# COMPUTER ENGINEERING
## DEPARTMENT



Presenting, 6th issue of half yearly departmental **NEWSLETTER** that consists of events, achievements, moments and much more…

# What is covered in
# THIS ISSUE

# OVERVIEW

The Government Engineering College, Gandhinagar (GECG) was established in 2004 to give higher education in engineering and technology. The institute is recognized by the All-India Council of Technical Education (AICTE), New Delhi, and the Institute of Engineers (India). The college is administered by the Directorate of Technical Education, Gujarat State, Gandhinagar, and is affiliated with Gujarat Technological University (GTU).

All the courses of this college were taught according to the GTU (Gujarat Technological University) syllabus and exams.

In November 2007, the college moved to its new campus at Sec-28, near GEB, inaugurated by Smt. Aanandiben Patel, Minister for Higher and Technical Education. It is spread over 33 acres (130,000 m2 ) of land.

# Principal's Message

**Dr. Sweta Dave**
Principal GECG

Dear faculty, staff & students,

*" To those who see with loving eyes, life is beautiful.
To those who speak with tender voices, life is peaceful.
To those who help with gentle hands, life is full.
And to those who care with compassionate hearts, life is good beyond all measure! "*

I Dr. Sweta P. Dave as the Principal of the prestigious educational organization, Government Engineering college of Gandhinagar, with a compassionate heart Invites you to have an Initial peak of our organization's vision & values. Government Engineering college Gandhinagar primarily stands to nurture the shelved potential hidden in the young talent. We intend to provide a platform to the students to let out their creativity and channelize their knowledge and young inspirational energy.

At GEC Gandhinagar, the joyful experience of academics and the energetic bursts of co-curricular activities Integrate to create an all-round experience for fellow students and attendees. Our highly qualified faculties and management makes sure our fellow students become capable to stand out of the competition in the outside world.

GEC Gandhinagar brings a holistic academic as well as a practical approach for the students to become compatible and knowledgeable to the market needs. And we believe In this statement a lot, our faculties are well qualified and trained to deliver the knowledge in a playful form and not letting students just to mug up.

At last, I want to convey that we focus on the overall development of our students. We also look after the staff members and the college resources to provide students with the highest quality of academics value. I will heartily invite you to join our prestigious organization and become part of our family.

# H.O.D.'s Message

**Dr. Dhaval Parikh**
HOD, CE Department

Dear Faculty and students,

The Department of Computer Engineering, established in 2004, has recorded a consistent improvement in its academic, research, and placement performance till now. I am elated to tell you that the department stands on the strength of experienced and well-qualified faculty who are very dedicated to teaching and also involved in the up-gradation of knowledge. Their research experience will help to cultivate the future of our students.

The B.E. Computer engineering program includes computer operations on different languages, data generation, collection and utilization of information. The course imparts all the basics as well as the latest knowledge pertaining to the rapidly developing field of computers. The course is designed to keep students at pace with the practical field. The mission of the department is to produce and impart theory, principles, practice, and know-importance of computing in the information age. This is required for the critical analysis, design, evolution, and improvement of the computing system in the context of computers and industry services. To provide students with a strong foundation in the mathematical, scientific, and engineering fundamentals necessary to formulate, solve and analyze engineering problems and to prepare them for graduate studies.

# About
## GEC, Gandhinagar



Established in 2004, Government Engineering College, Gandhinagar (GEC-Gn) takes pride in its highly motivated students. Our students are life-long assets that help this institute to continuously evolve and work towards its Vision.Our College is  Approved by AICTE.

The College is administrated by Directorate of Technical Education, Gujarat State, Gandhinagar. GECGN is affiliated to **Gujarat Technological University**.

# About
## Computer Department



Department of Computer Engineering is well posed to cater the needs of the course. It is equipped with well-developed laboratories to satisfy the course curriculum of various subjects related especially to the Computer field. The main backbone of the course is educating knowledge of computer and its engineering . Almost all fields are computerized to have ease of handling the problems of designing, manufacturing, servicing, researching, marketing and accounting.

The B.E. Computer engineering program includes computer operations on different languages, data generation , collection and utilization of information.

The course imparts all the basics as well as latest knowledge pertaining to the rapidly developing field of computers. The course is designed to keep students in pace with the practical field.

The mission of the department is to produce and impart theory, principles, practice and know-importance of computing in the information age. This is required for the critical analysis, design, evolution and improvement of computing system in context of computers and industry services. It is our objective that students should be able to pursue advanced studies in computer engineering and information technology on a competitive universal basis. The college has well established computer labs which are facilitated with IBM, X series Xeon & dual processor Pentium servers, Compaq server and several hundred work stations connected in LAN & WAN.

# Vision & Mission

## Vision

- To achieve excellence for providing value based education in Computer Engineering through innovation, team work and ethical practices.

## Mission

- To produce computer science and engineering graduates according to the needs of industry, government, society and scientific community.

- To develop partnership with industries, government agencies and R & D Organizations

- To motivate students/graduates to be entrepreneurs.

- To motivate students to participate in reputed conferences, workshops, symposiums, seminars and related technical activities.

# PEOs & PSOs

## Program Educational Outcomes (PEOs)

- To provide students with a strong foundation in the mathematical, scientific and engineering fundamentals necessary to formulate, solve and analyze engineering problems and to prepare them for graduate studies, R&D, consultancy and higher learning.

- To develop an ability to analyze the requirements of the software, understand the technical specifications, design and provide novel engineering solutions and efficient product designs.

- To provide exposure to emerging cutting edge technologies, adequate training & opportunities to work as teams on multidisciplinary projects with effective communication skills and leadership qualities.

- To prepare the students for a successful career and work with values & social concern bridging the digital divide and meeting the requirements of Indian and multinational companies.

- To promote student awareness on the life-long learning and to introduce them to professional ethics and codes of professional practice

# PEOs & PSOs

## Program Specific Outcomes (PSOs)

- By the completion of Computer Engineering program the student will have following Program specific outcomes.

- Design ,develop, test and evaluate computer based systems by applying standard software engineering practices and strategies in the area of algorithms, web design, data structure, and computer network

- Apply knowledge of ethical principles required to work in a team as well as to lead a team

# Faculty, CE Department

**Dr. Dhaval Parikh**
HOD, CE Department

**Dr. S.M.Shah**
HOD, Robotics and Automation

**Prof. J.S.Dhobi**
Associate Professor

**Dr. Pinal J. Patel**
Assistant Professor

**Dr. Pratik Barot**
Assistant Professor

# Faculty, CE Department

**Dr. Sanjay Patel**
Assistant Professor

**Dr. N.S.Shroff**
Assistant Professor

**Prof. N.K.Prajapati**
Assistant Professor

**Prof. D.P.Khem**
Assistant Professor

**Prof. B.U.Gadhia**
Assistant Professor

# Faculty, CE Department

**Prof. N.D. Shah**
Assistant Professor

**Prof. Yogendra Tank**
Assistant Professor

**Prof. Hemani Shah**
Assistant Professor

**Prof. Nikhil Singh**
Assistant Professor

**Prof. Nitin Raval**
Assistant Professor

# Faculty, CE Department

**Prof. Ashwin Prajapati**
Assistant Professor

**Prof. Viral  R. Patel**
Assistant Professor

**Prof. Mihir Mehta**
Assistant Professor

**Prof. Manisha Valera**
Assistant Professor

# Infrastructure Details

The building no. 5 is allocated to CE-IT department. It is a three storey building with around 25 rooms for lectures, different Labs particularly for hands-on practice on machines and cabin for the respected faculties and HOD sir. The entire building is under the surveillance of CCTV camera to maintain the safety and integrity of the Department.



Entire building is facilitated with high-speed Wi-Fi network for easy networking. The labs are provided with well-maintained WLAN network, efficiently maintained by our networking genius Prof. Prashant Chaudhari.

# Programming Lab 

The laboratories are equipped with a number of desktop computers. The current software resources include open-source programming SDKs. The lab is used for the course subjects like C, C++ programming etc.



# Database Lab 



A database management system is computer software that provides a way to manage data. DBMS lab aims at practicing and achieving this aim by using various software's such as SQL, ORACLE, and MS – Access etc.

# Application Development Lab 💻

Website Development includes both front end and back end including database management and dynamic functionality of website as per the user actions. Although we work with various tools/languages to achieve this functionality such as - ASP.NET, PHP, JSP but we primarily focus on .NET



# Network Lab 💻

Networking is a key area in the field of computers that deals with the physical connectivity of computers which is monitored by a combination of special hardware and software. The course curriculum provides from the coverage of basics to advanced applications and services, while providing a platform for hands-on practical experience and soft-skills enhancement.

# PG Research Lab 💻

The ability of a computer or other machine to perform those activities that are normally thought to require intelligence. The branch of computer science concerned with the development of machines having this ability. Early AI projects, such as playing chess and solving mathematical problems, are now seen as trivial compared to visual pattern recognition, complex decision making, and the use of natural language



# OOP Lab 💻

The laboratory is equipped with a number of desktop computers. The current software resources include a number of Object Oriented Programming SDKs, Integrated Development Environment like Eclipse, EditPlus etc. and Object Oriented Software Engineering tools.

# Clubs at GECG

## Club IDE

### A Community, By the Students, For the Students

It is an initiative by CE/IT Dept of GEC-Gn. This is community for the student and by the student. Here the students grow their knowledge in a peer-to-peer learning environment and bulid solutions for local businesses and their community.

🌐 https://clubs.gecg28.ac.in/

📷 https://instagram.com/theideclub?igshid=1x6stwsrt04q

in https://www.linkedin.com/company/the-ide-club

🎮 https://discord.gg/vXNCpKXzET

🐦 https://twitter.com/club_ide

# GDSC GEC - Gandhinagar

## Google Developers Student Club

Google Developer Student Clubs (GDSC) are community groups for college and university students interested in Google developer technologies. Students from all undergraduate or graduate programs with an interest in growing as a developer are welcome. By joining a GDSC, students grow their knowledge in a peer-to-peer learning environment and build solutions for local businesses and their communities.

🌐 https://gdsc.community.dev/government-engineering-college-gandhinagar/

📷 https://instagram.com/gdsc_gecg

in https://www.linkedin.com/company/gdsc-gec-gandhinagar

▶ https://youtu.be/snyOV3lqiM8

🐦 https://twitter.com/gdsc_gecg

# M.E. Final Year Students
# DP Thesis Research Work 2022

- With the assistance of her guide Dr. Pinal J. Patel, Mohini Harshadbhai Patel completed her M.E. in computer engineering on the subject of Alzheimer Disease Detection using Deep Learning.

- With the guidance of her guide Prof. Bijal Gadhia, trivedi praptiben gaurangbhai finished her M.E. in computer engineering on Syntactic and semantic similarity measure with ontology for indian political tweets.

- With the guidance of his guide Prof. J s dhobi, karan parekh finished his M.E. in computer engineering on the subject of student e-learning behaviour with clustering and multiclass classification algorithm.

- With the assistance of his guide Dr. Dhaval A. Parikh, Shukla saurabh subhash finished his M.E. in computer engineering with the thesis A multimodal framework based approach for automatic detection of offensive memes on socialmedia.

- With the assistance of Prof. Pratik A Barot, Rajput aishwarya nirbhaysingh completed her M.E. in computer engineering on the subject of image enhancement of satellite images.

# M.E. Final Year Students
# DP Thesis Research Work 2022

- Shaily Tiwari completed her M.E. in computer engineering with the help of her guide Professor Dhawal Khem on the subject of Gujarati Grammarly.

- With the assistance of her guide Dr. Dhaval A. Parikh, Langalia Bhumi finished her M.E. in computer engineering with a thesis on "Detecting fake news in multimedia using machine learning technique."

- With the assistance of her guide Prof. P. A. Barot, Rojasara jahnvi sanjaykumar completed her M.E. in computer engineering on the subject of Sentiment Analysis on Moocs for Educational Benefits

.

- With the assistance of her guide Prof. J s dhobi, Pankti Umeshbhai Sugandhi finished her M.E. in computer engineering on the subject of server load balancing in cloud computing.

- With the assistance of his guide Prof. Niranjan K. Prajapati, Bhabhor dhruvkumar nitinbhai completed her M.E. in computer engineering on the subject of multiple object recognition in 360-degree images.

- With the assistance of her guide Dr. Pinal J. Patel, Pandit niyati devanand finished her M.E. in computer engineering with the focus of Plant disease detection using deep learning.

# Result Analysis

✓ B.E. Result for year 2022



**YEAR - 2022**

✓ M.E. Result of year 2022



■ Pass  ■ Fail  ■ Percentage

**YEAR - 2022**

**25**
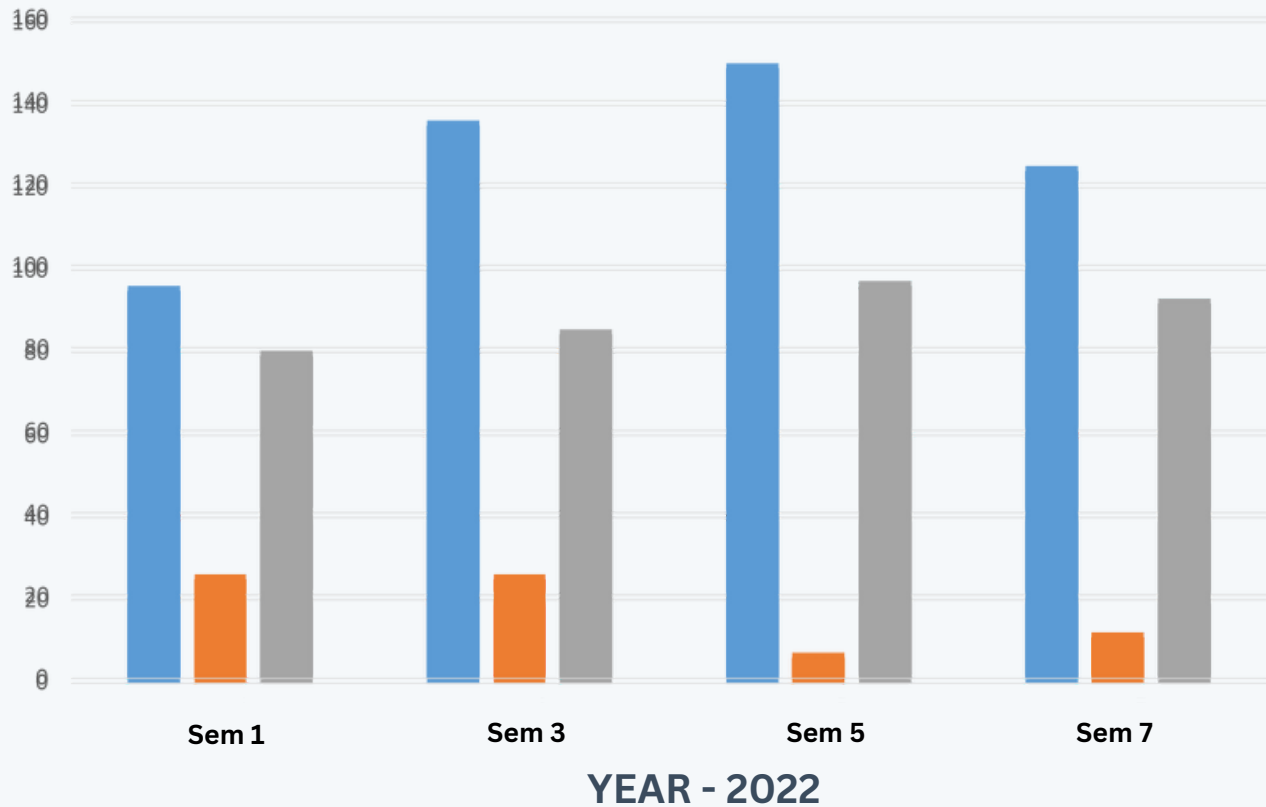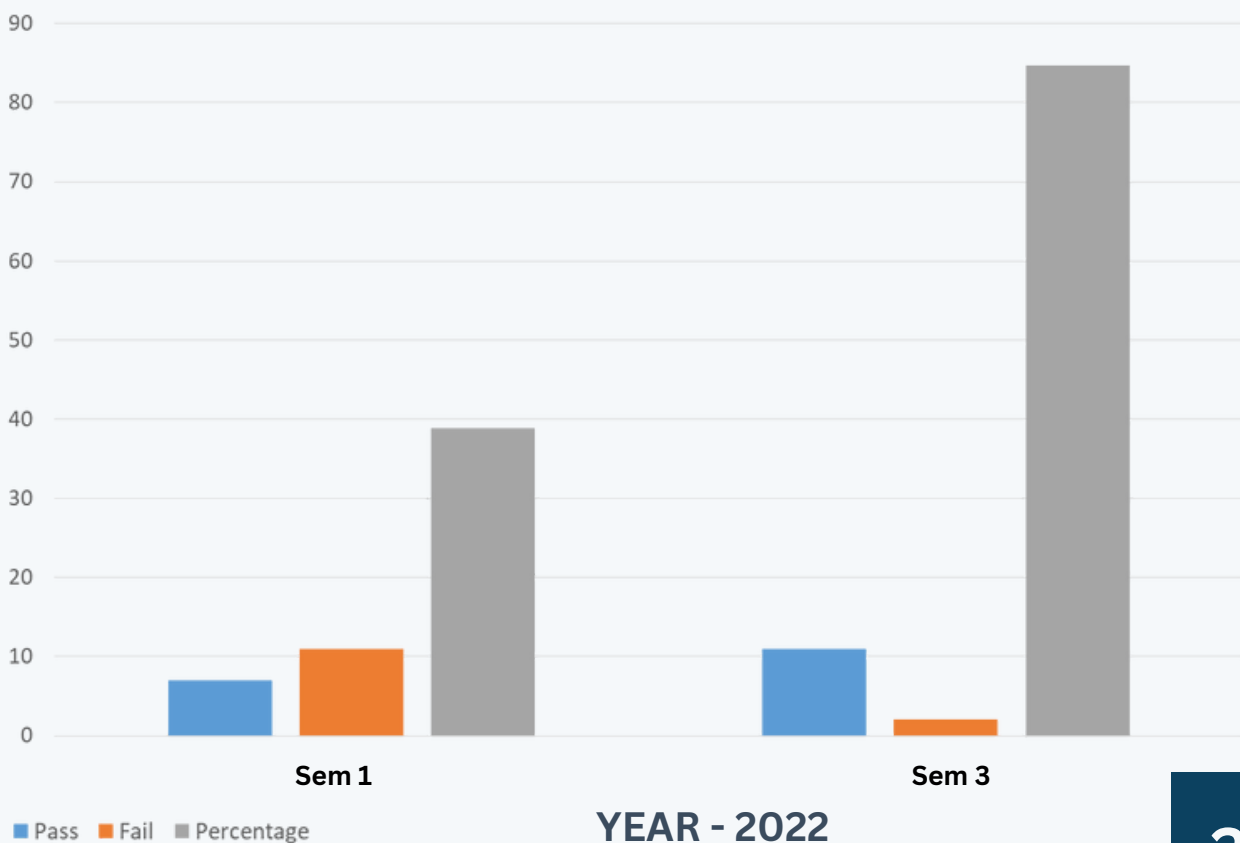
# Placement

✓ In 2022, 54 Students from CE Department are placed in various MNCs likewise TCS, Wipro, eInfochips, MotaData, Tatvasoft etc.

Highest Package 10 LPA
Average Package 5 LPA

## Companies visited campus this year...

# Faculty's Achievement

- **Dr. Dhaval A Parikh**

- Published a Paper on "A Survey on Crowd Anomaly Detection " in International Journal of Computing and Digital Systems (2210-142X) Int. J. Com. Dig. Sys. 12, No.1 on Oct-2022.

- Presented as a Technical Session Chair at 2nd Multi-Disciplinary International Conference GTU ICON 2022 in Engineering Theme: Emerging Trends in Engineering & Technology Organized by Graduate School of Engineering & Technology, Gujarat Technological University.

# Faculty's Achievement

- **Prof. B. U. Gadhia**

Attended STTP on Induction Training Phase-2 during 18th July 2022 to 29th July 2022 at RCTI, Ahmedabad.

- **Dr. P.A. Barot**

- **Dr. Pinal J. Patel**

Attended online STTP on Trends in industrial automation Refreshing past and Focusing future from 13th June 2022 to 24 June 2022 at GEC Gandhinagar.

- **Prof. Manisha Valera**

Participated in 4th International Conference on soft computing and its Engineering applications, springer during 9th December to 10th december 2022 at Smt. Chandaben Mohanbhai Patel Institute of Computer applications, CHARUSAT, Changa, India

# Student's Achievement



Received certificate of excellence for top rankers 2022 for scoring the highest SPI 9.71 in the 3rd year of B.E during the Shree Dewang Mehta IT Awards.

**Tripti Sharma**
**En.No. - 200130107518**



Earned Microsoft Azure az-900 based fir cloud computing and completed the exam in one attempt.

**Gauri Yadav**
**En.No. - D2D35**

He has server as a Google Developer Student Clubs(GDSC) lead for year 2021-2022. Google Developer Student Clubs (GDSC) are community groups for college and university students interested in Google developer technologies. Students from all undergraduate or graduate programs with an interest in growing as a developer are welcome. By joining a GDSC, students grow their knowledge in a peer-to-peer learning environment and build solutions for local businesses and their communities. He has managed the community of 500+ students.

**Param Radadiya**
**En.No. - 190130107118**



**Chavda Prayag**
**En.No. - 210130107002**

HACKATHON was organized under AAZADI KA AMRUT MAHOTSAV at International automobile centre for excellence, Gandhinagar. The program was SSIP student start-up and innovation policy HACKATHON. In this event we represented as a team of 7 members from GEC , Gandhinagar. Our prolem statement is ANNPURNA YOJNA'S ONLINE WEB PORTAL . We have created that web portal and we have also selected for further next round of the hackathon .

**Kashyap Harsora**
**En.No. - 210130107121**



**Aayush Kukadiya**
**En.No. - 210130107031**

**CERTIFICATE OF PARTICIPATION IN ONLINE COURSE**

अंतरिक्ष विभाग /DEPARTMENT OF SPACE
भारत सरकार/GOVERNMENT OF INDIA
भारतीय अंतरिक्ष अनुसंधान संगठन /INDIAN SPACE RESEARCH ORGANISATION
भारतीय सुदूर संवेदन संस्थान, देहरादून / INDIAN INSTITUTE OF REMOTE SENSING, DEHRADUN

नामांकन सं. / Enrolment No. : 20221031606729

यह प्रमाणपत्र
**MS. JINAL RAVAL**
को " रिमोट सेंसिंग, भौगोलिक सूचना प्रणाली और ग्लोबल नेविगेशन सैटेलाइट सिस्टम के मूलभूत सिद्धांत "
मे ऑनलाईन पाठयक्रम में भाग लेने पर प्रदान किया जाता है।
इस ऑनलाइन पाठयक्रम का आयोजन 22 अगस्त, 2022 से 25 नवंबर, 2022 ( कुल पाठयक्रम की अवधि = 79 घंटे 30 मिनट ) के दौरान किया गया।

**THIS CERTIFICATE IS**
AWARDED TO
**MS. JINAL RAVAL**
ON HAVING PARTICIPATED IN THE ONLINE COURSE ON
**"Basics of "Remote Sensing, Geographical Information System and Global Navigation Satellite System"**
THIS ONLINE COURSE WAS CONDUCTED DURING **22-08-2022 to 25-11-2022** ( Total course duration was = 79 hours and 30 minutes ).

This course consists of 5 modules- 1) Remote Sensing and Digital Image Analysis; 2) Global Navigation Satellite System; 3) Basics of Geographical Information System ; 4) Basics of Geocomputation and Geoweb Services; and 5) RS & GIS Applications in Natural Resource Management.

Date: 26-12-2022
Place: Dehradun
निदेशक/ Director
आई.आई.आर.एस, देहरादून/ IIRS, Dehradun

UID- 40fefb29ab1f524676689147d98079d0 .This Certificate can be validated using URL- https://certificate.iirs.gov.in

It includes the studies of "basic of remote sensing, Geographical Information System and global navigation satellite system". Total course duration was 79 hours and 30 minutes. Here I got an opportunity to interact with ISRO's scientists as well as those lectures were also conducted by them.

**Jinal Raval**
**En. No. - 210130107503**

# Student's Creativity



**Shaily Parekh**
En. No. - 210130107006



## JOKE OF THE DAY

December 21 6:37 PM Wed | 145 characters

**Father**: Why did you get such a low score in that test ?

**Son**: Absence.

**Father**: You were absent on the day of the test ?

**Son**: No, but the boy who sits next to me was !

-MEET SONI

IT BRANCH

**Meet Soni**
En. No. - 210130107006



अक्सर कहा जाता है कि

वक्त किसी के लिए थमता नहीं

शायद होंगे तुम सही, पर ये में मानता नहीं,

तुम पूछो किसी कवि से, शाम के ढलते रवि से

जब किसी अपने की याद आती होगी

ढलते सूरज की किरणे तुम्हे भाती होगी

समय के अनंत चक्र मैं फस जाओगे

अपने आप को यादों के भवंडर में पाओगे

तब समय का पहिया थम जाएगा

फिर कोई चाहकर भी उसे चला ना पाएगा

जब खुद को उस स्थिति में पाओगे ,दूजो से क्या बतलाओगे?

फिर तुम मानोगे मुझे सही , फिर कभी बोल पाओगे नहीं

की वक्त कभी थमता नहीं

**Fenil Patel**
D2D22

# Student's Creativity
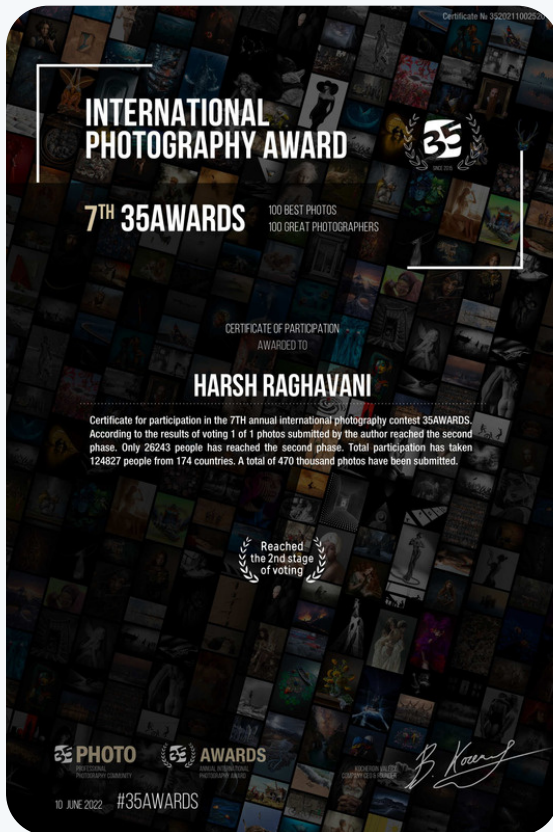




## Harsh Raghvani
### En. No. - 190130107119

# Tech Updates 🔄

## July :

- Cloud adoption can add $380 billion to India's GDP, create 14 million jobs, says Nasscom

- Blockchain platform 5ire raises $100 mn, becomes 105th unicorn in India.

- 15-Year-Old Wins A High Paying Job In The US After Winning Coding Contest, Loses It After Firm Finds Out He's Too Young.

- Ola to spend $500 million to establish battery innovation hub in Bengaluru.

- AI, deep learning to now assist in diagnosing birth defects.

- Airtel deploys private 5G network at BOSCH facility in Bengaluru, claimed to be India's first.

- IT spending to reach $112 billion in India amid global uncertainties.

- Indian women seeking more entrepreneurship opportunities than men, LinkedIn.

- Japan makes 'online insults' punishable by one year in prison.

# Tech Updates ⟳✓

## August :

- WhatsApp working toward allowing users to set up avatar profile photos: Report

- Wynk Music Plans Foray Into Distribution Ecosystem; to Invest Rs. 100 Crore to Promote Music Talent

- New Study Might Lead to New Therapeutic Approach for Treating Alzheimer's Disease

- Over 7 Percent Indians Owned Digital Currency in Form of Cryptocurrency in 2021: UNCTAD

- RBI's Digital Lending Norms Will Help Sector Scale Up, Become More Responsible, Industry Says

- Instagram Can Track User Data, Behaviour via Its In-App Browser; Meta Responds: Report

- WhatsApp Group Admins Can Soon Approve or Reject New Participants on Android: Report

- UPI Is Digital Public Good, Services to Remain Free, Ministry of Finance Says

- VLC Media Player Blocked in India Since February for Unknown Reasons, VideoLAN Says

# Tech Updates

## September :

- 5G services to be launched on 1 Oct by PM Modi

- RBI introduces UPI Lite for faster real-time, low-value transactions

- Adobe acquires design software firm Figma in a deal worth about $20 billion one of its biggest aquisition

- IBM opens new software lab in Kerala, inaugurated by CM Pinarayi Vijayan

- Oracle releases Java 19 to help users create innovative apps, services

- Wipro fires 300 staff members found to be moonlighting for competitors

- Twitter Finally Gets an Edit Button

- India is planning to tax winners in online gaming

- Delhi govt launches open database facility for EV charging, battery-swapping stations

- Apple Expected to Move 25% of All iPhone Production to India by 2025

# Tech Updates ↻✓

## October :

- Reliance Jio planning affordable laptop called 'JioBook' with 4G support under Rs 15,000: Report

- Indore bags cleanest city award for sixth year, surat at 2nd and Navi Mumbai comes close third.

- PM declares Modhera in Gujarat as 24x7 solar-powered village

- New EU law imposes single charger for all smartphones, tablets and cameras

- Google's new feature will alert parents when their kids leave school

- Google teams up with Assam to drive digital-led learning

- World's first solar-powered production car that can travel 11,000 km/year without a charge

- Facebook follower count goes down for users; Zuckerberg loses over 119 million followers

- Elon Musk acquires Twitter and fires top executives

# Tech Updates ⟳✓

## November :

- Towards a new India: New e-health database rolls out via pilot projects

- Hackers Said to Demand Rs. 200 Crore in Cryptocurrency From AIIMS-Delhi

- MNCs to add 500 tech, services centres in India by 2026: Nasscom

- Reliance Jio 5G Rollout Completed Across 33 District Headquarters in Gujarat

- Twitter to introduce gold, grey and blue ticks under Musk's latest verification plan

- 'Samsung' most commonly-used passwords in 2021

- Jaguar Land Rover announces global drive to hire laid off Meta, Twitter employees

- 'Avatar 2' Is So Expensive It Must Become the 'Fourth or Fifth Highest-Grossing Film in History' Just to Break Even

- Tech shines at Qatar FIFA WC 2022 with football sensors, AI, player analytics

# Tech Updates ⟳✓

## December :

- McDonald's is testing its first robot restaurant with no human contact

- A brief history of diffusion, the tech at the heart of modern image-generating AI

- Mastodon is hurtling toward a tipping point

- FTX founder released to parents on $250m bail

- Announcing a holiday gift: SantaCoder - a 1.1B multilingual LM for code that outperforms much larger open-source models on both left-to-right generation and infilling

- Quora launches Poe, a way to talk to AI chatbots like ChatGPT

- TikTok's parent company accessed the data of US journalists

- LastPass users: Your info and password vault data are now in hackers' hands

# Blogs

## Evolution Of Internet From 1G to 5G

Consequently, the entire planet is now connected to us all. Today, with the help of the internet, we are all linked, however in the past, when we used the latter to communicate, it may take months for a message to go between two people. But now Your message is sent to the other by simply by pressing the button and pulling back the finger. Therefore, we shall examine in this blog today how this network evolved.

### 1G

Consequently, the entire planet is now connected to us all. Today, with the help of the internet, we are all linked, however in the past, when we used the latter to communicate, it may take months for a message to go between two people. But now Your message is sent to the other by simply by pressing the button and pulling back the finger. Therefore, we shall examine in this blog today how this network evolved.

## 2G

In 1991, 2G was introduced on the Global System for Mobile Communications (GSM) following the success of 1G. We could both send and receive messages as well as call when we were on 2G. The sound quality of 2G was also enhanced, with less static and crackling noise when you were speaking. The download speed is also enhanced in 2G by almost 0.2Mbps during the course of its lifetime. We could send data bits from one phone to another over the 2G network, giving us access to media material on smartphones like ringtones. Due to the fact that we could now transfer data, 2G also afforded us several fundamental smartphone features. During the 2G era, "candy bar phones" also gained popularity, with Nokia taking the lead in developing well-known telephones like the Nokia 3210

## 3G

The third generation (3G), which came about eight years after the debut of 2G, is the generation from which we can see that the Internet was first launched. This generation's download speed was 2Mbps. So far, we have only been able to communicate via calls and SMS, but now we can now send each other images. This at the time

was seen as a major accomplishment. This generation has placed an increasing amount of emphasis on activities like video streaming, internet gaming, and video calling. As the 3G era went on, network upgrades raised speeds and support. Today's download speeds are almost 6 Mbps alone in Canada. Smartphones were new, even if candy-bar and flip phones were common alternatives in the 3G era. With the help of this new technology, consumers could use their mobile devices to browse the internet, make calls, send texts, and listen to music. Blackberry and Apple were the two main smartphone rivals at the time. The BlackBerry 5810, Blackberry's first mobile smartphone, was released in 2002.The first iPhone didn't launch until 2007, yet it quickly became the industry standard for smartphones and mobile phones. In 2017, Blackberry has 0% of the market. The need for faster bandwidth and expanded network capabilities was already a few years away when cell phones gained popularity.

## 4G

This generation has all the technological advancements that we did not consider at the start of the previous generation. 4G offered HD video streaming and chat, quick mobile web access, HD videos, and online gaming, starting at a minimum of 12.5 Mbps. Mobile devices need specialised design in order to enable 4G, as opposed to a straightforward SIM card changeover from 2G to 3G.

However, 4G wasn't exactly 4G when it originally began. The minimum 4G speeds specified by the ITUR (12.5 Mbps) were unreachable at the time. The ITU-R determined that LTE (Long-term evolution) may be referred to as 4G due to the amount of money that IT companies were investing in accomplishing this aim. But only if it offered a noticeable upgrade over 3G. In other words, when 4G originally launched, you were actually seeing 3.9G or 3.95G.

The 4G had a problem when it first came out. Although it offered fast download and upload speeds, the calling facility was much improved. Your call was received after a delay, however the sound quality was poor. In light of all of this, 4G VoLTE, also known as Voice Over Long-Term Evolution, was introduced. The majority of people in the globe today utilise 4G networks.

## 5G

In March 2019, South Korea became the first nation to provide 5G. South Korean telecom carriers KT, LG Uplus, and SK Telecom all launched the fifth generation. Major Canadian cities already have 5G available. According to some analysts, 5G will be 20 times faster than 4G. In actuality, Canada's median 5G download speed is 169.46 Mbps. Already 205 percent faster than 4G!

The latency and bandwidth size between 4G and 5G are two more significant differences. The incredible reduction in 5G latency leads to quicker download and upload speeds. In contrast to 5G, which is anticipated to have an

average latency of roughly 10, 4G has an average delay of about 50 milliseconds. Additionally, the latency of 5G may potentially be reduced to 1 millisecond.
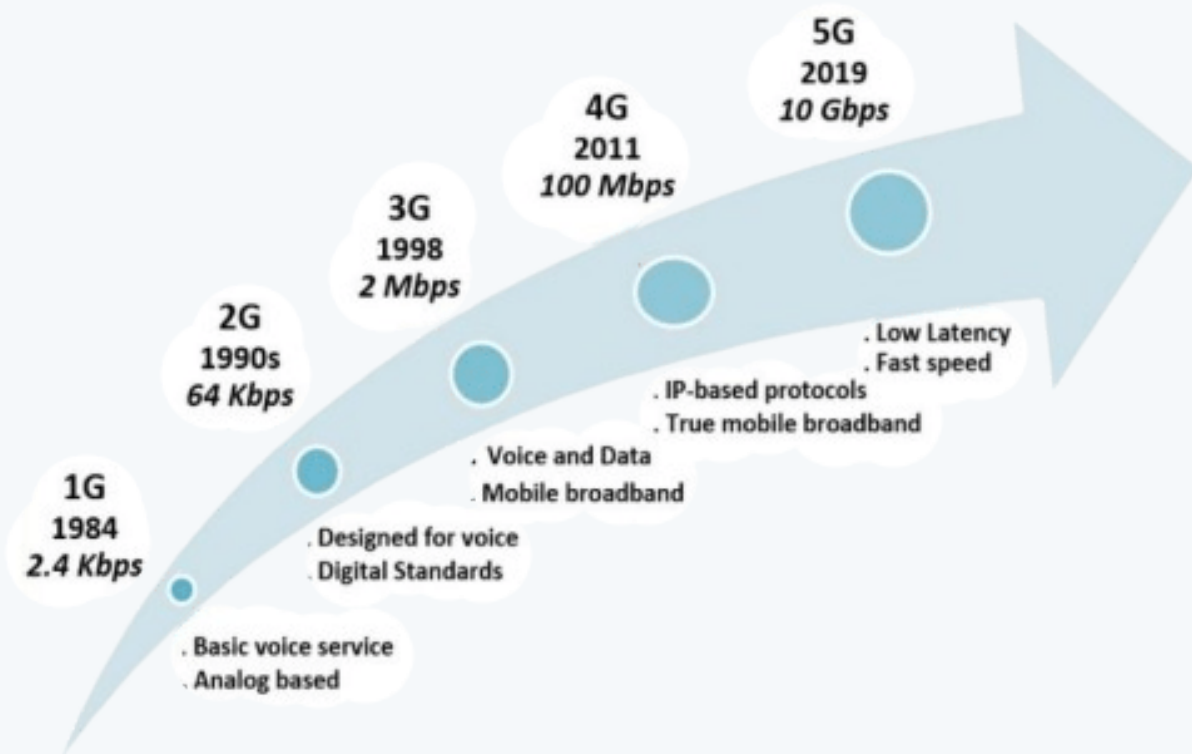
The frequency range of 5G is significantly wider (between 30GHz and 300GHz), supporting additional technologies and gadgets. Mass IoT installations, required for smart cities and other businesses, must have 5G.

The next digital revolution will be fueled by 5G's unprecedented network capabilities, even if it hasn't yet been widely deployed. Because 5G is so quick, focusing just on mobile usage is rather constrained. The cellular wireless technology of the future will improve machine-to-machine connection, ushering in a new automated society. Over the next three years, technologies like AI, IoT, and cloud computing will advance dramatically.

Not merely quicker mobile internet is an advantage of 5G. Additionally, the download speeds are not faster. The advent of 5G is a game-changer that will transform not just one industry, but also how we live and work. It will alter practically every area of our lives, including the way we go to work each morning, how we produce our food, and even how we support our favourite sports teams.

Similar to how 1G transformed our lives over 40 years ago, 5G will fundamentally alter them in ways that we haven't yet begun to imagine.

The evolution of the internet has not ended, rather it has just started.



**5G**
**2019**
*10 Gbps*

**4G**
**2011**
*100 Mbps*

**3G**
**1998**
*2 Mbps*

**2G**
**1990s**
**64 Kbps**

**1G**
**1984**
*2.4 Kbps*

. Low Latency
. Fast speed
. IP-based protocols
. True mobile broadband
. Voice and Data
. Mobile broadband
. Designed for voice
. Digital Standards
. Basic voice service
. Analog based

**-By Shlok Jadeja**
**(Sem 05)**

# Blogs

## Carbon : A new Programming Language

Recently, CPP north event 2022 was held and basically, it is an event where many developers come together to discuss future developments of C++. So, in this event, a Googler named Chandler Carruth introduced developers to a new programming language called Carbon.

## So, what's wrong with C++?

The general criticism of C++ is that it leans towards being overly complex. IntelliSense generally sucks, no support for first-class functions and tuples and initializer lists are considered a 'hack'. In addition to this, there are a few quirks like duplicate syntax and operators such as the & being both a logical operator and a reference. There's a bag full of other problems but in short, C++ works but it has its issues.

## So, when's the full release?

Currently, Carbon is in an experimental phase. The current roadmap is as follows:

- Release of a core working version (0.1) by end of 2022
- 0.2 in 2023
- Full 1.0 release in 2024-2025

- Jay Prajapati (Sem 5)

# Events 📢

# Python & 5 Secrets to GATE



It was conducted in collaboration with IMS Gate Acamedy. The session on Python was delivered by Mr. Shyam Chavda. The session covered the basics of Python language, its syntax, packages as well as problem-solving.

# Events 📢

## Startup Event



The SSIP cell, the IIC department, along with the club IDE, organized an event on startup "Startup-The Beginner's Guide". The event was hosted by members of the club in coordination with the SSIP cell and the IIC department of our college.

# Events 📣

## Compose Camp
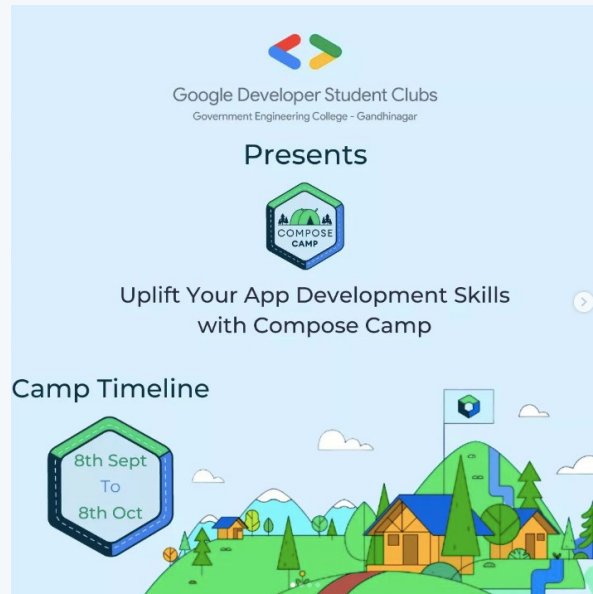


The students of Club IDE, in collaboration with the GDSC-GECG, organized a seminar on Android Development "Introduction to Compose Camp". Compose Camp is an initiative by GDSC. It was held to teach students about android basics and app making process. These sessions were conducted by GDSC GEC Gandhinagar under the leadership of Parth Parmar and Jinal Raval.

# Events 📢

## Ideathon



IDEathon was organized by ECell in collaboration with the club IDE, SSIP cell, and GDSC GECG to promote startup culture in our college. The following was the event's timeline:
29 September - Form Rollout for submission
6th October - Submission Deadline
7th October - Filteration of submission by Team
8th October - Offline rating by departmental coordinators
10th October - Finals Offline evaluation by SSIP Team

# Events 📢

## Hacktober Fest



The students of Club IDE, in collaboration with the GDSC-GECG, organized a seminar, "Introduction to Hacktoberfest 2022". This event was the introductory Session of Hacktoberfest. We aimed to become familiar with the opensource.

# Events 📢

## Code Sprint 2.0



The Club IDE organized a competitive programming event called "Code Sprint 2.0" on the GECG campus. The event was divided into three stages.

## Day 1 : CP Introduction (Seminar)
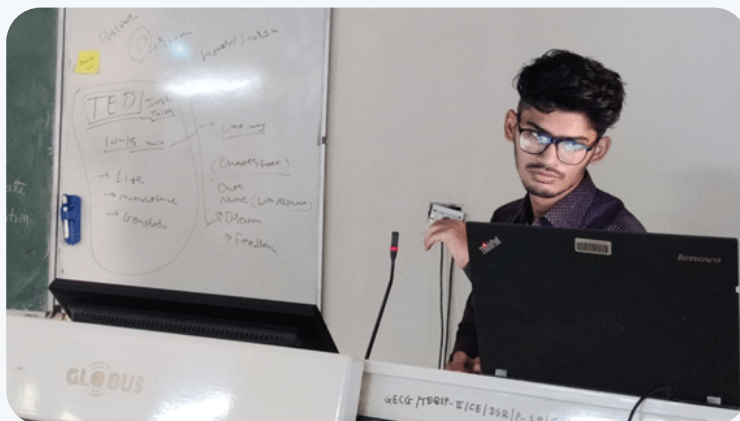
# Events 📣

## Code Sprint 2.0

## Day 2 : Round 1 (MCQ Round)
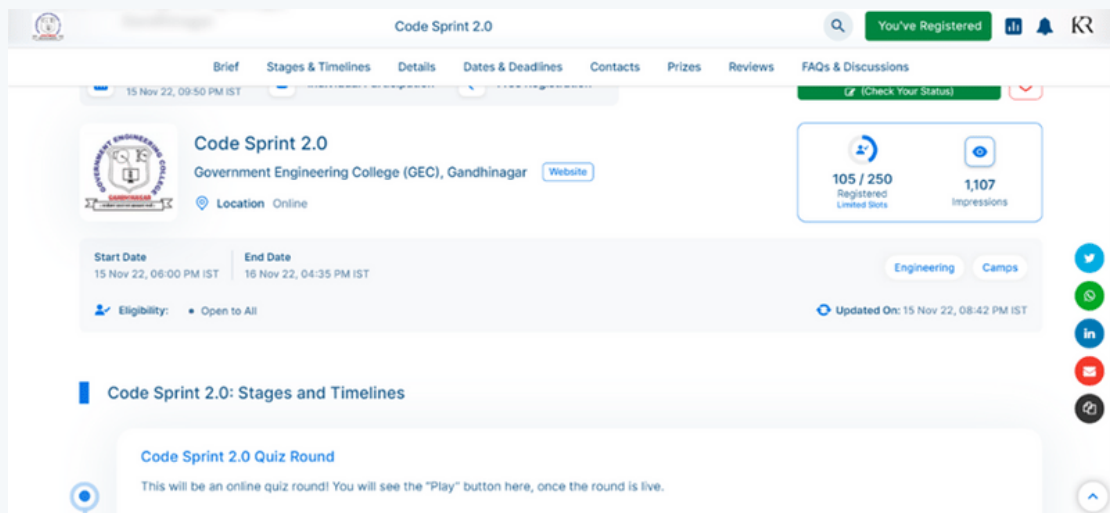


## Day 3: Round 2 (Coding round)

# Events 📢

# Building Your LinkedIn Profile



The club IDE, ECell and the GDSC GECG organized an event "Building your LinkedIn profile" to build a career-ready profile on LinkedIn. In this event Speaker Param has shared some tips to make your linkedIn profile job ready.

# Events 📢

# Web Development Event



The IDE club organized a "Web Development Introduction Session" event. Shlok Jadeja began the session with an introduction to the field of web development. He went on to categorize web development and explain what frontend development is, as well as provided a path for it. Manav Shah continued the event by discussing backend development and its path, full-stack web development and its path, and web development scope. An announcement was made regarding the web development Bootcamp. Overall, the event was a huge success with active participation.
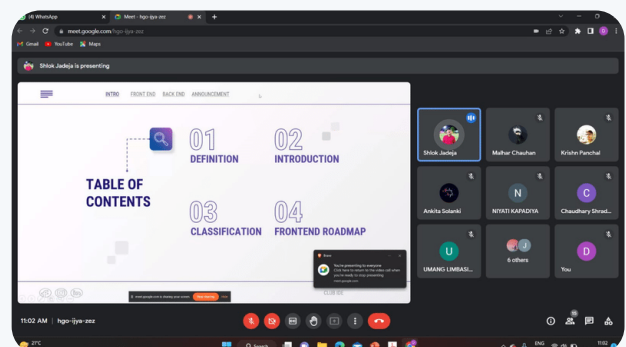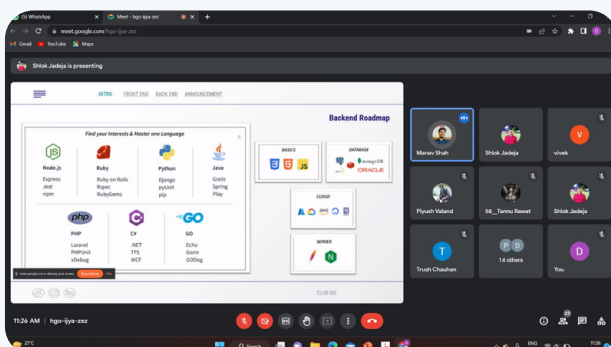
# Celebrations 🎉

## Teacher's Day

# Celebrations 🎉

## Engineer's Day

# Celebrations 🎉

## Navratri

# Beyond The Books

## Introduction to WordPress
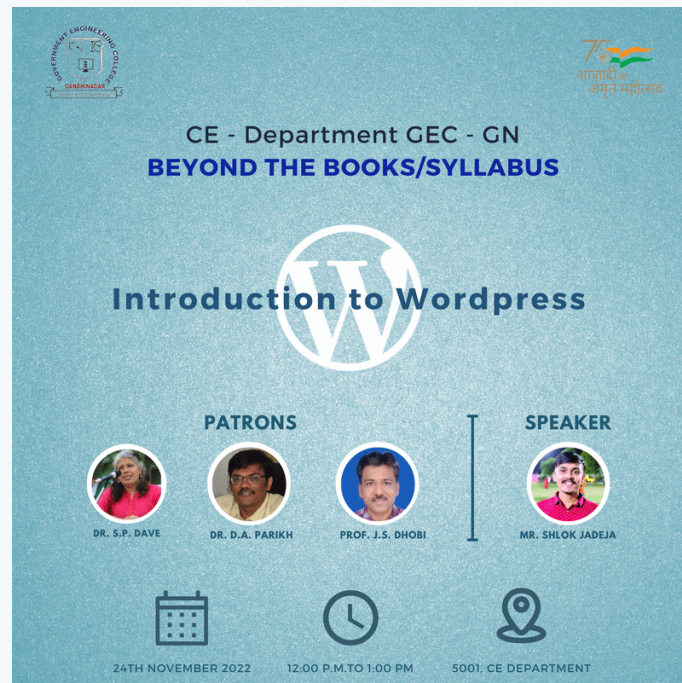




As the part of beyond the book, Shlok Jadeja has conducted an intro session on Front-End technologies like ReactJS and Content Management services like Wordpress.

**By Shlok Jadeja - CE Sem 5**

# Beyond The Books

## Introduction to ReactJS
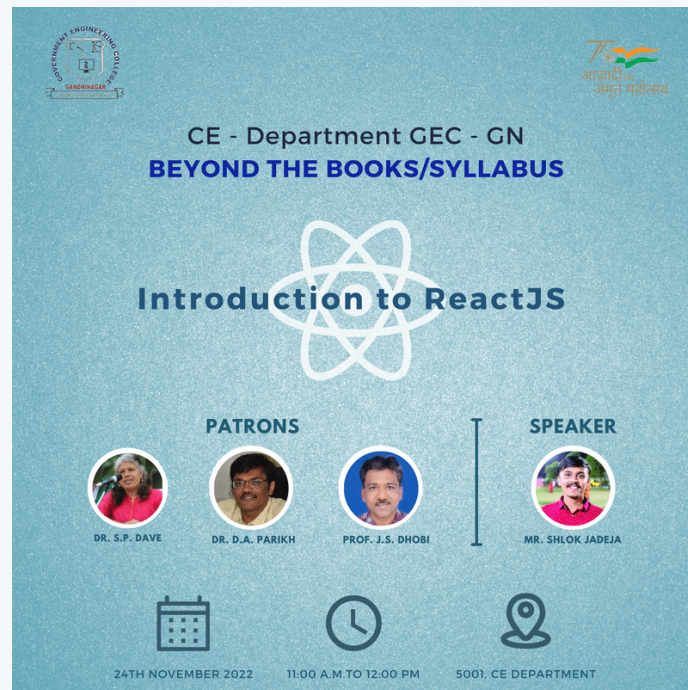




As the part of beyond the book, Shlok Jadeja has conducted an intro session on Front-End technologies like ReactJS and Content Management services like Wordpress.

**By Shlok Jadeja - CE Sem 5**

# Beyond The Books

## Django



Beyond the Book is a series of Tech and Non - Tech Seminars, Which is initiative of Prof. Pinal J Patel (CE/IT). Under which technical session on technologies like ReactJS, Django , Information sessions on Dark Web and Cyber Securities and Interactive session on work - life balance was held.

# Beyond The Books

## Work life Balance



Beyond the Book is a series of Tech and Non - Tech Seminars, Which is initiative of Prof. Pinal J Patel (CE/IT). Under which technical session on work - life balance was held.

# One Step Ahead

## SOME LESSIONS FOR YOUR CAREER

- In the end, every role boils down to how you deal with people

- If people can't trust you, it doesn't matter how smart you are.

- If you cannot write down what you wish to say, you do not yet know what to say.

- Spend time appreciating people rather than waiting for them to appreciate you.

- There's no such thing as "I can't". Either you don't want to. Or you need help.

- Don't be in a hurry to create impact. Be in a hurry to learn.

- It is much easier to be a commentator than a player. But it's the players that everyone is watching!

- Never trust your memory. Write everything down. The search is not for the best paying job, or the best brand.

- The search is for a manager who believes in you more than you believe in yourself!

# One Step Ahead
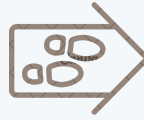
- You Can Win
- Be Humble
- Confidence without humility is ego. Humility is the foundation of all virtues. It is a sign of greatness and goodness. In fact, humility with virtue attracts everyone while fake humility distracts everyone.

## Story

Many years ago, a horseman noticed that some soldiers could not carry a load of sticks. His commander was also present when the soldiers were fighting. The horseman asked the hero why he did not help the soldiers. The commander replied, 'I am their commander. My job is to command them. ' The rider dismounted, approached the soldiers, and helped them lift the load of sticks. The rider again mounted his horse and said to the commander, "Now, the next time you need help, call your commander-in chief." When the cavalry left, the commanderand the soldiers learned that the cavalry was none other than George Washington.

The message is quite clear. Success and humility go hand in hand. When others praise you, that voice goes a long way. Think about it? Simplicity and humility are the hallmarks of greatness.

*"Humility does not mean putting yourself down. To believe so is tantamount to tarnishing one's reputation."*

# Memes

# Memes



Tom was the first guy losing his job because of Artificial intelligence



DAD CALLING ME AGAIN FOR TECH SUPPORT



IF I USE CLOUD COMPUTING WOULD I LOSE DATA DURING RAIN?

memegenerator.net

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Head of Robotics and Automation

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Thank You