

“It was the Internet.org vision and how we can connect the world,” Zuckerberg said. While Koum and WhatsApp also seemed to have had the same philanthropic motivation behind their world communications domination ambition, it would have not been possible for them to execute on it as easily as they had with Facebook.

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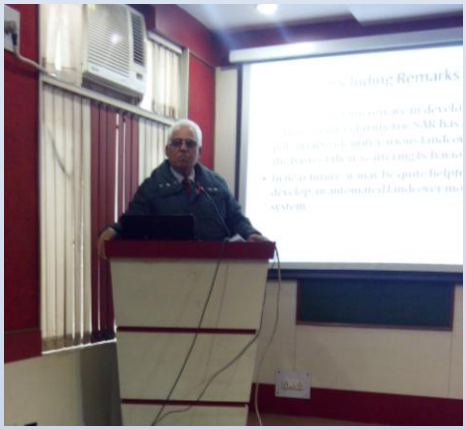
Happenings @ Dept. of I.T. in the month of February, 2014

GUEST TALK FOR MCA STUDENTS



Dr. K.P.Singh, renowned academician, founder Chairman – AICTE, former Vice Chancellor of VBS Purvanchal University Jaunpur, Ex Director – IIT, BHU, Varanasi delivered a Guest lecture on "Information Technology in Remote Sensing" for MCA students on 15th Feb, 2014.

Dr. K.P. Singh talked about remote sensing and said that it is the acquisition of information about an object or phenomenon without making physical contact with the object. He spoke on modern usage of Remote Sensing and explained the uses of aerial sensor technologies in detecting and classifying objects on Earth by means of propagated signals which may be split into active remote sensing or passive (e.g. sunlight) when information is merely recorded.

Dr. Singh also presented a detailed discussion on Applications of remote sensing data and usage of Information & Communication Technologies in effective processing and analysis of sensed data for better decision making. The session was very interactive and informative.

FACULTY PARTICIPATION

Prof. Sunil Kr Pandey attended the 101st Indian Science Congress held during 03rd February, 2014 to 07th February, 2014 in University of Jammu, Jammu. This is considered to be the biggest event for researchers, academicians all across the country and abroad to come together to share each other's work, research and developments taking place in scientific community.

Prof. Sunil Kr Pandey, was invited as an invited speaker in Information & Communication and Technology (including Computer Science Section).He also chaired one of sessions in which researchers from various parts of the country presented their research papers.

Placement Quiz Series

1. Which notation has the lower as well as upper limit of a function?

A. O-notation

B. o-notation

C. θ-notation

D. Ω-notation

2. What is the worst case running time of Insertion sort, if number of elements is n?

A. θ (n)

B. θ (n^2)

C. θ (nlogn)

D. θ (logn)

3. If D1 is the set of all values in column1, D2 is the set of all values in column2, D3 is the set of all values in column3 and similarly Dn is the set of all values in column , then a table of n attributes must be the subset of _____.

A. D1+D2+D3+.....+Dn

B. D1 X D2 X D3 X..... X Dn

C.D1

D.Dn

4. What would be the output of following C code?

```
void main()
{
  float pi=3.14;
  double PI=3.14;
  if(pi==PI)
     printf("ABCDEF");
  else
     printf("XYZ");
 }
```

A.ABCDEF

B.XYZ

C.Compilation Error

D.Runtime Error

5. void main()

```
{
int const * p=5;
printf("%d",++(*p));
}
```

A. 5

B. 6

C. Runtime Error

D. Compile Error

Solutions will be published in December issue

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Answer to last Placement Quiz Series

1 -A

2-D

3-C

4-D

5-A

Announcement and Contact Details

VIBRANCE is an E-magazine of Department of I.T, I.T.S, Ghaziabad. We look forward to the contribution from our students, alumni, faculty members and industry experts.

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