

|| Om Shree Manjunathaya Namaha ||

MMK & SDM MAHILA MAHAVIDYALAYA

Krishnamurthypuram, Mysore



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Nov. 15, 2016
Department of Computer Science
Issue 18

Student Editors
Preethi B.
Anusha M.

Editorial



The Department of Computer Science presents the Sixteenth issue of "GI Talk" to its readers. As usual the issue contains very good piece of information on the latest development of computers and their applications. The voice of innovative technologies have also been reflected in the pages of "GI Talk".

I am happy to write that the students have contributed very good articles under the guidance of their teachers. I hope that readers would receive them positively as usual. Constructive suggestions are welcome.

My best compliments to the staff and students of the Department.

Prof. K.V. Damodara Gowda
Chief Editor

Message by HOD

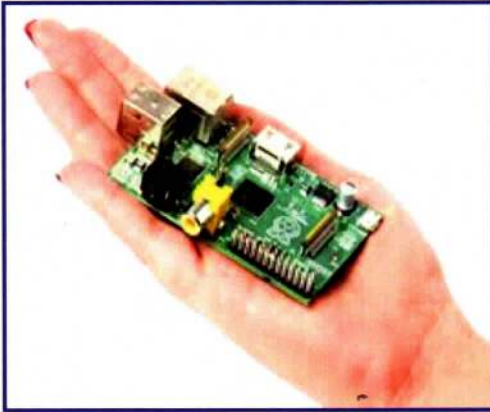


I am very happy that our BCA students have taken up the initiative to publish the 18th issue of Biannual News Letter GI Talk. The News Letter comprises the activities and achievement of the Department in the Academic and Co curricular activities. Department of Computer Science commits to work towards 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 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 original 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

Raspberry Pi



A Raspberry Pi is a credit-card sized computer originally designed for education, inspired by the 1981 BBC Micro. Creator Eben Upton's goal was to create a low-cost device that would improve programming skills and hardware understanding at the pre-university level. But thanks to its small size and accessible price, it was quickly adopted by tinkerers, makers, and electronics enthusiasts for projects that require more than a basic microcontroller (such as Arduino devices).

The Raspberry Pi is slower than a modern laptop or desktop but is still a complete Linux computer and can provide all the expected abilities that implies, at a low-power consumption level.

Is the Raspberry Pi open hardware?

The Raspberry Pi is open hardware, with the exception of the primary chip on the Raspberry Pi, the Broadcom SoC (System on a Chip), which runs many of the main components of the board-CPU, graphics, memory, the USB controller, etc. Many of the projects made with a Raspberry Pi are open and well-documented as well and are things you can build and modify yourself. What kind of operating system does the Raspberry Pi run? The Raspberry Pi was designed for the Linux operating system, and many Linux distributions now have a version optimized for the Raspberry Pi. Two of the most popular options are Raspbian, which is based

For beginners, either of these two works well; which one you choose to use is a matter of personal preference. A good practice might be to go with the one which most closely resembles an operating system you're familiar with, in either a desktop or server environment. If you would like to experiment with multiple Linux distributions and aren't sure which one you want, or you just want an easier experience in case something goes wrong, try NOOBS, which stands for New Out Of Box Software. When you first boot from the SD card, you will be given a menu with multiple distributions (including Raspbian and Pidora) to choose from. If you decide to try a different one, or if something goes wrong with your system, you simply hold the Shift key at boot to return to this menu and start over.

There are, of course, lots of other choices. OpenELEC and RaspBMC are both operating system distributions based on Linux that are targeted towards using the Raspberry Pi as a media center. There are also non-Linux systems, like RISC OS, which run on the Pi. Some enthusiasts have even used the Raspberry Pi to learn about operating systems by designing their own.

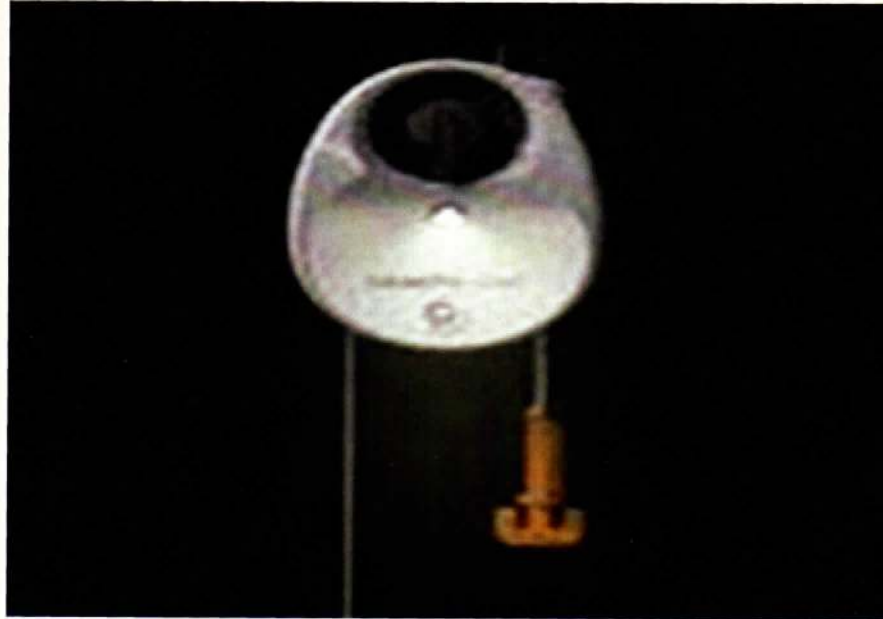
Programming languages used in Raspberry Pi Python, C, C++, Java, Scratch, and Ruby all come installed by default on the Raspberry Pi. The people from Raspberry Pi recommend Scratch for younger kids. Other languages that can be used are: HTML5

Applications of Raspberry Pi

1. Media streamer,
2. Arcade machine
3. Tablet computer,
4. Home automation
5. Internet radio,
6. Controlling robots
7. Cosmic computer

BINDHU RAJ L - II BCA

ROLL TOP LAPTOP



A rolltop laptop is a computer that is flexible enough to roll around a cylinder with a carrying strap and a power cord. As of 2015, the rolltop laptop is not yet ready for purchase and is still being designed.

The rolltop laptop looks like a Thermos when it is rolled up, rather than a computer; it is about 11 inches long, with a diameter of 3 1/4 inches. The rolltop laptop uses the latest high-tech devices, along with a new design techniques. A computer bag is no longer needed. The rolltop laptop includes an

interactive pen, a power supply and a holding belt. The designers of the rolltop laptop call it an all-in-one gadget.

Utilizing technology and combining it with basic ergonomic principles, the rolltop laptop is being developed as a future product. The designers simulate real scenarios that might impact usability and the laptop's functionality. These laptops offer the best mechanic, electronic and ergonomic practices, according to MyRolltop.com.



HAMSINI S KUMAR
I BCA

LATEST TECHNOLOGY INVENTIONS

Analysts predict that the latest technology inventions in cloud computing will significantly influence how we use our computers and mobile devices. Cloud computing is where tasks and file storage on your computer are performed and stored elsewhere. By using an internet connection you can connect to a service that has the architecture, infrastructure and software to manage any task or storage requirement at less cost. The advantages of cloud computing is that it eliminates the difficulty and expense of maintaining, upgrading and scaling your own computer hardware and software while increasing efficiency, speed and resources.



Your computer's processing speed, memory capacity, software applications and maintenance requirements are minimized. You would need to maintain, upgrade and scale these resources as required to meet your demands. This would be expensive and time consuming.

Cloud computing could be compared to how a utility provides electricity. It has the architecture, infrastructure, applications, expertise and resources to generate this service for you. You just connect to their grid. Microsoft, IBM and Google are some of the companies that are investing heavily

into the research and development of cloud technology. Read more...Cloud Computing

Source: computer.org

3D Printed Car

The latest technology inventions in 3d printing are rapidly changing how things are being made. It's an emerging technology that is an alternative to the traditional tooling and machining processes used in manufacturing. At the International Manufacturing Technology Show in Chicago, a little known Arizona-based car maker created a media sensation by manufacturing a car at the show.

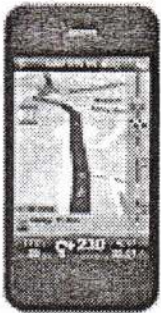
It was a full scale, fully functional car that was 3d printed in 44 hours and assembled in 2 days. The video below shows the car being made. "The goal here is to get the number of parts down, and to drop the tooling costs to almost zero." said John B. Rogers Jr., chief executive of Local Motors, a Princeton and Harvard-educated U.S. Marine.

"Cars are ridiculously complex," he added, referring to the thousands of bits and pieces that are sourced, assembled and connected to make a vehicle. "It's potentially a huge deal," said Jay Baron, president of the Center for Automotive Research, noting that the material science and technology used by Local Motors is derived from their partnership with the U.S. Department of Energy's Manufacturing Demonstration Facility at the Oak Ridge National Laboratory in Oak Ridge, Tennessee. This technology can use a variety of metal, plastic or composite materials to manufacture anything in intricate detail. People tend to want what they want, when they want it, where they want it, and how they want it,

which makes this technology disruptive in the same way digital technologies used by companies like Amazon and Apple disrupted newspaper, book and music publishers.

Imagine if you could customize and personalize your new car online and pick it up or have it delivered to you the next day at a fraction of the cost of buying one from a dealership? What if you could make a fender for a Porsche, or a tail light for a Honda, for a fraction of the cost of buying from a parts supplier? How revolutionary would that be for the automotive industry? It's already happening. Related: See: "Jay Leno Restores 100-Year-Old Electric Car"

One of the challenges with collecting antique cars is replacing parts. You can't buy them because they're obsolete and having a machinist tool the part doesn't always work



and often requires costly modifications until the part fits. So Leno uses 3d printing technology to make parts for his cars. "These incredible devices allow you to make the form you need to create almost any part", says Leno.

John B. Rogers Jr. believes that in the near future a car will be made in just 60 minutes. The company is already organizing a worldwide network of "Microfactories" where you can order and pickup your personalized, customized car. Sources: localmotors.com; popularmechanics.com

Car Gps Tracking

Car Gps Tracking is fairly common in new vehicles, providing drivers with tracking and navigation. However, latest technology inventions have made car gps tracking systems more sophisticated, allowing for a wide range of additional uses. Smartbox

technology is one example of how car gps tracking systems are being used to lower car insurance. A comprehensive recording of a driver's habits allows insurance companies to provide "pay-as-you-drive" car insurance. Most large cities have a limited capability to change the infrastructure of their roadways.

A car gps tracking system that integrates with traffic information would give drivers the ability to select routes in real time that were more fuel efficient, less congested, faster or shorter. A driver's recorded routing selection could then be used to penalize or reward drivers by lowering or increasing their related licensing fees or by calculating mileage based "road-use" fees. Eventually, such a system would replace gasoline tax since these revenues will decline as more vehicles become less dependent on fossil fuels. Sources: reuters.com; nydailynews.com

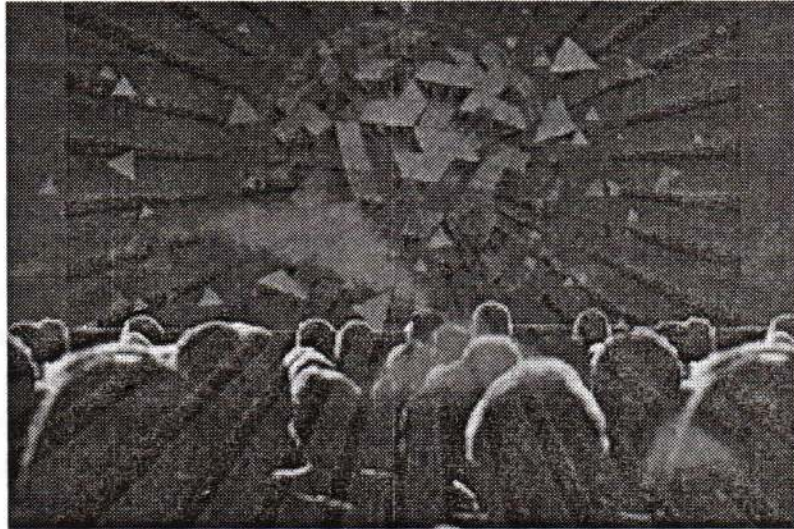
Air Into Water

Johathan Ritchey has invented the Watermill, which is an atmospheric water generator. It converts air into fresh water. This latest technology invention produces fresh water at a cost of about 3 cents a liter (1 quart). Originally designed for areas that do not have clean drinking water, the Watermill is for households that prefer an eco-friendly, cost effective alternative to bottled water.

Atmospheric water generators convert air into water when the temperature of the air becomes saturated with enough water vapor that it begins to condense (dew point). "What is unique about the Watermill is that it has intelligence," says Ritche. This makes the appliance more efficient. It will also tell you when to change the carbon filter and will shut itself off if it cannot make pure clean water.

Raksha Manjunath - III BCA

NEW TECH LETS YOU WATCH 3D MOVIES WITHOUT THE FUNKY GLASSES



Someday, moviegoers may be able to watch 3D films from any seat in a theater without having to wear 3D glasses, thanks to a new kind of movie screen.

The new technology, named Cinema 3D, overcomes some of the barriers to implementing glasses-free 3D viewing on a larger scale, but it's not commercially viable yet, the researchers said when describing their findings.

Although 3D movies can offer unique perspectives and experiences, one major drawback is the cumbersome eyewear that moviegoers typically have to wear. Although glasses-free 3D strategies already exist, these technologies currently cannot be scaled up to movie theaters. [10 Technologies That Will Transform Your Life]

Advertisement

For example, glasses-free 3D methods for TV sets often use a series of slits known as a parallax barrier that is placed in front of the screen. These slits allow each eye to see a different set of pixels, creating the illusion of depth.

However, for parallax barriers to work, they must be placed at a set distance from viewers. This makes parallax barriers difficult to implement in larger spaces such as theaters, where people can sit at a variety of distances and angles from the screen.

In addition, glasses-free 3D displays have to account for the different positions from which people are watching. This means that they have to divide up the limited number of pixels they project so that each viewer sees an image from wherever he or she is located, the researchers said.

"Existing approaches to glasses-free 3D require screens whose resolution requirements are so enormous that they are completely impractical," study co-author Wojciech Matusik, an associate professor of electrical engineering and computer science at MIT, said in a statement.

But in the new method, the researchers used a series of mirrors and lenses to essentially give viewers a parallax barrier tailored to each of their positions.

"By careful design of optical elements, we can achieve very-good-quality 3D content

without using glasses," study co-author Piotr Didyk, a researcher at the Max Planck Institute for Informatics and Saarland University, both in Germany, told Live Science.

"This is the first technical approach that allows for glasses-free 3D on a large scale," Matusik said in a statement.

In addition, the scientists reasoned that instead of displaying images to every position in a theater, they would need to display images only to a relatively tiny set of viewing positions at each theater seat.

"In our solution, we exploit the layout of the audience in a cinema," Didyk said.

The scientists developed a simple Cinema 3D prototype that could support a 200-pixel image. In experiments, volunteers could see 3D versions of pixelated figures from a number of different seats in a small theater.

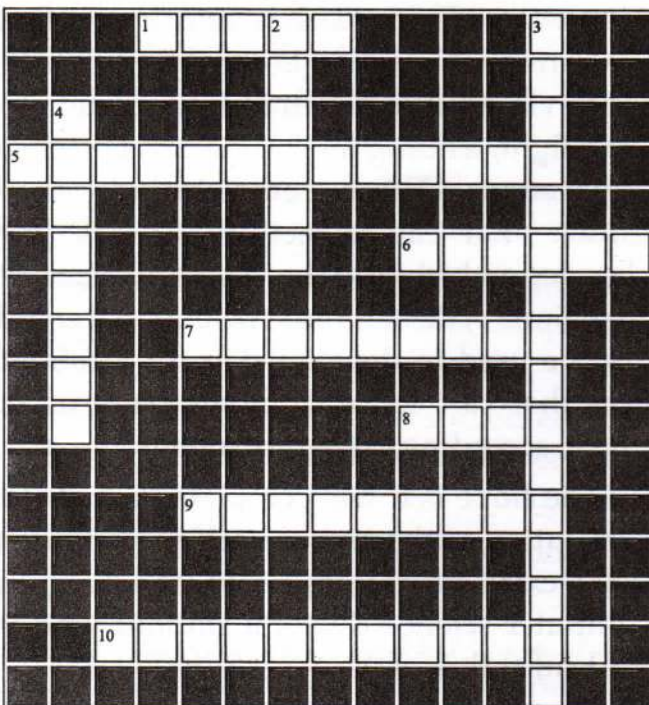
The scientists cautioned that Cinema 3D is currently impractical to implement commercially. For instance, their prototype requires 50 sets of mirrors and lenses, but the screen is just barely larger than a pad of paper. The researchers hope to build a larger version of their display and further boost the image resolution.

"It remains to be seen whether the approach is financially feasible enough to scale up to a full-blown theater," Matusik said in a statement. "But we are optimistic that this is an important next step in developing glasses-free 3D for large spaces like movie theaters and auditoriums."

The scientists detailed their findings July 26 at the SIGGRAPH computer graphics conference in Anaheim, California.

SRIVIDYA M- II BCA

Computer Science Crossword



Answers on Page 12

Across

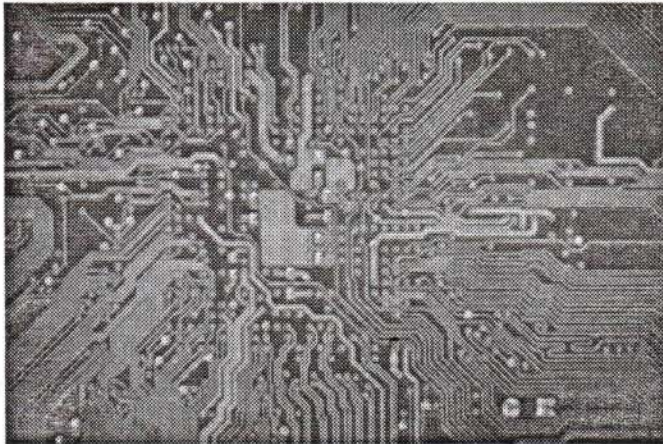
1. A _____ statement must be placed in between cases.
5. Execute a loop a specific amount of times determined in advance.
6. Classes require a main _____ in order to be an executable program.
7. Variables that cannot change.
8. Program used to code.
9. Variable names must start with a _____ letter.
10. Used when a task is needed to be done if the outcome of the comparison is false, you need to use the else part of this to be true.

Down

2. Stores information in contiguous memory blocks.
3. Used to evaluate an expression and tries to match the result to several possible cases.
4. Arrays are used to _____ a counted loop.

Anusha M. - II BCA

NEW 'GEL' MAY BE A STEP TOWARDS CLOTHING THAT COMPUTES



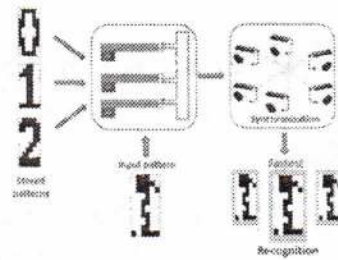
A gel-like material that can carry out pattern recognition could be a major step toward "materials that compute," with possible applications for "smart" clothing or sensing skins for robots, according to a new study.

Recent advances in both materials and computer science have prompted researchers to look beyond standard silicon-based electronics and exploit the inherent properties of materials to create systems where the material itself is the computer.

Now, a team from the University of Pittsburgh has designed a material that can solve pattern-recognition problems using changes in the oscillations of a chemically powered gel that pulsates like a heart.]

The field of materials that compute is brand new but could have numerous applications in "human-centric" computing, said study leader Anna Balazs, a professor of chemical engineering at the University of Pittsburgh.

"People are trying to move away from the traditional hard components that go into computers and make them more out of soft, compliant materials," Balazs told Live



Science. "We're trying to move in the direction of computers that people can wear or interact with that don't need large amounts of electronics, that are flexible, that are pressure sensitive so they can gauge changes in our behavior." At present, the material, described in a study published today (Sept. 2) in the journal *Science Advances*, is only theoretical. The design was created using theoretical and computational modeling and the team has not actually built it, though they say it would be feasible with state-of-the-art manufacturing techniques.

But Balazs says the research has established key design rules for the field. The material's properties also mean that patterns that need to be analyzed can be input via pressure, chemical stimulation or even light, lending it to numerous potential applications. These could include shoe insoles that can detect if a user's gait changes, which can be an early sign of Alzheimer's, Balazs said. The material could also be used to develop skin for a robotic arm that can sense different patterns of touch, according to the researchers.

"The hope is it will complete part of the computing as the sensor itself so you don't need extra processors," said Yan Fang, a computer science doctoral student who is the lead author of the new study.

GREESHMA.S.P, SMITHA.N - II BCA

GRAVITY LIGHT



Over 2 billion people on earth don't have electricity but these simple inventions are helping. Most live in rural or remote areas that are off the electrical grid but others can't afford electricity because they're poor and live on less than \$2 a day. Inventors have been working on this problem and have created effective, inexpensive, simple inventions that don't require electricity

Jessica Lin, along with co-inventors, Hemali Thakker, Julia Silverman and Jessica Matthews invented the sOccket, an award winning innovation that uses a soccer ball to harness and store electrical energy when kicked.

Multiple award winning inventor Emily Cummins created an inexpensive, simple, natural biological cooler that refrigerates perishable foods and medicine.

The latest simple invention to address this electricity problem comes from co-inventors Jim Reeves and Martin Riddiford.

They spent four years developing their award winning GravityLight™, which is a light that requires no electricity, no batteries or solar dependency to operate. Instead it uses the force of gravity to create light. A weight is connected to the end of a rope that loops through the light casing. The light is hung from any structure or tree. You pull on the rope to lift the weight to the casing.

When you let go of the rope the weight gradually falls and pulls the rope through gears that turn a small generator to power LEDs on the light. The light shines for about 25 minutes and it only takes 3 seconds to pull the rope to restart the cycle again.

To demonstrate the feasibility of their invention they decided to raise funds for field testing. They launched a crowdfunding campaign on Indiegogo to raise \$55,000 but received close to \$400,000.

Jim acknowledges that the success and support for the campaign was helped by an unexpected endorsement from Bill Gates who tweeted, "GravityLight is a pretty cool innovation which could be a source of cheap light in developing markets."

Jim Reeves gives a great explanation of the development process he and Martin used to create GravityLight at a TEDx event.

See more at: <http://www.inventor-strategies.com/simple-inventions.html#sthash.y2LGTabP.dpuf>

Raksha Nagesha- III BCA

1. What will be the values of x, m & n after execution of the following statements?

```
int x, m, n;
```

```
m=10;
```

```
n=15;
```

```
x=++m + n++;
```

A. x=25, m=10, n=15;

B. x=26, m=11, n=14;

C. x=26, m=11, n=16;

D. x= 25, m=10, n=16;

2. Consider the following code

```
if (number>=0)
```

```
    if (number>0)
```

```
        cout<<"Number is positive";
```

```
        cout<<"Number is Negative";
```

What will be the output if number is equal to 0?

A. Number is Negative

B. Number is positive

C. Both A & B

D. None of the above

3. In the following code snippet, which lines of code contain error?

```
int j=0;
```

```
while(j<10) {
```

```
    j++;
```

```
    if(j==5) continue loop;
```

```
    cout<<"J is "<<j; } }
```

A. Line 2

B. Line 5

C. Line 4

D. No error

4. Which of the following is an abstract data type?

A.

```
int
```

B.

```
double
```

C.

```
string
```

D.

```
Class
```

5. what would be the output of the following program?

```
int main()
{
int x, y=10, z=10;
x=(y==z);
cout<<x;
return 0;
}
```

- A. 0
- B. 1
- C. 10
- D. Error

6. Identify the error in the following program.

```
#include<iostream.h>
void main()
{
int i = 0;
i = i + 1;
cout<< i<< " ";
/*comment \*/i = i + 1;
cout << i; }
```

- A. No Error
- B. Statement missing
- C. Syntax error
- D. Run error

[Syntax error /* comment*/i=i+1;

7. What is the output of the following program?

```
#include<iostream>
class abc {
void f();
void g();
int x;
};
main() {
cout<<sizeof(abc)<<endl;
}
```

- A. 12
- B. 4
- C. 8
- D. Compile error

8. How many types of polymorphisms are supported by C++?

- A. 1
- B. 2
- C. 3
- D. 4

9. What is the output of the following program?

```
#include<iostream.h>
main()
{
    float t = 2;
    switch(t)
    {
        case 2: cout<<"Hi";
        default: cout<<"Hello";
    }
}
```

- A. Hi
- B. HiHello
- C. Hello
- D. Error

10. Which of the following operators cannot be overloaded?

- A. []
- B. ->
- C. ?:
- D. *

Preethi Suman - II BCA

ANSWERS OF COMPUTER CROSSWORDS
1. BREAK, 2. ARRAYS, 3. SWITCH STATEMENT
4. POPULATE, 5. FOR STATEMENT
6. METHOD, 7. CONSTANTS
8. JAVA, 9. LOWERCASE
10. IF STATEMENT

Answers of Debugging
Option C, 2. Option A
Option C, 4. Option D
Option B, 6. Option C
Option B, 8. Option B
Option D, 10. Option C

Computer Jokes

Back to Jokes Here is the list of the rest of our computer jokes, puns, and riddles for children and kids:

1. Q: What did the spider do on the computer?
A: Made a website!
2. Q: What did the computer do at lunchtime?
A: Had a byte!
3. Q: What does a baby computer call his father?
A: Data!
4. Q: Why did the computer keep sneezing?
A: It had a virus!
5. Q: What is a computer virus?
A: A terminal illness!
6. Q: Why was the computer cold?
A: It left it's Windows open!
7. Q: Why was there a bug in the computer?
A: Because it was looking for a byte to eat!
8. Q: Why did the computer squeak?
A: Because someone stepped on it's mouse!
9. Q: What do you get when you cross a computer and a life guard?
A: A screensaver!
10. Q: Where do all the cool mice live?
A: In their mousepads
11. Q: What do you get when you cross a computer with an elephant?
A: Lots of memory!

Nishkala III BCA

Other Activities

Ms Shwetha M, Assistant professor of Computer Science participated in One Day Awareness Workshop on Cyber Crime Prevention and Detection: Legal issues organized by Department of MCA, JSS Science and Technology University, Mysore on 20th August 2016.

Ms. Yashaswini and Ms. Varshini of II BCA participated in Inter Collegiate Paper Presentation on the Topic "New Technologies" held at Gopalswamy(GSS) College, Mysore on 29th September 2016.

The following students of final BCA participated in various competitions of IT Fest held at Vidya Vikasa Institute of Engineering and Technology, Mysore on 27th September 2016.

1. Ms. Manisha R. Patel
2. Ms. Pranathi S.
3. Ms. Preritha S.
4. Ms. Rachitha B.
5. Ms. Raksha P. and
6. Ms. Roshini S. Jain

Photo Gallery



Release of 17th issue Biannual News Letter GI Talk



Students of I B Sc who attended Certificate Course on "An Assembly Level Language with Microprocessor 8085" conducted by Department of Computer Science



Inauguration of the Department Wall Magazine "Tech - World" on 22nd July 2016 by Dr. Latha K A, Associate Professor of Kannada, Maharani's Arts College, Mysore



Students watching TED Talks and Inspirational talks



Smt. K S Sukrutha, Head of the Department orienting the students of I BCA and I B Sc Computer Science



Ms Shashi Rekha of II BCA giving a Power Point Presentation on the topic Real Time Systems



Inauguration of Tech Amateur IT Club was held on 18th August 2016 followed by Invited Talk on the topic "Selection of Projects and its implementation" by Dr H S Nagendra Swamy, Associate Professor, DOS in Computer Science, Manasagangothri, Mysore.



Newly elected office bearers of Tech Amateur IT Club for the academic year 2016 - 17 during the Inauguration of Tech Amateur IT Club

Photo Gallery



Students of Lakshmipuram Government High School who attended "Internet Awareness Programme" organized by the Department of Computer Science



Ms. Preritha S of III BCA giving a Lecture on the topic Structures and Unions to IBCA students as part of Student Faculty program



III BCA students at Alumni Interaction programme



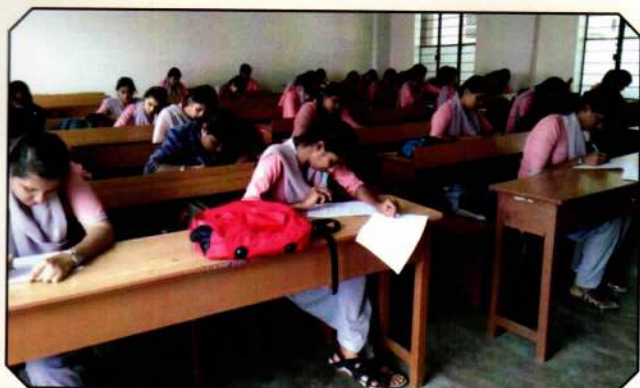
Alumnus Ms. Sreelakshmi A, pursuing MCA at NIE giving a lecture on "Database Normalization" for II BCA students as part of Alumni Faculty Programme



Interclass Debate competition organized by the Department of Computer Science on the topic -"Social Networks is it Boon or Bane?"



Students of III BCA at Kerala



Students at Inter class IT Quiz Competition organized by Tech Amateur IT Club of Computer Science Department



Students of III BCA at 3rd International Festival of Science, Technology, Engineering and Mathematics

Toppers of University Examination of May/June 2016



Akshatha Tantry
BCA - 187/200
6th Sem.



Parineetha M.
BCA - 186/200
6th Sem.



Vandana
BCA - 184/200
6th Sem.



Nikitha
BCA - 184/200
6th Sem.



Jeevitha M.
BCA - 559/600
4th Sem.



Raksha P.
BCA - 557/600
4th Sem.



Shruthi D.
BCA - 520/600
4th Sem.



Yashaswini K.M.
BCA - 375/400
2nd Sem.



Madhura H.K.
BCA - 368/400
2nd Sem.



Aishwarya K.P.
BCA - 362/400
2nd Sem.



Ramya Hebbar S.
B.Sc. - 271/300
6th Sem



Deepthi Muddaiah
B.Sc. - 263/300
6th Sem.



Sindhuja
B.Sc. - 241/300
6th Sem.



Meghana M. Patel
B.Sc. - 95/100
4th Sem.



Shalini P.
B.Sc. - 94/100
4th Sem.



Chaitra N.
B.Sc. - 89/100
4th Sem.



Rashmi Hebbar S.
B.Sc.- 89/100
2nd Sem.



Ranjitha M.
B.Sc.- 86/100
2nd Sem.



Varsha R.
B.Sc.- 81/100
2nd Sem.

*The department has obtained 100% results
in the BCA University Examinations since its first batch*