

UNITED COLLEGE OF ENGINEERING & RESEARCH  
UPSIDC INDUSTRIAL AREA, NAINI, PRAYAGRAJ, U.P., 211010

UGI E

 TechEra

Department of  
Computer Science  
and Engineering

AN OFFICIAL  
TECHNICAL MAGAZINE

*for the student  
by the student*

201920

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# EDITORIAL TEAM MEMBERS

## FACULTIES



**Prof. A.K Misra, HOD**  
*Management Head*



**Mr. Sanjay Goswami**  
*Technical Head*



**Mr. Bhanu Pratap Rai**  
*Technical Head*



**Mr. Anshu Tiwari**  
*Technical Head*



**Mr. Ajeet Singh**  
*Evaluation Head & Advisor*



**Ms. Shivangi Agrawal**  
*Evaluation Head & Advisor*



**Mr. Rahul Kesarwani**  
*Technical & Design Head*

# UGI

## STUDENTS



**MR. RATAN  
OJHA**



**MS. ISHIKA  
SRIVASTAVA**



**MR. NAMO  
MISHRA**



**MR. PRAKHAR  
SRIVASTAVA**



**MR. RISHABH  
SINGH**



**MS. KRITI  
SRIVASTAVA**



**MS. SAUMYA  
YADAV**



Dear UGI Tech Era team,

It gives me great pleasure to know that our students are bringing out a technical magazine named, 'UGI Tech Era'. It's a matter of pride that in a small period, you've made a great effort to publish a technical magazine. The creative and innovative abilities themselves are a piece of evidence to see in the multifarious work and activities which you people got involved to bring out this magazine to life.

Emphasis on value education is absolutely essential in the present scenario and it is heartening to note that focus put on the latest and useful technology which are the repository of humanism and universalism, UGI Tech Era team magazine would provide an opportunity to young professionals to bring out their creativity and innovative ideas to spread knowledge for the development of responsible, dynamic and self-reliant professionals with an aim to acquire global outlook and would gain more than just plain knowledge.

Wishing the UGI Tech Era team's success in their educational endeavors.

**Prof. H.P Shukla**

Principal



In this age of globalization, there have been many advances in science and technology. Life in a rapidly changing world is shrinking day by day. The seemingly independent events that take place in other parts of the world have an impact on all of us - whether direct or indirect, immediate, or postponed.

At UGI, we provide personalized, high-quality education delivered by experienced and well-trained professionals who bring resilience and practical focus to their classrooms. We attract students from a variety of backgrounds and cultures, providing a dynamic and invigorating classroom environment. Our students also benefit from our international relations and study opportunities and job opportunities.

A college magazine is a mirror of college life. Any ordinary man can judge the standard of the education of a college just by going through the college magazine. It shows the activities of students in the field of their extracurricular enthusiasm as well as in their academic ventures.

I am very happy to convey my best wishes to the Department of Computer Science Engineering by releasing the technical magazine “UGI TechEra” which brings students and teachers of different disciplines together to share and showcase their creative ideas and skills. I take this opportunity to compliment the Head of Department, faculty, staff members, alumni, and students of the Computer Science department and extended my best wishes to them for all their future endeavors too.

With best wishes.

**Dr. Sudhanshu Kanaujia**

Dean Academics



It gives me immense pleasure to know that the "UGI Tech Era" technical magazine is being published. "UGI Tech Era" is a forum that provides students and staff with an opportunity to share their initial thoughts on technological subjects. It aims to encourage and nurture future engineers in this ever-evolving field of technology to bring about a revolution. The magazine captures the latest trends in technology.

The magazine plays an instrumental role in providing students with an opportunity to improve skills and language control. It is a step in the creation of a professional and ethical attitude. This technical magazine, I am sure, will be an appropriate milestone on the road to our mission of knowledge and service.

This is the time when our skills must be stretched and we must come out of the rut. We would end up with the same outcome if we go through the same motions. In our efforts, we have to put more time, resources, thinking, and imagination, and resolve to reach higher. To the editorial board and the students who have worked tirelessly for this innovative venture, I extend my words of gratitude.

As students of the UNITED COLLEGE OF ENGINEERING AND RESEARCH my best wishes are for each of you to continue learning, continue to evolve, and continue to venture beyond what you already know and make a difference to this planet.

Wishing a good year ahead to the future council.

**Mr. Swapnil Srivastava**  
Dean  
Planning and development



## MESSAGE FROM THE DESK OF HEAD OF DEPARTMENT

Dear reader,

Computing is changing the way we think and work, and plays a significant role not only in solving different kinds of engineering and technological problems but also in satisfying societal needs such as health care. Consequently, great advances have taken place in the field of computer science and engineering, bringing together the understanding of the scientific and technological foundations of computing, the concept of software and hardware as well as those of communication technologies.

The Department of Computer and Science and Engineering endeavors to contribute to these advances through teaching and research in this field. The present the technical magazine "TechEra" with tagline "by the students for the students" attempts to present the Department and its activities for general information to all concerned.

Best regards,

**Prof. A.K Misra**





I am glad to share that our Computer Science and Engineering Department students are successful in bringing their new release of the magazine “UGI TechEra” for this academic year. Our CS/IT students have established a joint venture, in bringing out a technical magazine with their contributions. This magazine spreads technical awareness among the readers as well as motivates them to contribute their articles as well. I express my compliments to the secretary, the editors, and their dedicated committee for their valuable efforts in bringing out this issue. I wish them all triumph!

Best wishes,

**Mr. Vijay Kumar Dwivedi**

Convenor

Computer Science and Engineering Department



**Dr. Divya Bartaria, Head  
Corporate Relations  
United Group of Institutions, Prayagraj**

Dear students,

I am happy to find you all in full vigor and academic fervor when it is time for us to welcome the New Year 2021 by commemorating our past accomplishments, celebrating our latest achievements, and planning for our upcoming professional commitments.

I would like to extend my warmest greetings to all of you and congratulate you on the launch of this technical magazine as initiated by the Department of Computer Science & Engineering and Information Technology. In particular, I would like to send my best wishes to the Head of the Department for taking this initiative and to all Editorial Board members, who have worked extremely hard to handle the reviews of submissions for this magazine.

Students being the face of United Group of Institutions and Corporate Relations Centre (CRC) being an interface between students and industry, I consider myself as a self-inspired inspirational leader, envisaging to give a momentum to all Unitians not to join the race but to keep in pace with the current career trends and job scenario.

Given space in this technical magazine should be considered as an opportunity and responsibility both through which we could target the following significant areas of career development:

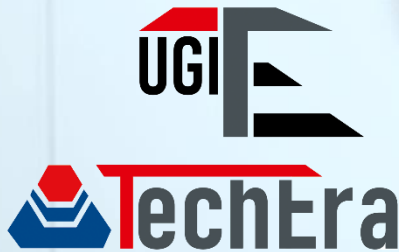
- Campus Placements Updates making the students aware of the latest job trends & hiring ecosystem, UGI's efforts, market realities, and students' achievements.
- Important Learning, Skilling, and Training tips in sync with industrial collaborations and requirements.
- Rewarding students' entrepreneurial spirit and vision that would fuel opportunities for career advancement.
- Providing access to leading-edge technologies.

In the very first issue of this technical magazine, I wish to propagate an idea of Self-directed Learning followed by Strategic Career Planning for which a series of learning steps and stages are recommended. Do read my article inside titled, '**A journey from passion to the profession**' that any student could correlate with himself/herself and if found superimposed, it can be carried forward for the career disposition and image building.

Have a great learning and experiential career journey!

Best Wishes.

# About TechEra



Logo designed by  
**Mr. Rahul Kesarwani**  
Technical & Design Head

The word “TechEra” is the fusion of two great words “Tech” and “Era”, which represents the explosion of huge technologies blast in the current decades. The reason behind selecting the word “TechEra” is the revolution in the information technology or digital world due to the rise of information and communication technologies, machine learning, bioinformatics, and robotics. Now, these key technology changes drive the world with its great impact on society, society functions, development of new industries, and its economic growth.

The purpose of publishing this magazine is to provide a platform for the faculties, students, and researchers to expose their technical writing skills along flowing with the waves of new technologies. Also using it, they enhance and share their knowledge and research activities from the eruption of novel and innovative ideas and discoveries in the digital world

It focuses on the theoretical and practical relationship between changes in technology.

*“Technology is nothing. What’s important is that you have faith in people, that they’re good and smart, and if you give them tools, they’ll do wonderful things with them.”-Steve Jobs, founder of Apple*

*“Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important.” -Bill Gates, founder of Microsoft*



**Sanjay Goswami**

*Assistant Professor,  
Department of Computer Science & Engineering*

### VISION OF THE INSTITUTE

To be an institute known for its Values, Academic Excellence & Research and nurturing professionals for their "Career" and "Life"

### MISSION OF THE INSTITUTE

- M1** To establish and provide state-of-the-art environment for real and lifelong learning
- M2** To provide education focused for deep knowledge, interpersonal skills and leadership
- M3** To conduct impactful research for addressing challenges of the society
- M4** To establish and strengthen collaboration between academia and industry
- M5** To develop competent professionals with ethical and social responsibility

### VISION OF THE DEPARTMENT

Nurturing professionals for their "Career" and "Life" through Deep Knowledge in Computer Science, Research & Ethical Values.

### MISSION OF THE DEPARTMENT

- M1** To impart theoretical foundation and practical skills for the design & development of software systems and solution of engineering problems.
- M2** To prepare students for emerging trends in computer and related areas.
- M3** To cultivate entrepreneurial skills, leadership qualities, and ethical values among the students.
- M4** To develop research interest amongst faculty and students by providing the desired environment.

## CARDS: VISION & MISSION OF INSTITUTE AND DEPARTMENT

# TRENDING TECH

## Internet beaming:

In the 21st century hardly anyone needs any introduction to this exceptional treasure of data called the "Internet". A technology designed in the late '60s for military purpose and later in the '90s opened the way for regular people to surf the Web is currently using miles of Fiber optic cables to keep the world online which has proved to be miraculous in the time of pandemic providing people with the connectivity they required. But still, the Digital divide is prominent because physically installing wires around the globe is near impossible to achieve and to maintain on which Tech companies have come with a revolutionary idea of Internet Beaming to bridge the gaping digital divide between the world's 4.8 billion unwired people and their 2.2 billion plugged-in counterparts. In which they are trying to beam i.e., focused transmission of Internet signals on the ground from the sky with the help of a transceiver system.

Tech giant like Google is testing their helium balloon prototype under `Project Loon` whether new folk like SkyNet by Elon Musk is going with a sate-light based grid system in space to beam the net down on Earth, this revolution can put every person on globe Online if completed



successfully. Since the projects are in their trial phase commercial availability of the beamed network isn't near but anticipation is high.

## Augmented Reality (AR):

The Virtual world has always fascinated thinkers to explore the possibilities of the unknown and geeks have always tried to live this dream with technologies like Hologram and VR. Developed at MIT in 1960 Virtual Reality gave the world's first

device to experience pseudo-reality in brief but for a time it was just limited to Games, simulations, and 3-D movies.

AR can be defined as a system with a combination of real and virtual worlds, real-time interaction, and accurate 3D registration of virtual and real objects, In other words, augmented reality alters one's ongoing perception of a real-world environment, whereas virtual reality completely replaces the user's real-world environment with a



simulated one. A key measure of AR systems is how realistically they integrate augmentations with the real world. The software must derive real-world coordinates and camera images. That process is called image registration. An **Augogram** is a computer-generated image that is used to create AR. **Augography** is the science and software practice of making augograms for AR.

Popular examples of AR in the commercial market are PokemonGo and Snapchat Filters. Defense forces across the globe are also opting for AR as a non-Orthodox way of training soldiers under the name Tactical Augmented Reality (TAR).

## Artificial Intelligence (AI):

It all started with a question asked by legendary computer engineer Alan Turing:

“Can Machines Think?”

AI is a wide range of Computer Science that is concerned with building machines capable of performing a task that generally requires human intelligence and also tries to replicate human intelligence in a digital form.

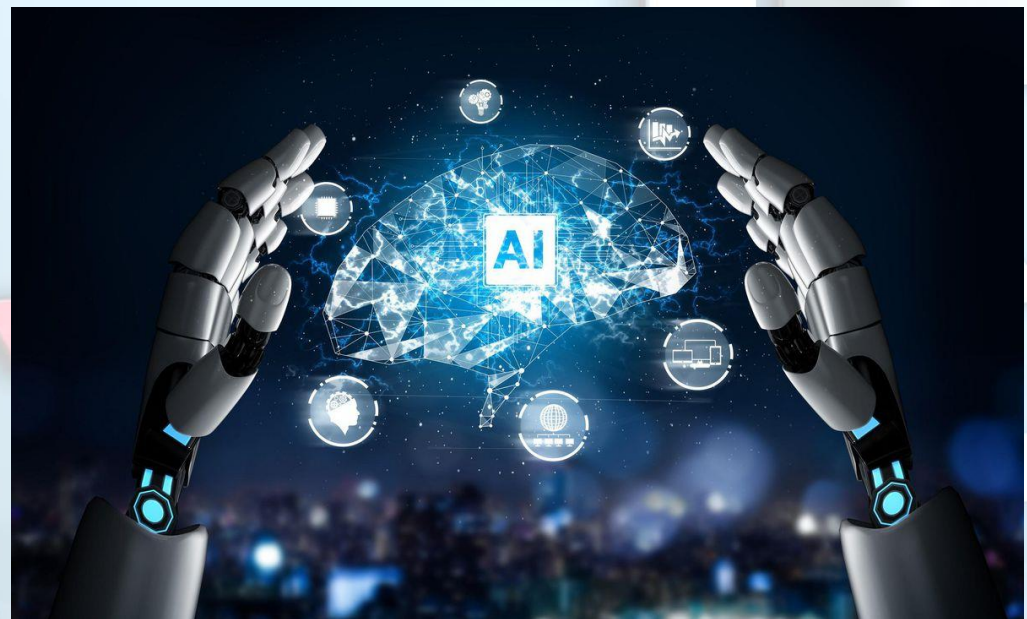
AI is concerned under four points

- Thinking Humanly.
- Acting Humanly.
- Thinking rationally.
- Acting rationally.

**AI adapts through progressive learning algorithms** to let the data do the programming. AI finds structure and regularities in data so that the algorithm acquires a skill. So, just as the algorithm can teach itself how to play chess, it can teach itself what product to recommend next online. And the models adapt when given new data. Backpropagation is an AI technique that allows the model to adjust, through training and added data, when the first answer is not quite right. AI is supported by Machine Learning and Deep Learning which are in themselves a different field of computer science.

AI is broadly categorized into two parts,

Narrow AI, also known as “Weak AI”. It stimulates limited human intelligence and is focused on performing one task only with greater proficiency.



Another type is called "General AI" or “Strong AI” and is the type of adaptable intellect found in humans, a flexible form of intelligence capable of learning how to carry out vastly different tasks examples are the robots we see in movies like Terminator and Matrix.

Well-known examples are Alexa, Siri, Google Assistant, Driverless cars, Social Media recommendations.



# GEFORCE RTX 3090

How can a tech magazine be complete without featuring the latest game-changing GPU from Nvidia? So, here we present before you, the glorious and famed RTX 3090, which probably costs more than a Nano car. (Rs 130000. Approx.)

Nvidia's GeForce RTX 3090 is a big ferocious GPU with TITAN class performance. It's powered by Ampere—NVIDIA's 2nd gen RTX architecture—doubling down on ray tracing and AI performance with enhanced Ray Tracing Cores, Tensor Cores, and new streaming multiprocessors. Plus, it features a staggering 24 GB of G6X memory, all to deliver the ultimate gaming experience to the users. It will bring a revolution in gaming like never before.

## Ray Tracing

Ray tracing is a technology that, as suggested by the name, traces the in-game light Ray's to effectively predict their trajectory and create visuals as if light rays are being reflected the way they do in the real world.

This is the Holy Grail of gaming technology. It renders the game with such visual capabilities which allows it to reach so close to the real world that it has brought game graphics to a whole new tier. Ray tracing helps provide a cinematic experience for even the most visually intense games.

## 8K Gaming

Connect, play, capture, and watch in brilliant HDR at resolutions up to 8K with GeForce RTX 3090. The 8K



resolution delivery makes GTX 3090 the unprecedented King among the graphic cards. It allows us to play as well as stream the games in 8K resolution, which means clearly, twice as many details in any frame as the 4K resolution, allowing us to experience even the tiniest details. Thanks to the HDMI cable, which makes it possible for 8K resolution on a single cable. Capture up to 8K HDR footage with the GeForce and playback smoothly with the AV1 decode.

-

## **Namo Mishra**

*(Contributor, UGI TechEra)*

B.Tech. (CSE)

University Roll Number: 1900100100094

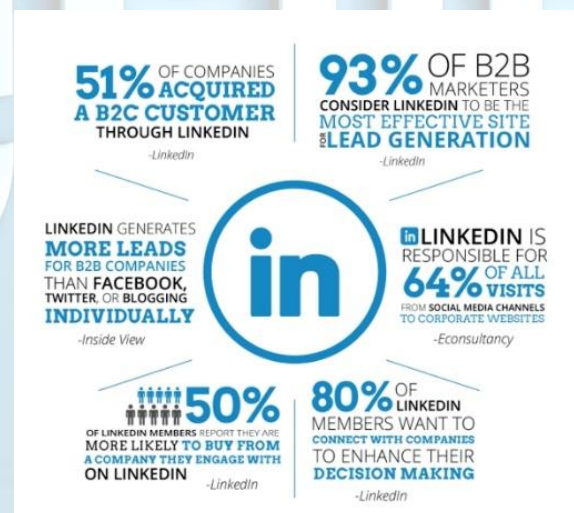
# STUDENTS CORNER

## LinkedIn: A Revolutionary tool



Most people think of LinkedIn as a usual social media platform, but it is a lot more than that. Unlike Facebook and other platform, it's a logical entry point for success-minded business leaders, influencers, marketers, and job-seekers. It is a one-stop network where professionals could enhance their careers, gain or share knowledge, build brands, or find talents in various fields.

Explaining LinkedIn simple language, "Everyone is advised by their parents and teachers to spend time or join the circle of bright or good students so that you also get motivation for performing better and doing innovative stuff ". LinkedIn does that for you. You can choose peoples from throughout the whole world, according to your goals and you can connect with them and share ideas or gets inspired by each other's new ideas or work. Not only students you can also connect with Successful professionals of your respective industry or professors of any college. So that you get updated with the latest trends and opportunities in that field.



*"You talk on LinkedIn the same way you talk in the office", said Dan Roth, LinkedIn editor in chief.*

LinkedIn provides you a platform to improve your personality and prepares you for the corporate world by raising your professional behavior standards. It shows you how to talk, write, present yourself, your qualities. It's the place where you can share your ideas with high-

level peoples, whomsoever it may concern. Once you get connected with people, each one of you can notice each other's achievements and ongoing work or projects.

Why waste your precious time in scrolling the personal feed of someone else life and instead of that you invest that amount of time in this platform which will help you reach a bigger audience and productive creatures under the sky. Which can be proved meaningful in your business, studies, research, etc. The Higher you interact with new people, the more the chances of learning new stuff. It's the best thing to invest your time and efforts which will be very fruitful for you in many aspects.

So as a student, businessman, or artist, it's the right platform for you to start your productive journey where you can learn, promote, and grow with many other bright minds across the globe. So, what are you waiting for, go get yourself signed up at LinkedIn, and start your progress?

## **Ratan Kumar Ojha**

*(Contributor, UGI TechEra)*

B.Tech. (CSE)

University Roll Number: 1900100100115

# ARTIFICIAL INTELLIGENCE

Most people are not familiar with the concept of artificial intelligence (AI). Despite its widespread lack of familiarity, AI is a technology that is transformed every walk of life. It is a wide-ranging tool that enables people to rethink how we integrate information, analyze data, and used the resulting insight to improve decision-making.

AI generally is thought to refer to “machines that respond to stimulation consistent with traditional responses from human, given the human capacity for contemplation Judgement and intention”.



Artificial intelligence algorithms are designed to make decisions, after using real-time data. They are unlike passive machines that are capable only of mechanical or predetermined responses. Using sensors and

digital data, or remote inputs, they combine information from a variety of different sources, analyze the material instantly, and act on the insight derived from those data.

AI systems can learn and adapt as they make decisions. In the transportation area, for example, semi-autonomous vehicles having tools that let drivers and vehicles know about upcoming potholes, highway constructions, or other possible traffic impediments. Vehicles can take advantage of the experience of other vehicles on road, without human involvement, and the entire corpus of their achieved "experience" is immediately and fully transferable to other similarly configured vehicles.

AI plays a major role in other fields as well like National Security, health care, smart city, etc.

## BRAIN BOX AI

RAIN BOX AI is the name which is termed as the self-adapting Artificial technology which optimizes the energy consumption of buildings, and it has a large climate change contributor. The AI engine of the brain box is a self-operating building that regulates the control of heating, ventilation, and air conditioning. It is a cloud-based



computing impact on energy consumption. By the use of the brain, box AI commercial building can reduce the total cost by 25% and improve comfort by 60%.

## IMAGE RECOGNITION



IMAGE RECOGNITION is the most foundational technology which is used to detect an image or a video .it has a detecting feature, it can help the process of image search as well as to detect the study personalities, diagnosis disease, self-driving car.

In this image, made models are trained to take an image as an input and output one or more labels

describing the images.

"NOWADAYS WITH DEEP LEARNING, WE BUILD ALGORITHM THAT LEARNS TO MAKE THEIR OWN RULES."

**Ashutosh Kumar**

B.Tech. (CSE)

University Roll Number: 1900100100044

# Data Science – Future of All Careers

Trillions of data daily consume. Career opportunities in data have exponentially grown in the recent few years. Data is the new oil in the market. Companies are capture data and derive insights from it because of technological advancements and convert data into some useful and meaningful information. Data-Driven Decision making is more popular.

## Coronavirus impact on Industries-

COVID-19 pandemic affected all industries. All the industries Adopt technology that produces a large amount of data. The industries like Manufacturing & Logistics, Travel & Tourism, Entertainment & Media, Healthcare, Commerce, Finance, etc. The demand for people skilled in data science is high in the covid-19 pandemic. More organizations are opening their door to data science. Companies are focusing on data analytics for their growth. The pandemic accelerated to businesses become data-driven.

## Job Market in Data Science

According to the Harvard Business Review, "Data Scientist is the Sexiest Job of the 21<sup>st</sup> century".

The job market is booming, data science is relatively new, the chance of growth is high and everyone is competing for talent. The Demand for data scientists is very high while the supply is too low. It will be the highest-paid job in the future

**Data Science Process** –The procedures and methodologies that are used to procure, organize, package, and present data in an easily understandable format. There are different kinds of data that might be available in different fields and this data could be either in structured data format or unstructured data format.

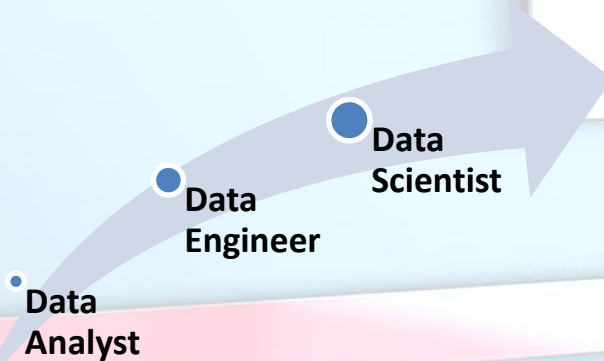
- Collecting data
- Cleaning data
- Manipulating data
- Analyzing data
- Visualization



**Job Descriptions and Salary** – In the data science field salary is dependent on multiple factors like locations, skills, and experience. Experience is more important in this field.

According to research, the starting salary is 4-6 LPA and after having the experience it reaches the high.

- The fresh graduate hires in a data analyst role, Data analysts are Professionals who analyze, identify correlation, and discover valuable patterns to solve specific business problems.
- Data engineers are the data professionals who prepare big data infrastructure. Data engineers work on the design architecture.
- A data scientist is a work on the advanced level of data analysis. Data scientists apply statistics, machine-learning on big data.



**Learning Path and RoadMap** - to become a data scientist we need to learn many things.

**Statistics-** You have to be good in mathematics basics like(mean median), Learn about the basic statistics, probability.

**Programming language for Complicated Analyses-** Python is the most widely used data science programming language in the world today. you should learn python or R but python has more libraries as compared to R. Both in R and python, you can have the best visualization.

- python

**Learning to Query Databases-** There are a lot of relational database tools like MySQL, MS SQL Server, Oracle, etc. You can learn any one of these tools in the database. There is no such best SQL for data science.

- MySQL

**Data Visualization Tools for Business Intelligence-** By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.

- Tableau
- Microsoft Power BI
- Excel

**Machine Learning and Predictive Analysis** - Machine Learning and Data Science, both of them are correlated with each other. This can help machines to make the right decisions and smarter actions in real-time. Machine learning replaced traditional statistical techniques with more accurate automatic sets of generic methods.

- Dealing with missing data, outliers, etc.
- Learning classification and regression models.
- Learning cluster analysis models.
- Making decisions based on various performance metrics in ml.

### **Knowledge of Frameworks -**

There are many Open-Source Machine Learning frameworks available in the market that are reportedly the most used by the data science field

- Pandas
- TensorFlow
- Scikit-learn
- Matplotlib
- Numpy
- Seaborn

### **Examples -**

- Digital Advertisements
- Recommender system
- Internet search & Search engine

**Himalaya Dubey**

B.Tech. (CSE)

University Roll Number: 1601013018



# Build a Career in Computer Networking

In the current scenario most of the CS & IT students focusing to improve their coding skills and their entire knowledge for better job placements. But what about those students who do not have good coding skills, they have a better chance to build a carrier in the networking field and make the carrier interesting and more interactive by doing some certifications like CCNA, CITRIX, etc, And make their carrier in networking.



Being an active part of a community, every individual is bound to conduct an interaction to survive. This communication might include simple talks, discussions, arguments, and debates, or commands, given by superiors. It is a tool that can be used for problem-solving, personality development, professional growth, and societal progress.

One must understand that communication can not only be conducted through direct talking, but it can also take place in the form of sign language and written content. We can use any form of communication to grow our network. An individual network plays an important role in private as well as professional advancement.


Networking means connecting and make contacts by conducting communication at different platforms. Networking is significantly required in professional life will never let you become a part of an office or workplace. Therefore, every person needs to polish his/her networking skills and learn to communicate with associates and acquaintances effectively.



A vast network comes with numerous advantages and can turn out to be quite helpful in professional life and Networking is the core element for professional growth. The more you will connect with people, the bigger the network you'll create, and the easier your life will become.

## Networking Courses

Some networking courses are there which can help a lot to grow your carrier in networking.

- 
1. CCNA 200-301
  2. CCNP
  3. CCIE
  4. Citrix Certified Associate
  5. VMware Certified Professional 6
  6. JNCIE-ENT
  7. Wireshark Network Analyst
  8. System Security professional

-

**Prashant**

B.Tech. (CSE)

University Roll Number: 1701010095



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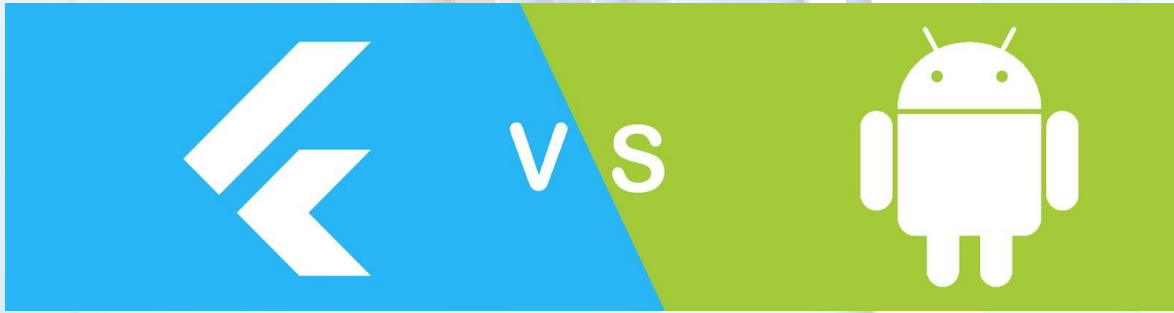
# Flutter: Why is it the future of Mobile App Development?



In the era of emerging and ever-growing technology, Mobile App development has become a vital requirement for any business.

Low data tariffs and efficiently featured low-cost smartphones have led to a steady increase in the number of smartphone users.

Mobile Apps can effectively increase the reach of the business to the public making the interaction much easier. It can reinforce the brand value and provide the owner with a seamless experience to collaborate with their target audience. Along with the growing demands of the mobile app, increases the demands of highly skilled developers who can develop effective and interactive applications that can meet the requirements of both the owner and customers.



Over a long time, Android has globally dominated the App Development market as nearly 75% of the world population prefers using Android as against 15% of iOS. Though Android is Very **stable** and gives a great **performance** across various sizes of Android devices it comes with a huge amount of **boilerplate** code which hinders the innovation and creativity of a developer which is the main reason why one should look for some cross-platform solutions, like **Flutter**.

Before jumping straight into Flutter let's have a look at what do we exactly mean by the term "Cross-Platform".

A cross-Platform application is a type of software application that is implementable in multiple platforms and devices without encountering any difficulty. Developers generally face a challenge to develop applications for multiple platforms as the business needs to target both iOS and Android users due to which two separate codebases have to be maintained and updated regularly which leads to many difficulties.

Here Flutter comes to the rescue.

## How Flutter Evolved

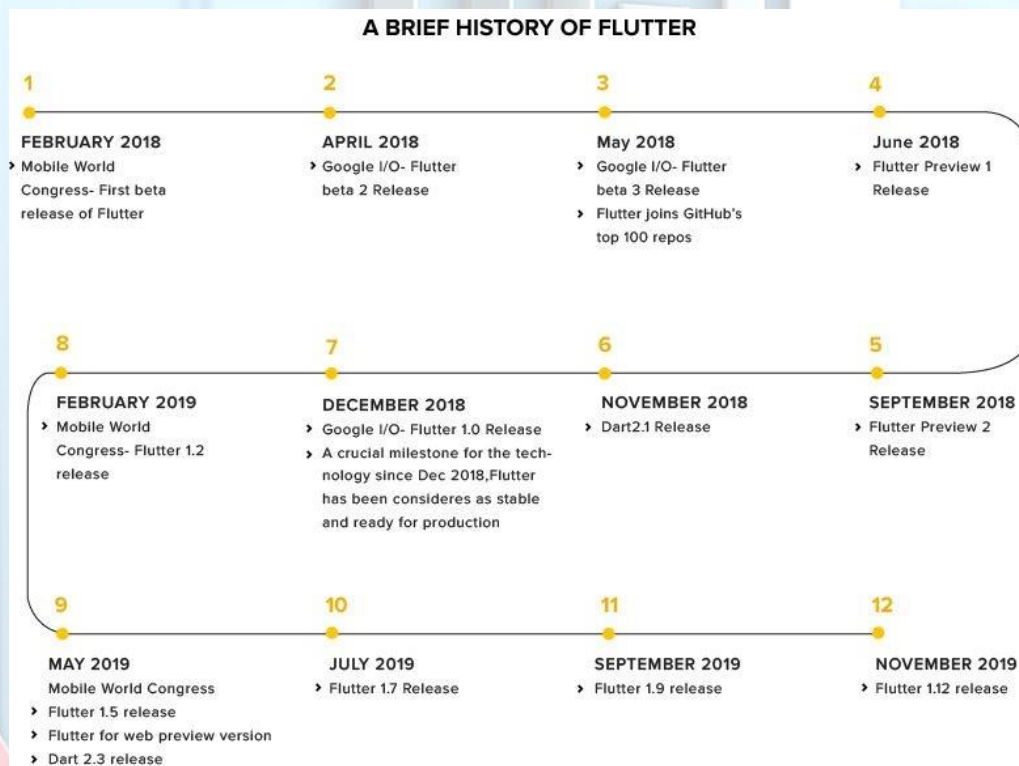


Image credit: <https://appinventiv.com>

Flutter, according to Google is defined as Google's UI toolkit for building beautiful, natively compiled applications for **mobile**, **web**, and **desktop** from a single codebase.

On December 4, 2018, **Flutter 1.0** was released at the Flutter Live event, denoting the first "**stable**" version of the Framework. Since then Flutter has improved a lot in terms of performance.

How is Flutter different?

- It is a dynamic, cross-platform framework, with all the integrated widgets and tools that result in faster app development.
- In Flutter, Everything is a widget.
- Flutter surpasses the traditional limitations of cross-platform applications.
- Makes the app development process much faster.
- Debugging is made easy with hot reload.
- Low-Cost Maintenance.

So, what all these terms exactly mean, why Flutter has a bright future, why do developers believe that Flutter is the future of Mobile App development.

Here are the 5 major reasons:

## **1. Uses Dart as the Language**

Dart is an object-oriented, class-defined, garbage-collected language using a C-style syntax that trans-compile optionally into JavaScript.

## **2. Testing Made Easy**

One can easily get rid of the hassle of testing the app for various platforms as Flutter has a single code base which makes it effortless for testing.

The app can be tested based on functionality, user-interface, usability, and logical formation in a single platform of the application, without wasting time testing multiples platforms.

### **3. Customizable Widgets**

Flutter contains a list of widgets for designing UI interfaces. These widgets are customizable and are reusable, making them useful for further development.

### **4. Hot Restart and Hot Reload**

Let's have a look at what these fancy terms exactly mean. Hot reload implements the change in your UI in a couple of seconds, without reloading the whole app or messing with inputs and variables. It also helps in fixing bugs. The changes get instantly reflected on the screen as the Dart Virtual Machine gets the source code, updates it, and displays the changes immediately.

Hot restart, on the other hand, saves time by just implementing the functionality based on the recent changes made in the app in less than 10secs without restarting the whole app. Restarting the whole app would've done the same thing, but it would've done it in 40 seconds. Therefore, Hot restart saves developers' time.

### **5. Cost-Effective Yet High on Performance**

Flutter app development comes with several cost-saving factors like:

- low developmental effort
- single codebase
- low maintenance timeline

All these come together to get its cost range down to a huge extent.

Flutter is the quickest way to deliver high-performing, cross-platform mobile applications. All these aspects make Flutter a perfect solution for business and in the future, the demand for frameworks like Flutter will surely increase thus making it the ultimate framework. Learning Flutter can be fruitful and rewarding in every way in this technical era. Hence all these factors make Flutter an apt choice for developers.

## **Ishita Ghosh**

B.Tech. (CSE)

University Roll Number: 1801010051

## Brainwaves as a security tool

Brainwaves could act as your password - but not if you're drunk. Getting drunk could make it harder to enter your password - even if your brainwaves are your login. Brainwave authentication is one of many biometric measures touted as an alternative to passwords. The idea is for a person to authenticate their



identity with electroencephalogram (EEG) readings. For example, instead of demanding a passcode, a computer could display a series of words on a screen and measure the user's response via an EEG headset. EEG signatures are unique and are more complex than a standard password, making them difficult to hack. But while research suggests that EEG readings can authenticate someone's identity with accuracy rates around 94 percent, there could be confounding factors - including whether you've had a few too many drinks. Tommy Chin, a security researcher at cybersecurity consultancy firm Grimm, and Peter Muller, a graduate student at the Rochester Institute of Technology, decided to test this theory experimentally, by analyzing people's brainwaves before and after drinking shots of Fireball, a cinnamon-flavored whisky. "Brainwaves can be easily manipulated by external influences such as drugs [like] opioids, caffeine, and alcohol," Chin says. "This manipulation makes it a significant challenge to verify the authenticity of the user because they drank an immense amount of alcohol or caffeinated drink." Too drunk to log on Chin and Muller presented their findings at security conference ShmooCon in Washington DC, last weekend, with initial results from a small number of tests indicating that brainwave authentication accuracy could fall to 33 percent in inebriated users. They recruited more participants at ShmooCon to gather more data. The problem is not confined to drink and drugs. John Chuang at the University of California, Berkeley, last year published research into the impact of exercise on EEG authentication and found that accuracy degrades immediately after a workout (though



it quickly recovered). He suggests that other factors such as hunger, stress, or fatigue could also reduce reliability. "Depending on the application, it may be a wonderful feature that a drunk person cannot authenticate into a system after they have had too many drinks," Chuang says. If accuracy under different conditions were required, it could be possible to collect multiple brainwave "templates" for a user by separately mapping their EEG signature when drunk, tired, and so on. Chin and Muller also found it is possible to tweak the EEG data analysis using machine learning to improve the results for inebriated participants. But for brainwave authentication to be used in the real world, Chuang says that systematic research should be done on how all kinds of different factors could affect its accuracy, "such as physical exercise, mental fatigue, stress, distraction, changes in affect or mood, or the effects of caffeine, sugar, or medication".

**Harsh Rastogi**

B.Tech. (CSE)

University Roll Number: 1801013028

# This Computer Attack Can Trick Bio-Engineers to Make Harmful Viruses Instead of Vaccines



It seems like 2020 is not at all done with shaking the world with its deadly blows. After the inception of the ever-growing pandemic, now, cyber-security researchers have found a malicious security flaw that can trick scientists into making harmful, pathogenic viruses and toxins instead of vaccines and medicines. Wait, what?

According to a recently published paper, security researchers from the

Israeli Ben Gurion University have discovered the aforementioned computer-attacking system. This deadly attack could allow hackers to tweak the composition of the medicines or vaccines in a bioengineer's computer remotely.

Now, to understand the computer attack, first, we have to understand a term called "synthetic DNA". It is one of the primary components for the development of various medicines, vaccines, and immunogens. So, medical professionals often keep a record of the components in their systems.

So, the researchers from the Israeli university created and tested a computer attack that successfully replaced the short DNA sub-strings on a bioengineer's computer with infectious code. This could trick a scientist to develop a lethal virus instead of a life-saving vaccine.

"A cyber attack intervening with synthetic DNA orders could lead to the synthesis of nucleic acids encoding parts of pathogenic organisms or harmful proteins and toxin. This threat is real. We conducted a proof of concept: an obfuscated DNA encoding a toxic peptide was not detected by software implementing the screening guidelines. The respective order was moved to production," wrote the researchers in the official person.

Traditionally, to perform such an attack, the attackers needed to have access to the physical lab or the supplies of the lab. However, with this security flaw, a simple cyber researcher with the necessary expertise but a dangerous motive can easily carry out a bio-terrorist attack remotely from a safe location.

To prevent such cyber attacks in the future, the researchers have suggested that an array of strict guidelines and measures should be implemented in the biotechnology industry. However, failing to do so might result in a bigger disaster than the ongoing pandemic.

Pradyumn Seth

B.Tech. (CSE)

University Roll Number: 1900100100105

# RADIATION- (THE IMPACT ON HUMAN)

Radiation exposure has long been a concern for the public, policymakers, and health researchers. Technology has been progressed in such a way that what has been expected can easily be seen today. everything has pros and cons and the same lies with radiation too.

Beginning with radar during WORLD WAR II human exposure to radiofrequency radiation (RFR) technologies has been grown substantially over time. From satellite to cell phone, from television to laptop, we all are surrounded by radiation directly or indirectly and thus have an impact on us physically and mentally both and give rise to many diseases such as thyroid tumors/cancer, skin cancer, hair fall, etc.



The diseases caused are prolonged and hazardous and require a long time for complete treatment. The severity of sign and symptoms of radiation sickness

Depends upon how much radiation you have absorbed. mobile towers and control stations are set up to a certain value to prevent radiation exposure.

The possible source of high dose radiation includes the following:

- An accident at a nuclear industrial facility
- An attack on a nuclear industrial facility
- The detonation of a small radioactive device
- The detonation of a standard nuclear weapon

As it has been always said that *"Prevention is better than cure"*, so preservative measure has been taken to overcome with this

- Time, distance, and shielding
- Radiation emergencies
- Resources

*Hope this article would help to get aware of radiation and its safety measures.*

**Prashant Kumar Dubey**  
**Civil Department (2<sup>nd</sup> Year)**

# UGI GOSSIPS

## BACKSTAGE QUIZZING

'Backstage Quizzing', the Quiz Club of United College of Engineering and Research organized 'SciBizTech Quiz' - a college-level quizzing extravaganza focusing on Science, Business, and Technology. The quiz was conducted in two rounds - Prelims and Finals. A total of 100 teams (each of three students) from 2 campuses of the United Group of Institutions, Allahabad participated in the event. Around 64 teams from 'United College of Engineering & Research' and 36 teams from 'United Institute of Management - FUGS' participated in the Prelims round.

The first round (Prelims) was the written elimination round which consisted of 26 questions in A-Z format from Science, Business, and Technology. Top 10 teams were selected from prelims for the finals in which 2 teams were of UIM and the remaining from UCER.

The final was a tough battle between the teams. Comprising 4 rounds of different forms, the finals were not only a test of knowledge but of strategy also. The event was concluded with the prize distribution by The Principal and Dean Academics. The winners were awarded trophies, certificates, and a hefty cash prize of ₹4500.

## Technophile

The challenging, the teasing, the greatest Coding Event of UCER, **The Technophile** was held in 4 rounds. The Technophile has been itself, a hallmark of its brainstorming competition, innovation, and inspiration present on a single platform. This can further be justified by the enormous participation, strict management, to the cut-throat competitive interface of **Hackerrank** and equally accountable and transparent result declaration to each participant. So it grants the coder inside you, a quality best wish to achieve success by evaluating yourself on this startling platform of the Technophile.

**Total participants : 330+**

# RESEARCH & INNOVATION @UGI

Dear students

We wish to inform you that our college UCER Allahabad has registered in Different government agencies for students' promotion scheme and support.

1. National Innovation and Startup Policy Implementation for HE sunder the ministry of MHRD's Innovation Cell, AICTE. Mr. Vijit Srivastava is the coordinator for the above program on behalf of UCER.
2. ISRO sponsored outreach program for students, UCER Allahabad is the nodal center for the above program Mr. Vijit Srivastava is the Nodal Officer appointed for the above program on behalf of UCER.

## **Why Startup?**

It seems that everyone nowadays is either starting a startup or working for one. The appeal of starting your own company is high: whose dream job isn't banking millions on an innovative product and managing their own company, instead of being managed by one.

Of course, startups are much harder than most people are willing to work for, but that doesn't stop millions of recent grads and college students from attempting the next big thing. Pursue that idea you've always been passionate about, or dig a little deeper in an area you've always been curious about.

That's the beauty of startups – you don't need any experience, only the desire to learn. Having some type of technical, design, or management background will help your efforts immensely, but the ultimate purpose of this project is to learn.

Therefore I would like to appeal to every student to think something different and come up with great ideas and innovations as it's a unique experience to help build something and be part of its growth from the very beginning. This means living the high highs, low lows, and everything in between.

Best Wishes



### **Vijit Srivastava**

Assistant Professor, Electronics & Communication

Contact No: 7376336124

Email id: uceralld07@gmail.com

## Event Details at Institute Level

1. **AWISKAR/UDGAM:** This is the core technical event of United College of Engineering and Research Allahabad.

These events have three parts

- a. Prototype working technical project/Model competition.
- b. Startups contest.
- c. Students Conference.

This is the self-financed institute-level event of UCER organized every year winners of this event will be forwarded to different research agencies.

Achievement: Project, 'Tank Surveillance System' was selected in DRDO in 2018

The project, 'Smart Dustbin' was selected in Kalam Innovation Gallery in 2017

The project, 'Life Support by Plants on Mars' was selected in Kalam Innovation Gallery in 2018. This is the MINAR (my Analogue Research) project in Yorkshire, UK which is a joint venture by Kalam Library (Mars Mission-India) and United Kingdom Centre for Astrobiology (UK).

**Mr. Vijit Srivastava, Assistant Professor EC Dept. UCER, Incharge of the event.**







Innovation Centre of UCER used for the project and start-up work

- 2. Kalam Startup Parikrama:** Kalam Centre for Innovation and Incubation of Startups (K-CIIS) is organizing a one-day event at college campuses where workshops are conducted on startup and entrepreneurship followed by business plan competitions (pitching competition) to identify the best startup plans from college campuses.

This is the one-day startup event of AKTU organized in UCER in 2018 and 2019. Students of AKTU from a different city of Uttar Pradesh have participated in this event.

**Mr. Vijit Srivastava, Assistant Professor EC Dept. UCER, Coordinator of the event on behalf of UCER.**



Startups contest



Awards Distribution ceremony

3. **Kalam Master Class:** Dr. Kalam Master Class is a state-wide effort to foster entrepreneurship and help startups. It is a campaign for potential entrepreneurs, students, existing startups, and colleges affiliated with AKTU, especially the ones who have the potential but are reluctant due to lack of knowledge. A basic level incubation center (K-CIIS) is established in A.K.T.U. to nurture the entrepreneurial energy of students and boost startup culture across all affiliated colleges of the University. This is the one-day 6-hour workshop on startups. This is the AKTU sponsored one day workshop organized by UCER Allahabad in Feb 2020

**Mr. Vijit Srivastava, Assistant Professor EC Dept. UCER, Coordinator of the event on behalf of UCER.**

4. **UCER Allahabad achieve the 2<sup>nd</sup> rank in Dr. Kalam Entrepreneurship League in 2019**

With the vision of healthy competition in terms of startup and entrepreneurship and boost Startup and Entrepreneurship culture among Institutions University launched Dr. Kalam Entrepreneurship League. The university is awarding the top two institutions who score the maximum points (score) and the entire rank table is displayed on the university website circular section.

## **TANK SURVEILLANCE SYSTEM**

The **Project “Tank Surveillance System”** is an unmanned RC tank Surveillance system that is based on the system on chip category. This system is designed for the Indian defense system to reduce the casualty of our Indian soldiers. This project was selected in DRDO and two students were selected for 3-month project work under the guidance of **Dr. MD Zulfikar Ali Bhutto, Sc 'D', STARS.**

### **Technique**

Arduino is a single-board microcontroller designed to make applications interactive and controls or environments easily adaptive. It also uses a different set of sensors, actuators, motors, and other products. It offers a simple integrated IDE that runs on a regular personal computer and allows users to write programs for Arduino.



## **Innovation**

To upgrade and secure the control of defense in highly sensitive areas on the land, particularly through detecting, ranging, and firing mechanisms. This robotic vehicle is designed to detect and encounter any of the happening, at the sensitive zone. The tank is also loaded for firing mechanism efficiently on the aerial as well as the ground. The complete damage machine is feasible to overcome any hurdle, where the presence of a human is a challenge. The FPV system is embedded for efficient handling, through radar wi-fi and camera control.

## **Application**

It is used in the Indian defense system for providing better security especially in that area where the presence of a human is not an easy task. This is possible because the system is an unmanned vehicle and controlled from a very large distance, compact in size, performs multifunctional operations. Helpful in dense places, effective cost, and capable of doing combat battles.

## TEAM

Sanad Kumar Singh (batch 17-18)

Zaid Ahmad (batch 17-18)

## SMART DUSTBIN

SMART DUSTBIN is a type of dustbin that can distribute the waste materials according to their state. It divides the waste into four different parts as it separates wet and dry waste, iron waste plastic waste differently.

**Aim:** As we are seeing our country is one of the most polluted countries in the world where we have dustbin but most of them do not use it. As a single dustbin is not sufficient for proper waste management so keeping this in mind we have made a dustbin which will help a lot in proper waste management.

### Technical details:

A smart dustbin is fully an electronic device, which has the quality of doing multiple works by making the work of people very easy in the process of waste management.

It has 4 main parts:

- moving disk,
- moisture sensor mechanism,
- Magnet,
- Air blower
- .

### Usefulness

- **Reduces trash:** using a smart dustbin is an effective way of reducing trash and keeping the environment clean moreover these can be used to recycle trash and thus reduce the quantity of refuse.
- **Environmental benefits:** these dustbins also offer immense benefits to the environment, this is because it lessens the load placed on the environment by recycling materials.

## Market potential

This type of dustbins could earn some financial benefits if you collect some recycled materials such as Polybags, plastics bottles, iron, etc then you can earn money from your local recyclers. In fact recycling centers usually pay based on the number of recyclable materials that you have collected this means you can collect recyclables items using a smart dustbin and later sell them, not only for cleaning purposes this type of dustbin is also useful for market point of view. As technology makes the work of people easy this smart dustbin will also help a lot in keeping the city clean and in proper waste management.

### TEAM

Jitesh Mishra (1601040048)ME

Amit Kumar (1601040017) ME

Akash Srivastav (1601040013) ME

# START-UP ARENA

## College Startup

### **AADISHRI FOUNDATION- SIKSHA SASHAKTIKARAN SWABHIMAN**

SHIVANK GUPTA, founder of AADISHRI FOUNDATION, his main motive is to educate the underprivileged children of the slum area. Not only education, but he also desires to improve their lifestyle which is trapped in poverty in the worst way possible.

AADISHRI Foundation plays an important role in nurturing the children of slum areas by providing them primary education and basic values of life.

Every time he stepped out of his town as the villages nearby had 90% of its children working for their poverty-stricken families at a very early age- the age at which his parents taught him and convinced him to go to school and seek proper education for a better and independent future.

Letting everything aside, he continued his studies as he was helpless and finally stepped out of his comfort zone for pursuing B.Tech in Prayagraj, Uttar Pradesh. He again felt the same pain when he saw the underprivileged areas of Prayagraj, the view gave him the thought of helping the poor and underprivileged children so that they can get proper education and a better future too as his parents gave him.





## AADISHRI FOUNDATION

THEY TOO HAVE DREAMS.... HELP THEM TO RISE .....

JOIN US:

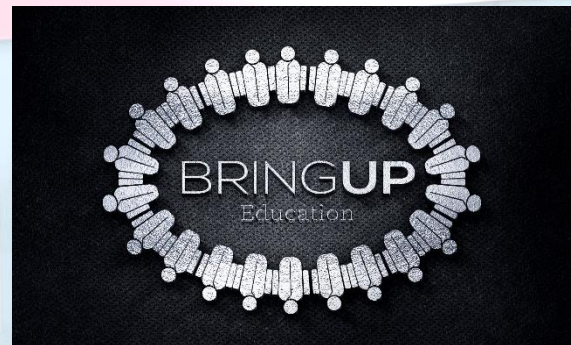
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OFFICIAL.AADISHRI



## BringUp Education- Education with Equality

Bringup Education is a certified Ed-Tech firm established in 2019, co-founded by Jayesh Mishra. It offers a wide range of courses from school education to undergraduate programs with a Learning management system (LMS). Bringup Education provides training and internship opportunities to the students which enhances the skills of students and makes them 'job ready'.



ISO 9001: 2015 CERTIFIED

This is the era of E-learning, where learning maximizes and time minimalism. The salient advantages of e-learning prove to be a strong facet among schools of the present-day educational world. Bringup education aims to provide a holistic learning platform to our students at the click of their hands.

BringUp Education wants to spread education as a tool of interactive learning with a fun activity where the student can discuss concepts, solve questions, and share new ideas which enhances the learning ability of students. We aim to be a revolutionary force in changing the educational pedagogy in India by using scientific tools and make a better tomorrow. Bring up Education will cultivate the habit of being persistent and

innovative in every student. They aim to provide quality lectures to students at affordable prices and make them happy and satisfied.

## **SHURUAAT \_AN INITIATIVE\_**

"SHURUAAT" as the name itself suggests "THE BEGINNING". Beginning and unfolding of a change.

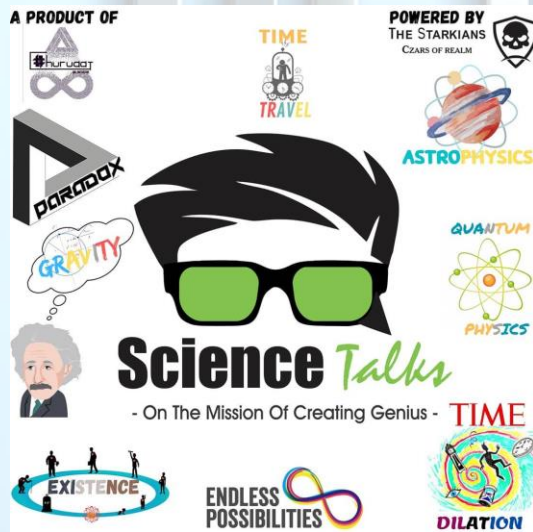
It is rightly said that "If we want to change something, we should first start from our own space and surrounding, and for bringing up this change a series of initiatives and full dedication is required, and that's where our organization "SHURUAAT" stands.

"SHURUAAT", aims at bringing a small change by conducting several events that are informative and at the same time accessible for all. The main motive of this project is to enhance the hidden skills of the students. The virtuosity and versatility of creativity and innovation inside them. These events will help the students in exploring and acquiring knowledge of those interesting concepts and notions which remain untouched and uninstructed because of the pattern of the syllabus.

The consecution includes events named Science Talk, The Starkians, Cyclone of Ideas, Vision-I, CraftsmanShip, and many more.

**SCIENCE TALKS:** The reason behind conducting Science Talks is, a decreasing trend is observed among students in exploring the field of science.

They aim to make students aware of the facts and verily taking place in their surroundings, which will really be fun and will change student's perception too.



**THE STARKIANS:** It is the robotics club under SHURUAAT working in bringing up such interesting space of which students are fond of but remain unaware of those technologies because of the limitation of sources to learn about them irrespective of their specific branch.

Its main aim is to make people aware of those technologies which they only see in videos.

**CYCLONE OF IDEAS:** The reason behind going with the cyclone of Idea is just a thought which every common man had once. That's not just a thought but an idea which is left unsaid because of various reasons, sometimes lack confidence and other necessities. But if that one unsaid idea is given a platform it could even result in revolution.

Their main aim is to bring out all those hidden ideas which when communicated and got a reach the desired place will bring a huge change.

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# INNOVATIVE STARTUPS OF INDIA

## Plonk: A Mobile Parking App

India is among the most populated countries in the world. Traffic is one of the major problems in countries like India. Perhaps no metro city in the country doesn't suffer from the disorderly condition of traffic on the roads. Bengaluru is the IT capital of India and hence a typical bustling city. One of the biggest problems in this city is finding a parking space when you desperately need one.

Plonk, a real-time parking app, has set out to solve the parking problem of cities like Bengaluru.

Helmed by brothers Arjun Jairaj (CEO) and Balram Jairaj (COO) and John Seemon (CTO), this startup has found more than 1000 parking spots in Bengaluru, within two weeks of its launch, as per the reports.

The Startup targets 'Unorthodox' sources like individual houses, empty plots, churches, and apartments apart from usual spaces like parking lots and malls.



“We wanted to look at unorthodox sources. The ‘suppliers’ can allow parking and make a business out of it. This needs no expertise as such,” says Arjun Jairaj, in an interview with The Economic Times. While some of the ‘suppliers’ lend out their parking spaces for monetary gains, the others do it to decongest the roads.

“Plonk is a great concept. The money that we gain from it goes towards maintaining our space. But we are a part of it to help in decongesting the roads, the parking is lying free most of the times, so why not give it out to others?,” said Darshan Govindraj, director of Vaishnavi Group who has let out 20 parking spots in his central Bengaluru office on Residency road.

The owners, once verified, get complete freedom to decide the number of parking slots, timings, and rates. The owners can also have multiple plans.

This startup has proved to be a boon for cities like Bengaluru. Countries, like India, are genuinely in need of such projects.

## ***CRED: Pay your credit card bills & earn rewards***

Cred is an initiative of **Kunal Shah**, founder of **FreeCharge**. The app aims to make paying credit card bills simpler and reward you for paying them on time. The app asks for your phone number to check your credit score with Cibil, CRIF, and Experian.

If your credit score is 750 or higher, you are granted access to the app, else you join a waitlist. The app scans any credit cards linked to your phone number and adds them to the app. To manage the cards, Cred requires access to your email account (this is not mandatory).

Cred uses this access to scan credit card statements for hidden charges. Every time you make a payment to your credit card, you earn Cred Coins – each coin is equal to Rs 1. These coins can then be used to claim rewards from vendors like Ixigo and FreshMenu, among others.



You can also use the option to 'burn' your coins to win cashback, which is directly credited to your credit card. The only thing we found missing was a reminder function for payment due dates (but that should be added soon). Give Cred a chance – it looks promising. Also, CRED has introduced two new products aimed at increasing financial confidence for individuals. CRED RentPay allows members to pay their highest recurring household expense, their monthly rent payments, on credit. The second

product, CRED Stash, a flexible, low-interest, and instant credit line, has been launched as a pilot with IDFC FIRST Bank and is the only offering of its kind in India.

CRED RentPay allows members to pay monthly rent with their credit cards, directly from the CRED app. With the option of paying rent on credit, members can free up cash, enjoy the interest-free credit period, and earn reward points on credit card spends. Upon paying their credit card bill, members will also receive CRED coins to spend on products, services, and experiences from CRED partners equivalent to the transaction value of rent.

Members need to add the landlord's bank account or UPI details and instantly transfer the rent from their credit card, directly on the CRED app. Over time, CRED will enable members to set up auto-pay for timely payments. Upcoming features include the ability to make other landlord payments such as maintenance charges and security charges through credit cards, that can then be financed with affordable EMIs.

CRED Stash is designed to be the fully digital way to get credit in India, without the application and verification processes typically associated with loans and at an interest rate at one-third of typical credit card interest charges as CRED's member base have credit scores over 750. On completion of the pilot, CRED Stash will scale up with multiple bank partners.

## **GRAVITY LABS**

### **What is air pollution?**

Air pollution refers to the release of pollutants into the air that is detrimental to human health and the planet as a whole.

Burning fossil fuels releases gases and chemicals into the air. And in an especially destructive feedback loop, air pollution not only contributes to climate change but is also exacerbated by it. Air pollution in the form of carbon dioxide and methane raises the earth's temperature. Soot from industries is another big contributor to air pollution. The minute particles present in soot not only harm the environment but deteriorates our health as well.

## Solution...?

What should we do about this ever-increasing air pollution, which is affecting the climate of this planet so much that it might become inhabitable for us, lest we stop it?

Well, Graviky Labs has a solution- [AIR-INK](#)

Graviky began as an MIT Media Lab experiment when they hacked together a tool to capture soot from a burning candle and used the closest available solvents - vodka and vegetable oil - to produce a rough version of what is now AIR-INK®.

Then, they invented a device that captures air pollution and turned the captured particulate matter into a safe, water-based ink. After a successful Kickstarter, they came to the fore with the world's biggest sustainability collaboration with Heineken.



Not only do they filter a lot of air and disencumber it but also create a useful product out of the harmful carbon which was affecting our health and the climate as a whole.

# PLACEMENT GALLERY

## A Journey from Passion to Profession

As a learner or as a budding professional you need to plan your career journey starting from passion transformed into your profession. It is you who can understand and realize your passion for which you must start knowing your career interest areas.

Are you aware of your personality? Are you aware of your interests? Are you aware of the various career options matching your career interests and personality?

### Map your Career Interests with your Personality

It is all about mapping your interests, abilities, and skills mapped with your personality traits that give you a direction to do relevant research, training, skilling, etc for further job search, application, and your performance.

Through this table, you will get an idea of Interests and Personality Traits that could be mapped with the related career options. This understanding would help you to follow a pathway to discovering your ideal career path.

SN	Six Interest Areas (Passion)	Six Personality Traits	Related Career options (Profession)
1	<b>Building</b> Building jobs involve the use of tools, machines, or physical skills. Builders like working with their hands and bodies. Such persons have the manual ability and good psychomotor domain.	<b>Realistic</b> (Doer)	Civil Engineers, Technicians, Opticians, Automotive Master Mechanics, Automotive Specialty Technicians, Construction and Building Inspectors, Construction Carpenters, Computer Support Specialists, Machine Operators, Electro-Mechanical Technicians, Electronic Equipment Installers and Repairers, Electronics Engineering Technicians
2	<b>Thinking</b> Thinking jobs involve theory, research, and intellectual inquiry. Thinkers like working with ideas and concepts, and enjoy science, technology,	<b>Investigative</b> (Thinker)	Computer and Information Scientists, Research Computer Hardware Engineers, Computer Programmers, Computer Software Engineers, Applications Computer Software Engineers, Computer Systems Analysts, Computer Systems Engineers / Architects, Electrical



	and academia.		Engineers, Electronics Engineers, Market Research Analysts, Management Analysts, Materials Scientists, Engineers, Materials Technicians, Mathematical Mathematicians, Mechanical Engineers
3	<b>Creating</b> Creating jobs involve art, design, language, and self-expression. Creators like working in unstructured environments and producing something unique.	<b>Artistic</b> (Creator)	Editors, Fashion Designers, Film and Video Editors, Graphic Designers, Multi-Media Artists and Animators, Reporters and Correspondents, Set and Exhibit Designers, Singers, Technical Writers
4	<b>Helping</b> Helping jobs involve assisting, teaching, coaching, and serving other people. Helpers like working in cooperative environments to improve the lives of others.	<b>Social</b> (Helper)	Teachers, Counselors, Coaches, Social Workers, Psychologists, Training and Development Specialists
5	<b>Persuading</b> Persuading jobs involve leading, motivating, and influencing others. Persuaders like working in positions of power to make decisions and carry out projects.	<b>Enterprising</b> (Persuader)	Engineering Managers, Sales Agents, Securities and Commodities Sales Engineers, Sales Managers, Sales Representatives, Wholesale and Manufacturing, Technical Directors / Managers, Telemarketers, Training and Development Managers
6	<b>Organizing</b> Organizing jobs involve managing data, information, and processes. Organizers like to work in	<b>Conventional</b> (Organizer)	Database Administrators, Electronic Drafters, Financial Analysts, Web Administrators, Web Developers, Word Processors and Typists, Network Designers

structured environments to complete tasks with precision and accuracy.			
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You can easily understand your top career interest areas as having been categorized into 6 areas above. Each career interest area has its own set of typical work tasks, roles, and values that you enjoy doing as well as what motivates and satisfies you at work. Based on your career interest you can determine your personality trait and further by mapping your career interests and personality types with the related jobs you can choose a career that is a good match for you.

John Holland, a psychic medium and spiritual teacher gave this tool/test commonly known as Holland Code Test, according to which, an individual has one dominant personality trait supported by two more traits that make his/her Holland code (3-letter code). For Example, a person may have a 3-letter code ESA which means he is an enterprising personality with a social and artistic attitude. The very suitable career option for such a person may be a counselor, a coach, a motivational mentor, a clergy, a therapist, or a psychologist.

### Exploring Careers - Converting your Passion into Profession

Your next step should be your career planning. When planning your career, it's important to follow a step-by-step process to avoid becoming overwhelmed by information and choices. Therefore, after exploring your career interests and understanding your personality traits, start browsing some of your top careers best suited for you, and then following the steps below:

1. **Make a comprehensive list of career possibilities.** You can get acquainted with various companies that recently visited your campus offering different kinds of job profiles.  
In the beginning, you'll want to do some basic research on all the careers that appeal to you. Determine some criteria, such as a minimum salary, eligibility criteria, and job roles that a career must have to be satisfying to you.
2. **Narrow down the options.** Based on the outcomes of your initial research, try to narrow down the list of possible careers to 3-5 top choices.
3. **Dive deep.** Now's the time to start some serious information-gathering. Learn everything you can about the top careers you've chosen. Start with online research, knowing the career and related industries, knowing the required skills and qualifications, etc. Then, get a real-life feel for the careers you're considering. Start taking training, certification, conduct

interviews with professionals in the field, do job shadowing, and internships in the industry.

4. **Make your choice!** Completing a systematic career search process ensures that you'll have the confidence to commit to a career path, you've explored every possibility of knowledge and awareness, and you are prepared as well as ready to make your choice.

Yes! Choosing a career that fits your talents, abilities, and interests may be one of the most important decisions you ever make. Armed with complete information about who you are and what you are suited to, you'll be well prepared to make a choice that makes the most of your potential.

### **Choosing the Right Career - Asking some important questions**

As you explore careers, you will be asking many questions that are personal to you and your core values. These questions will help you dial into the careers that will suit your value system. Here, we suggest some questions that you may want to ask about each career you are seriously considering.

You might answer these questions by doing research online, in books, magazines, or trade journals, or by interviewing people in the field. The goal is not to get black-and-white answers to every question, but to gain a better and more complete understanding of whether a career is a good fit for you.

#### **Your Key Questions:**

- Will this career allow me to come up with my own unique and original way of doing things?
- Will this career allow me to be authentic and true to myself on the job?
- Am I able to utilize my talents and skills through this career?
- Will this career make me happy?
- Will this career allow me to influence and motivate other people?
- Will I feel powerful and important in this career?
- Will this career allow me to take risks and pursue exciting achievements?

You've digested a lot of information, so take a while to sit with it. When you're ready, come back to your list of careers that you have chosen and pick out the ones that sound most appealing. If you traverse your career trajectory following the discussed steps, you will feel proud of your career idea and plan to feel well prepared to get started. We wish you the best of luck in your career search and journey!

UGI



TechEra

# STUDENTS AWARENESS CORNER

As per the latest data of **NASSCOM**, 70% of Indian techies are not jobbed ready. If we talk about corporates their expectations are getting higher. The market demands students with appropriate skills and ironically education in India is still based on just passing the exams!! The question is how a student can tackle these challenges. The answer is simple - 'Awareness'. There are some simple steps through which you can upgrade your skills and become job-ready.

**\*Google\*** -We search everything on Google starting from our school assignment to entertainment but do you know that Google itself offers a wide range of online courses and if you pass those courses you may grab a Google Certificate. Google offers more than 100 courses to you through its interactive web portal **\*' Google Garage'**. It provides courses and certifications on Digital Marketing, Machine Learning, Coding, Personality Grooming, etc. You simply need to visit the Google Digital Garage and select the course and after completion, you will receive a certificate which you can add to your Resume.

A large chunk of students believe that proficiency in English is extremely important in placement and it is a valid fact but don't you think that if you get a certificate on your English ability and that certificate is accepted by all MNC? There is exciting news for the students who are preparing for placement or government examinations. Now you can evaluate your English proficiency level on the Global Parameters of CEFR and it is available for free on the Play Store. **\*British Council\*** has launched a dedicated app which will test your proficiency in English through its app **\*' British Council English Score'**. The app is available on Google Play Store and you can appear in the test for free but to get a verified certificate you need to spend just ₹350/-. The certificate is accepted in companies like **Infosys, TCS, OYO, Amazon, UBER, etc.**

These days companies want to see something unique in your resume and it is shocking but HR will review your resume in just 15 seconds. So what you can do to showcase

talent and skills? So don't worry tech giant\***IBM**\* has launched its verified \***IBM Certification**\* that gives badges on the completion of skills. You can develop skills related to Data Science, Python, Blockchain, cybersecurity, etc.

There are a lot of things available for core branch students too. If you are a Mechanical, Civil, or Electrical steam student you can visit the website of **NPTEL or SWAYAM portal**. You can get a long list of industry-oriented courses mainly offered by IITs. All the courses are free and you have to pay only the examination fees, the duration of these courses is available in 4,6,8,12 and 24 weeks and you can select your preferred course and duration. Apart from this, several courses are offered by **NIELIT, MSME, Indo- German Tool Room**. Courses on **SCADA, PLC, CNC, CAD/ CAM** are available on their portal. So options are much awareness is required and all you need to do is to be positive and take these courses with full enthusiasm. Hope students will follow these options and become job-ready.



**Ajeet Singh**

*Assistant Professor*

*Applied Sciences & Humanities*

# Teacher

# EMOTIONAL INTELLIGENCE

Have you ever been in trouble because of not being able to manage your emotions?

Have you ever regretted saying something which could have been avoided?

If you answered 'Yes' to either of the questions then this article is for you.

For years, the emphasis has been on a high Intelligence Quotient as a measure of success. People evolve and so do demands and the demand of the hour is Emotionally Intelligent humans. You can grab the best job through high IQ but to sustain and flourish, you need to be emotionally intelligent.

Emotional intelligence is the capability to identify, manage, evaluate, and understand our own emotions and also of the people around us.

Look around you and identify at least two people who you think are good at managing their emotions in a way that no matter how stressful the situation gets, they always seem to know what to say and how to say it. They present themselves with utmost patience and are always considerate towards others. They are good listeners and have an endearing aura around them.

We all like being around them, isn't it?

But, how are they so? Because they have high emotional intelligence.

Now, how have they developed this high level of EI?

The answer is simple. According to Daniel Goleman, 5 areas need to be worked upon to become an emotionally intelligent human:

1. Self-awareness – Being able to identify your emotions and their influence
2. Self-regulation – Ability to regulate your emotions and impulses
3. Motivation – Being self-motivated and optimistic

4. Empathy – Being considerate towards others
5. Social-skills – Mastering at building and maintaining relationships

The key is to control your emotions and not be in control of them. Becoming emotionally intelligent requires conscious and persistent efforts but once you get proceeding on the path of emotional intelligence, it starts to reflect in every aspect of your personality.



**Shivangi Agrawal**  
*Campus Recruitment Trainer*



# CODER'S CORNER

## How to think like a programmer – lessons in problem solving

Being Computer Science Engineering Student, if you're interested in programming, you may well have seen this quote before:

*"Everyone in this country should learn to program a computer, because it teaches you to think."*

– Steve Jobs

You probably also wondered what does it mean, exactly, to think like a programmer? And how do you do it??

Essentially, it's all about a more effective way for problem solving. In this article of UGI TechEra, my goal is to teach you that way.

By the end of it, you'll know exactly what steps to take to be a better problem-solver.

### Why is this important?

Problem solving is the meta-skill.

We all have problems. Big and small. How we deal with them is sometimes, well...pretty random.

Unless you have a system, this is probably how you "solve" problems (which is what I did when I started coding):

1. Try a solution.
2. If that doesn't work, try another one.
3. If that doesn't work, repeat step 2 until you luck out.

Look, sometimes you luck out. But that is the worst way to solve problems! And it's a huge, huge waste of time.

The best way involves a) having a framework and b) practicing it.

This doesn't mean you do everything the same way. Everyone is different. You'll be different. But if you start with principles, we all agree are good, you'll get a lot further a lot quicker. So, what should you do when you encounter a new problem? Here are the steps:

### 1. Understand

Know exactly what is being asked. Most hard problems are hard because you don't understand them (hence why this is the first step).

How to know when you understand a problem? When you can explain it in your mother language like Hindi or in plain English language.

Do you remember being stuck on a problem, you start explaining it, and you instantly see holes in the logic you didn't see before?

Most programmers know this feeling.

This is why you should write down your problem, doodle a diagram, or tell someone else about it.

*"If you can't explain something in simple terms, you don't understand it."*

– Richard Feynman

### 2. Plan

Don't dive right into solving without a plan (and somehow hope you can muddle your way through). Plan your solution!

Nothing can help you if you can't write down the exact steps.

In programming, this means don't start hacking straight away. Give your brain time to analyze the problem and process the information.

To get a good plan, answer this question:

*"Given input X, what are the steps necessary to return output Y?"*

### 3. Divide

Pay attention. This is the most important step of all. Do not try to solve one big problem. You will cry.

Instead, break it into sub-problems. These sub-problems are much easier to solve.

Then, solve each sub-problem one by one. Begin with the simplest. Simplest means you know the answer (or are closer to that answer).

After that, simplest means this sub-problem being solved doesn't depend on others being solved.

Once you solved every sub-problem, connect the dots.

Connecting all your "sub-solutions" will give you the solution to the original problem. Congratulations!

This technique is a cornerstone of problem-solving.

### 4. Stuck?

By now, you're probably sitting there thinking "Hey Rahul... That's cool and all, but what if I'm stuck and can't even solve a sub-problem??"

First off, take a deep breath. Second, that's fair.  
Don't worry though, friend. This happens to everyone!  
The difference is the best programmers/problem-solvers are more curious about bugs/errors than irritated.

### **Conclusion**

That's all folks!

Now, you know better what it means to "think like a programmer." You also know that problem-solving is an incredible skill to cultivate.

As if that wasn't enough, notice how you also know what to do to practice your problem-solving skills!

Finally, I wish you encounter many problems.

You read that right. At least now you know how to solve them! (also, you'll learn that with every solution, you improve).

Now, go solve some problems!

And best of luck my dear students.



**Rahul Kesarwani**

*Expert Technical Trainer*



Dear Readers,

We started the "UGI Tech Era" with a simple goal in mind, to upraise technological awareness and the opportunities available in such fields. We, a team of seven, signed up for this initiative under the wonderful guidance of our HoD, Mr. A.K. Misra, and other faculty members. We, as editors of this magazine, mostly emphasize bringing the most effective and interesting articles to the forefront for our readers to enjoy, and at the same time keeping the articles relevant enough for them to gain knowledge that will help them in their lives as students or professionals.

We try our level best to include interesting and unique content for our readers, while constantly working to improve every possible aspect of our magazine. We tirelessly worked on the project of bringing this magazine to life, irrespective of the situations that stood before us.

We are very grateful to all of you for giving your piece of time to read this magazine of ours, which is a direct embodiment of the humongous labors that we put into this magazine.

P.S. – We always welcome people with new and innovative ideas and content. Please do reach us if you have any ideas or suggestions or any type of queries in mind.

Write your suggestions to us on  
[technicalmagazineugi@gmail.com](mailto:technicalmagazineugi@gmail.com)

Thank You.

### **EDITORIAL TEAM UGI TechEra:**

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STUDENTS: Ratan Kumar Ojha , Ishika Srivastava, Namu Mishra , Prakhar Srivastava, Rishabh Singh,  
Kriti Srivastava, Saumya Yadav (BATCH: 2019-2023)