# DIGIT-ALL

## Dept. of Computer Science and Engineering.

## Gandhi Institute For Technology Bhubaneswar

*October 2019*

*Vol.9 Issue:2*

## DIGIT-ALL

THE E-MAGAZINE, EXPLORES THE TECHNICAL SKILLS OF STUDENTS & FACULTIES. THE MAGAZINE HAS ARTICLES ON LATEST TECHNOLOGIES, CARTOONS, QUIZZES AND MANY MORE FUN FACTS.

### EDITORS:

**Prof.Rajesh Kumar Ojha**

**Prof.Archana Panda**

**Mr. Pradeep Prusty**

**Ms.Adyasha Priyadarsini**

# Vision of the Department:

To produce the professionals of highest grade, bearing the ability to face the challenges posed by latest computing paradigms, founded by intuitive quality of education and driven by culture of critical thinking and creativity, towards the betterment of humankind.

# Mission of the Department:

To Advance knowledge of computing and educate students in major paradigms of computer science and to create a distinctive culture of research and innovation among the budding engineers with collaboration of faculties, technocrats, funding agencies and experts from other premier institutes for generating a pool of professionals and eco-preneurs with the ability to address the Industry and social Problems.

# PEOs of the Department:

PEO 1: To gain adequate mathematical, computing and engineering principles in order to advance in professional career or obtain better response in higher studies platforms.

PEO 2: To foster the ability to analyze real life problems, perform required research and design computing systems, in accordance to its solutions that are technically sound, economically viable and socially admired and adaptable.

PEO 3: Will have ability to exhibit professionalism, technical skills, communication skills, team work and humanitarian skills in their profession and adapt to current changes by inculcating habit of lifelong learning.

## From HOD's desk:

Dear Readers,

*Greetings from Department of Computer Science & Engineering!*

As a Department of Computer Science & Engineering, We have always strived to provide a well rounded curriculum and training to our students and prepare them in order to face the challenges in their professional life after they graduate from here. Apart from conducting regular academic curriculum, various student driven initiatives, ensures personality development of students at GIFT. One of such initiatives is DIGIT-ALL.

DIGIT-ALL has helped bringing out the hidden treasures within the students as well as the faculty members by a way helping them improve their skill, knowledge and understanding.

I on behalf of the whole fraternity of the Department of C.S.E, take this opportunity to thank and congratulate you for making this a success story and as well expect that all of us will put an effort to keep the wheel running.

Thanks & Regards,

Dr. Sujit Kumar Panda

H.O.D, CSE

Gandhi Institute For Technology, Bhubaneswar

# Contents

# Articles

# Ambient Backscatter

**Mr.Manish Kumar        (1701298253)**
**Mr.Debacharn Tripathy (1701298060)**

Small computing devices are increasingly embedded in objects and environments such as thermostats, books, furniture, and even implantable medical devices . A key issue is how to power these devices as they become smaller and numerous; wires are often not feasible, and batteries add weight, bulk, cost, and re- quire recharging or replacement that adds maintenance cost and is difficult at large scales.Ambient RF from TV and cellular communications is widely available in urban areas (day and night, indoors and out- doors). Further, recent work has shown that one can harvest tens to hundreds of microwatts from these signalsAmbient backscatter, a novel communication mechanism that enables devices to communicate by backscattering ambient RF. In traditional backscatter communication (e.g., RFID), a device communicates by modulating its reflections of an incident RF signal (and not by generating radio waves). Hence, it is orders of magnitude more energy-efficient than conventional radio communication.

Ambient backscatter differs from RFID-style backscatter in three key respects. Firstly, it takes advantage of existing RF signals so it does not require the deployment of a special-purpose power infrastructure—like an RFID reader—to transmit a high-power (1W) signal to nearby devices. This avoids installation and maintenance costs that may make such a system impractical, especially if the environment is outdoors or spans a large area. Second, and related, it has a very small environmental footprint because no additional energy is consumed beyond that which is already in the air. Finally, ambient backscatter provides device-to-device communication. This is unlike traditional RFID systems in which tags must talk exclusively to an RFID reader and are unable to even sense the transmissions of other nearby tags.

## Dynamic Distributed Intrusion Detection System

**Mr.Girija Sankar Behera (CSE-1701298025)**
**Ms.Swati Kumari        (ECE-1801298414)**

An Intrusion Detection System or IDS is a software/hardware tool used to detect unauthorized access to a computer system or network. This may take the form of attacks by skilled malicious hackers, or Script kiddies using automated tools.An IDS is required to detect all types of malicious network traffic and computer usage. This includes network attacks against vulnerable services, data driven attacks on applications, host based attacks such as privilege escalation, unauthorized logins and access to sensitive files, and malware (viruses, trojan horses, and worms).An IDS is composed of several components, Sensors which generate security events, a Console to monitor events and alerts and control the sensors, and a central Engine that records events logged by the sensors in a database and uses a system of rules to generate alerts from security events received. There are several ways to categorize an IDS depending on the type and location of the sensors and the methodology used by the engine to generate alerts. In many simple IDS implementations all three components are combined in a single device or appliance.

actual galaxy merger, I can help astronomers refine their models. The website itself is simple, but works seamlessly. You need to make an account, but it takes 15 seconds with an email address and password. There's no email confirmation, so you're free to go straight to the science after sign up. Here each project comes with a tutorial explaining how to use the application, or you can just dive right in. For instance, the Planet Hunters project gets you classifying light curves right away, but there is a tutorial available. Beyond just the satisfaction of contributing, you can also track your progress – how many stars you have classified, how many potential planets you've found.

I'm pretty excited about trying a project called "Search for exploding stars". I'll be finding candidate supernovas in sky surveys taken by the Palomar Observatory in California, candidates which astronomers may then follow up. But the problem is, the 640,000 people taking part in Zooniverse projects worldwide have polished off the Palomar data – all the supernova candidates have been found. Zooniverse informs me about a pop-up, and suggests I try "Solar Storm watch", which asks me to spot solar storms in images from Nasa's STEREO spacecraft. The implementation of projects on Zooniverse is miscellaneous. Solar Storm watch comes with a very polished edge, with great training on how to spot and measure solar storms. The galaxy merger project is simple, which just asks me to pick best matches, requiring almost no training.

The Zooniverse platform itself keeps track of your actions, measuring your progress across each one. Zooniverse also has a couple of outlier projects: using old shipping logs to model Earth's climate; categorizing killer whale songs; even helping SETI look for alien signals in data from the Kepler mission. What's so intriguing about the platform is that it harnesses your brain's computational power and analytical ability to do things that even super computers can't. In a world where software and hardware are doing more and more, it's nice to know that old fashioned human brains are good for something.

# DIFFSERVE

**Ms.Rojalin Muduli   (CSE-1701298156)**
**Mr.Ranjit Chand    (ECE-1801298258)**

Today's Internet provides a best effort service. It processes traffic as quickly as possible, but there is no guarantee at all about timeliness or actual delivery: it just tries its best. However, the Internet is rapidly growing into a commercial infrastructure, and economies are getting more and more dependent on a high service level with regard to the Internet. Massive (research) efforts are put into transforming the Internet from a best effort service into a network service users can really rely upon.Commercial demands gave rise to the idea of having various classes of service. For instance one can imagine that companies might offer (or buy, for that matter) either a gold, silver or bronze service level. Each of them having their own characteristics in terms of bandwidth and latency with regard to network traffic. This is called Quality of Service (QoS). The Internet Engineering Task Force (IETF), one of the main driving forces behind Internet related technologies, has proposed several architectures to meet this demand for QoS. Integrated Services and Differentiated Services, developed in the ?intserv? and ?diffserv? IETF Working Groups, are probably the best known models and mechanisms. The IETF diffserv WG has also defined a DiffServ Management Information Base, a virtual storage place for management information regarding DiffServ. At time of writing, this MIB is still work in progress. This assignment contributes to the development of the DiffServ MIB by writing a prototype implementation of a DiffServ MIB agent and giving feedback to the IETF community. One of the likely uses of the DiffServ MIB is that it may act as part of a bigger policy-based management framework. Therefore an implementation of the DiffServ MIB might also help development in that area.Web. They can easily play all of their favorite electronic games and also spend some time to doing school work. They could even watch movie on web. This type of influential user capability makes this service norm.

Students can do research anywhere or do their homework. Those who are searching for work can even advantage because they've quick access to the actual web and the services it gives to look for a job. Those who are exhausted of being unable to access the web when they required, or relying on their slow mobile phone service to do so, will upraise the advantages of using web on the go services. Mobile to web service can make it comfortable for you to communicate and connect virtually anywhere. Add to it the level of security mobile web pages service can offer compared to open wireless and you can certainly take the benefit from wireless card like this. Many of today's abundant cable providers now provide the service as well. This can create a prominent influence on your connectivity and communications without hurting your pocket at the same time.

## Electromechanical Human-Machine Interaction

**Ms.Itishree Barik    (CSE-1701298245)**
**Ms.Sucharita Maity  (ECE-1801298385)**

New interactive computing applications are continually being developed in a bid to support people?s changing work and recreational activities. As research focuses on one particular class of interactive systems, high level models of interaction are formulated and requirements emerge that reflect shared features or common functionality among those systems.?The technology behind this system is really a combination of physiological sensing techniques with interactive computer applications. A review is presented of existing research and development into this exciting new area of human-computer interaction. It is envisaged that the work presented in this seminar will serve as a jumping off point for others interested in exploring the potential of incorporating physiological information into the human-machine relationship.

Similarly, those who want to be more self-reliant in treating the software issues on their own have another option available as certain companies provide software that can help the user fix some issues. There is Dell Support Center, HP Support Assistant, Acer e-Recovery Management, Microsoft Fix It etc. that are available in the market. These software are specifically developed to facilitate the user to carry out the troubleshooting steps on their own. The software can be easily downloaded free from the website of the manufacturer. It has many advantages that are listed below:

 Very convenient: the software is very easy to install through their automatic setup. They let you manage different devices by one screen, and also let you keep records.

User specific: using such software, the user gets personalized support and the help is quite relevant depending upon the type of problem.

Gives total control: the user gets the complete control over the settings and can choose the automation level.

Such software lets you carryout troubleshooting process on your own that too in a safe and organized manner. In case of facing any problem regarding Microsoft products, Microsoft Support is the ready solution. Apart from the brand, you also have technical assistance offered by other companies that are equally competent and reliable.

## Words of Wisdom

"I think computer viruses should count as life ... I think it says something about human nature that the only form of life we have created so far is purely destructive. We've created life in our own image."
— Stephen Hawking

# *Interesting Facts*

**Ms. Sweta Suman Pasayat (CSE-1701298363)**

➢ COBOL language was developed by the first female admiral in the US Navy, Admiral Grace Hopper.

➢ Only 8% of the world's currency is physical money, the rest only exists on computers.

➢ There was a computer worm that would gain access to Windows XP systems, download a patch from Microsoft to close the vulnerability that it used to infect the system, attempt to delete the infamous Blaster worm (if present) from the system, then delete itself.

➢ The worst breach of U.S. military computers in history happened when someone picked up a memory stick (infected by a foreign intelligence agency) they found in the parking lot and plugged it into their computer, which was attached to United States Central Command.

## Words of Wisdom

"I still love books. Nothing a computer can do can compare to a book. You can't really put a book on the Internet. Three companies have offered to put books by me on the Net, and I said, 'If you can make something that has a nice jacket, nice paper with that nice smell, then we'll talk.' All the computer can give you is a manuscript. People don't want to read manuscripts. They want to read books. Books smell good. They look good. You can press it to your bosom. You can carry it in your pocket."

— **Ray Bradburyj**

# Cartoons

**Ms.Sriya Nayak (CSE-1901298214)**
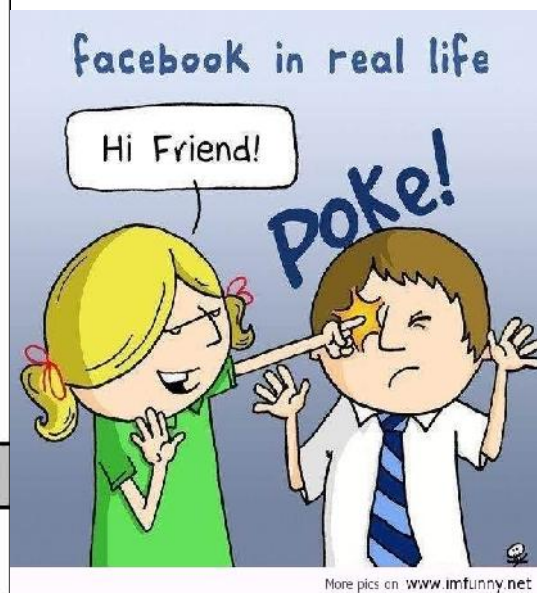


## proverbios

***A hungry man is an angry man:*** A person who does not get what he wants or needs is a frustrated person and will be easily provoked to rage.

# Technical Quiz

**Mr.Akash Kumar Nayak  (CSE-1801298024)
Mr. Debapriya dey          (CSE-1801298113)**

❖  Which of the following languages is more suited to a structured program?

A.  PL/1B.   FORTRAN
C.  BASIC                         D.PASCAL
E.  None of the above

❖  A computer assisted method for the recording and analyzing of existing or hypothetical systems is

A.  Data transmission              B. Data flow
C.  Data capture                   D. Data processing
E.  None of the above

❖  From what location are the 1st computer instructions available on boot up?

A.  ROM BIOS                      B.CPU
C.  boot.ini                      D.CONFIG.SYS
E.  None of the above

❖  What could cause a fixed disk error?

A.  No-CD installed               B. bad ram
C.  slow processor                D. Incorrect CMOS settings
E.  None of the above

❖  The part of machine level instruction, which tells the central processor what has to be done, is

A.  Operation code                B. Address
C.  Locator                       D. Flip-Flop
E.  None of the above

❖  Which of the following refers to the associative memory?

A.  the address of the data is generated by the CPU              B. the address of the data is supplied by the users
C.  there is no need for an address i.e. the data is used as an address
E.  None of the above

❖ How many digits of the DNIC (Data Network Identification Code) identify the country?

A. First three
B. First four
C. First five
D. First six
E. None of the above

❖ A station in a network forwards incoming packets by placing them on its shortest output queue. What routing algorithm is being used?

A. hot potato routing
B. flooding
C. static routing
D. delta routing
E. None of the above

❖ A report generator is used to

A. update files
B. print files on paper
C. data entry
D. All of the above
E. None of the above

❖ Which of the following is not a logical data−base structure?

A. tree
B. relational
C. network
D. chain
E. All of the above

❖ What command is used to count the total number of lines, words, and characters contained in a file?

A. countw
B. wcount
C. wc
D. count p
E. None of the above

❖ What command is used to remove files?

A. dm
B. rm
C. delete
D. erase
E. None of the above

**Answers**

1. D
2. B
3. A
4. D
5. A
6. C
7. A
8. A
9. B
10. D
11. C
12. B

# POETRY

**Ms.Usharani Bastia (CSE-1901298229)**

Why?
Why can't people see the real me?
I try so hard to be the perfect person I can be.
Sure I'm young, quiet and shy.
But I'm such an amazing person, which many pass by.
Why?
Why can't people just take the time?
Just tell me your favorite thing to do and I'll tell you mine.
The people that do, I hold dear to my heart.
They see me as mysterious, sweet, funny and smart.
You can't expect me to open up the very first day.
It takes time, but trust me, I'll soon have a lot to say.
Why?
Why can't people wait and get to know the real me?
I bet you I'd be a much different person than you first did see.