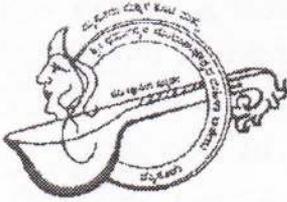


|| Om Shree Manjunathaya Namaha ||  
**MMK & SDM MAHILA MAHAVIDYALAYA**  
Krishnamurthypuram, Mysore



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May 25, 2016  
Department of Computer Science  
Issue 17

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### Editorial

### Message by HOD



The Department of Computer Science of our College presents the Seventeenth issue of "GI Talk" to its readers. The issue contains a good piece of information on the advancement made in the field of Computers and their applications. Many of the articles on innovative techniques and devices have also been incorporated in this issue.

I am happy to write that the students have contributed very good and valuable articles under the guidance of their Teachers. I hope that the readers would receive them positively and encourage them. Constructive suggestions are always welcome.

My hearty congratulations and best compliments to the staff and students of the Department of Computer Science.

**Prof. K.V. Damodara Gowda**  
Chief Editor

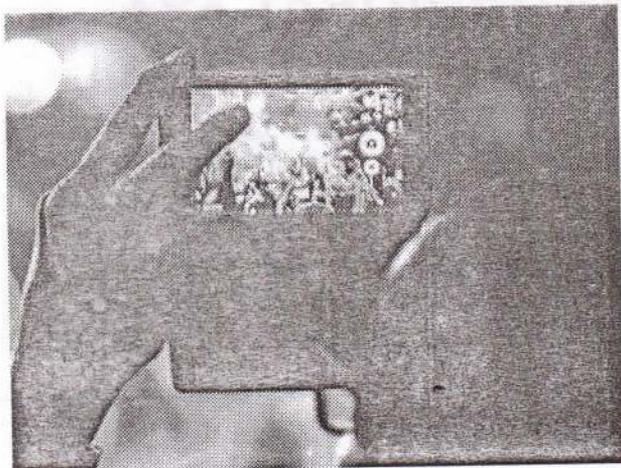


It gives me great opportunity to present the 17<sup>th</sup> issue of Bi annual News Letter " GI Talk". The issue comprises the activities and achievements of the Department in the Academic and Co-curricular as well as Research and Development. The Department aim is to impart value based quality education along with development of positive attitude, skills and abilities among students to apply their knowledge in order to face the challenges of future. In order to fulfill this aim GI Talk is a platform for students of this Department to explore and galore in IT field.

I congratulate the team of faculty members and the students for their brilliant work in bringing out this issue. I hope the readers will find this issue of News Letter very informative and educative. We will be happy to receive readers suggestion for further improvement and development of the News Letter.

**K.S. Sukrutha**  
HOD, Computer Science

## Smartphone Technology Enables Blind to 'SEE'



Specialists in computer vision and machine learning based at the University of Lincoln are aiming to embed a smart vision system in mobile devices to help blind people navigate unfamiliar indoor environments.

LONDON: Scientists are developing new adaptive mobile technology that could enable visually-impaired people to 'see' through their smartphone or tablet.

Specialists in computer vision and machine learning based at the University of Lincoln, UK, funded by a Google Faculty Research Award, are aiming to embed a smart vision system in mobile devices to help people with sight problems navigate unfamiliar indoor environments.

Based on preliminary work on assistive technologies done by the Lincoln Centre for Autonomous Systems, the team plans to use colour and depth sensor technology inside new smartphones and tablets to enable 3D mapping and localization, navigation and object recognition.

The team will then develop the best interface to relay that to users - whether that is vibrations, sounds or the spoken word.

"This project will build on our previous research to create an interface that can be used to help people with visual impairments," said Project lead Dr Nicola Bellotto, an expert on machine

perception and human-centred robotics from Lincoln's School of Computer Science.

"There are many visual aids already available, from guide dogs to cameras and wearable sensors. Typical problems with the latter are usability and acceptability.

"If people were able to use technology embedded in devices such as smartphones, it would not require them to wear extra equipment which could make them feel self-conscious.

"There are also existing smartphone apps that are able to, for example, recognize an object or speak text to describe places. But the sensors embedded in the device are still not fully exploited.

"We aim to create a system with 'human-in-the-loop' that provides good localization relevant to visually impaired users and, most importantly, that understands how people observe and recognize particular features of their environment," said Bellotto.

The research team, which includes Dr Oscar Martinez Mozos, a specialist in machine learning and quality of life technologies, and Dr Grzegorz Cielniak, who works in mobile robotics and machine perception, aim to develop a system that will recognize visual clues in the environment.

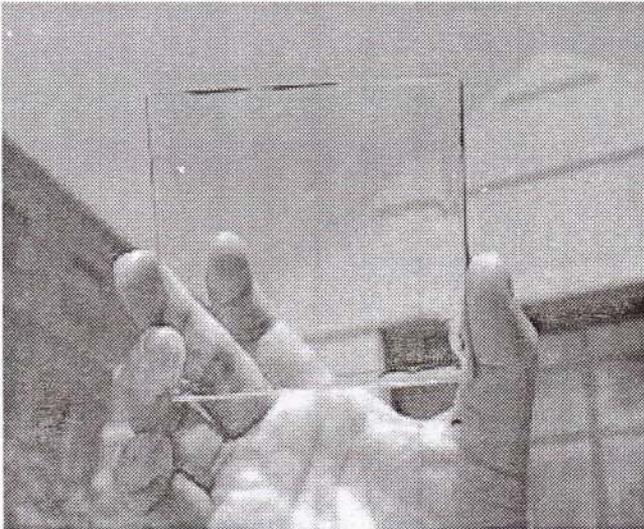
This data would be detected through the device camera and used to identify the type of room as the user moves around the space.

A key aspect of the system will be its capacity to adapt to individual users' experiences, modifying the guidance it provides as the machine 'learns' from its landscape and from the human interaction.

So, as the user becomes more accustomed to the technology, the quicker and easier it would be to identify the environment.

**MANISHA PATEL - II BCA**

## SMARTPHONES COULD GENERATE OWN POWER WITH NEW COATING



A transparent material that can be attached to a smartphone's touch screen could help the device generate electricity whenever anyone taps it, researchers in China say.

Touch screens are now found on most cell phones and tablet computers. Using a touch screen typically involves finger taps, and scientists at Lanzhou University in China reasoned that the mechanical energy from these motions could be converted into electricity to charge the phone's batteries, which could significantly extend the working time of these portable devices.

The researchers developed a new material based on a transparent silicone rubber known as PDMS. Scientists embedded wires in this rubber that were made of lead zirconate titanate that were only 700 nanometers, or billionths of a meter, wide. For perspective, this is about 140 times thinner than the average width of a human hair.

As the rubber solidified, the researchers used electrical fields to align the nanowires in the rubber in columns. This alignment helped set both the material's electrical and visual properties.

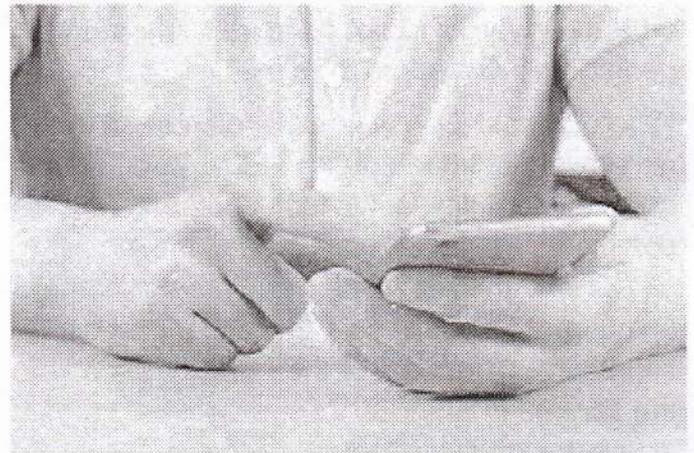
Whenever such nanowires are bent - for instance, whenever anyone taps on the material - they generate electricity, a phenomenon known as piezoelectricity. By making sure the nanowires are lined up with one another, the

researchers helped ensure that they would react to finger taps in unison, generating as much energy from the motions as possible.

When the material is viewed head-on, these incredibly narrow wires are largely invisible, and the material can look mostly transparent. As such, the nanowires "can harvest tapping energy on a screen without influencing the screen's normal working," study senior author Yong Qin, a materials scientist at Lanzhou University, told Live Science.

In addition, when the material is viewed from an angle, the nanowires interfere with light rays, which means that anything seen through the material at that angle will look blurry. As such, the material can also help protect a user's privacy by preventing anyone nearby from being able to peek at someone else's smartphone screen.

In experiments, tapping on the material generated an electrical current of 0.8 nanoamperes, or about one-millionth of the

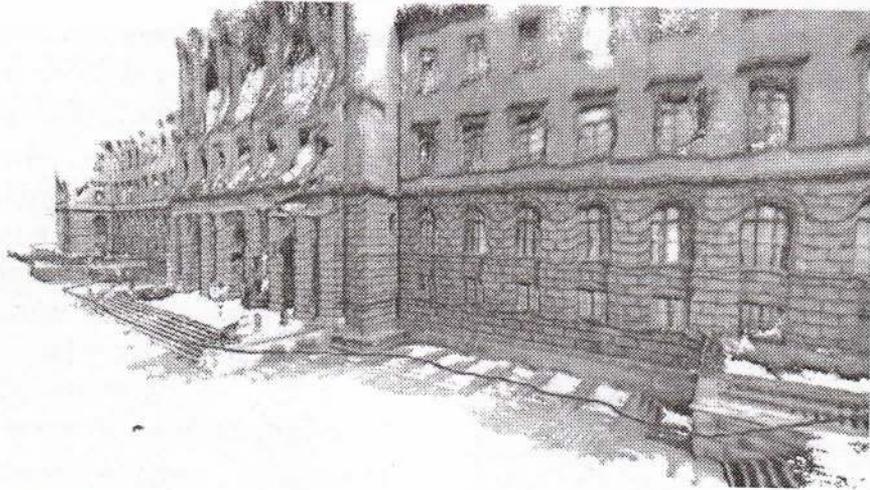


electricity used by a hearing aid. The scientists noted that the results of future research could help their material generate more current to efficiently recharge the batteries of mobile devices.

Electrical signals from nano wires could also help researchers develop more sensitive touch screens.

**RAMYA E.M. - III BCA**

## 3D Mapping of Entire Buildings with Mobile Devices



A 3-D model of the ETH Zurich main building. The red line indicates the path the scientists took in order to generate it. The researchers optimized this image using additional offline calculations. Credit: ETH Zurich / Thomas Schöps

Computer scientists working in a group led by ETH Professor Marc Pollefeys have developed a piece of software that makes it very easy to create 3-D models of entire buildings. Running on a new type of tablet computer, the program generates 3-D maps in real time.

When Thomas Schöps wants to create a three-dimensional model of the ETH Zurich main building, he pulls out his tablet computer. As he completes a leisurely walk around the structure, he keeps the device's rear-facing camera pointing at the building's façade. Bit by bit, an impressive 3D model of the edifice appears on the screen. It takes Schöps, a doctoral student at the Institute for Visual Computing, just 10 minutes to digitise a historical structure such as the main building.

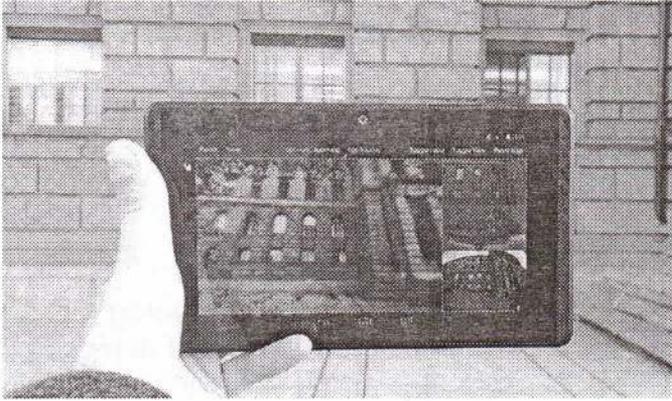
He developed the software running on the device in cooperation with his colleagues from the group led by Marc Pollefeys, Professor of Informatics. Development was carried out as part of Google's Project Tango, in which the internet company is collaborating with 40 universities and companies. ETH Zurich is one of them.

### Pixel comparison

The ETH scientists' method works by purely optical means. It is based on comparing multiple images, which are taken on the tablet by a camera with a fisheye lens, and uses the principle of triangulation in a manner similar to that applied in geodetic surveying. Or, to put it simply: the software analyses two images of a building's façade that were taken from different positions. For each piece of image information, each pixel in an image, it searches for the corresponding element in the other. From these two points and from the camera's known position and viewing angle, the software can determine how far each picture element is from the device and can use this information to generate a 3D model of the object. Long gone are the days when the models were restricted to the outlines of buildings and basic features such as window openings and doorways. Instead, they now even show architectural details such as the arrangement of bricks in a stone façade.

The Project Tango developer tablet was used by the scientists. Credit: ETH Zurich / Thomas Schöps

The new software offers some key advantages over existing methods. One advantage is that it can be used in sunlight. "Other systems work using a measuring grid of infra-red light," explains Torsten Sattler, another postdoc in Pollefeys' group who is also participating in the project. In the infra-red method, the device projects a grid of infra-red light onto an object;



this grid is invisible to the human eye. An infrared camera captures the projected image of the grid and uses this to generate a three-dimensional map of the object. "This technique works well indoors," says Sattler. But he goes on to say that it is poorly suited to outdoor shots in sunlight. This is because sunlight also contains infra-red components, which severely interfere with the measurements. "Outdoors, our method has clear advantages. Conversely, infra-red technology is better suited to indoor use in rooms whose structures are less pronounced, such as rooms with uniform, empty walls."

The ETH scientists programmed the software for the latest version of the Project Tango mobile device. "These tablets are still in the development phase and are not yet intended for end users, but they have been available for purchase by interested software developers for a few months now, also in Switzerland. The first apps for them have already been developed; however, at the present moment the device is out of stock," says ETH doctoral student Schöps.

### **A fisheye lens and rigorous quality control**

Pollefeys' working group already developed a 3D scanner for smartphones two years ago. This was intended for smaller objects. The current project allows even whole buildings to be mapped for the first time, thanks to the fisheye lens and the device's high processing power. "In future, this could probably even be used to survey entire districts," says Sattler.

As the researchers have found, the mapping of

large objects is plagued by calculation errors in respect of the 3D coordinates. "It isn't that easy to differentiate between correct and incorrect information," explains Sattler. "We solved the problem by programming the software to scrupulously delete all dubious values." Real-time feedback is essential to ensuring that the 3D model does not become a patchwork. Thanks to a preview mode the user always knows for which building areas they have collected enough information and which still require scanning.

### **Augmented reality**

This real-time feedback is possible because, thanks to its high processing power, all of the calculations are performed directly on the tablet. This also paves the way for applications in augmented reality, says Sattler. One example is a city tour in which a tourist carries a tablet as they move around a city in real life. If they view a building 'through' their tablet, additional information about the building can be displayed instantly on the screen. Other potential applications include the modelling of buildings, the 3D mapping of archaeological excavations, and virtual-reality computer games.

Furthermore, the technology could be integrated into cars to allow them to automatically detect the edge of the road, for example, or the dimensions of a parking space. Accordingly, the current project has also utilised findings from the EU's V-Charge project for the development of self-parking cars, in which Marc Pollefeys' group was also involved.

The software now developed at ETH forms part of Google's Project Tango. "Our software is now part of Google's software database. Of course, we hope that Google will make our technology available to end users and include it as standard in the next version of the Tango tablet," says Sattler. "Obviously, our dream is that some day every mobile device will include this function, allowing the development of apps that utilise it." A large computer manufacturer recently announced its intention to put a smartphone with the Google Tango technology platform on the market this coming summer.

ANSWERS OF C QUIZ : (1 - D, 2 - C, 3 - D, 4 - D, 5 - B, 6 - D, 7 - C, 8 - B, 9 - C, 10 - A)

## 3D PRINTING



3D printing (also called additive manufacturing) has been around for a number of years, but is only recently being utilized for new, innovative projects. From small trinkets to icing on cookies, all the way to construction materials and artificial limbs for amputees, 3D printing can be used in a number of different settings to create unique objects. Because of this success, 3D printing is now being seen as a useful addition to humanitarian responses. It has burst onto the humanitarian scene, helping people in a number of new, innovative ways.

While 3D printers may not be the most effective in immediate humanitarian responses, they can provide long-term aid, making them a sustainable resource. Common items, such as hand-washing stations and water buckets, can also be made in advance, and then shipped when needed.

### How do 3D printers work?

3D printers work by using various materials to make solid objects; multiple layers of material are stacked on top of each other in crossed-patterns in order to print, and ultimately create, the object in question. Types of materials used to print objects are typically plastic or metal. Different types of 3D printers use different types of material, but they all operate the same way: creating multiple layers to ultimately create an object.

Before being printed, the object must be created on a computer using a computer-assisted design (CAD) program, which then sends the

image to the printer. Prices for 3D printers and the materials used to print objects all depend on the quality of the products you are wishing to create.

### Oxfam and MyMiniFactory

Recently, Oxfam International partnered with an online organization called MyMiniFactory.com to create resources using 3D printers to help those being directly affected by the current crisis in Syria. MyMiniFactory is a free online database that offers information and designs for 3D printing, ranging from at-home hobby projects to large-scale, professional projects.

For the first stage of the project, MyMiniFactory created an online campaign that invited participants from around the world to submit designs for objects that could be used to help combat issues related to water, sanitation and hygiene that Syrian refugees in refugee camps in Lebanon were facing. The call for designs asked for a "Hand Washing Device."

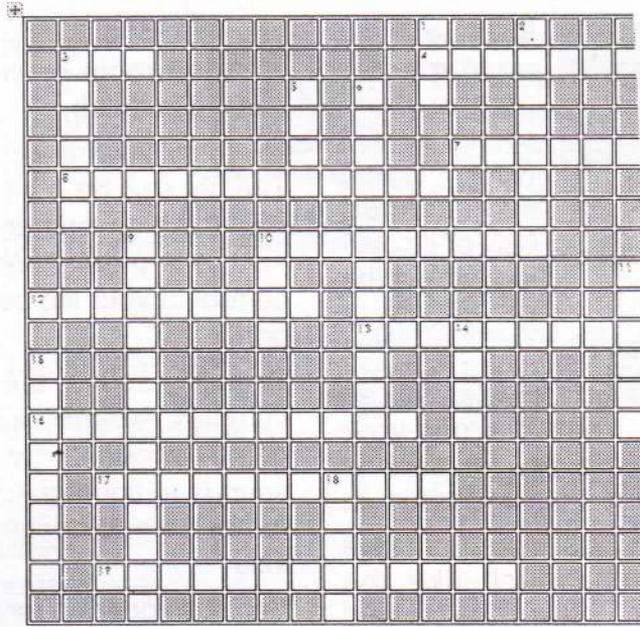
Contracting waterborne illnesses, such as diarrhea, is a deadly issue that can be combatted by simply ensuring proper hand-washing techniques.

After designs were submitted, they were reviewed by engineers. The best ones were sent to be 3D printed, and prototypes were created and distributed throughout the refugee camps. People living in the camps tested the prototypes, and reported back with any suggested improvements. After the initial testing stage, the best prototypes were recorded, and were scheduled for mass production in the late Fall of 2014.

A list of the designs that were created to help increase WASH activities within refugee camps can be found here. The designs are listed along with instructions for use, and information pertaining to their updates after the initial testing, which explain how small adjustments ensure even better success. Almost all of the designs are new, innovative takes on hand-washing stations; which would help ensure that those living in the refugee camps properly wash their hands, which reduces the risk of waterborne illnesses.

ASHIKA - II BCA

## Computer Terms Crossword



Across

Down

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

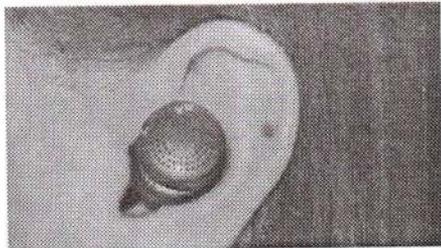
1. Format widely used because all document formatting is preserved
2. Expands the window to fill the screen
3. Related commands that are divided into tabs
5. Collection of related data stored on a hard disk
6. Displays a menu of commands for opening, saving, and printing (2 words)
9. Indicates the file 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
18. Malicious code that appears like a useful program

**Rohini Mugur - III BCA**

**Answers**

Across - 3. RAM 4. Default 7. Email 8. outputdevice 10. Interface 12. Dialogbox 13. Thumbnail  
 16. Multitasking 17. Inputdevice 19. Contextualtab.  
 Down - 1. PDF 2. Maximum 3. Ribbon 5. File 6. OfficeButton 9. Fileextension 10. Icon  
 11. Folder 14. Menu 15. Computer 18. Virus.

## Fine-Tune the World with 'Augmented Reality' Earbuds



Imagine if you could make a garage band sound as if it were playing in a concert hall, or if you could turn down the volume of a

screaming baby on an airplane.

New earbuds from the Here Active Listening can now instantly transform sounds from your surroundings. These wearable devices seek to "augment reality" - in this case, your soundscape.

In the future, these devices could enable translation of live speech, much like the "universal translators" in "Star Trek," said researchers at Doppler Labs, where the Here system was invented.

"We believe in a future where supercomputers can fit in the ears," Noah Kraft, co-founder and CEO of Doppler Labs, told Live Science.

The Here system differs from both virtual reality and augmented reality headsets. Virtual reality headsets, such as the Oculus Rift and Samsung Gear VR, block the user's view of the real world, while augmented reality headsets such as Google Glass and the Microsoft HoloLens superimpose images onto the real world to create a mixed reality. In contrast, Here seeks to modify what people hear instead of what they see.

"We think the future is in wearable technologies, in our case, hearables," Kraft said. "We want people to be more engaged in their environments, to personalize their sonic experiences."

The Here system consists of a pair of earbuds that use Bluetooth to wirelessly connect to a smartphone app. A microphone on each Here earbud captures incoming sound waves. Electronics in each bud can modify these sounds, and then miniature speakers play the result, all in less than 30 millionths of a second, leading to no perceivable delay, according to Doppler Labs. Users can use the smartphone app to adjust Here's settings.

The earbuds can boost or reduce the volume, bass, treble, reverb and other aspects of live sounds in a person's environment. For example,

you could dampen noise from chatter in a crowded room or crank up the bass of music playing at a club.

Grammy Award-winning film composer Hans Zimmer said he is a fan of Here. "You can turn off your nagging mother or the dog barking," Zimmer said in a promotional video. "It's about having control of your life beyond the ear that you were born with."

To nullify sound, the earbuds possess not only complex internal air spaces, but also active noise-cancelling technology, which generates sounds to counteract incoming noises. "We can remove the screeches that subways make," Kraft said.

Here can operate for 4 to 6 hours with the help of a rechargeable lithium-ion battery and low-power electronics that optimize battery power. Moreover, the case that holds the earbuds houses two extra charges as well, Doppler Labs said.

Through Kickstarter, Here raised more than \$635,000 from more than 2,800 backers. Doppler Labs then raised \$17 million from venture capitalists to help bring here to market. The makers have created a limited run of 10,000 here units. The waitlist for these devices currently exceeds 25,000 people, but Doppler Labs said it will make Here available to buy at the Coachella Valley Music and Arts Festival in Indio, California, in April. The feedback from users on these units will help Doppler Labs tweak Here for the mass market, and "we hope to be consumer-ready by the end of the year," Kraft said.

Doppler Labs emphasized that Here is not meant for phone calls, nor does it play music that's been wirelessly transmitted by smartphones. Here is not a hearing aid, either, nor is it meant to replace the kind of hearing-protection systems used at firing ranges.

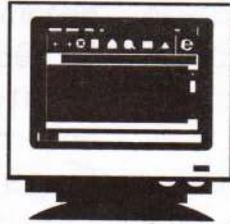
However, Kraft noted that Here could one day find use in real-time translation. "Who doesn't want to work on a 'moon shot' idea like that?" he said. "We're only at the beginning of the journey right now to help give people full control of their world".

**Bhavani M - III BCA**

# COMPUTER JOKES

## Life Before the Computer

An application was for employment.  
A program was a TV show.  
A keyboard was a piano!  
Memory was something that you lost with age.  
A CD was a bank account.  
If you had a 3-inch floppy you hoped nobody found out!  
Compress was something you did to garbage not something you did to a file.  
Log on was adding wood to a fire.  
Hard drive was a long trip on the road.  
A mouse pad was where a mouse lived.  
Cut - you did with a pocket knife.  
Paste you did with glue.  
A web was a spider's home.  
And a virus was the flu!



Now, no one will open internet explorer!  
**Programming Exam for second year students:**

Question : String concatenation.  
One Student, works on but gets runtime error. Output is something like this :

Enter String one : ABC

Enter String two : XYZ

Segmentation Fault

He was not able correct it, and finally it was time, here's what he showed to teacher.

Enter String one : Segmentation

Enter String two : Fault

Segmentation Fault

## In Earlier Days,

A person who sacrificed his sleep, forgot his family, forgot his food, forgot laughter were called "SADHU"

But now they are called... "SOFTWARE ENGINEERS"

Banner in front of a Software Company By its HR Manager "Drive slowly don't kill the engineers, Leave them to us it's our duty, We do it in a legal way.... DEADLINES"

## How to hide your important files from people without making Hidden folders

Go to Desktop and create a new folder.  
Name the folder Internet Explorer.  
Change the folder icon to Internet Explorer.  
Keep it in a corner of the desktop.

PARINEETHA - III BCA

## IT Student

Girlfriend: I don't think it's working out. Our relationship is dead.

IT Guy: Ek baar restart karke to dekh le.

## Window Nahi Khul Rahi

Patni ne pati ko phone karke poocha: Window nahi khul rahi hai. Kya karun?

Pati Kholta hua paani window par daalo aur phir try karo.

Patni: Pakka na.

Pati: Haan haan, karke to dekho jaadu sa kaam kareda.

Shaam ko pati ne ghar lautkar poochha...

Pati: Kya hua mera tareeka kaam aaya ki nahi.

Patni: Pata nahi, kyon ki ab to laptop hi start nahi ho raha hai.

## 500 Page ki Story

Doctor, pagal se: Yeh kya hai?

Pagal: Ye maine 500 panno ki kitab likhi hai...

Doctor: Tumne 500 panno pe kya likha?

Pagal: 1st page pe likha hai Ek Raja ghode par baith ke jungal ki taraf chala, aur akhri page pe likha ke wo Raja jungle pahunch gaya.

Doctor: To beech ke 498 panno pe kya likha?

Pagal: Tigdik Tigdik.. Tigdik.. Tigdik.. Tigdik.. Tigdik.. Tigdik..

Doctor: Teri ye kahani padhega kaun?

Pagal: Facebook par post kar doonga, mere jaise log zarur padhenge.

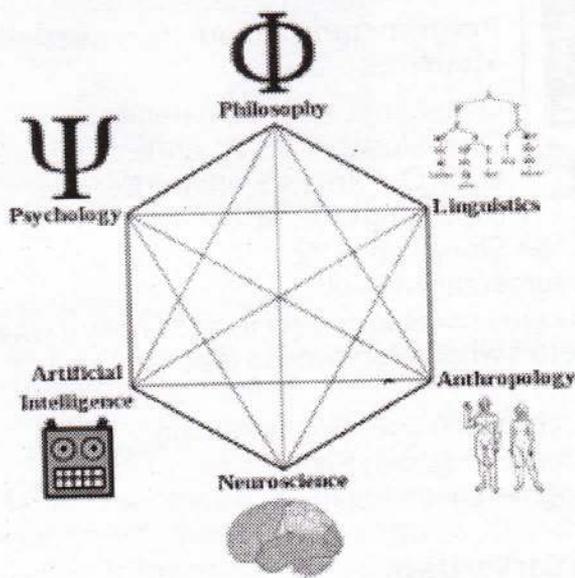
Open 24 hours

Tech Support: "Just call us back if there's a problem. We're open 24 hours."

Customer: "Is that Eastern time?"

THRIPURAMBA B N-III BCA

## COGNITIVE SCIENCE



What is cognitive or cognition?

The mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.

Cognitive science

It is the interdisciplinary scientific study of the mind and its processes. It examines what cognition is, what it does and how it works. It includes research on intelligence and behavior, especially focusing on how information is represented, processed, and transformed (in faculties such as perception, language, memory, attention, reasoning, and emotion) within nervous systems (humans or other animals) and machines (e.g. computers).

The term cognitive science was coined by Christopher Longuet-Higgins in his 1973 commentary on the Lighthill report, which concerned the then-current state of Artificial Intelligence research. In the same decade, the journal *Cognitive Science* and the Cognitive Science Society were founded. The founding meeting of the Cognitive Science Society was held at the University of California, San Diego in 1979, which resulted in cognitive science

becoming an internationally visible enterprise. In 1982, Vassar College became the first institution in the world to grant an undergraduate degree in Cognitive Science. In 1986, the first Cognitive Science Department in the world was founded at the University of California, San Diego.

Cognitive science consists of multiple research disciplines, including neuroscience, anthropology, linguistics, psychology, philosophy, and artificial intelligence.

It spans many levels of analysis, from low-level learning and decision mechanisms to high-level logic and planning; from neural circuitry to modular brain organization. The fundamental concept of cognitive science is that "thinking can best be understood in terms of representational structures in the mind and computational procedures that operate on those structures."

A central tenet of cognitive science is that a complete understanding of the mind/brain cannot be attained by studying only a single level. An example would be the problem of remembering a phone number and recalling it later. One approach to understanding this process would be to study behavior through direct observation, or naturalistic observation. A person could be presented with a phone number and be asked to recall it after some time. Then, the accuracy of the response could be measured. Another approach to measure cognitive ability would be to study the firings of individual neurons while a person is trying to remember the phone number. Neither of these experiments on its own would fully explain how the process of remembering a phone number works. Even if the technologies to map out every neuron in the brain in real-time were available, and it was known when each neuron was firing, it would still be

impossible to know how a particular firing of neurons translates into the observed behavior. Thus, an understanding of how these two levels relate to each other is imperative.

The Embodied Mind: Cognitive Science and Human Experience says, "The new sciences of the mind need to enlarge their horizon to encompass both lived human experience and the possibilities for transformation inherent in human experience." This can be provided by a functional level account of the process. Studying a particular phenomenon from multiple levels creates a better understanding of the processes that occur in the brain to give rise to a particular behavior.

LEARNING AND DEVELOPMENT are the processes by which we acquire knowledge and information over time. Infants are born with little or no knowledge, yet they rapidly acquire the ability to use language, walk, and recognize people and objects. Research in learning and development aims to explain the mechanisms by which these processes might take place.

A major question in the study of cognitive development is the extent to which certain abilities are learned. This is often framed in terms of the nature and nurture debate. The nativist view emphasizes that certain features are innate to an organism and are determined by its genetic endowment.

The empiricist view, on the other hand, emphasizes that certain abilities are learned from the environment. Although clearly both genetic and environmental input is needed for a child to develop normally, considerable debate remains about how genetic information might guide cognitive development.

COGNITIVE NEUROSCIENCE is a branch of both psychology and neuroscience,

overlapping with disciplines such as physiological psychology, cognitive psychology, and neuropsychology. Cognitive neuroscience relies upon theories in cognitive science coupled with evidence from neuropsychology, and computational modeling. Cognitive neuroscience can look at the effects of damage to the brain and subsequent changes in the thought processes due to changes in neural circuitry resulting from the ensued damage.

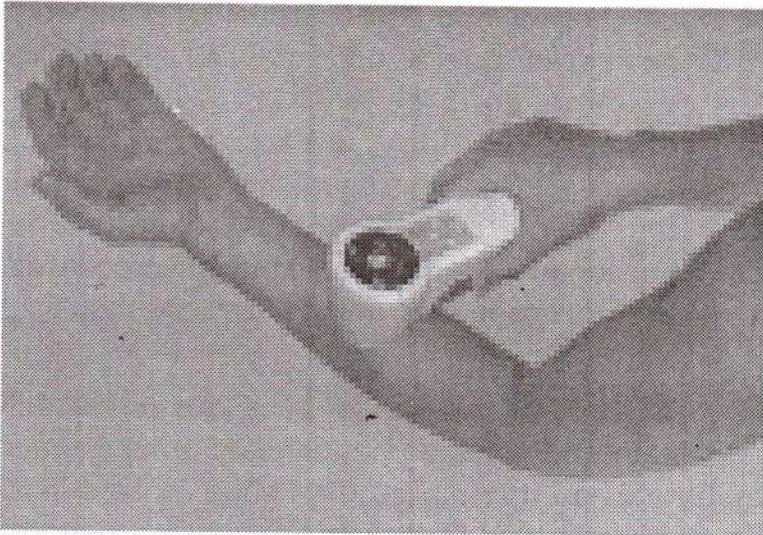
COGNITIVE ANTHROPOLOGY is concerned with what people from different groups know and how that implicit knowledge, in the sense of what they think subconsciously, changes the way people perceive and relate to the world around them. Cognitive anthropology studies a range of domains including folk taxonomies, the interaction of language and thought, and cultural models.

COGNITIVE LINGUISTICS (CL) refers to the branch of linguistics that interprets language in terms of the concepts, sometimes universal, sometimes specific to a particular tongue, which underlie its forms. It is thus closely associated with semantics but is distinct from psycholinguistics, which draws upon empirical findings from cognitive psychology in order to explain the mental processes that underlie the acquisition, storage, production and understanding of speech and writing.

COGNITIVE PSYCHOLOGY is the study of mental processes such as "attention, language use, memory, perception, problem solving, creativity, and thinking." Much of the work derived from cognitive psychology has been integrated into various other modern disciplines of psychological study, including educational psychology, social psychology, personality psychology, abnormal psychology, developmental psychology, and economics.

**PARINEETHA M - III BCA**

## NEEDLE-LESS INJECTION



This future invention is a device for delivering medication and vaccination through the skin.

As an alternative to injecting a needle, micro-poration is a painless method of transferring medication (intraepidermal) into the body using laser technology.

A handheld laser creates micro pores in the epidermis of the skin for the transfer of molecules. It has a familiar comparison to the "needle-less" device used by Dr. McCoy on Star Trek. The popular sci-fi series has inspired more than a few new inventions including the "laser" and the

cell phone.

This new micro-poration technology is painless to use and requires no supervision to administer. The interfaced controls regulate the dosage.

## Transparent Smartphones

Inventors, Jung Won Seo, Jae-Woo Park, Keong Su Lim, Ji-Hwan Yang and Sang Jung Kang, who are scientists at the Korean Advanced Institute of Science and Technology, have created the world's first transparent computer chip.

The chip, known as (TRRAM) or transparent resistive random access memory, is similar to existing chips known as (CMOS) or metal-oxide semiconductor memory, which we use in new electronics.

The difference is that TRRAM is completely clear and transparent. What is the benefit of having transparency?

"It is a new milestone of transparent electronic systems," says Jung Won Seo. "By integrating TRRAM with other transparent electronic components, we can create a total see-through embedded electronic systems."

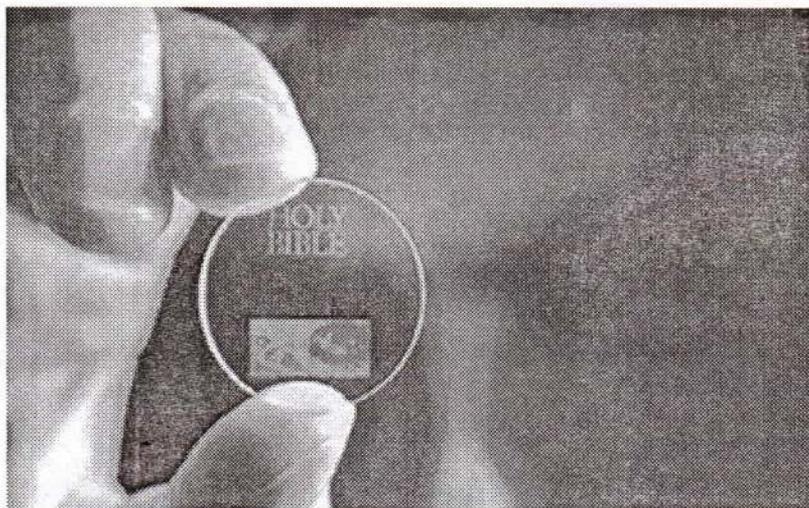
The technology could enable the windows or mirrors in your home to be used as computer monitors and television screens.

This technology is expected to be available within 3 to 4 years.



MANASA D S - III BCA

## 'Superman Memory Crystal' Could Store Data for 13.8 Billion Years



Using nanostructured glass, scientists at the University of Southampton have developed a way to store data for billions of years.

Copies of the Magna Carta, the Universal Declaration of Human Rights and the King James Bible have now been digitally stored on a piece of glass known as a "Superman memory crystal" that has the capacity to save huge amounts of information for up to 13.8 billion years, researchers say.

Using a method of laser etching, researchers at the University of Southampton, in the United Kingdom, archived these documents, along with Isaac Newton's scientific treatise "Opticks," on coin-size pieces of glass. These tiny discs can survive for billions of years at temperatures of 374 degrees Fahrenheit (190 degrees Celsius). And at room temperature, they can last virtually forever, the researchers said.

"It is thrilling to think that we have created the technology to preserve documents and information and store it in space for future generations," Peter Kazansky, a professor at the university's Optoelectronics Research Centre, said in a statement. "This technology can secure the last evidence of our civilization; all we've learnt will not be forgotten."

Kazansky and his colleagues first reported their "5D data storage" in 2013 at the Conference on Lasers and Electro-Optics in

San Jose, California. The researchers use femtosecond lasers, which are lasers that produce very short pulses, to inscribe information in nanostructured dots that are 5 micrometers apart. These nano-size etchings polarize light that travels through the glass. A combination of a polarizing lens and an optical microscope is all that is needed to "decode" the message, the researchers said.

The 5D moniker refers to the 3D positioning of the nanostructures as well as their size and orientation.

In 2013, the researchers recorded a 300-kilobyte text file, but the capacity of a single glass data disc is 360 terabytes (1,000,000,000 kilobytes), they reported. The discs are stable up to 1,832 degrees F (1,000 degrees C).

Southampton researchers gave the copy of the Universal Declaration of Human Rights as a gift to the United Nations Educational Scientific and Cultural Organization (UNESCO) in early February, part of the closing ceremony of that organization's Year of Light initiative. The scientists call the glass the "Superman memory crystal," a nod to memory crystals in the "Superman" films and comics. According to the university, the researchers are now seeking industry partners to further develop the technology.

**MANISHA . R. PATEL - II BCA**

## C QUIZ

1. The keyword used to transfer control from a function back to the calling function is

- A. switch      B. goto      C. go back      D. return

2. What is the notation for following functions?

1. int f(int a, float b)

```
{
    /* Some code */
}
```

2. int f(a, b)

```
int a; float b;
```

```
{
    /* Some code */
}
```

- A. 1. KR Notation 2. ANSI Notation  
 B. 1. PreANSI C Notation 2. KR Notation  
 C. 1. ANSI Notation 2. KR Notation  
 D. 1. ANSI Notation 2. PreANSI Notation

3. How many times the program will print "IndiaBIX" ?

```
#include<stdio.h>
```

```
int main()
```

```
{
    printf("IndiaBIX");
    main();
    return 0;
}
```

- A. Infinite times      B. 32767 times  
 C. 65535 times      D. Till stack overflows

4. What will be the output of the program?

```
#include<stdio.h>
```

```
void fun(int*, int*);
```

```
int main()
```

```
{
    int i=5, j=2;
    fun(&i, &j);
    printf("%d, %d", i, j);
    return 0;
}
```

```
void fun(int *i, int *j)
```

```
{
    *i = *i**i;
    *j = *j**j;
}
```

- A. 5, 2      B. 10, 4      C. 2, 5      D. 25, 4

5. What is the output of this C code?

1. #include <stdio.h> 2. main()

3. { 4. if (sizeof(int) > -1) 5. printf("True");

6. else 7. printf("False"); 8. } a) True b) False

6. What is the output of this C code?

1. #include <stdio.h>

2. main()

3. {

4. char \*p = "Sanfoundry C-Test";

5. p[0] = 'a';

6. p[1] = 'b';

7. printf("%s", p);

8. }

a) abnfoundry C-Test

b) Sanfoundry C-Test

c) Compile time error

d) Run time error

7. What will be output if you will compile and execute the following c code?

```
void main(){
```

```
    int i=320;
```

```
    char *ptr=(char *)&i;
```

```
    printf("%d", *ptr);
```

```
}
```

- (A) 320      B) 1      (C) 64  
 (D) Compiler error      (E) None of above

8. What will be output if you will compile and execute the following c code?

```
#define x 5+2
```

```
void main(){
```

```
    int i;
```

```
    i=x*x*x;
```

```
    printf("%d", i);
```

```
}
```

- A) 343  
 B) 27  
 C) 133  
 D) Compiler error  
 E) None of above

9. What will be output if you will compile and execute the following c code?

```
void main(){
```

```
    char c=125;
```

```
    c=c+10;
```

```
    printf("%d", c);
```

```
}
```

- (A) 135      (B) +INF      (C) -121      (D) -8  
 (E) Compiler error

10. C was primarily developed as

- A. System programming language  
 B. General purpose language  
 C. Data processing language  
 D. None of the above.

Answer to the above QUIZ is in page N

# Photo Gallery



Miss. Rohini Muger of III BCA was crowned as "IT Queen" of the Academic year 2015-2016 by PU Principal Prof. M.V. Asha



III BCA students of the Academic year 2015-2016 are seen with Principal and Staff members



Students of Add on Course "Assembly Level Language with Microprocessor 8085" are seen with Principal and Staff members



Miss. Srividya of III BCA was crowned as the "Campus Queen" of the Academic year 2015-2016 by the Career and Placement Cell



Release of 16th issue of Bi annual News Letter GI Talk by Principal Prof. K V Damodara Gowda on 25th November 2015.



Students of II BCA visited High Performance Computing(HPC) Lab on 22nd February 2016 at Department of Studies in Computer Science, Manasagangothri, UOM, Mysore



Students of I B Sc working with Simulator 8085 using "Assembly Level Language Microprocessor 8085"



Ms Priya K.P. of BCA receiving Gold Medal at Mysore University Convocation for securing highest marks in BCA Examinations

***Toppers of University Examination of Nov / Dec 2015***



**Aishwarya K.P.**  
I B.C.A. - 478/500



**Jeevitha**  
I B.C.A. - 466/500



**Divya K.M.**  
I B.C.A. - 463/500



**Jeevitha M.**  
II B.C.A. - 556/600



**Shruthi D.**  
II B.C.A. - 529/600



**Manisha R. Patel**  
II B.C.A. - 511/600



**Akshatha Tantry**  
III B.C.A. - 549/600



**Anusha R.**  
III B.C.A. - 546/600



**Rohini Muger**  
III B.C.A. - 543/600



**Rashmi Hebbar S.**  
I B.Sc. - 95/100 (EMC's)



**Sowmya M.N.**  
I B.Sc. - 89/100 (PMC's)



**Rangitha N.**  
I B.Sc. - 85/100 (PMC's)



**Meghana M. Patel**  
II B.Sc. - 95/100



**Sneha G.N.**  
II B.Sc. - 86/100



**Pallavi K.**  
II B.Sc. - 83/100



**Akshaya A.**  
II B.Sc. - 83/100 - I



**Shalini P.**  
II B.Sc. - 83/100 - I



**Swathi M.**  
III B.Sc. - 247/300



**Sindhuja S.**  
III B.Sc. - 246/300



**Ramya Hebbar S.**  
III B.Sc. - 236/300 (PMC's)

***The Department has obtained 100% Results  
in the BCA University Examinations since its First Batch***