K.L.N. College of Engineering
i'Storm
Department of Information Technology
SPECIAL INTEREST GROUP
LIVE WITH TECHNOLOGY

PRINCIPAL MESSAGE

It is a matter of great pride and satisfaction for K.L.N. COLLEGE OF ENGINEERING to bring out the News Letter '**I'STORM**' Released from the Department of Information Technology. The College has made tremendous progress in all areas-academic, non-academics, capacity building relevant to staff and students. The College has achieved another milestone in getting NBA (National Board of Accreditation).I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities. A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in Record time. I express my deep sense of gratitude to Dr.N.Balaji, HOD/IT under whose guidance this Technical work has been undertaken and completed within the stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.

PRINCIPAL

Dr.A.V. RAMPRASAD

THE EDITOR'S DESK

It gives me immense pleasure to note that response to this newsletter of our department **i'STORM** has been overwhelming. The wide-spectrum of articles in different sections gives me a sense of pride that our students and professors possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. I applaud the contributors for their stimulated thoughts and varied hues in articles contributed by them. Commendable job has also been done by the Editorial Board in planning for and producing the Newsletter. My congratulations to the team who took the responsibility for the arduous task most effectively. I am hopeful that this small piece of technical work shall not only develop the taste for reading among students but also develop a sense belonging to the institution as well.

H.O.D (I.T)

Dr.N.Balaji

NEWS LETTER EDITORIAL BOARD

EDITOR-IN-CHIEF:

Dr. N.Balaji (HOD/IT)

STAFF-INCHARGE:

Mrs. N.Nandhini (AP2)

STUDENT EDITORS:

- K.R.Pradeep (Third Year)
- Sandhiya.R (Third Year)
- Abishek .S.A (Third Year)
- Shanthi.C.V (Third Year)

OUR COLLEGE :

Vision

To become a Premier Institute of National Repute by Providing Quality Education, Successful Graduation, Potential Employability and Advanced Research & Development through Academic Excellence.

Mission

To Develop and Make Students Competent Professional in the Dynamic Environment in the field of Engineering, Technology and Management by emphasizing Research, Social Concern and Ethical Values through Quality Education System.

OUR DEPARTMENT:

Vision

To emerge as a centre of excellence through innovative technical education and research in Information Technology.

Mission

To produce competent information technology professionals to face the industrial and societal challenges by imparting quality education with ethical values.

Program Educational Objectives

The Educational Objectives of Information Technology Program represents major accomplishments that we expect from our graduates to have achieved three to five years after graduation. More specifically our graduates are expected.

1. *To excel in industrial or graduate work in information technology and allied fields.*

2. *To practice their professions conforming to ethical values and environmental friendly policies.*

3. *To be able to have an exposure in emerging cutting edge technologies and adapt to ever changing technologies.*

4. *To work in international and multi – disciplinary environments.*

Program Specific Outcomes

1. *Ability to apply the fundamentals of mathematics, science, engineering, information and computing technologies to identify, analyze, design develop, test, debug and obtain solutions for complex engineering problems.*

2. *Ability to select and apply appropriate modern tools and cutting edge technologies in the field of Information and communication to meet the industrial and societal requirements with public health and safety considerations.*

3. *Ability to analyze the multidisciplinary problems and function effectively in various teams for developing innovative solutions with environmental concerns and apply ethical principles in their career.*

4. *Ability to acquire leadership and communication skills to manage projects and engage in lifelong technical learning to keep in pace with the changes in technologies.*

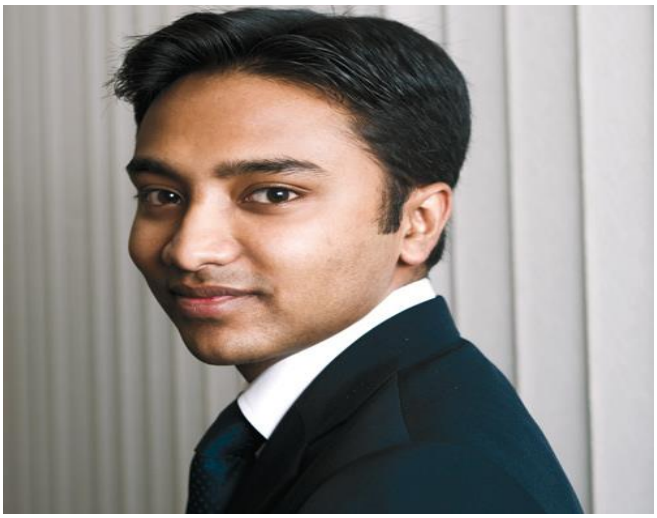
Program Outcome

1. ***Engineering knowledge:*** *Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.*
2. ***Problem analysis:*** *Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.*
3. ***Design/development of solutions:*** *Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.*
4. ***Conduct investigations of complex problems:*** *Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.*
5. ***Modern tool usage:*** *Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.*
6. ***The engineer and society:*** *Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.*
7. ***Environment and sustainability:*** *Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.*
8. ***Ethics:*** *Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.*
9. ***Individual and team work:*** *Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.*
10. ***Communication:*** *Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.*
11. ***Project management and finance:*** *Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.*
12. ***Life-long learning:*** *Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change*

ICON OF THE MONTH

Suhas Gopinath

Suhas Gopinath (born November 4, 1986 in Bangalore) is an Indian entrepreneur. He is the founder, CEO and Chairman of Globals Inc., an IT multinational company. He took charge as CEO at the age of 17, three years after founding the company, and at the time, was named world's youngest CEO.



Gopinath is recipient of the Rajyotsava award, Young Achiever and Young Global Leader award. Gopinath was born in Bangalore in the Indian state of Karnataka to his father, a defense scientist and mother, a housewife. He taught himself to make websites with the help of books and made his one as, www.coolhindustan.com, at the age of 14, and incorporated his company Globals Inc., the same year in 2000. He became CEO of his multinational company at the age of 17. He was thought to be, for a time, the youngest CEO of a company.

Suhas is the youngest member ever in the World Economic Forum's history. The other members include the Louisiana governor Bobby Jindal, Hollywood star Leonardo Di Caprio, musician A R Rahman, Prince of Brunei , etc.

Gopinath is forward-thinking in business but also has a lot to say about social issues. He spoke at a young leaders’ conference about the importance of viewing the world as a global community without political borders. And he is just as passionate about animal rights. Gopinath sat down with PETA Youth to discuss his views on business, animal rights and what young people can do to revolutionize both.

Recognition:

- In 2005, Gopinath was the youngest among the 175 recipients of Karnataka's Rajyotsava Award.
- On December 2, 2007, The European Parliament and International Association for Human Values conferred "Young Achiever Award" on Gopinath at the European Parliament, Brussels.
- In November 2008, he was invited to represent the World Bank's ICT Leadership Roundtable for adopting ICT in Africa to increase employability and fostering ICT skills in students from these countries.
- He was announced as "Young Global Leader" for 2008–2009 by the World Economic Forum, Davos. In that position he would be involved in development programs across the world. He holds a diploma on global leadership and public policy from the John F. Kennedy School of Government and Harvard University.

-R.Sandhiya (Third Year)

ANDROID NOUGAT

Android 7.0 "Nougat" is an upcoming release of the Android operating system. Previously the codename was Android N. It was first released as a developer preview on March 9, 2016, with factory images for current Nexus devices, as well as with the new "Android Beta Program" which allows supported devices to be

upgraded directly to the Android Nougat beta via over-the-air update.

Google outlines the schedule on their website and indicates final release in August or September.

History:

There will be five Android N preview releases before the final release in the third quarter of 2016. An updated preview is released each month (4 to 6 week interval). The N Developer Preview started on March 9, 2016 with the release of Preview 1. On April 13, 2016, Android N Developer Preview 2 was announced. Android N Developer Preview 3 became available on May 18, 2016. Android N Developer Preview 4 became available on June 15, 2016.

Google further discussed Android "N" during the Google I/O keynote on May 18, 2016, and unveiled its new virtual reality platform Daydream. During the conference, a new "beta-quality" preview build of Android "N" was released, and Google announced that it would hold a contest to determine the official release name of the operating system. On June 30, 2016, Google announced that N's release name would be "Nougat"; it was also confirmed that the release would be version 7.0 of Android.

Features:

Android Nougat introduces a split-screen multi-window mode, in which two apps can be snapped to occupy halves of the screen. An experimental freeform multi-window mode is also available as a hidden feature, where multiple apps can appear simultaneously on the screen. The notification shade was also redesigned, featuring a smaller row of icons for settings, replacing notification cards with a "sheet" design, and allowing inline replies to notifications implemented via existing APIs used with Android Wear. Multiple notifications from a single app can also be "bundled".

Seamless updates are also introduced, following Chrome OS. Software updates will be able to install in the background and run with only a reboot. This is possible because of the introduction of two system partitions, one for use and the other for updates.

The "Doze" power saving mechanism introduced in Marshmallow was expanded to include a state activated when the device is running on battery and the screen has been off for a period of time, but is not stationary. In this state, network activity is restricted, and apps are granted "maintenance windows" in which they can access the network and perform background tasks. The full Doze state is activated if the device is stationary for a period of time.

A new "Data Saver" mode restricts background mobile data usage, and can trigger internal functions in apps that are designed to reduce bandwidth usage, such as capping the quality of streaming media among other examples.

Developer Preview 2 added platform support for Vulkan, the new low-level 3D rendering API to augment OpenGL ES but with higher graphics performance. A new set of human emoji was also included in this version of the preview, with support for skin tones.

Development platform:

In December 2015, Google announced that Android N would switch its Java Runtime Environment from the defunct Apache Harmony to Open JDK—the official open source implementation of the Java platform maintained by Oracle Corporation and the Java community. Google promoted that the shift was part of an effort to create a "common code base" between Java on Android and other platforms and allow use of popular Java 8 features in code, but was actually to address then-ongoing litigation with Oracle surrounding its use of copyrighted Java APIs as part of the Android platform, as Open JDK is expressly licensed under the GNU General Public License (a U.S. federal court has since ruled that Google's use of the APIs was fair use).

The Android Runtime (ART) now incorporates a profile-guided compilation system, utilizing a JIT compiler and profiling alongside its current ahead-of-time compiler to further optimize apps for a device's hardware and other conditions in the background. This change also increases the speed of the application "optimization" process that occurs on an app or system upgrade.

-T.S.Azith Lal (Third year)

HUMAN BCI RESEARCH INVASIVE BCIs

Invasive BCI research has targeted repairing damaged sight and providing new functionality for people with paralysis. Invasive BCIs are implanted directly into the grey matter of the brain during neurosurgery. Because they lie in the grey matter, invasive devices produce the highest quality signals of BCI devices but are prone to scar-tissue build-up, causing the signal to become weaker, or even non-existent, as the body reacts to a foreign object in the brain.

In vision science, direct brain implants have been used to treat non-congenital (acquired) blindness. One of the first scientists to produce a working brain interface to restore sight was private researcher William Dobelle.

Dobelle's first prototype was implanted into "Jerry", a man blinded in adulthood, in 1978. A single-array BCI containing 68 electrodes was implanted onto Jerry's visual cortex and succeeded in producing phosphenes, the sensation of seeing light. The system included cameras mounted on glasses to send signals to the implant. Initially, the implant allowed Jerry to see shades of grey in a limited field of vision at a low frame-rate. This also required him to be hooked up to a mainframe computer, but shrinking electronics and faster computers made his artificial eye more portable and now enable him to perform simple tasks unassisted.

In 2002, Jens Naumann, also blinded in adulthood, became the first in a series of 16 paying patients to receive Dobelle's second generation implant, marking one of the earliest commercial uses of BCIs. The second generation device used a more sophisticated implant enabling better mapping of phosphenes into coherent vision. Phosphenes are spread out across the visual field in what researchers call "the starry-night effect". Immediately after his implant, Jens was able to use his imperfectly restored vision to drive an automobile slowly around the parking area of the research institute. Unfortunately, Dobelle died in 2004 before his processes and developments were documented. Subsequently,

when Mr. Naumann and the other patients in the program began having problems with their vision, there was no relief and they eventually lost their "sight" again. Naumann wrote about his experience with Dobelle's work in Search for Paradise: A Patient's Account of the Artificial Vision Experiment and has returned to his farm in Southeast Ontario, Canada, to resume his normal activities.

Movement:

BCIs focusing on motor neuroprosthetics aim to either restore movement in individuals with paralysis or provide devices to assist them, such as interfaces with computers or robot arms. Researchers at Emory University in Atlanta, led by Philip Kennedy and Roy Bakay, were first to install a brain implant in a human that produced signals of high enough quality to simulate movement. Their patient, Johnny Ray (1944–2002), suffered from 'locked-in syndrome' after suffering a brain-stem stroke in 1997. Ray's implant was installed in 1998 and he lived long enough to start working with the implant, eventually learning to control a computer cursor; he died in 2002 of a brain aneurysm.

Tetraplegic Matt Nagle became the first person to control an artificial hand using a BCI in 2005 as part of the first nine-month human trial of Cyberkinetics's BrainGate chip-implant.
Implanted in Nagle's right precentral gyrus (area of the motor cortex for arm movement), the 96-electrode BrainGate implant allowed Nagle to control a robotic arm by thinking about moving his hand as well as a computer cursor, lights and TV. One year later, professor Jonathan Wolpaw received the prize of the Altran Foundation for Innovation to develop a Brain Computer Interface with electrodes located on the surface of the skull, instead of directly in the brain.

More recently, research teams led by the Braingate group at Brown University and a group led by University of Pittsburgh Medical Center, both in collaborations with the United States Department of Veterans Affairs, have demonstrated further success in direct control of robotic prosthetic limbs with many degrees of freedom using direct connections to arrays of neurons in the motor cortex of patients with tetraplegia.

-P.G.Saravanan (Third year)

VOICE STICK

Technology is improving day by day and many of the innovations are being planned for various segments of people. Many of the innovations are also invented for people with various ailments. Like the new Voice Stick, a concept text scanning device for the visually impaired. As the name suggests, the stick when scanned in the printed letters, the OCR function recognizes the text and converts the information into voice. The voice is then read back and thus helping the visually challenged. It is a quite innovative and practical product. So whatever be the matter, like letters, E-mails etc, it works out to be a perfect solution and companion for the visually challenged.

Braille is one of the most important ways that visually impaired individuals acquire their information. The problem is that it is hard to find braille books due to the high costs involved to published them compared to common books.

Voice Stick is a portable text scanning device for the visually impaired. When it scans printed letters, the OCR (Optical Character Recognition) function recognizes the texts and converts the written information into a voice. The portable stick, Voice Stick, can be used to convert any words or letters found in our daily life, such as in books, newspapers, contracts, mail, etc., into voice information.

Voice Stick Portable Text Scanning Device Abstract:

Voice Stick Portable Text Scanning Device is latest innovation for blind peoples. Innovation is enhancing step by step and a hefty portion of the developments are being gotten ready for different sections of individuals. A considerable lot of the developments are likewise created for individuals with different illnesses. Like the new Voice Stick Portable Text Scanning Device, an idea content examining gadget for the outwardly weakened. As the name recommends, the stick when filtered in the printed letters, the OCR capacity perceives the content and changes over the data into voice. The voice is then perused back and subsequently helping the outwardly tested. It is an entirely inventive and down to earth item. So whatever be the matter, similar to letters, E-sends and so on, it works out to be an impeccable arrangement and sidekick for the outwardly tested.

What is Voice Stick?

Voice Stick Portable Text Scanning Device is latest innovation for blind peoples. it is simply a portable and very lightweight scanner which scans the book object and convert it to voice so there is no need to read any text from the book Voice Stick Portable Text Scanning Device will read automatically after scanning book text. we just have to listen voice.

How Voice Stick Works?

Voice Stick Portable Text Scanning Device as the name suggests that it scans the book object and convert it to voice so there is no need to read any text from the book Voice Stick Portable Text Scanning Device will read automatically after scanning book text., the stick when filtered in the printed letters, the OCR capacity perceives the content and changes over the data into voice. The voice is then perused back and subsequently helping the outwardly tested. It is an entirely inventive and down to earth item. So whatever be the matter, similar to letters, E-sends and so on, it works out to be an impeccable arrangement and sidekick for the outwardly tested.

Advantage:

- Voice Stick Portable Text Scanning Device is portable
- Voice Stick Portable Text Scanning Device is very light weight
- Voice Stick Portable Text Scanning Device is easy to use

- Voice Stick Portable Text Scanning Device automatically reads so like a tape recorder so no need to read
- Voice Stick Portable Text Scanning Device is very cheap compare to other solutions.

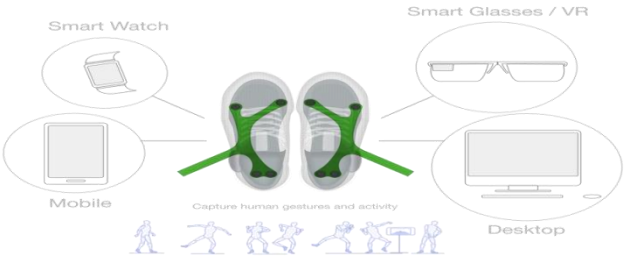
-C.V.Shanthi (Third year)

IoT SHOE

Seattle-based Boogio, an IoT wearable company that makes pressure sensitive sensors for footwear, lets its developers do creative things such as taking the Oculus Rift version of the base jumping game Aaaaaaa!, which already uses input from your eyes and hands, and adding input from your feet. "We mapped the center of gravity to that experience," said Jose Torres, co-founder and CEO of Boogio, "so that you can essentially stand idle and then parachute down in virtual reality." He said it was a very simple loop to test the theory of how immersive that experience would be.

Boogio is a sticker that you put underneath an insole that has pressure sensors across toe heel and arch, with sixty-five thousand layers of pressure sensitivity. A small device clips to the side of the shoe and contains a gyroscope, 3D accelerometer, Bluetooth connectivity, and battery. Boogio generates a lot of data points such as the weight of your body on your feet, how you are holding yourself up when standing, and can infer from your inner balance when shifting weight from left to right. "This is the first real wearable that can sense and model your locomotion from the foot," Torres said. "You're not inferring it based on the wrist, you are seeing it from the source."

To demonstrate that Torres uses Boogio in his pitches. "I have a PowerPoint presentation where I change the slides based on which way I'm leaning. It's a cool Jedi trick, and it's a great way to show that you're leveraging your body, bridging digital and analog. Taking the physical and translating it into a digital experience–that's a really powerful interface to have. "



So it's not too much of a stretch that developers have actually leveraged Boogio data for video games. For example, where you can use your foot to do gas and brake for car racing or leverage something similar to what [Microsoft] Kinect would do, but now –because you are wearing the technology– you don't need a camera to see you, he said. "You can take any game mobile, you can be anywhere in the world, and use gesture to overlay onto that game, which is pretty cool. You can do virtual hack sack, virtual golf, whatever you want to do to play around and interface with it."

That's the entertainment side of Boogio, but Torres said there are serious applications such as in healthcare.

Like most wearable startups, Torres said his company is not currently pursuing FDA approval as a medical device. "Still," he said, "if you're looking into the future of this thing, if you're wearing it for a couple of years, and it's integrated into your shoes and other technologies, what kind of data can you see?" He cited the traditional benefits of gait output which is really a neurological output and therefore early indicators of Parkinson's or Alzheimer's disease. The plan is to open the data to research. "We aren't there yet with our platform," he said, "but we want to build in those experiences and those tools so we can give researchers access to this thing."

-M.Mohamed Aasif (Third year)

RECENT TRENDS IN ROBOTICS

Robotics is a branch of applied science, the popular conception of which came not from science, but from drama, fiction and cinema. The word “robot” was first used in 1921 by Czech playwright Karel Capek in his play “Rossum’s Universal Robots” where robots were machines resembling human beings except that they were exceptionally hardworking. The word “Robotics” which means the study of robots, was later coined in 1942 by science fiction writer Isaac Asimov in his story “Runaround” where he put forward three “laws” of robotics. Science fiction writers including Asimov and film-makers used the concept of robots widely and projected robots as human-like mechanical “beings” with tremendous physical and intellectual capabilities, compared to which even the most sophisticated robots of today will look very primitive. This budding of the new science in the cradles of arts had two-fold results. On one side, robotics got a natural terminology straight from

Human anatomy with words like arm, shoulder, elbow, wrist, hand, finger, leg, knee, ankle, foot etc and an ideal system, namely the human body, to get new ideas and to evaluate the performance of existing system. On the other hand, a myth was created in the minds of laymen regarding human-like machines called robots, the sophistication of which is quite phenomenal. To many people, the word “robot” gives rise to a mental picture of a metallic human of tremendous strength and a picture of an actual robot would be rather disappointing. An actual industrial robot can, of course, look similar to a human arm, in basic mechanical architecture. For example, the motion capabilities of a six degrees of freedom PUMA robot can be explained in analogy with movements at shoulder, elbow and wrist of a human arm. Many other robots, however, depart from this analogy to different extents depending on their architecture, though they perform the same jobs as PUMA. The four principal components of a robot, namely the manipulator, the controller, the sensors and the actuators roughly resemble in function (though not in appearance) the human arm, brain, sense organs and muscles. A standard definition (given by Robot Institute of America) describes a robot as a “reprogrammable multifunctional manipulator”. In that perspective, hard automation systems and numerically controlled (NC) machines do not fall within the scope of robotics. Teleoperators or telerobots also fall near the border line. Though programmable machines existed even in the 19th century, the science of robotics came into being in the last 50 years through the epoch-making developments of first telerobot to handle radioactive material (world war II), first servoed electric-powered teleoperators (1947–48), NC machines (1952), first reprogrammable robot (1954) and the installation of the first robot (1961). By the 1970’s, robotics emerged as an independent field of study. Nowadays, robots are used for material handling, welding, spray-painting, teleoperations (in inaccessible and/or hazardous places), assembly, machining etc. With this introduction to the field of robotics, let us have a look at the recent trends in robotic research and application, which can be described under the following broad headings. Redundant Robots: Six degrees of freedom are, in principle, enough to manipulate objects in space with three possible independent translations and three independent rotations. But, with a given architecture of a robot arm and a given working environment, restrictions of workspace, dexterity and obstacles call for additional degree(s) of freedom. In such cases, as a human being uses additional freedoms of the body to supplement the capabilities of the arm for enhancing the reach, manipulate objects comfortably and reach below the table or around the corner objects, additional degrees of freedom can be provided in the robot arm with extra joints

and links. Such robots are called redundant robots (because they use more inputs than necessary) and are used for the purposes of workspace enhancement and avoidance of singularities and obstacles. With a redundant robot, a particular point can be reached in infinite number of ways — to choose one of those infinite ways is the problem of redundancy resolution, which is solved by optimizing the performance.

Space Robots:

Robots in space applications are light, can handle greater masses and have a special characteristic that, unlike robots on earth, their frames are not fixed, rather they float with the rest of the robot, together with the space vehicle.

Flexible Robots:

Truly speaking, all solid bodies are flexible. Conventional modelling of robot manipulators needs to consider the links of a robot as rigid, for which the deflections have to be negligible from the viewpoint of positional accuracy. Consequently, the links are to be designed stronger than necessary and heavy. But, from a physical point of view, it is not necessary and we should not mind the links being flexible as long as they are within elastic limits and we know

their behaviour. So, the recent interest has been to work with flexible robots and to take advantage of their light weight by incorporating their flexibility into the mathematical model which, of course, complicates the dynamics of the system — a price to be paid for the advantage gained.

Parallel-actuated Robots and Closed-loop Robots:

The traditional serial chain robots, due to their cantilever structure, have less load carrying capacity. Actuations off the base aggravate this problem and make the robot bulky. Consequently, the serial robots tend to bend at high load and vibrate at high speed. Though they possess a large workspace, the positioning capability is rather poor. So, where high load carrying capacity and precise positioning is of prime concern, an alternative is provided by parallel-actuated and closed-loop robots which have attracted tremendous research interest in the last 15 years. As a human being uses both arms to handle a heavy load, three fingers in parallel for doing a precise work like writing and as animal body is supported on four legs with provision of in-parallel actuation at the leg joints, robot manipulators also can be designed with the end-effector (hand) connected to the frame by parallel chains of joints and links having the actuations distributed among the various chains or legs. The most celebrated among the parallel manipulators is the six-degrees-offreedom parallel manipulator called the Stewart platform which has its end-effector connected to the ground by six extensible legs having ball-socket joints at the ends, the extensions of the legs being done by six linear actuators. Parallel robots, in general, provide high structural rigidity and load carrying capacity, good positioning capabilities and have less vibration. But, they generally have restricted workspaces and their kinematics and dynamics is quite complicated to study and analyse. Typical applications of parallel robots include applications where high load capacity and precise positioning are required, use as an assembly workstation, dexterous wrist and micromanipulators. The application of the concept of parallel actuation has uses in cooperating robots and in multi-fingered gripping and manipulation.

Walking Robots:

While manipulation robots manipulate objects by utilizing the freedom available at the joints, mobile robots can carry objects to greater distances by body movement. In ordinary life, we use trains, automobiles and animals for conveyance. Similarly, in robotics, we have tracked, wheeled and legged vehicles. Though all of these have their own applications, walking

machines have enjoyed the maximum research interest due to their versatility over terrain irregularities and greater mobility, and work is mostly focused on machines walking on two to six legs. Till now, most of these walkingmachines have succeeded mostly in laboratory conditions and have achieved little breakthrough on completely unstructured ground, but the attempts in this direction promise a high potential. Recently BARC has developed a walking machine with six legs (presented in National Convention on Industrial Problems in Machines and Mechanisms 1994) which moves forward and can take turns also, but the walking speed is quite low. A challenging field of research is biped locomotion which gives rise to a problem of stability, which is evident as equilibrium of a body with less than three supports is precarious. The ease of biped locomotion in human beings can be attributed to their erect body structure, the extent and nature of the surface of the foot and an extremely smart nervous system — conditions simulating in machines is a really challenging task.

-S.Deeraj Kumar (Third year)

ROAD TO SUCCESS

Shortcuts to solve arithmetic operations

Division:

Division using the factors of the divisor:

This method is also called Double Division.

$$\frac{75}{15}$$

Here you can directly divide 75 by 15 and the answer would be 5. But, to understand this method, we are not doing like that. Now, factorize divisor.

So we can write 15 as 5 × 3.

$$\frac{75}{5 \times 3}$$

Now we can divide 75 by 3 which gives us 25.

$$\frac{25}{5}$$

Now we can divide 25 by 5 and that gives 5 as answer. So the answer is 5.

Division By Parts

$$\frac{75}{15}$$

Write 75 as 45 + 30

So we can write

$$\frac{45+30}{15} = \frac{45}{15} + \frac{30}{15} = 3 + 2 = 5$$

So the answer is 5.

Division by 10:

Just move the decimal point one place to the left side.

$$\frac{12.56}{10} = 1.256$$

So the answer is 1.256

Division by 5:

Divide the dividend by 100 and multiply by 20.

$$\frac{200}{5} = \left(\frac{200}{100} \times 20\right) = 2 \times 20 = 40$$

So the answer is 40

Division by 25:

Divide the dividend by 100 and multiply it by 4.

$$\frac{200}{25} = \left(\frac{200}{100} \times 4\right) = 2 \times 4 = 8$$

So the answer is 8

Division by 50:

Divide the dividend by 100 and multiply it by 2.

$$\frac{200}{50} = \left(\frac{200}{100} \times 2\right) = 2 \times 2 = 4$$

So the answer is 4.

Multiplication

This method is for multiplying two three digit number. Let us say the numbers are ABC and DEF. Write them as shown below.

A B C
D E F

Step 1: C × F

Step 2: (B × F) + (C ×E)

Step 3: (A × F) + (C × D) + (B × E)

Step 4: (A × E) + (B × D)

Step 5: A × D

This is method for multiplying two digit numbers. Let us say universally that the two numbers are AB and CD.

If you want to multiply them directly then following method is to be followed.

Write both numbers as shown below.

A B
C D

Step 1: B × D

Step 2: (A × D) + (B × C)

Step 3: A × C

NEWSFEED

COLLEGE/PLACE/ DATE	EVENT
IAETSD Chennai 19-07-2016	IAETSD ICRMET 2016/Conference
IIRDEM Bangalore 19-07-2016	IIRDEM ICATE 2016/Conference
VIT University Vellore 22-07-2016	Embedded Systems Architecture and ARM Processor/Workshop
Indian School of Mines Dhanbad 04-09-2016	KHANAN' 2016/Technical Fest
Scholl Of IT Noida 17-09-2016	International Conference
Model Engineering College Cochin 20-09-2016	IBeTo|Excel 2016/Contest
NIT Raipur Raipur 01-10-2016	Avartan 2016/Technical Fest
Gandhi Institute of Engineering and Technology 16-11-2016	ICRIET 2K16/Conference

BITS PILANI KK BIRL GOA Goa 05-02-2017	QUARK 2017/Technical Fest

	Palaniammal.M 125034

WALL OF FAME

Placement Details: Maxwellcs

	Sangeetha.N.J 125105
	Ramya.A 125024
	Raja Prabhu.M 125310
	Sundareswari.S 125304

HEAD COUNT OF STUDENTS PLACED IN FINAL YEAR (2012-2016)

Company name	Count
CTS	2
IBM	3
IVTL	3
OFS	1
Polaris	1
Soft square	2
TCS	12
Neeyamo	1
VeeTech	1
Maxwellcs	5
Total	31

OUT OF THE BOX

-P.G.Saravanan (Third year)

FRIENDSHIP SECTION

Friendship day:

Friendship Day was originally promoted by Joyce Hall, the founder of Hallmark cards in 1930, intended to be 2 August and a day when people celebrated their friendships by sending cards. The second of August was chosen as the centre of the largest lull between holiday celebrations. Friendship Day was promoted by the greeting card National Association during the 1920s but met with consumer resistance - given that it was too obviously a commercial gimmick to promote greetings cards. By the 1940s the number of Friendship Day cards available in the US had dwindled and the holiday largely died out there. There is no evidence to date for its uptake in Europe; however, it has been kept alive and revitalised in Asia, where several countries have adopted it.

In honor of Friendship Day in 1998, Nane Annan, wife of UN Secretary-General Kofi Annan, named Winnie the Pooh as the world's Ambassador of Friendship at the United Nations. The event was co-sponsored by the U.N. Department of Public Information and Disney Enterprises, and was co-hosted by Kathy Lee Gifford.

Some friends acknowledge each other with exchanges of gifts and cards on this day. Friendship bands are very popular in India, Nepal, Bangladesh and parts of South America. With the advent of social networking sites, Friendship Day is also being celebrated online. The commercialization of the Friendship Day celebrations has led to some dismissing it as a "marketing gimmick". But nowadays it is celebrated on the first Sunday of August rather than 30 July. However, on 27 July 2011 the 65th Session of the United Nations General Assembly declared 30 July as "International Day of Friendship".

The idea of a World Friendship Day was first proposed on 20 July 1958 by Dr. Ramon Artemio Bracho during a dinner with friends in Puerto Pinasco, a town on the River Paraguay about 200 miles north of Asuncion, Paraguay.

Out of this humble meeting of friends, the World Friendship Crusade was born. The World Friendship Crusade is a foundation that promotes friendship and fellowship among all human beings, regardless of race, color or religion. Since then, 30 July has been faithfully celebrated as Friendship Day in Paraguay every year and has also been adopted by several other countries.

The World Friendship Crusade has lobbied the United Nations for many years to recognise 30 July as World Friendship Day and finally on 20 May, General Assembly of the United Nations decided to designate 30 July as the International Day of Friendship; and to invite all Member States to observe the International Day of Friendship in accordance with the culture and customs of their local, national and regional communities, including through education and public awareness-raising activities. It is also known as Shru and Sanjya day.

-B.Sathyajothi (Third year)

Poem on friendship

A friend is like a flower,

A rose to be exact,

Or maybe like a brand new gate

That never comes unlatched.

A friend is like an owl

Both beautiful and wise.

Or perhaps a friend is like a ghost

Whose spirit never dies

A friend is like a heart that goes

Strong until the end

Where would we be in this world

If we didn’t have friend.

-M.Mohamed Aasif (Third year)

Suggestions and Feedback Contact:
klnceitsig@gmail.com