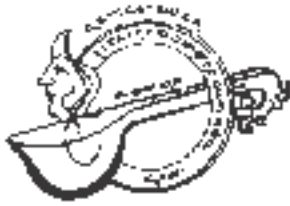


|| Om Shree Manjunathaya Namaha ||
MMK & SDM MAHILA MAHAVIDYALAYA
Krishnamurthypuram, Mysore



Prof. K.V. DAMODARA GOWDA
Principal

Mrs. SUKRUTHA. K.S
HOD of Computer Science

Faculty Editors
Mrs. Jyothi Lakshmi G.Kava
Mrs. Nayana M.P.

May 15, 2017
Department of Computer Science
Issue 19

Student Editors
Preethi B.
Anusha M.

Editorial



The Department of Computer Science presents the 19th issue of "GI Talk" to its readers. As usual the issue contains very good pieces of latest inventions & technologies brought out in the field of Computer Science and also their applications. There are many very good numbers of articles in this issue on innovations such as Cashew Smart Wallet, Memory Chips into processors to speed up computing task, Robo Dragon file and the like. Thus the voice of latest innovative exercises made in the field of Computer Science has been mirrored in the pages of GI - Talk.

I am extremely pleased to write that the students have contributed very good number of articles under the guidance of their teachers. I hope the readers of this issue would receive them all positively. Constructive suggestions will always be valued by us.

I convey my best compliments to the members of staff & students of the department of Computer Science for their endeavors in this regard.

Prof. K.V. Damodara Gowda
Chief Editor

Message by HOD



I am very happy that our BCA students have taken up the initiative to publish the 19th issue of Biannual News Letter GI Talk. The News Letter comprises the student and staff activities and achievement of the Department in the Curricular and Co-curricular activities. Department of Computer Science commits to work towards developing Software Engineers with a rich blend of competent, technical and social skills and contribute to nation building. In order to fulfill this, GI Talk News Letter 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 and sincere efforts. I wish all the Students and Faculty a great academic career. We will be happy to receive reader's suggestions for further improvement and development of the News Letter.

K.S. Sukrutha
HOD, Computer Science

Photo Gallery



Guest Lecture programme on Project Management for final year BCA students by Mr. Shivaraju, Unisol Technologies, Mysuru.



Inter class Lecture Competition on the topic "Advancement in Animation" organized by Department of Computer Science



Students of II BCA at Guest Lecture Programme on the topic "Human Computer Interaction" by Dr. R. K Bharathi, Associate Professor, Department of MCA, SJCE.



Tech Amateur IT Club organized display cum competition of Wall Magazines prepared by the students of all B Sc and BCA classes



Ms Pooja Prakash from Accenture, Bangalore an alumna 2010 - 2013 batch donating books to the Department of Computer Science.



Release of 18th issue of Bi annual News Letter GI TALK

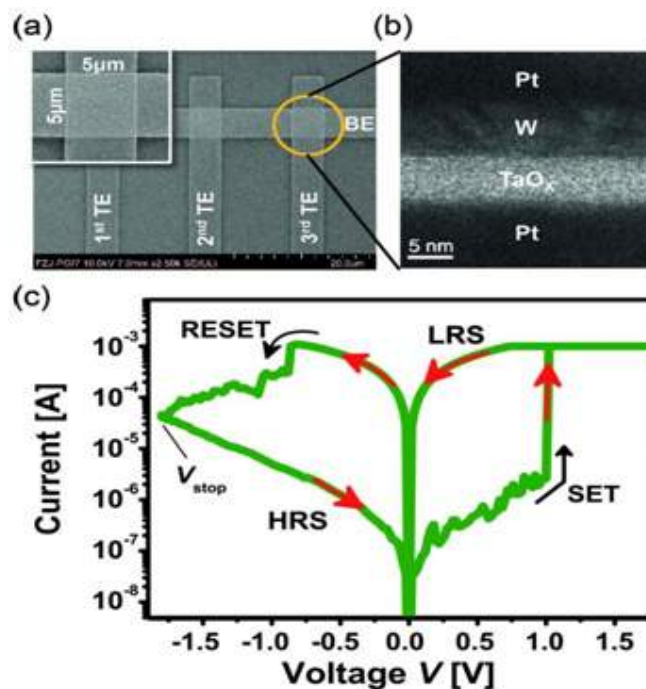


Ms Nisha N of III B Sc as Student Faculty giving Lecture on the topic Searching Techniques to II B Sc students.



Career Talk by Mrs. K A Anitha Venkatesh, Principal and CEO of Aditya Institute of Management and Information Technology, Mysuru for final year BCA Students.

Scientists Turn Memory Chips into Processors to Speed up Computing Tasks



A team of international scientists have found a way to make memory chips perform computing tasks, which is traditionally done by computer processors like those made by Intel and Qualcomm. This means data could now be processed in the same spot where it is stored, leading to much faster and thinner mobile devices and computers. This new computing circuit was developed by Nanyang Technological University, Singapore (NTU Singapore) in collaboration with Germany's RWTH Aachen University and Forschungszentrum Juelich, one of the largest interdisciplinary research centres in Europe.

It is built using state-of-the-art memory chips known as Redox-based resistive switching random access memory (ReRAM). Developed by global chipmakers such as SanDisk and Panasonic, this type of chip is one of the fastest memory modules that will soon be available commercially. However, instead of storing information, NTU Assistant Professor Anupam Chattopadhyay in collaboration with Professor Rainer Waser from RWTH Aachen University and Dr Vikas Rana from Forschungszentrum Juelich showed how ReRAM can also be used to process data.

This discovery was published recently in Scientific Reports, a peer-reviewed journal under the prestigious Nature Publishing Group. Current devices and computers have to transfer data from the memory

storage to the processor unit for computation, while the new NTU circuit saves time and energy by eliminating these data transfers. It can also boost the speed of current processors found in laptops and mobile devices by at least two times or more. By making the memory chip perform computing tasks, space can be saved by eliminating the processor, leading to thinner, smaller and lighter electronics. The discovery could also lead to new design possibilities for consumer electronics and wearable technology.

How the new circuit works

Currently, all computer processors in the market are using the binary system, which is composed of two states - either 0 or 1. For example, the letter A will be processed and stored as 01000001, an 8-bit character. However, the prototype ReRAM circuit built by Asst Prof Chattopadhyay and his collaborators processes data in four states instead of two. For example, it can store and process data as 0, 1, 2, or 3, known as Ternary number system. Because ReRAM uses different electrical resistance to store information, it could be possible to store the data in an even higher number of states, hence speeding up computing tasks beyond current limitations.

Asst Prof Chattopadhyay who is from NTU's School of Computer Science and Engineering, said in current computer systems, all information has to be translated into a string of zeros and ones before it can be

processed."This is like having a long conversation with someone through a tiny translator, which is a time-consuming and effort-intensive process," he explained. "We are now able to increase the capacity of the translator, so it can process data more efficiently."The quest for faster processing is one of the most pressing needs for industries worldwide, as computer software is getting increasingly complex while data centres have to deal with more information than ever.

The researchers said that using ReRAM for computing will be more cost-effective than other computing technologies on the horizon, since ReRAMs will be available in the market soon.Prof Waser said, "ReRAM is a versatile non-volatile memory concept. These devices are energy-efficient, fast, and they can be scaled to very small dimensions. Using them not

only for data storage but also for computation could open a completely new route towards an effective use of energy in the information technology."The excellent properties of ReRAM like its long-term storage capacity, low energy usage and ability to be produced at the nanoscale level have drawn many semiconductor companies to invest in researching this promising technology.

The research team is now looking to engage industry partners to leverage this important advance of ReRAM-based ternary computing.Moving forward, the researchers will also work on developing the ReRAM to process more than its current four states, which will lead to great improvements of computing speeds as well as to test its performance in actual computing scenarios.

MONICA M. - II BCA

CASHEW SMART WALLET: PROTECTS WHAT YOU TREASURE THE MOST!



Cashew is World's first Wallet, designed in California, with a fingerprint reader to ensure only you have access to your wallet and is always connected to your smartphone using Bluetooth to ensure your wallet is always by your side. No more misplaced cards, cash or IDs again. This product with cutting-edge technology and unparalleled design is a Smart Wallet you've been searching for.

WHAT DIFFERENTIATES US FROM OTHERS?

No other wallet in the market has been able to combine three features - Biometric Finger Authentication, Bluetooth Connectivity and Crowdsourced GPS. All Smart Wallets out there in the market are like traditional wallets - you can open them even if it is not yours. They don't prevent the first and foremost important part of securing the wallet, which is ACCESS. We restrict the access to



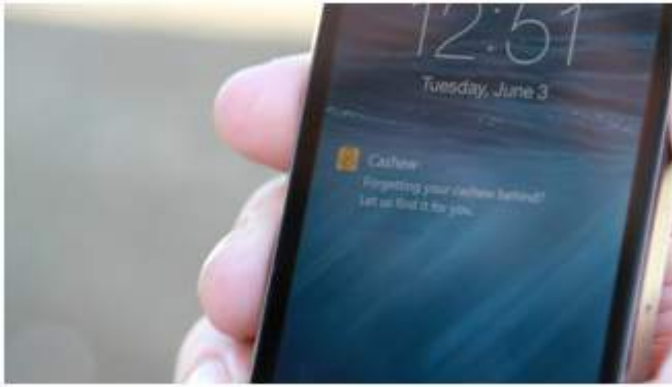
only you and your loved ones. Cashew not only reminds and protects you from loss of your Wallet but also protects you from Identity Theft!

Features:

Fingerprint authentication : Have exclusive access to your Wallet and never be worried about any missing cash or cards from your Wallet. Store up to 20



fingerprints and share your wallet with your family too.



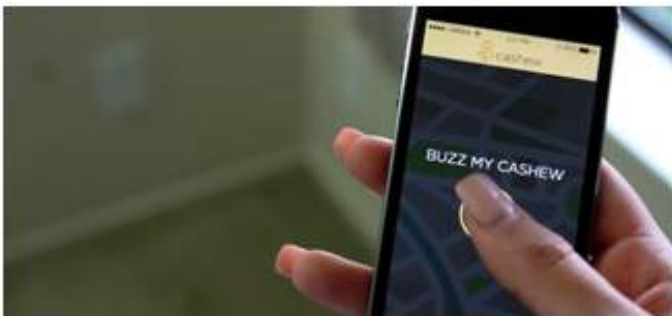
Integrated Bluetooth : The Wallet connects to your smart phone using Bluetooth and your phone alerts you every time you forget your wallet behind. Also, don't remember the last location of your wallet? The free mobile app records its location. Peace of mind is a choice you make!

Crowd Source GPS technology : In case of loss or theft of your Cashew, mark your Wallet as lost on the



app. This puts all our Cashew users on a lookout for your Wallet. Once your wallet is found, you will securely receive a notification on your wallets whereabouts!

Electronic latch : This locks the wallet and will only unlock on fingerprint recognition (biometric



authentication) of the owner. Unauthorized users will be locked out immediately. In case someone tries to

tamper with the latch, a notification is sent immediately to your phone.



Buzzer : Every time you can't find your Wallet, be it under a car seat or under a pile of clothes, use the "Buzz my Cashew" feature on the app. This makes your wallet ring and just follow the sound to find your misplaced Wallet.

Specially Designed Interiors : Currently, the interiors of the Wallet is still work in progress. From our first initial renders and prototyping, interiors of the wallet are designed to hold 30 currency notes and 8 cards (The interiors are made using a specially



designed stretch polycarbonate to simulate the traditional wallet. Which means there are 6 dedicated slots for cards but you can also squeeze in another 2 cards in the Cash Slot without effecting the closing of the wallet). The Cashew is not designed to hold coins but you can definitely use one of the card slots if needed

Rechargeable Battery : The coolest part? Cashew lasts upto 9 months without charging. Cashew can be fast-charged with the battery charger unit that comes along with Cashew.

Yadhumitha Rajashekhar
I BCA

Data stored on a single Atom for the first time

Innovation in electronics manufacturing is driven by a desire to make devices ever smaller but increasingly powerful. Moore's Law has seen the power of computer chips double every two years without them growing in size, while data storage plateaued somewhat.

But in a breakthrough that could revolutionise the way information is stored, researchers have managed to store data on a single atom.

Researchers at IBM successfully coded an individual atom with a binary value of 0 or 1 in what is a major step forward for information storage. Experts in the field have described the research as a "landmark achievement" and said it could be used to increase hard-drive storage



density by 1,000 times.

"It's a landmark achievement," Sander Otte, a physicist at Delft University of Technology in the Netherlands, told Nature. "Finally, magnetic stability has been demonstrated undeniably in a single atom."

The researchers were able to imbue two Holmium atoms with separate binary values using a magnetised scanning tunnelling microscope. They then connected them to make a miniscule hard drive with four possible combinations.

With the majority of the data ever produced having been created in the past six years, atomic storage could be vital for reducing the space and energy used in keeping information.

If the system was scaled up it would be possible to store an iTunes library of 35 million songs on a credit card sized device, according to IEEE Spectrum.

To date, the smallest matter to have stored data was a magnetic grain with a diameter of 5 nanometers. A Holmium atom has a radius of 0.2 nanometres.



The researchers plan to further explore if the atoms of other elements, clusters of atoms and small molecules could also be used to store data.

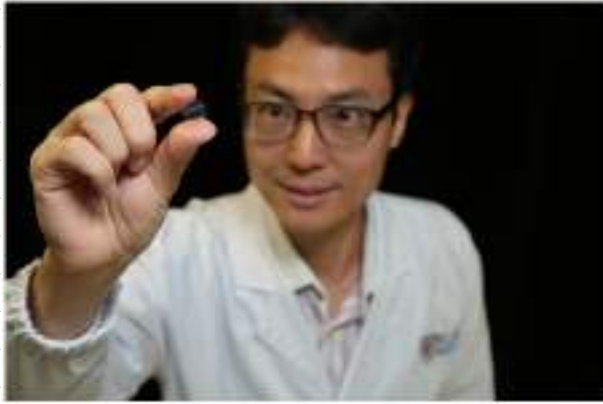
It could also be used eventually to replace an electrical current in devices as the atoms could move information within a device, according to Otte. This could make for more energy efficient computers.

The breakthrough indicates that there are still steps to be made to create more powerful, smaller and efficient computers.

Intel, whose founder was behind the Moore's Law maxim that the power of chips doubling every two years without them growing in size, recently announced that the company will release a 10 nanometre chip in 2017. The news allayed doubts that manufacturers had reached a crunch point where it was no longer cost effective to uphold Moore's Law.

Vaishnavi Mohan
I BCA

Research Team Develops Plastic, Flexible Magnetic Memory Device



It looks like a small piece of transparent film with tiny engravings on it, and is flexible enough to be bent into a tube. Yet, this piece of "smart" plastic demonstrates excellent performance in terms of data storage and processing capabilities. This novel invention, developed by researchers from the National University of Singapore (NUS), hails a breakthrough in the flexible electronics revolution, and brings researchers a step closer towards making flexible, wearable electronics a reality in the near future.

The technological advancement is achieved in collaboration with researchers from Yonsei University, Ghent University and Singapore's Institute of Materials Research and Engineering. The research team has successfully embedded a powerful magnetic memory chip on a flexible plastic material, and this malleable memory chip will be a critical component for the design and development of flexible and lightweight devices. Such devices have great potential in applications such as automotive, healthcare electronics, industrial motor control and robotics, industrial power and energy management, as well as military and avionics systems.

The research team, led by Associate Professor Yang Hyunsoo of the Department of Electrical and Computer Engineering at the NUS Faculty of Engineering, published their findings in the journal *Advanced Materials* on 6 July 2016. Flexible, high-performance memory devices a key enabler for flexible electronics. Flexible electronics has become the subject of active research in recent times. In particular, flexible magnetic memory devices have attracted a lot of attention as they are the fundamental component required for data storage and processing in wearable electronics and biomedical devices, which require various functions such as wireless communication, information storage and code processing. Although a substantial amount of research has been conducted on different types of memory

chips and materials, there are still significant challenges in fabricating high performance memory chips on soft substrates that are flexible, without sacrificing performance. To address the current technological challenges, the research team, led by Assoc Prof Yang, developed a novel technique to implant a high-performance magnetic memory chip on a flexible plastic surface.

The novel device operates on magnetoresistive random access memory (MRAM), which uses a magnesium oxide (MgO)-based magnetic tunnel junction (MTJ) to store data. MRAM outperforms conventional random access memory (RAM) computer chips in many aspects, including the ability to retain data after a power supply is cut off, high processing speed, and low power consumption. Novel technique to implant MRAM chip on a flexible plastic surface. The research team first grew the MgO-based MTJ on a silicon surface, and then etched away the underlying silicon. Using a transfer printing approach, the team implanted the magnetic memory chip on a flexible plastic surface made of polyethylene terephthalate while controlling the amount of strain caused by placing the memory chip on the plastic surface. Assoc Prof Yang said, "Our experiments showed that our device's tunneling magnetoresistance could reach up to 300 per cent - it's like a car having extraordinary levels of horsepower. We have also managed to achieve improved abruptness of switching. With all these enhanced features, the flexible magnetic chip is able to transfer data faster."

Commenting on the significance of the breakthrough, Assoc Prof Yang said, "Flexible electronics will become the norm in the near future, and all new electronic components should be compatible with flexible electronics. We are the first team to fabricate magnetic memory on a flexible surface, and this significant milestone gives us the impetus to further enhance the performance of flexible memory devices and contribute towards the flexible electronics revolution."

Assoc Prof Yang and his team were recently granted United States and South Korea patents for their technology. They are conducting experiments to improve the magnetoresistance of the device by fine-tuning the level of strain in its magnetic structure, and they are also planning to apply their technique in various other electronic components. The team is also interested to work with industry partners to explore further applications of this novel technology.

C. ACHALA - II BCA

Robo Dragonfly: Tiny Backpack Turns Insect into a Cyborg



Scientists look to flying animals - birds, bats and insects - for inspiration when they design airborne drones. But researchers are also investigating how to use technology to interact with, and even guide, animals as they fly, enhancing the unique adaptations that allow them to take to the air.

To that end, engineers have fitted dragonflies with tiny, backpack-mounted controllers that issue commands directly to the neurons controlling the insects' flight.

This project, known as DragonflEye, uses optogenetics, a technique that employs light to transmit signals to neurons. And researchers have genetically modified dragonfly neurons to make them more light-sensitive, and thereby easier to control through measured light pulses.

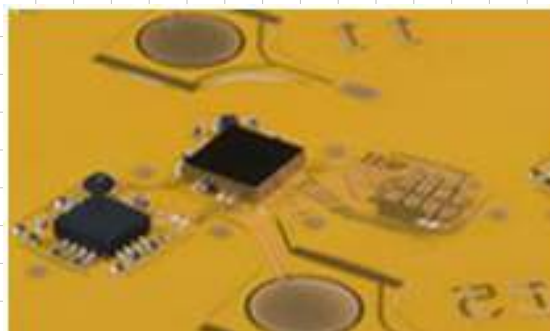
Dragonflies have large heads, long bodies and two pairs of wings that don't always flap in sync, according to a 2007 study published in the journal *Physical Review Letters*. The study authors found that dragonflies maximize their lift when they flap both sets of wings together, and they hover by flapping their wing pairs out of synch, though at the same rate.

Meanwhile, separate muscles controlling each of their four wings allow dragonflies to dart, hover and turn on a dime with exceptional precision, scientists found in 2014. Researchers used high-speed video footage to track dragonfly flight and build computer models to better understand the insects' complex maneuvers, presenting their findings at the 67th Annual Division of Fluid Dynamics meeting, according to a statement released by the American Physical Society in

November 2014.

DragonflEye sees these tiny flight masters as potentially controllable flyers that would be "smaller, lighter and stealthier than anything else that's manmade," Jesse Wheeler, a biomedical engineer at the Charles Stark Draper Laboratory (CSDL) in Massachusetts and principal investigator on the DragonflEye program, said in a statement.

The project is a collaboration between the CSDL, which has been developing the backpack that controls the dragonfly, and the Howard Hughes Medical Institute (HHMI), where experts are identifying and enhancing "steering" neurons located in the dragonfly's nerve cord, inserting genes that make it more responsive to light.



"This system pushes the boundaries of energy harvesting, motion sensing, algorithms, miniaturization and optogenetics, all in a system small enough for an insect to wear," Wheeler said.

Even smaller than the dragonfly backpack are components created by CSDL called optrodes - optical fibers supple enough to wrap around the dragonfly's nerve cord, so that engineers can target only the neurons related to flight, CSDL representatives explained in a statement.

And in addition to controlling insect flight, the tiny, flexible optrodes could have applications in human medicine, Wheeler added. "Someday these same tools could advance medical treatments in humans, resulting in more effective therapies with fewer side effects," Wheeler said. "Our flexible optrode technology provides a new solution to enable miniaturized diagnostics, safely access smaller neural targets and deliver higher precision therapies."

A close-up of the backpack board and components before being folded and fitted to the dragonfly.

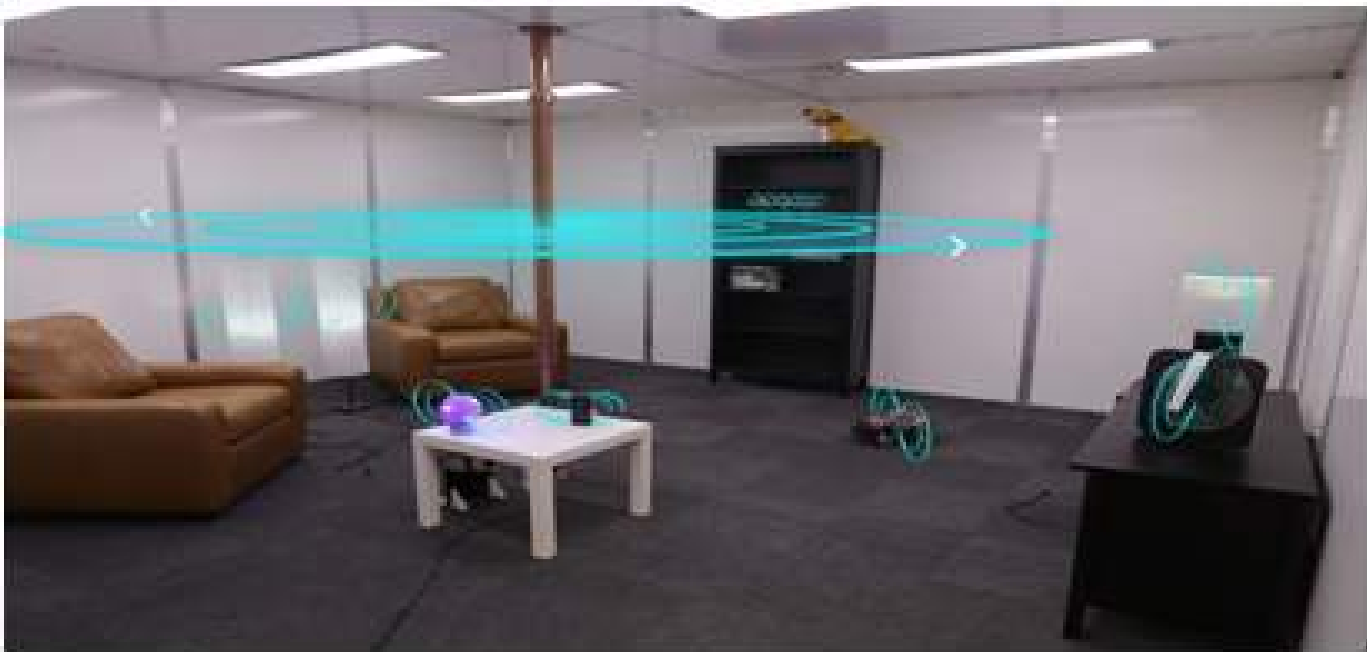
V. Jeevitha - II BCA

Disney Scientists Turned an Entire Metal Room into a Wireless Charger

When you need to charge your electronic devices on the go, it can be a hassle trying to find somewhere to plug in. And though some devices can already be charged without wires, researchers at The Walt Disney Company have recently supersized the technology by building a wireless "charging room."

Scientists at a branch of The Walt Disney Company called Disney Research have converted an entire room into a wireless charger that can boost the batteries of 10

room or office and your cellphone is charged simply by walking in," Sample said in the video. "We have a metalized room, and we're going to use standing electromagnetic waves that reverberate all around this room, providing wireless power to any devices inside." Known as quasistatic cavity resonance (QSCR), the wireless charging technology uses electromagnetic fields generated by electrical currents. Disney Research's room is outfitted with



objects at one time, according to the study. The researchers said they were inspired by inventor Nikola Tesla, who created the first system to wirelessly transmit electricity - the Tesla coil.

Tesla believed there could be a global network of wireless electricity that would use an electromagnetic wave that reverberated between the ionosphere (a layer of the Earth's atmosphere filled with ions and free electrons) and the ground, study co-author Alanson Sample, an associate lab director and principal research scientist at Disney Research, explained in a video. While Tesla's vision didn't come to fruition, Sample and his colleagues were inspired to investigate how wireless charging could be set up in large spaces. [Top 10 Inventions that Changed the World]"What we really want is a three-dimensional charging experience, where you walk into your living

aluminum-paneled walls and a centrally located copper pole that houses 15 capacitors (which store electrical energy, as batteries do). As the capacitors generate electrical currents, they travel through the ceiling, walls and floor, and then back through the pole. These electrical currents create the electromagnetic fields that circulate around the pole and wirelessly charge devices in the room, the researchers said..

"In this work, we're demonstrating room-scale wireless power, but there's no reason we couldn't shrink this down to the size of a toy box or charging chest, or scale up to a warehouse or a large building," Sample said.

Aishwarya P.
I BCA

Jokes



IT'S MY COMPUTER

Customer: "I can't seem to connect to the Internet."

Tech Support: "All right. What operating system are you running?"

Customer: "Netscape."

Tech Support: "No, what version of Windows are you using?"

Customer: "Uhhh...Hewlett Packard?"

Tech Support: "No, right click on 'My Computer' and select properties on the menu."

Customer: "Your computer? It's my computer!"

A client called my help desk saying she couldn't send an e-mail. When I was done troubleshooting the problem, she interrupted me to ask, "Wait a minute, do I type @ in lower- or uppercase?"

While he was visiting, my father asked for the password to our Wi-Fi."Its taped under the modem," ?I told him.After three failed attempts to log on, he asked, "Am I spelling this right?"

T-A-P-E-D-U-N-D-E-R-T-H-E-M-O-D-E-M?"

I finally convinced my mother that it was a good idea for her to learn to text. Her first message to me? "Whereisthespacebar?"



If Gods were in IT World

Brahma: System installer

Vishnu: System operator

Shiva: System programmer

Narad: Data Transmitter

Yama: Deleter

Apsara & Rambha: Virus

Ganapati: Anti virus

Hanuman: E-Mail

Chitragupta: Hard Disc

Saraswati: Internet explorer

Parvati: Mother Board

Lakshmi: ATM



ANUSHA M.
II BCA

Database Questions and Answers - SQL Basics and SQL Data Definition

1. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas ?

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

Answer : b

Explanation: Data Definition language is the language which performs all the operation in defining structure of relation.

2. Which one of the following provides the ability to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database ?

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

Answer : a

Explanation: DML performs change in the values of the relation .

3. Create table employee (name varchar ,id integer) What type of statement is this ?

- a) DML
- b) DDL
- c) View
- d) Integrity constraint

Answer : b

Explanation: Data Definition language is the language which performs all the operation in defining structure of relation.

4. Select * from employee What type of statement is this?

- a) DML
- b) DDL
- c) View
- d) Integrity constraint

Answer : a

Explanation: Select operation just shows the required fields of the relation. So it forms a DML

5. The basic data type char(n) is a _____ length character string and varchar(n) is _____ length character.

- a) Fixed, equal
- b) Equal, variable
- c) Fixed, variable
- d) Variable, equal

Answer : c

Explanation: Varchar changes its length accordingly whereas char has a specific length which has to be filled by either letters or spaces .

6. An attribute A of datatype varchar(20) has the value "Avi" . The attribute B of datatype char(20) has value "Reed" .Here attribute A has _____ spaces and attribute B has _____ spaces .

- a) 3, 20
- b) 20, 4
- c) 20 , 20
- d) 3, 4

Answer : a

Explanation: Varchar changes its length accordingly whereas char has a specific length which has to be filled by either letters or spaces.

7. To remove a relation from an SQL database, we use the _____ command.

- a) Delete
- b) Purge
- c) Remove
- d) Drop table

Answer : d

Explanation: Drop table deletes the whole structure of the relation .purge removes the table which cannot be obtained again.

8. Delete from r; r - relation. This command performs which of the following action ?

- a) Remove relation
- b) Clear relation entries
- c) Delete fields
- d) Delete rows

Answer : b

Explanation: Delete command removes the entries in the table.

9. Insert into instructor values (10211, 'Smith', 'Biology', 66000); What type of statement is this ?

- a) Query
- b) DML
- c) Relational
- d) DDL

Answer : b

Explanation: The values are manipulated. So it is a DML .

10. Updates that violate _____ are disallowed .

- a) Integrity constraints
- b) Transaction control
- c) Authorization
- d) DDL constraints

Answer : a

Explanation: Integrity constraint has to be maintained in the entries of the relation .

M. Anusha - II BCA

Smartphones are Revolutionizing Medicine



Smartphones are revolutionizing the diagnosis and treatment of illnesses, thanks to add-ons and apps. "If you look at the camera, the flash, the microphone... they all are getting better and better," said Shwetak Patel, engineering professor at the University of Washington. "In fact the capabilities on those phones are as great as some of the specialized devices," he told the American Association for the Advancement of Science (AAAS) annual meeting this week.

Smartphones can already act as pedometers, count calories and measure heartbeats. But mobile devices and tablets can also become tools for diagnosing illness. "You can use the microphone to diagnose asthma, COPD (chronic obstructive pulmonary disorder)," Patel said.

"With these enabling technologies you can manage chronic diseases outside of the clinic and with a non-invasive clinical tool." It is also possible to use the camera and flash on a mobile phone to diagnose blood disorders, including iron and hemoglobin deficiency.

"You put your finger over the camera flash and it gives you a result that shows the level of hemoglobin in the blood," Patel said. An app called HemaApp was shown to perform comparably well as a non-smartphone device for measuring hemoglobin without a needle. Researchers are seeking approval from the US Food and Drug Administration for its wider use.

Smartphones can also be used to diagnose osteoporosis, a bone disorder common in the elderly.

Just hold a smartphone, turn on the right app in hand and tap on your elbow. "Your phone's motion picture sensor picks up the resonances that are generated," Patel said. "If there is a reduction in density of the bone, the frequency changes, which is the same as you will have in an osteoporosis bone."

Such advances can empower patients to better manage their own care, Patel said. "You can imagine the broader impact of this in developing countries where screening tools like this in the primary care offices are non-existent," he told reporters.

"So it really changes the way we diagnose, treat and manage chronic diseases."

Lower costs :

Mobile smartphone devices are already helping patients manage cancer and diabetes, says Elizabeth Mynatt, professor at the Georgia Institute of Technology. "Someone who is newly diagnosed with diabetes really needs to become their own detectives," she said.

"They need to learn the changes they need to make in their daily lifestyle." For women newly diagnosed with breast cancer, researchers provided a tablet that allows them real-time access to information on the diagnosis, management of their treatment and side effects.

The technique also helps patients who may not be able to travel to a medical office for regular care, reducing their costs.

"Our tool becomes a personal support system," Mynatt said. "They can interact to get day-to-day advice." Research has shown this approach "changes dramatically their behavior," she added.

"The pervasiveness of the adoption of mobile platform is quite encouraging for grappling with pervasive socio-economic determinants in terms of healthcare disparities."

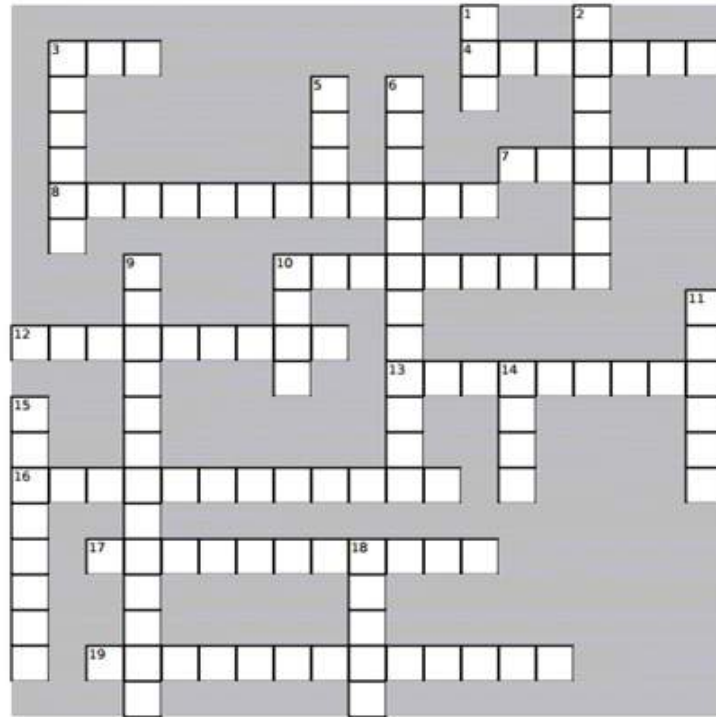
A growing number of doctors and researchers are turning to smartphones for use in their daily work, seeing them as a useful tool for managing electronic health data and figuring out the most effective clinical trials, said Gregory Hager, professor of computer science at Johns Hopkins University. Clinical trials currently cost around \$12 million to run from start to finish, he said.

"The new idea is micro-randomized trials, which should be far more effective, with more natural data," he said.

Although the costs could be dramatically lower, too, the field is still new and more work needs to be done to figure out how to fully assess the quality and the effectiveness of such trials.

GREESHMA S.P. - II BCA

Computer Terms Crossword



Across

3. Random Access Memory
4. Setting that is automatic unless changed by user
7. Electronic mail
8. Printers and Monitors (2 words)
10. Area on screen where the user interacts with the software application
12. A small 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)

Down

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

ANSWERS

- | | |
|--------------------|--------------------|
| 1. PDF | 10. INTERFACE |
| 2. MAXIMIZE | 11. FOLDER |
| 3. RAM | 12. DIALOG BOX |
| 4. DEFAULT | 13. THUMBNAIL |
| 5. FILE | 14. MENU |
| 6. OFFICE BUTTON | 15. COMPUTER |
| 7. E-MAIL | 16. MULTITASKING |
| 8. OUTPUT DEVICE | 17. INPUT DEVICES |
| 9. FILE EXTENTIONS | 18. VIRUS |
| | 19. CONTEXTUAL TAB |

PREETHI.B
II BCA

Making Computers Explain Themselves



In recent years, the best-performing systems in artificial-intelligence research have come courtesy of neural networks, which look for patterns in training data that yield useful predictions or classifications. A neural net might, for instance, be trained to recognize certain objects in digital images or to infer the topics of texts. But neural nets are black boxes. After training, a network may be very good at classifying data, but even its creators will have no idea why. With visual data, it's sometimes possible to automate experiments that determine which visual features a neural net is responding to. But text-processing systems tend to be more opaque. At the Association for Computational Linguistics' Conference on Empirical Methods in Natural Language Processing, researchers from MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) will present a new way to train neural networks so that they provide not only predictions and classifications but rationales for their decisions.

"In real-world applications, sometimes people really want to know why the model makes the predictions it does," says Tao Lei, an MIT graduate student in electrical engineering and computer science and first author on the new paper. "One major reason that doctors don't trust machine-learning methods is that there's no evidence." "It's not only the medical domain," adds Regina Barzilay, the Delta Electronics Professor of Electrical Engineering and Computer Science and Lei's thesis advisor. "It's in any domain where the cost of making the wrong prediction is very high. You need to justify why you did it." "There's a broader aspect to this work, as well," says Tommi Jaakkola, an MIT professor of electrical engineering and computer science and the third coauthor on the paper. "You may not want to just verify that the model is making the prediction in the right way; you might also want to exert some influence in terms of the types of predictions that it should make. How does a layperson communicate with a complex model that's trained with algorithms that they know nothing about? They might be able to tell you about the rationale for a particular

prediction. In that sense it opens up a different way of communicating with the model."

Virtual brains

Neural networks are so called because they mimic - approximately - the structure of the brain. They are composed of a large number of processing nodes that, like individual neurons, are capable of only very simple computations but are connected to each other in dense networks.

In a process referred to as "deep learning," training data is fed to a network's input nodes, which modify it and feed it to other nodes, which modify it and feed it to still other nodes, and so on. The values stored in the network's output nodes are then correlated with the classification category that the network is trying to learn - such as the objects in an image, or the topic of an essay. Over the course of the network's training, the operations performed by the individual nodes are continuously modified to yield consistently good results across the whole set of training examples. By the end of the process, the computer scientists who programmed the network often have no idea what the nodes' settings are. Even if they do, it can be very hard to translate that low-level information back into an intelligible description of the system's decision-making process. In the new paper, Lei, Barzilay, and Jaakkola specifically address neural nets trained on textual data. To enable interpretation of a neural net's decisions, the CSAIL researchers divide the net into two modules. The first module extracts segments of text from the training data, and the segments are scored according to their length and their coherence: The shorter the segment, and the more of it that is drawn from strings of consecutive words, the higher its score.

The segments selected by the first module are then passed to the second module, which performs the prediction or classification task. The modules are trained together, and the goal of training is to maximize both the score of the extracted segments and the accuracy of prediction or classification. One of the data sets on which the researchers tested their system is a group of reviews from a website where users evaluate different beers. The data set includes the raw text of the reviews and the corresponding ratings, using a five-star system, on each of three attributes: aroma, palate, and appearance. What makes the data attractive to natural-language-processing researchers is that it's also been annotated by hand, to indicate which sentences in the reviews correspond to which scores. For example, a review might consist of eight or nine sentences, and the annotator might have highlighted those that refer to the beer's "tan-colored head about half an inch thick," "signature Guinness smells," and "lack of carbonation." Each sentence is correlated with a different attribute rating.

D. APOORVA - II BCA

Photo Gallery



II BCA students at Interdisciplinary Lecture Programme on the topic " Fundamentals of Statistical Methods" by Prof. K V Nagabhushana, Dept. of Commerce and Management



Tech Amateur IT Club of Department of Computer Science conducted Debugging Competition on "C Programming Language"



Students of BCA with staff and Principal during Science Exhibition in connection with the National Science Day



Students of II BCA with staff members attending workshop on Super Computers at Department of Studies in Computer Science, Manasagangothri, Mysore



Students of II BCA with staff members visited High Performance Computing laboratory(HPC Lab) at Department of Studies in Computer Science, Manasagangothri, Mysore



Smt.Rajitha V, Asst.Professor of Computer Science handling Certificate Course on Computer Graphics.



Students of B Sc attending Final Examination of Certificate Course on "Computer Graphics".



Prize winners of Competitions organized by Tech Amateur IT Club of Computer Science Dept. with Staff members during the valedictory of Tech Amateur IT Club

Toppers of University Examination of Nov. / Dec. 2016



Manasa D.
89/100 - I B.Sc.



Divyashree M.S.
82/100 - I B.Sc.



Rashmi Urs M.
81/100 - I B.Sc.



Rashmi Hebar
89/100 - II B.Sc.



Divya H.R.
83/100 - II B.Sc.



Ranjitha N.
83/100 - II B.Sc.



Meghana Patel
262/300 - III B.Sc.



Nisha N.
246/300 - III B.Sc.



Sneha G.
246/300 - III B.Sc.



Pallavi K.
244/300 - III B.Sc.



Chaithra Subbayya Hegde
457/400 - I B.C.A.



Yogitha N.
238/400 - I B.C.A.



Hamsini S. Kumar
231/300 - I B.C.A.



Yashaswini K.M.
560/600 - II B.C.A.



Aishwarya K.P.
560/600 - II B.C.A.



Preethi B.S.
538/600 - II B.C.A.



Manisha R. Patel
555/600 - III B.C.A.



Jeevitha M.
544/600 - III B.C.A.



Raksha P.
539/600 - III B.C.A.

OUR ALUMNI OUR JEWELS



Miss. Swathi H.G.,
top scorer in BCA
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(in all semesters) has won
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Convocation sponsored by
Maharaja Education trust
Marks obtained
(3670/4000)



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Marks obtained
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Gold Medal in 2014 -2015
Mysore University
Convocation sponsored by
Maharaja Education trust
Marks obtained
(3583/4000)