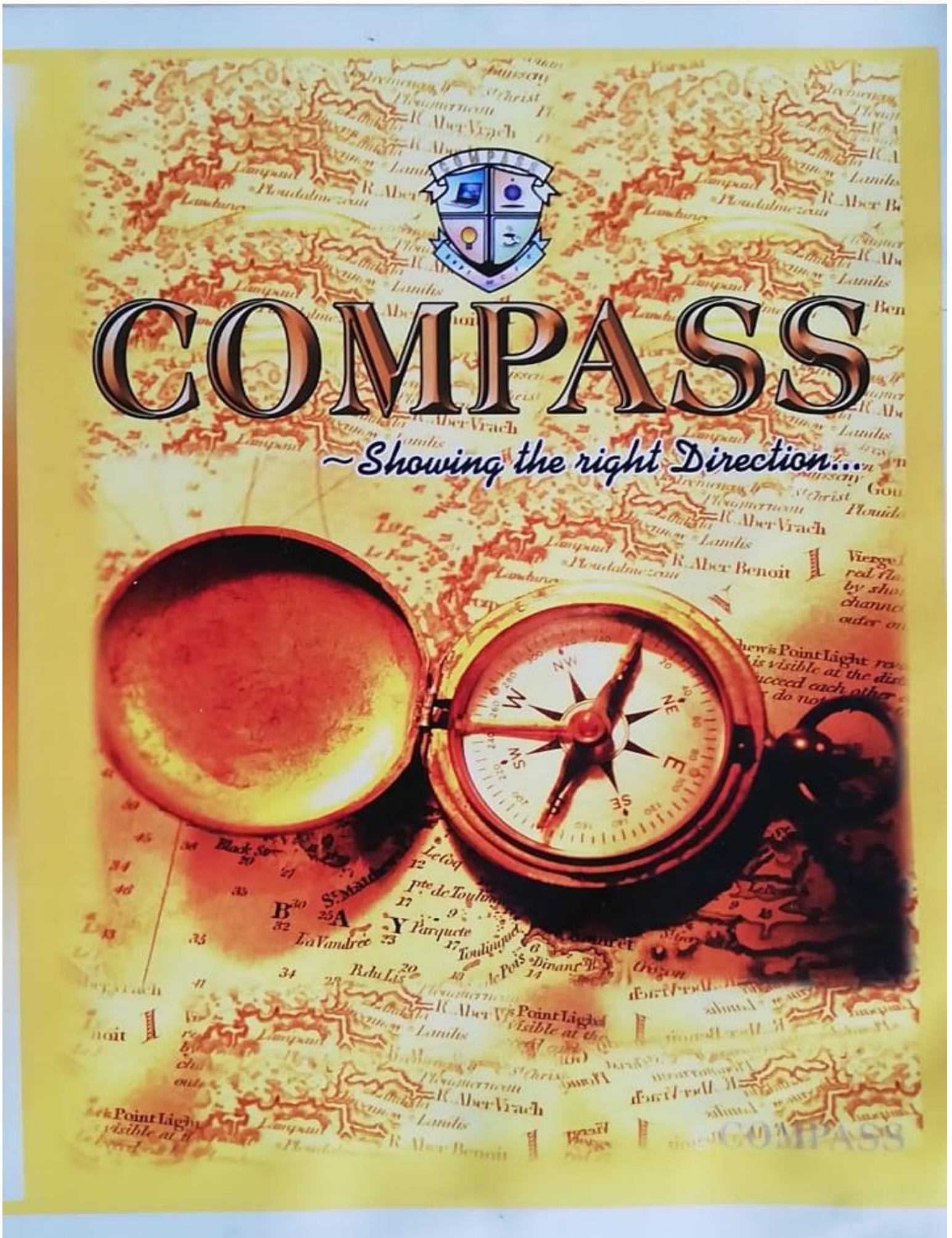
COMPASS
~Showing the right Direction...

RAJEEV GANDHI MEMORIAL COLLEGE OF ENGINEERING AND TECHNOLOGY

(AUTONOMOUS)

NANDYAL

(ESTD-1995)

Editor in Chief

Mr. K. E. NARESH KUMAR

Asst. Professor, CSE Dept.,

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About RGMCET

Rajeev Gandhi Memorial College of Engineering and Technology was founded in the year 1995. It is located in a 32.04 acre sprawling campus on NH-40 (old NH-18) at Nandyal, Kurnool (Dist), Andhra Pradesh.

It is the dedicated commitment and efforts of our Chairman, the man with vision "Vidyarathna" Dr. M. Santhiramudu, who started the institution with a motto "**EDUCATION FOR PEACE**". RGMCET is a road of elegant educational journey, yet path breaking in different dimensions.

RGMCET Vision

- To develop this rural based engineering college into an institute of technical education with global standards.
- To become an institute of excellence which contributes to the needs of society.
- To inculcate value based education with noble goal of " Education for peace and progress".

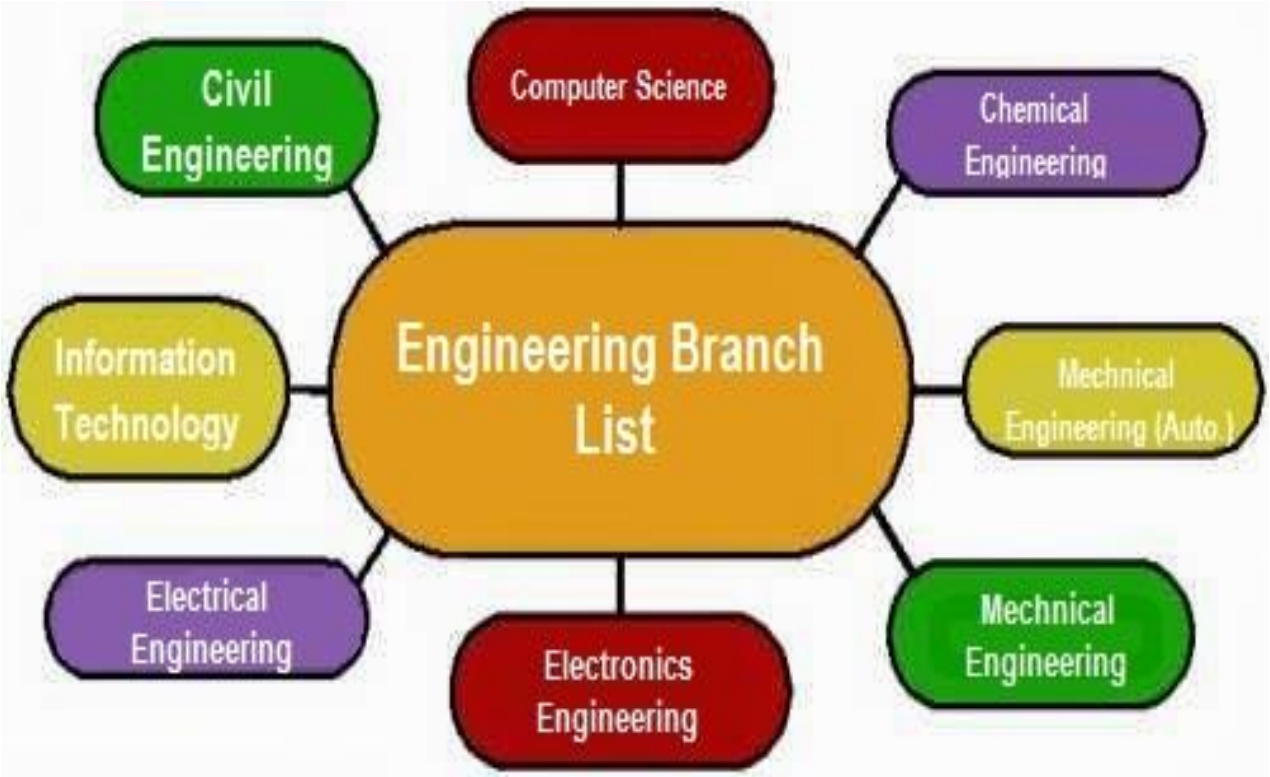
RGMCET Mission

- To build a world class undergraduate program with all required infrastructure that provides strong theoretical knowledge supplemented by the state of art skills.
- To establish postgraduate programs in basic and cutting edge technologies.
- To create conductive ambiance to induce and nurture research.
- To turn young graduates to success oriented entrepreneurs.
- To develop linkage with industries to have strong industry institute interaction.
- To offer demand driven courses to meet the needs of the industry and society.

- To inculcate human values and ethos into the education system for an all-round development of students.

RGMCET Quality Policy

- To improve the teaching and learning.
- To evaluate the performance of students at regular intervals and take necessary steps for betterment.
- To establish and develop centers of excellence for research and consultancy.
- To prepare students to face the competition in the market globally and realize the responsibilities as true citizen to serve the nation and uplift the country's pride.



About COMPUTER SCIENCE AND ENGINEERING

CSE Department Vision

- To empower students with cutting edge technologies in computer science and engineering.
- To train the students as entrepreneurs in computer science and engineering to address the needs of the society.
- To develop smart applications to disseminate information to rural people.

CSE Department Mission

- To become the best computer science and engineering department in the region offering undergraduate, post graduate and research programs in collaboration with industry.
- To incubate, apply and spread innovative ideas by collaborating with relevant industries and R & D labs through focused research groups.
- To provide exposure to the students in the latest tools and technologies to develop smart applications for the society.

Program Specific Outcomes (PSO's)

1. Students will have the ability to understand the principles and working of computer systems to assess the hardware and software aspects of computer systems.

2. Students will have the ability to understand the structure and development methodologies of software system, that possess professional skills and knowledge of software design process.
3. Students will have the ability to use knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.

Program Educational Outcomes (PEO's):

1. To Pursue a successful career in the field of Computer Science & Engineering or a related field utilizing his/her education and contribute to the profession as an excellent employee, or as an entrepreneur.
2. To be aware of the developments in the field of Computer Science & Engineering; continuously enhance their knowledge informally or by pursuing graduate studies.
3. To Engage in research and inquiry leading to new innovations and products.
4. To be able to work effectively in multidisciplinary and multicultural environments.
5. To be responsible members and leaders of their communities, understand the human, social and environmental context of their profession and contribute positively to the needs of individuals and society at large.

Program Outcomes (PO's) - Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

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 modelling 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.

Incipience:

A short note for readers... We want to thank all of those who supported us in Compass Magazine. We will always be gratified to the faculty who supported us through this journey.

The essential purpose of Compass Magazine is to inform, engage, inspire and entertain a diverse readership including faculty, staff, students and other friends of RGMCET.

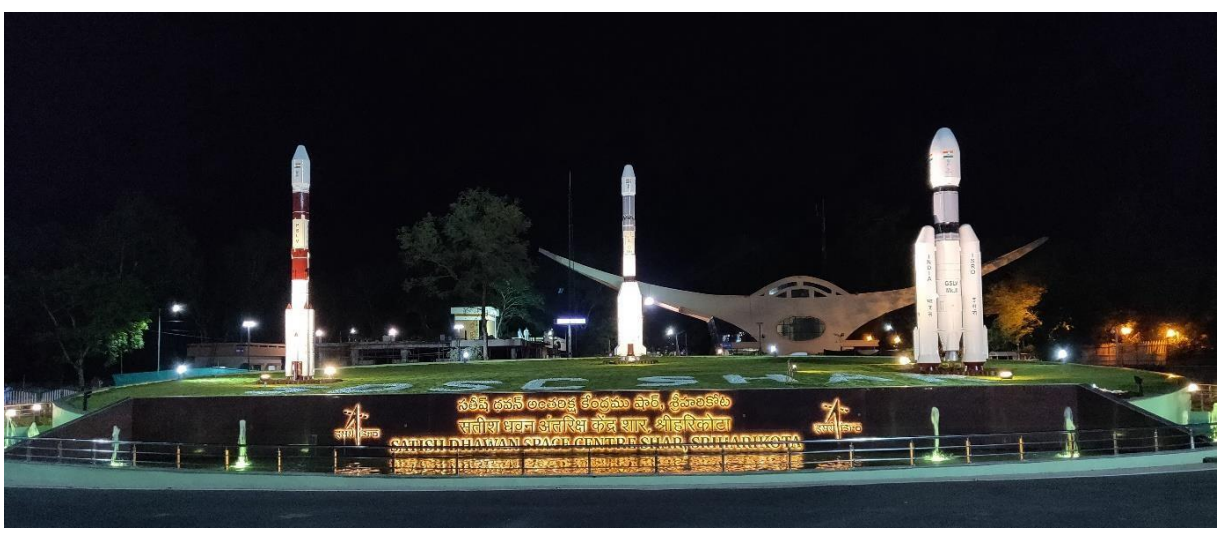
Our magazine glides you through a series of queries you get during the phase of B.Tech and we tried to possibly find answers and solutions for your queries and problems.

You will get to know how the scope of Computer Science and Engineering has in present society and what are the important guidelines you need to follow in order to embellish your success in stream of your choice. So we wish you a happy experience and good luck with your future.

Index:

BACK TO THOSE NEVER FORGETTABLE DAYS

It was 26th September and we started our journey in the morning around 9am with the wishes of our department HOD and all other staff and with two staff members for our care and support. The journey started with a scream of joy and happiness. Immediately singers and dancers from our batch came out with their talents where some even surprised and made us dumb. Without our knowledge we reached near to Badvel where our lunch was planned. So, we stopped in the outskirts of Badvel for some break. But even this became a chance for us to do some enjoyment and more. Here our batches were divided for our stay in a hotel in sullurupeta. Wait……. I think I haven't said about which days I am talking about. This is about our Industrial visit to "SRI HARIKOTA HIGH ALTITUDE RANGE" the place which is famous around the world for launching satellites.



The foundation for this was led during our 2nd year where one of our faculty assured of getting permission from ISRO if we managed to get permission for industrial visit with in the college. Because industrial visit in our college were stopped due to some reasons. Anyway, during our third year the planning for the industrial visit started where we firstly managed to get permission from higher officials of our college and later from SHAR even with the help of our faculty.

Immediately after dividing batches we resumed our journey, reached Badvel and had our lunch. By evening we reached Nellore where our buses shifted their direction towards beach instead to Sullurupeta. It's where the real enjoyment started. All of us spent sometimes in water later played volleyball and took photos for our memories in the future. After sun started setting off, we started to sullurupet and reached there by 10pm. Here immediately we went to the hotel and checked into allocated rooms for us divided by batches. But after reaching checking in every one of us in a great hunger, had our food and went to sleep.

Early in the morning at 5:30 everyone was made to wake up and told to get ready as soon as possible for visiting the nearest temple there. That's how our second day in industrial visit started with blessings of God. Then we had our breakfast and started for our actual purpose the visit to "SHAR".

"SHAR" is in an Island where people with permission are only allowed into it. After reaching immediately we were checked thoroughly by the security and not even our mobiles were allowed into it. Then we were taken into a big gallery where we were described completely about ISRO, its origin, the satellites it launched and its future projects. Then to one more room where we were said about life in ISRO and how to enter it if we were interested and we asked some doubts. Later we entered a museum which contained the complete blueprint of SHAR and some more projects regarding ISRO. Before going to our lunch, we took an opportunity to congratulate the SHAR staff who took efforts for our permission into it, explained about the ISRO and helped us there. Now, the more interesting part of our visit started where we were taken to the satellite launching pads, they were three in number. Firstly, we saw an old launching pad built during time of late president of India Dr. A. P. J. Abdul Kalam garu which wasn't in use and then to launching pad which is currently in use to launch satellites. Regarding that we were explained in detail about from the starting stage of the satellites till its ejection into space.

The third one is the latest one which is yet to do its first launch but it was a modernized one and it where our visit concluded. Before coming out of SHAR we took amazing pictures of SHAR in the night lights which you can see in the image ending with our group photo. We took all belongings taken by the security, started to rooms. Finally, with our batches we took final dinner of our visit enjoying with our friends.

Now our source and destination got interchanged. Coming back to Nandyal, even during our journey there was no full stop to entertainment, the buses were full of laughs, dances, screams etc., Some even didn't have their sleep that day. By the morning we reached college and got dispersed into our rooms. Our trip was full of fun, fight, sad but it became the "NEVER FORGETTABLE DAYS TO ME".

Now I finally take privilege to thank our Chairman Dr. M. Santi Ramudu garu, Principal Dr. T. Jayachandra Prasad garu, Dean Admin Dr. D. V. Ashok Kumar garu, our HOD Dr. K. Subba Reddy garu for permitting and encouraging us for the industrial visit, Dr. N. Madhusudhana Reddy sir, the man behind our tour to SHAR, who suggested for our Industrial visit and brought permission form ISRO , K. E. Naresh sir and B. Swetha madam for accompanying with us in the trip and finally to all our staff who had put their efforts and cooperating for the visit.

A. Naveen
4th CSE

Think! Why India is still developing country after 72 years of Independence?

India is the second highest populated country in the world and it is the seventh largest country in the world. In this highly populated country nearly 70% of the population mainly depends on the agriculture sector for their income. But presently this number is going down because farmers are suffering a lot in this country. Every sector has some loop holes but loop holes present in this sector are which every human should think of seriously. For example think that you own a company and you are producing some beauty products, you want to get high profits so you decides high price for this product and releases in the market. Now who have capcity to buy and the one who is needy will buy this, definitely you will get profits. Now, assume the same situation in agriculture sector if farmers increase price for every crop to meet his debts or to solve his family problems or to buy any seeds, tools, field for next crop .. etc then there will be strikes, rallies, some disturbances will happen in our country because these are daily needs of every human. To solve these problems Government of India has announced MSP(Minimum support price) for farmers. But presently MSP didn't meet the expectations of farmers. In our country farmers can't decide their own price for their produce.

In earlier days of our country farmers uses very long process to produce the crop. At some point of time for very fast crop output, corporates introduces Fertilisers for crop which will result in very fast yielding. Firstly farmers didn't believe in these, later they all used to it so that corporates earned huge profits.

Now presently, as awareness grows people think that fertilised food will lead to several diseases and started to quit them. Again these corporates make a chance of this situation and introduces the concept of Organic food which is very clean without any fertilisers and healthy. Presently everyone likes to have organic food but every farmer used to old concept of fertilisers again these corporates telling them to go back to

very old process of farming. But they can't go extremely back again, it is very tough and it takes lot of time.

Also in this agriculture sector middle men plays a major role in getting profits than farmers. They are going to take crop from farmers for some price and they sell this crop for high profits in big cities. Here someone's hardwork is paying someone. Indian farmer is not in a position to handle risk of carrying his product to big places to make more profits, whenever he gets crop into his hands he needs to sell immediately either for profit or loss due to his personal problems. In various countries Farmers doing their job easily by using many new technologies in their agriculture style. In India very few farmers upgrade to new technologies, rest are in same phase of old style of agriculture.

These are some of the problems faced by farmers in India. Due to all these no farmer in India wants to make his son or daughter a farmer. Presently Indian Govt's also rushing over Industralisation, producing new jobs…etc and concentrating very less on farmers.

Apart from Govt, normal people..etc, Being Engineers why can't we solve the problems of farmers through our Innovating ideas. For example when we take computer science we have very advanced technologies like Artificial Intelligence, Machine learning, Deep learning, Image processing, Programming..etc which helps in inventing new things like sending rockets to Space, advanced AI weapons, self driving cars, smart gadgets..etc why we can't we introduce a smart AI agriculture field, smart agriculture tools, smart marketing applications..etc.

It is just about one stream if we combine all the new technologies in all streams of engineering then we may produce powerful innovations which will change face of agriculture in our country. Presently it is in our(Engineer's) hands to make India a developed country by helping our farmer through innovation.

"WE ARE ENGINEERS, WE DARE TO DO ANYTHING"

K. Yashwanth
4th CSE

HD Maps: New age maps powering autonomous vehicles

The maps that are particularly built for self-driving purposes are usually called High Definition Maps or HD Maps for short. These maps specifically have extremely high precision at centimeter-level. This is because the robots need very precise instructions on how to maneuver themselves around the 3D space.

Why do we need such precise maps for driving down the road? In most cases, the tolerance for error might be high, but there might be cases such as driving on a road to the town hall that literally cliffs on one side, where there is no room for error. So, the maps need to be extremely precise and contain a lot of information, which humans may take for granted. Not only that the maps should contain where the lanes are, where the road boundaries are, we also want to know where the curves are and how high the curves are.

If it is 5 cm, we are approaching an era of a holy grail for mappers, as a 1:1 map if ever really made would be as big as the world itself. So, HD Mapping is really a 1:1 mapping. HD Maps are not just about scale, but also about comprehensiveness.

K. Ravi Kumar

4th CSE

Article 370 of the Constitution of India

Article 370 of the Indian constitution is an article that gives special status to the state of Jammu and Kashmir. The article was drafted in Part XXI of the Constitution: Temporary, Transitional and Special Provisions. The Constituent Assembly of Jammu and Kashmir, after its establishment, was empowered to recommend the articles of the Indian constitution that should be applied to the state or to abrogate the Article 370 altogether. After the J&K Constituent Assembly later created the state's constitution and dissolved itself without recommending the abrogation of Article 370, the article was deemed to have become a permanent feature of the Indian Constitution.

This article along with Article 35(A) defined that the J&K state's residents live under a separate set of laws, including those related to citizenship, ownership of property, and fundamental rights, as compared to resident of other Indian states. As a result of this provision, Indian citizens from other states cannot purchase land or property in Jammu & Kashmir.

On 5 August 2019, the President of India has issued new Presidential Order revoking the 1954 Order, and making all the provisions of the Indian Constitution applicable to the State. This has rendered the Article 370 "toothless".

The home minister Amit Shah also introduced a Bill in the Upper House of the Parliament seeking to reorganise the state with Jammu and Kashmir serving as a Union Territory and Ladakh region to be separated as a separate union territory.

- S.V.S.Naveen

4th CSE

Blue Eyes Technology

Blue in terms stands for Bluetooth, which enables reliable wireless communication **Eyes,** because the eye moment enables us to obtain a lot of interesting and important information. The basic idea behind this technology is to give the computer the human power. Blue Eyes uses sensing technology to identify a user's actions and to extract key information. This information is then analyzed to determine the user's physical, emotional, or informational state, which in turn can be used to make the user more productive by performing expected actions or by providing expected information. Pods cars, pong robots, ipad and smart phone are blue eyes enabled devices. In section II, different techniques of blue eyes technology [1], are given, in section III, Emotion Sensory World technique is introduced. Section IV the methodology is defined, conclusion is in section V and the Section VI is of future work.

TECHNIQUES OF BLUE EYES TECHNOLOGY

Emotional Mouse:

It obtains physiological data and emotional state such as heart beat, pressure, temperature etc through the touch of user on mouse where different sensors (such as pressure sensor, heart beat sensor, GSR sensor,

temperature sensor) are deployed inside it. Then it determines the personality of the user.

Manual And Gage Input Cascading (Magic Pointing):

A webcam is used to quickly determine the glints and pupils of the user under variable and realistic lightning conditions and wrap the cursor to every new object user looks at. Then user takes control of the target by hand near the target or ignores it and search for next one.

Artifical Intelligent Speech Reconization:

The user speaks to the computer through microphone and that speech get filtered and stored in RAM. The input words are scanned and matched against the internally stored words. Pattern matching is designed to look for the best fit because of variations in loudness, pitch, frequency difference, time gap etc .The identification causes some action to be taken.

Simple User Interest Tracker (SUITOR):

Blue eye enabled suitor become active when the user makes an eye contact and automatically detect user's area of interest and starts searching it. E.g.: If you are reading headline, pops up the story in the browser window.

EMOTION SENSORY WORLD

Human emotion is a visible manifestation of effective state, cognitive activity, emotional state and personality. There has been a lot of work done on blue eyes technology such as [4-8]. These papers presents number of techniques proposed to identify emotional state of a person According to Ekman [2], the neuro-part of the theory refers to a partly innate, biological program, called a facial affect program, which specifies the relationships between different movements of the facial muscles and particular emotions (happiness, anger, sadness, surprise).According to Ekman findings during:

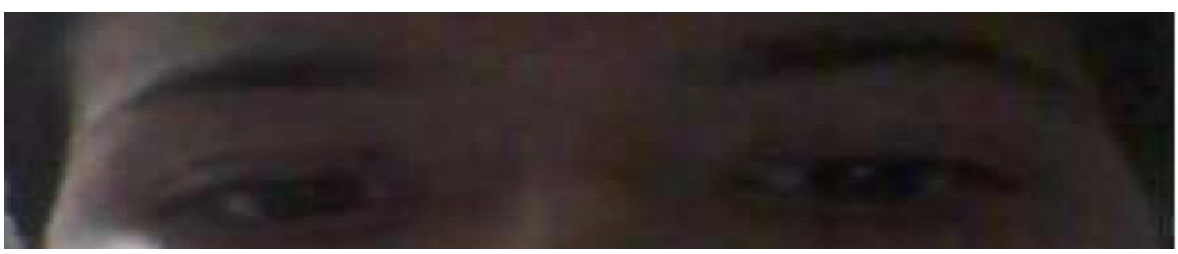
Happiness-the eyes are relaxed or neutral; the outer

Anger-The brows are pulled down and inward; no sclera is shown in the eyes;

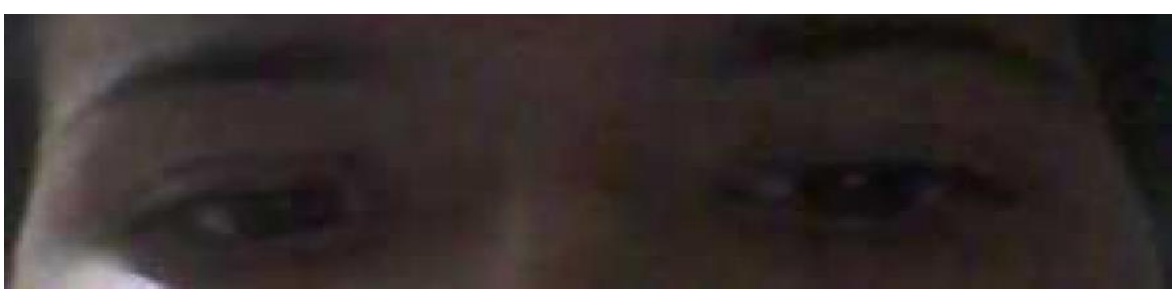
Sadness-The brows are drawn together with the inner corners raised and the outer corners lowered or level; the eyes are glazed;

Surprise-The eyebrows are raised and curved.

In this paper a new technique" Emotion Sensory World" of blue eyes technology have been proposed which deals with the detection of emotions of human through the texture of eye because eyes are "window to the soul" that they can tell much about person internal state just by gazing into them [3],a camera will capture the image of a person and focuses on the eye area by using texture filtering algorithm which is then compared with the list of images stores in data base .The best image that identifies the emotion of a person is shown on the window, after detecting the emotion a song is played in order to normalize the mood of person.

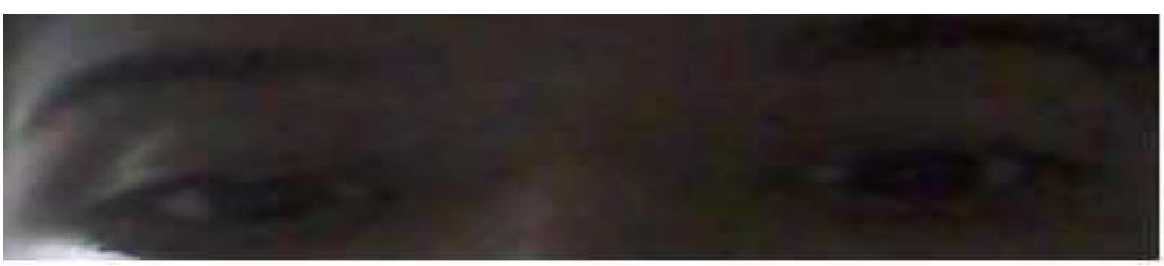


Happy



Anger

Sadness



Surprise

CONCLUSION:

The paper proposes two key results of emotional sensory world. First, observation reveals the fact that different eye colors and their intensity results in change in emotions. It changes without giving any information on shape and actual detected emotion. It is used to successfully recognize four different emotions of eyes. This developed methodology can be extended to other activities. Secondly results were achieved for converging in good emotions using a mixture of features, shapes, colors based on eye points. After this successful capturing of eye spots, it will help to tell about the mood of a person and also helps to cheer up by playing songs or other sources. The motive of this research proves to be a source of economic development over all.

FUTURE WORK

This research work can be extended to home appliances where it can perform various tasks within home premises through blue eye technology. Further as a world is digitizing and we are moving towards robotic world, several human activities can be shrunk with emotion sensory world tool. The tool or system is fitted in robot with eye emotions which detects what is the demand and the action can be taken by robot accordingly.

A. Sowmya Sree
4th CSE

Innovations from Future Healthcare 2019

Future Healthcare is an annual event that takes place in London in the United Kingdom.

It is a showcase of international innovation in the healthcare space. This year, over 350 brands attended.

We spent much of our time listening to short introductions to new products in the Health Innovators Theatre.

They all had the potential to change the way that healthcare professionals deliver and monitor healthcare.

As ever, data and the way experts manipulate them featured heavily. As one presenter asked, "Data [are] the answer, what is the question?"

However, there were also companies attempting to reinvent old technologies using a fresh approach.

Below is a brief introduction to some of the products that piqued our interest this year.

1. Detecting dementia early

Today, Alzheimer's disease — the most common form of dementia — is one of the leading causesof death in the United States. As the population's average age slowly rises, the number of deaths due to dementia are likely to rise in line.

Despite this, catching dementia early remains challenging. Oxford Brain Diagnostics believe that their technology can catch the condition years before symptoms become apparent.

Their secret lies in cortical disarray measurement (CDM). In short, this technique enables scientists to gather an "extra level of detail" from existing MRI scans. This allows them to detect changes in the microanatomy of the brain.

Dr. Steven Chance — Oxford Brain Diagnostics' CEO — told *MNT* that "CDM extracts information about the microscopic structure of the brain's gray matter by applying a unique analysis to a standard form of MRI scan."

"The method reveals the damage to the cerebral cortex even in the early stages of disease because it is sensitive to disruption at the cellular scale."
Dr. Steven Chance
Alongside the obvious benefits of spotting the signs of dementia earlier, the technology might also assist the pharmaceutical industry: Researchers could quantify how experimental drugs affect the microstructure of the brain.

2. Mobile cancer screening

In 2018, globally, there were 570,000 new cases of cervical cancer. Around 90 percent of deaths from cervical cancer occur in low- and middle-income societies.

The hand-held EVA System.

Better screening and earlier intervention could significantly reduce the mortalty rate.

MobileODT have designed a battery-powered, hand-held colposcope called the EVA System, which can take high-quality images of the cervix.

MobileODT worked with the National Cancer Institute to develop a machine learning algorithm, called automatic visual evaluation (AVE), that can produce an accurate diagnosis in minutes.

A prospective, multicenter pilot study that scientists conducted in Korea showed that the device is more than 90 percent accurate.

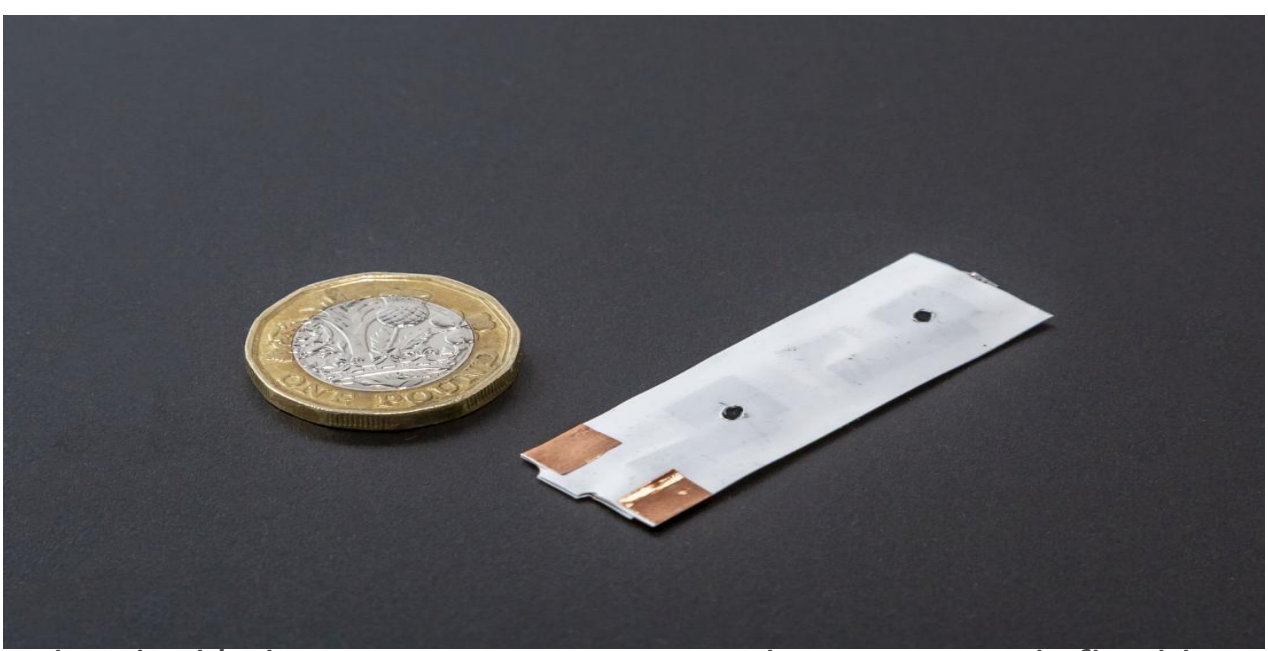
Yael Misrahi — head of global partnerships at MobileODT — outlined the product at Future Healthcare. *MNT* caught up with her after the event, and she explained that one of the primary benefits of this system is that "it is handheld and can be used by a nonexpert healthcare provider."

Because the device is based on smartphone technology, it is user-friendly and includes a "remote consultation feature to consult experts either in real-time or during a quality assurance check."

"With AVE — the machine learning algorithm for detection of pre-cancer — there is no need for a scrape or a lab and a woman is able to receive a result at the point of care rather than waiting several weeks or months for a result."

3. Upgrading disposable batteries

How batteries work has remained relatively unchanged for decades. BlueThink — without altering the underlying chemistry — have developed a way of making a common type of battery safer and more cost-effective.



BlueThink's battery is compact, simply constructed, flexible, and safe.

Manufacturers now widely use button batteries in medical devices, as BlueThink's Javier Eduardo Nadal explained to *MNT*:

"Medical devices are now smarter and more user-friendly than ever before."

"This growing trend relies on good design and the use of technologies like LEDs and screens to improve the user experience, as well as connectivity to provide patients, doctors, and healthcare systems with valuable data."

"All these innovative devices have one thing in common: They need energy."

Button batteries are not without their problems; if a person leaves them on a shelf for a long time, they lose their charge. If they are incinerated — for instance, those of contaminated disposable medical equipment — they explode.

They are also harmful to the environment and a significant hazard for children if swallowed.

K. Shyam Sundar
IV CSE

Know more about India

There is no doubt about the fact that India has contributed to the world in many of the fields like medicine, architecture, astronomy, logic, metallurgy, mathematic s, mineralogy etc. In recent years, India has shown its immense inventions in communication and information technology, space research.

Here you may know such inventions which are accepted universally.

Cataract Surgery:

The first cataract surgery was performed by the ancient Indian physician Sushruta, way back in 6th century BC. Many people from various other countries came to India to seek treatment from Sushruta. His surgical works were later translated to Arabic languages and got transported to European countries.

Some medical treatments:

Indians were the first to identify leprosy and many remedies for this disease were found in the Atharvana Veda. The treatment of removing stones or the lithiasis treatment was first introduced in India. Upendra Nath Bramhachari, a Nobel Prize nominee and Indian medical practitioner, invented methods to treat visceral leishmaniaisis or kala azar or black fever

Radio/Wireless communication:

In 1909, Gugliemo Marconi received the Nobel Prize in Physics, for his efforts in the development of wireless telegraphy. But, not many know that it was Sir Jagadish Chandra Bose in 1895 who made the first public demonstration of radio communication waves, two years before Marconi's demonstration in England. More than a century later, Sir Bose was posthumously credited for his achievements, which truly shaped the face of modern wireless communication.

Rockets:

It was in the 1780s,Tipu Sultan, the ruler of the South Indian Kingdom of Mysore, and his father Hyder Ali first made use of Iron-cased and metal-cylinder rockets against the large British East India Company's forces during the Anglo-Mysore wars.

First flush:

The world's first flush toilets were discovered in most homes in Indus Valley Civilization which is supposed to be the largest ancient civilization in the world.

Organized education system:

Residential schooling or schools with hostels or in ancient terminology "Gurukul" also started in India, where a single teacher taught several students at a time.

Chess: Chess originated during the Gupta dynasty. It was introduced to Persia from India and became a part of the princely or courtly education of Persian nobility. The Old Persian name of chess was 'chatrang'.The game was taken up by Muslim world after the Islamic conquest of Persia.

USB:

The first USB(Universal Serial Bus)technology began development in 1994,co-invented by Ajay Bhatt of Intel and the USB-IF. The organization is comprised of leaders like Intel,Compaq,Apple,LSI,Microsoft and Hewlett-Packard.

Ruler:

Rulers were first used by the Indus Valley Civilization prior to 1500 BCE. Made of ivory, the rulers found during excavation, reveal the amazing accuracy of decimal subdivisions on it.

Water on Moon:

ISRO's Chandrayaan-1 made the startling discovery that our moon is not a dry ball of rocks. The discovery of lunar water is attributed to the Chandrayaan mission.

These are just a few of India's inventions and discoveries which were accepted by whole world. As a matter of fact, the list is quite too long to cover all ancient inventions and discoveries made in India.

Sharanya Aluru

IV CSE

JIO FIBERNET

JIO Fiber Broadband: Jio Fiber is a fibre optic based broadband service, offering high speed internet with speed up to 1000 Mbps.

WHAT MAKES JIO FIBER UNIQUE?

- Enjoy high speed internet
- Stream 4K content
- Connect multiple devices
- Manage your account
- Experience hassle-free installation

JIO FIBER – PREVIEW OFFER

- Experience ultra-speed internet service at your home.
- Speed post 100 GB data will be 1 Mbps
- Refundable security deposit of 4500/-

The broadband services offered by Reliance Jio will also offer host of services to the consumers like it did for mobile data. In April, there was news that the company was testing its network in several locations across Mumbai. The broadband service is believed to deliver a minimum of 100Mbps for the home broadband consumers at affordable rates.

How to apply for Jio Fiber:

So far, users could only apply for a Jio Fiber preview offer under which the broadband connection, with a speed ranging in between 100 Mbps and 1 Gbps, came for free and users were asked only to pay for a refundable security deposit of ₹ 2,500 for the router (ONT device).

Now as Jio Fiber paces towards a commercial launch, the registration process has begun. You can apply for a Jio Fiber connection at its website here in a simple three-step process. In the first page, mention the address where you want to get a Jio Fiber connection after which you will be asked to give your name, mobile number and email id. You will then be asked to submit an OTP sent to your phone. The registration process, which is more like an expression of interest, is now complete. You will get a message stating that once the feasibility is confirmed you will receive a call from Jio's sales representative for further process.

Installation of Jio Fiber connection:

If your registration process is complete and the Jio Fiber service is available in your area, an installation engineer will soon visit your house to install the broadband system. Activation is within two hours.

Reliance Jio has announced on its website that during the initial rollout phase, installation charges will be free.

"As part of our initial roll out we are offering complimentary JioFiber installation and connection to all our customers. Other than the refundable security deposit, as of now there are no additional installation charges," Jio said.

Along with the Jio Fiber connection, you will also get a free landline for making voice calls.

You will need any of the two documents to get the connection: Aadhaar card or any other original valid proof of identification and proof of address like voter id card, PAN card, passport, driving licence, etc. As per recent tweets by Jio Care, Jio’s customer grievances and request centre, the company has said that JioFiber Preview Offer has currently being launched in select areas of Mumbai, Delhi-NCR, Ahmedabad, Jamnagar, Surat and Vadodara. The tweet further added that Jio’s network is in the process of being rolled out to other cities.

DIGITAL DATA STORAGE IN DNA

We may all have storage devices like SSDs, flash memory devices and SD cards of different capacities but we might need a new storage device as they all get full with time but now we may not have to worry about their capacities as the Scientists at New York Genome Center have come up with a new way to encode digital data in DNA to create the highest density large scale data storage scheme ever invented. It is capable of storing 215 petabytes (215 million gigabytes) in a single gram of DNA(It means it could store every bit of datum ever recorded by humans in a container about the size and weight of a couple of pickup trucks) and it could potentially last for hundreds of thousands of years. Isn't that cool?

How did they do it?

The DNA in our cells contains the instructions for building all the proteins that keep us running. DNA is made up of repeating sequences of the nucleic acids adenine, guanine, cytosine, and thymine (A, G, C, and T) which are sometimes called base pairs. Each sequence of three bases translates to a different amino acid, which are the building blocks of proteins. It's data storage just like what we do with hard drives but with much higher potential density.

The four-lettered nucleobase alphabet of DNA (A, C, G and T) can be transformed into binary code—for example, as 00 for A, 01 for C, 10 for G and 11 for T. Scientists looked at the algorithms that were being used to encode and decode the data and first converted the files into binary strings of 1s and 0s compressing them into one master file and then split the data into short strings of binary code. They devised an algorithm called a **DNA Fountain** which randomly packaged the strings into droplets, to which they added extra tags to put the file back together.

They started with six files including a full computer operating system and a computer virus. In all, the researchers generated a digital list of 72,000 DNA strands, each 200 bases long. They sent these as text files and later, the sequences were fed into a computer which translated the genetic code back into binary and used the tags to reassemble the six original files. The approach worked so well that the new files contained no errors and were also able to make a virtually unlimited number of error free copies of their files.

Advantages:

- It can last hundreds of thousands of years if kept in a suitable conditions.
- As long as human societies are reading and writing DNA, they will be able to decode it.
- DNA won't degrade over time like cassette tapes and CDs, and it won't become obsolete.

Disadvantages:

- High cost.
- DNA is significantly harder and slower to read than conventional computer transistors i.e., in terms of access speed it is actually less RAM-like than our average computer SSD or spinning magnetic hard-drive.

M. HariKrishna
4th CSE

BLOCKCHAIN

A blockchain is a growing list of records, called blocks that are linked through cryptography. There is no one person or organization in charge of the entire chain. In fact, it's open and everyone in the chain can see the detail of each record—what's known as a block. They are resistant to modification of the data by any anonymous individual and data once recorded in any given block cannot be altered without alteration of all other subsequent blocks, which is merely impossible as the hash gets changed every time with a change in the data. The only person who can edit a block is the one that "owns" it. Owners gain access to their block through a private key that only they have. When there are changes to an individual block, everyone's distributed blockchain is updated and syncs in real time.

Blockchain was invented by a person (or a group) using the pseudonym Satoshi Nakamoto in 2008 to serve as the public transaction ledger of the cryptocurrency Bitcoin.

Twitter once tweeted- "Whatever the question be, blockchain is the answer".

0.5% of world's population uses blockchain today.

Blockchain's market size will be $60 billion by 2024.

Every technology in the current world could be embedded with blockchain to take security on to a par new level.

According to a research, more than 300 million blockchain transactions took place by the end of 2017.

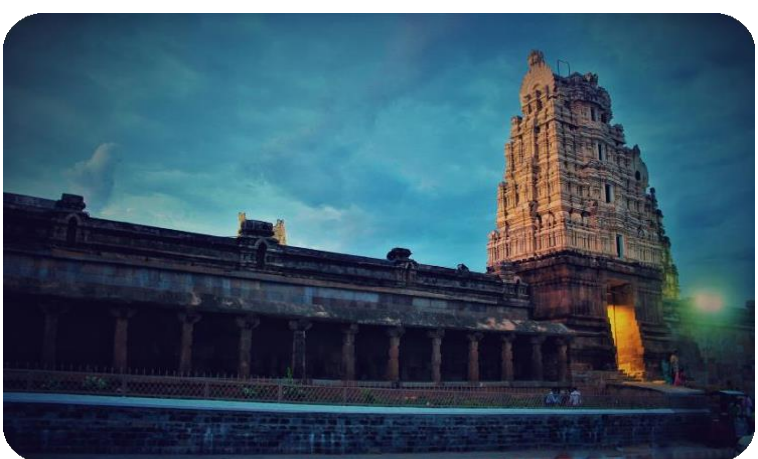
More than 50% of the banks today are working for implementing their transactions via blockchain. RBI revealed that they have created a unit to explore blockchain technologies.

P. Prashanth
4th CSE

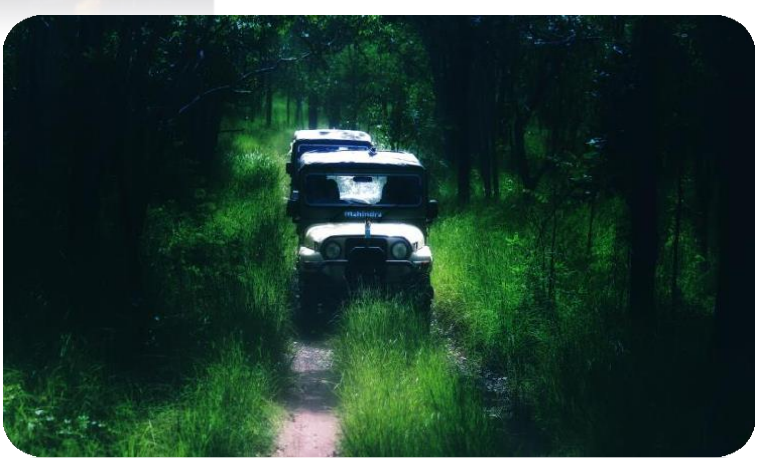
ARTISTIC ZONE

D. Mahitha Reddy
3rd CSE

G. Lokesh
4th CSE



P. Ajay Kumar
4th CSE



GALLERY

PLACEMENTS

TATA

TATA CONSULTANCY SERVICES

ValueLabs

INFY TQ Infosys

Message from Well-wishers (2016-2020)

"As engineers, we are going to be in a position to change the world". We take the materials provided from nature and we invent such things even not possible to those who created us. Such invention is a great scientific adventure. We should work to fulfill our dreams within no time. Don't say you don't have enough time. You have exactly the same number of hours per day that were given to Sir C.V.Raman, Abdul Kalam, Mokshagundam Visweswarayya, K.L.Rao and more. One thing each and every student should know is that every best successes comes on the heels of failure.

One should not afraid of growing slowly, but be afraid only of standing still. We have to work and work and stop not until we reach the goal. In the journey of achieving goal the life has series of events, both good and bad. No matter how deft your organization skills, there will always be life influencing factors over which you may have no control. As you embark on this new stage of life, you will be able to raise to the occasion because our college has taught us. On such occasion's think of our principles, teachers have instilled in us and make us proud.

On behalf of final year students, we convey this message to our beloved sisters and brothers. We pray that god guide you and guard you, as you undertake this new and exciting journey of life. Parting is such a sweet sorrow, but the memories we saved in our memory is not volatile at any time.

OBJECTIVES OF COMPASS

- INVOLVE STUDENTS IN DIFFERENT FORMS OF PEER-LEARNING
- ENCOURAGE STUDENT PARTICIPATION IN ACTIVITIES THAT REQUIRE THEM TO ACQUIRE AND DEMONSTRATE RATIONAL THINKING, COMMUNICATION SKILLS AND LOGICAL ABILITY.
- BRING OUT THE LEADERSHIP SKILLS AMONG INDIVIDUALS BY PROVIDING THEM SUFFICIENT EXPOSURE TO UTILIZE THE SKILLS ACQUIRED.
- HELP STUDENTS RECOGNIZE THE IMPORTANCE OF SMART-WORK & THINKING OUTSIDE THE BOX, THUS INCULCATE CREATIVE THINKING.
- CONTRIBUTE TO ALL ROUND DEVELOPMENT OF INDIVIDUALS THROUGH LEARNING OUTSIDE THE CLASSROOM.