SHRI SHANKARACHARYA INSTITUTE
OF PROFESSIONAL MANAGEMENT AND TECHNOLOGY,RAIPUR
COMPUTER SCIENCE & ENGINEERING

CYBER TRINITY

NEWSLETTER October 2020, VOL 7

Inside This Issue

- Vision and Mission
- Memorandums
- DevOps
- What the Facts!
- Playing with Letters!
- Glories
- Happenings of Department
- Computer Science in Medical Field
- Editorial Board

VISION

"To produce value-based quality Engineers with the knowledge of latest trends and research technologies to meet the developing needs of industry and society."

MISSION

- To impart quality education in linewith quality teaching-learning-process
- To provide a better environment to encourage and support innovative research and development
- To strengthen linkage between industry-academia for overall improvement of students.

The environment is a vital component of any educational institution which unlocks a doorway to infinite learning possibilities. Hereby Shri Shankaracharya Institute of Professional Management and Technology helps the students as well as teachers in providing an amazing atmosphere for teaching-learning process. The facilities provided helps the student in better understanding and advanced implementation. Apart from study sessions, we frame our students to excel in the work they are into. Various activities in multiple fields are conducted to judge one's potential and materialize them according to their interests. Our college is ranked number 1 engineering college in Chhattisgarh and in the top 50 private engineering colleges all over India.

I convey my good wishes and vouchsafed blessings to the forthcoming batch of CSE 2017-21 for their placement in the eminent company. I heartily welcome the 2019-23 batch in the department. Take an active part in sessions, experiment with your ideas, give wings to your innovation, explore your creativity.

Shri Nishant Tripathi
Chairman(B.G), SSIPMT

SSIPMT is known for its value-based quality education as its students focus on gaining more and more knowledge of the latest trends and research technologies to meet the developing needs of the industry & society.

The atmosphere of college helps students to develop the potential within so that they can utilize all their assets to assess any issues and resolve them with their best knowledge and "serve the nation" as our motto says. The students of the CSE branch in SSIPMT Raipur are being trained in NASSCOM & AICTE recommended technologies. And we take a huge pride by saying that this year also our students of the 2017-21 batch got placed in the varied companies, we heartily congratulate them all the luck & wishes for their future endeavours. We cordially welcome our new batch 2019-23 in the Department with all the best wishes & good luck for their bright future.

Dr. Alok Kumar Jain
Principal, SSIPMT

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MEMORANDUMS

I hope every one of you is safe in this pandemic. This is a very difficult time for humanity, but we have to keep our faith, support, and hope in our doctors, policemen, defence, and our government to fight the Coronavirus and become victorious. “You don’t have to be great to start, but you have to start to be great”, as said by Zig Ziglar. I know that the current scenario is very tough time for all of us and with this motivation quote, I wish All the very best to my dear student for their placements. My genuine progress will be seeing you all in superior positions in different firms. So, work hard and s. And I know you will make it! Keep working on your logical reasoning, aptitude, speaking skills, and do as many courses as you can and strengthen your resume with certifications as much as possible.

I can proudly say that the Computer Science Association (CSA) thrives very to enhance the knowledge of kids, even during the pandemic. The innovations shown by the students in the “Best Out of Waste” were amazing, astonishing, and helpful. The “I am Smarticus” aptitude test was managed very impressively and a healthy number of students participated in it and scored very well. At last, the lovely, “Teacher’s Day” celebration was done magnificently, everyone who participated in it did an excellent job. Although this year’s celebration was a little different from the previous ones because of the pandemic, still it was joyful as ever before.

Dr JP Patra
Head of Department, CSE

We follow trends and this is the trend of millennials, quick, and quality. Production of efficient, high-quality software products faster and cheaper. That brings a new trend of DevOps, in which there is no barrier between development, deployment, and operational teams. DevOps is not just about coding, it’s about people. It’s about transforming those people who work in organizations as assets. In my opinion, DevOps is a mindset that transforms human asset into organizational capital. The secret of DevOps is the relation between the people, how they connect, collaborate, and comprehend the task. Because everyone in an organization is responsible and accountable for everything.

My best wishes for all students working and contributing to this newsletter and to the students, you’ll be facing their placement interviews. Students, “You are not Just You; you are the representative of this institute.” And in short “You are the Future.” Remember the thing, it’s not over until you win.

Brijmohan Lal Sahu
Assistant Professor

“DON’T LIMIT YOUR CHALLENGES. CHALLENGE YOUR LIMITS”

I am glad to see our students working hard and have come up with innovations that make us proud. We keep trying to motivate students to update with the most recent technology as per the trends of the industry. One such software development approach is DevOps. DevOps is the combination of two words, i.e. Development and Operation. DevOps is a software development approach that allows high-quality software to be developed quickly and reliably. There are technical benefits of DevOps that are Continuous software delivery, less complexity to manage, faster resolution of problems. DevOps is in high demand right now with no signs of slowing down.

I wish you all the best for the upcoming placement. My best wishes to all my dear students for a bright and successful future ahead.

Abhishek Saw
Assistant Professor

DevOps: a new era's trend

DevOps is a thought, mind concept, culture, or a method which helps an IT organization to be more efficient and productive. DevOps the word is a fusion of two other very well-known words Development and Operations. The Development part of DevOps deals with the process of coding, planning, building, and testing. Similarly, the operation part of the DevOps deals with the process of releasing, monitoring, deploying, and operating. For example, In a car if you see there is an engine, four tires, and the whole structure of the car, the engine is here the development of the team, the four tires are the operation team, the structure of the car is the main product and the person driving the car is your client. To make the client or the person driving, feel comfortable in the car or the product. The engine (development team) and the tires (operations team) have to work together by giving feedback in and out in a loop, and if they do not communicate properly the car will not make the person's drive comfortable. Hence, DevOps can take a company to a ninety percent efficiency if practiced properly.

-Aayush Mishra
3rd Sem (A)

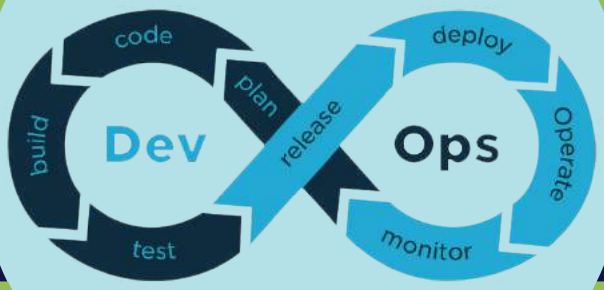
DevOps: Establish unity with integrity

DevOps is a clipped compound word in which 'Dev' stands for 'development' and 'Ops' stands for 'operation.' Apart from the buzzword of the IT culture, it is more like a philosophical mindset or strategy which bridges the gap between the Dev (Development) & Ops (Operation) side of the company.

It is a principle for the smooth conduction of big plans, so that, both the development & operation works simultaneously. Hence, improves the quality of output, and the Application reaches millions of users safely on time. The logo of DevOps which is an infinite symbol itself defines it perfectly as both the application development and operation contains a series of infinite steps.

DevOps practices help in building up a strong relationship, communication, and collaboration skills between teammates which results in the growth, and success of an organization. In one line we can say that DevOps is like sprinkling some essence at work which enhances its productivity.

-Zeenat Saba
3rd Sem (B)



DevOps Methodology

The goal of DevOps is to increase an organizations speed when it comes to delivering applications and services. Many companies have successfully implemented DevOps to enhance their user experience. Lets take an example- Facebook's mobile app which is updated every two weeks effectively telling users you can have what you want, and you can have it now! Have you ever wondered how Facebook was able to do it so smoothly? Its DevOps philosophy that helps Facebook ensure that its apps aren't outdated and its users get the best experience. Facebook achieves this through a "code ownership model" that makes its developers responsible for testing and supporting through production and delivery for each column of code they write and update.

Industries have started to gear up for the digital transformation by shifting their needs to weeks and months instead of years while maintaining high quality. As a result we will soon see that DevOps engineers have more access and control of the end user than any other person in the enterprise.

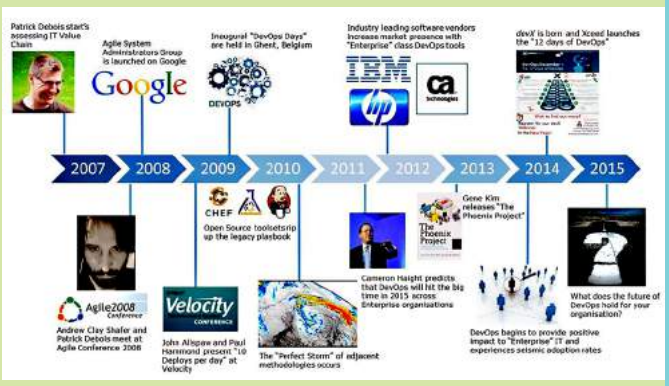
-Vaibhavi Pathak
5th Sem (B)

DevOps: Notion

The idea of dev-ops came into existence in 2008, proposed by Patrick Debois with the consideration of collaboration and automation. Dev-ops aims at laying out a bridge between system development and IT operations. It focuses on detecting and rectifying the issues that occurred in the process without interrupting other services. It involves multiple field members collaborating altogether as cross-functional in a company or firm. This results in creating a common ground for communication and problem-solving therefore, reflecting the digital working image of a company. Faster analysis, resolution of issues, and rendering services with satisfactory software quality leads to improve customer experience and satisfaction. The companies with the dev-ops concept have procured height as the circle only focuses on attracting the right talent for the desired jobs. More focus on automation, standard framework, and concepts of server-less technologies can provide a good ground for dev-ops in future facets.

-Ishita Verma
3rd Sem (A)

History of DevOps



The software development lifecycle was originally the brain-child of the 1960s and 1970s developers who used the Waterfall Methodology. It was a simple and linear software development model which follows a top-down approach. This model was only suitable for projects which had stabled requirements, and never used for complex projects. Then came Agile Methodology which was an iterative based Software Development Approach where the software project is dampened into various iterations and sprints. The lack of communications between the developers and operation engineers resulted in delayed event process and release. This major drawback gave birth to the DevOps approach. DevOps enabled continuous software delivery with a less complex problem to repair and faster resolution of problems. The main objective of DevOps is to shorten the system's development life cycle.

Manpreet Singh Saluja
3rd SEM (A)

DevOps Automation Tool

"The most powerful tool we have as developers is automation."
They're used to automate the test scripts and achieve high speed. The difficulties faced by the IT team when managing large IT infrastructure are divided into categories. These are: -

1.Source Code Management: GIT, Mercurial, Bitbucket, Subversion, TFS, which is used for tracking changes in the files and software.

2.Continuous Integration Servers: Jenkins, Bamboo, Teamcity or CircleCI; which are open source continuous integration server built with java used to test project virtually.

3.Infrastructure Automation: Chef, AWS, Salt Stack, Ansible are various tools used in transformation of infrastructure into code.

4.Log Management: Splunk, Scalyr, Graylog are used in indexing and searching of log files.

5.Configuration and Container Management: Puppet is majorly used for deploying, configuring and managing servers. And Docker uses containers for creation, deployment and running of application.

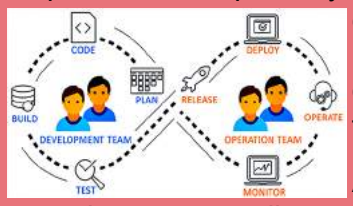
6.Continuous Monitoring: Nagios, ExtraHop, Monit are used for monitoring systems, networks and infrastructure.

Mounica Thakar
5th SEM (B)

Operation of DevOps, Software required & process involved

The DevOps basically works on the principle of "PPT" which refers to People, Process & Technology. These 3 are the foremost essential elements of DevOps.

The DevOps process flow is all about agility & automation. Each step of the DevOps lifecycle focuses on closing the loop between development & operations and driving production through continuous development, integration, testing, monitoring, feedback, delivery & development.



A software & its tools are the most important attributes of any operation. Simplest & popular DevOps tools & software involves Git, Jenkins, Bamboo, Docker & more like this.

Git is one in all the most popular DevOps tools which is widely used across the software industry.It helps in tracking the progress of work; as we can make repositories where uploading of work takes place resulting in correct workflow.

Zeenat Saba
3rd SEM (B)

Principles of DevOps

DevOps has many principles to work with although at the heart of DevOps there lies three important principles: -

1. **Principle of Flow =>** DevOps speeds up the flow of work through the technology value stream further, increasing the quality of work. DevOps achieves flow by making work visible, reducing batch sizes and intervals of work, and building in the quality to prevent defects from being passed down.

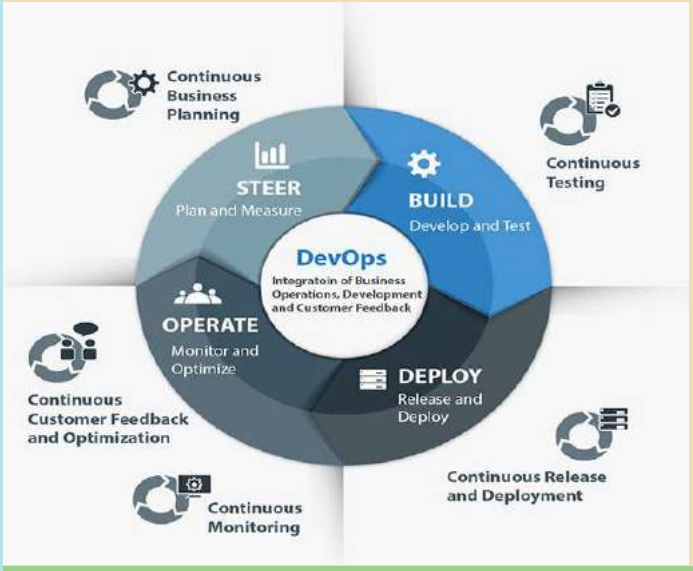
2. **Principle of Feedback =>** This principle focuses on amplifying the feedback between both developers and deployers along with the internal and the external customers, resulting in understanding customer needs and apply their knowledge to wherever needed.

3. **Principle of continual learning and experimentation =>** This principle fosters continual experimentation and learning from the risks which are taken ensuring that we keep pushing ourselves to excel and give a best of ourselves.

Musab Hashmi
5th SEM (B)

Future Aspects of DevOps

In upcoming years, we can witness several changes in the future approach of DevOps. The first important thing is the security as aspect of DevOps, also known as DevSecOps. Security will get more priority in the development cycle of DevOps ever than before, and it will be the responsibility of each member of the team rather than just security experts. The strategy is to secure data in the public cloud for security purposes. The next aspect is artificial intelligence or machine learning in DevOps. Applying AI and ML to the DevOps pipeline can help the organization to run, build, and automate applications in a much better way. Automation is another future aspect. The automation of software organization and infrastructure provisioning is a tool for the success of companies. It plays a vital role in improving the efficiency of the software. The Container Orchestration system will be helpful in the world of DevOps to solve the difficulties of infrastructure provisioning. Also, Serverless systems will be beneficial for the changes in application development in the cloud. Lastly, a multi-cloud strategy will be more adaptable and budget-friendly for companies.



-Isha Mishra 3rd Sem (B)

Hiring Procedure In The DevOps System

In Dev-ops system, the hiring series can be codified into sub lying categories:

• **Hiring freelancer** - Freelancer platform Upwork, Toptal, Youlearn provide a wide range of specialist with much cheaper cost. They're basically excellent for minor in short term projects.

• **Hiring Dev ops engineer through IT companies** - Hiring from professionals, one knows to validate and professionally implement new technologies, it guarantees to expertise and reliability, with general team experience and quality work.

• **Working with recruiting agencies -** Partnering with recruiting agencies provides an open-source contract with efficient management, which may include executive search, on-demand recruitment or recruitment process out searching.

What does the company expect from DevOps: -

Candidate must possess hard skills, tech skills to be updated in today's cutting-edge technology and soft skills to become a perfect addition to a team.

DevOps involve multiple field members collaborating altogether as cross-functional in a company or firm. Common grounds in communication and their problem-solving strategies result in faster analysis, resolution of issues and rendering services with satisfactory software quality. The companies with DevOps concept have procured heights as the circle only focuses on attracting the right talent for the desired job.

-Ishita Verma, 3rd Sem (A)

Summing Up..

DevOps- an emerging technology that is the combination of Development, and IT Operations along with philosophies, practices, and tools. Though DevOps has multi-faced goals its main aim is to lessen the system development life and impart software of high quality. Inherited from Agile technology, Patrick Debois and Andrew Clay came up with this technology in 2008. DevOps Lifecycle is the integration between the two pillars of it, i.e. Development and Operations. A DevOps Engineer will be working with developers as well as system operators to administer proper work flow; he should have good communication skills and should know how to many team and project. The major tools involved are- Docker, Ansible, Git, Jenkins, Splunk, etc. An organization working with the DevOps technology are reducing their code development and deployment cycle from years to weeks and months. In the coming time, the adoption of DevOps will be higher than 80% and this will help the organization to choose a path that will enable successful completion of their goals.

-Bhumika Pankaj Bhandari
5th Sem (A)

HOW DOES COMPUTER SCIENCE CONTRIBUTE IN MEDICAL FIELD

IoMT (Internet of Medical Things)

"It is an amalgamation of medical devices and applications that can connect to health care information technology systems using networking technologies."

ML (Machine Learning)

"In classic terms, machine learning could be a style of computing that permits self -learning from data and so applies that learning without the requirement for human Intervention."

AI (Artificial Intelligence)

"AI is simply a collective term for machines that may think". It refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions

Applications and Advancements of IoMT, ML, and AI within the Medical Field:

1.Clinician and Operational oriented AI:

- AI can be used for fast creation and development of new drugs for rare diseases.
- Earlier cancer detection
- Medication management. Managing medical records and other repetitive works.
- Preparing and administering the chosen treatment method.
- AI could reduce time and energy by automating the procedure of booking appointments, virtual doctor consultants etc.

2.AI in Radiology:

- Lung cancer is one of the foremost common and deadly tumours. Carcinoma screening can help identify pulmonary nodules, with early detection being lifesaving in many patients. AI can help in automatically identifying these nodules and categorizing them as benign or malignant.

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3.Clinical trial research

- ML will be used for remote monitoring and real-time data access for increased safety. According to McKinsey, there are many other ML
  Applications for helping increase run efficiency, including finding the simplest sample sizes for increased efficiency; addressing and adapting to differences in sites for patient recruitment; and using electronic medical records to cut back data errors (duplicate entry, for example).

4.Outbreak Prediction

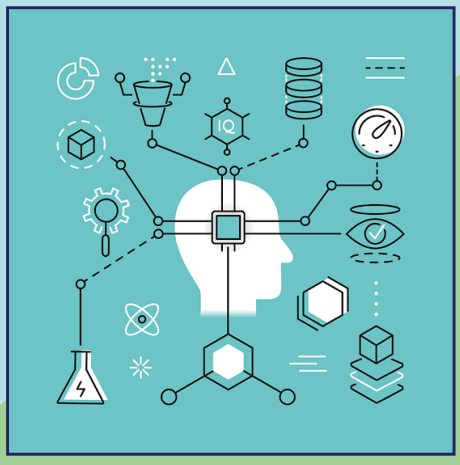
- ML and AI technologies also are being applied in monitoring and predicting epidemic outbreaks around the world, supported data is collected from satellites, historical information on online platform, real-time social media updates, and other sources. The opioid epidemic may be a direct example of AI

5.Machine Learning based behavioural Modification

- Behavioural modification is a crucial part of medicine, and ever since the proliferation of machine learning in healthcare, countless Start-ups are cropping up within the fields of cancer prevention and identification, patient treatment, etc. Somatic may be a B2B2C-based data analytics company that has released an ML-based app to acknowledge gestures that we make in our daily lives.

6.IoMT improves quality of treatment

- IoMT can improve healthcare quality while reducing cost — a business model care providers find very attractive. Patient monitoring is not the only application IoMT finds in hospitals and clinics. MRIs, X-ray machines, CT scanners, and other equipment can be remotely monitored for performance issues.



7.Excellence of IoMT

- IoMT allows insurers to view patient data more quickly, too, making claims processing faster and more accurate. Faster data access means faster data analysis, quicker diagnosis and treatment. The sooner patients can receive the treatment they need, the sooner they can go home. Hence, per patient cost also decreases.

8.Drug Discovery and Manufacturing

- One of the first clinical applications of machine learning lies within the early-stage drug discovery process. Currently, machine learning techniques involve unsupervised learning which may identify patterns in data without providing any predictions. Project Hanover developed by Microsoft is using ML-based technologies for multiple initiatives including developing AI-based technology for cancer treatment and personalizing drug combinations for AML (Acute Myeloid Leukaemia).

Future advancement in medical field

In the future AI-ML-IoMT could be more helpful in surgeries and providing individuals(people) with better personalized treatment. It can never replace doctors, but can make their skills to be used in an efficient way and where it is required. Real-time vital of patient can be accessed, and immediate action could be taken if any serious condition occurs. Using various methods or algorithms micro surgeries could be done more precisely and accurately. Hence, the hospital could be able to provide treatment more accurately.

Abhishek Chakraborty 3rd A
Srijan Agrawal 3rd B
Kanha Agrawal 3rd A

Events organized by CSE

This semester even during a pandemic situation our department has been innovative in the conduction of many events. The Computer Science Association team (CSA) worked very hard to boost the knowledge of students, during the pandemic. The conduction of events such as- Best out of waste, aptitude test, painting, and poetry, and in fact the Teacher's day was done virtually and very successfully. Events such as ***" Alfaz- a poetry competition "***, ***" Kalakriti- a painting competition "***, and ***"Best Out of Waste"*** helped the young artists of our department to show off their artistic skills, and know the importance of recycling and reusing waste material. Events such as ***"Code Bites- a competitive programming contest"*** and ***"I am Smarticus- a qualitative aptitude test"*** helped the students in their preparation for placements and interviews as coding and aptitude are main pillars of placement interviews. Also, the celebration of ***"Teacher's Day"*** was also done virtually, the event was a full package of dance, song, games and this seemed like once a lifetime event. Through this CSA didn't fail in creating memories even during the pandemic.

Glories of Department

1.**CHARCHIT PATRE** of the 3rd semester completed TOASTMASTER LEVEL 1 of Dynamic Leadership.

2.**RHEA JAIN** of the 3rd semester is the 1st student of SSIPMT SPELLBINDERS TOASTMASTER CLUB to complete Dynamic leadership path.

3.**JITESH CHHABRA, KARAN SIDDHU, M.V PRASHANT, SHUBHAM JAIN, PREETI VERMA & PIYUSH AHUJA** of the 5th semester were the finalists of COVID-19 NATIONAL BIO INFORMATICS ONLINE HACKATHON for full stackers.

4.**RUBAL AGARWAL** of the 5th semester participated in FRONTEND HACKATHON organized by GIRLSCRIPT BILASPUR and achieved 9th position in it.

5.**SHUBHAM JAIN** & **CHAHAT TEKWANI** of 5th semester participated in GOOGLE KICKSTART round F and achieved 1632 and 2667 rank respectively.

6. **ABHINAV DUBEY, MUSKAN VERMA, RAGHAV SHUKLA & RUBAL AGARWAL** of the 5th semester took part in one of the biggest open source event i.e. HACKTOBERFEST 2020 and successfully completed it.

7.**AKANKSHA PANDEY** of the 7th semester has cleared all the rounds of HACKWITHINFY 2020 coding challenge and got "PPO" for the post system Engineer Specialist.

8.**KARTIKEY PANDEY** & **VIDHI CHANDRAKAR** of the 7th semester started internship at OATAIK TECHNOLOGIES as an App and Website Developer.

9.**KULDEEP SINGH THAKUR** of the 7th semester is the area director of N4 TOASTMASTER CLUB in Chhattisgarh.

10. **SHUBHI SHRIVASTAVA** of the 7th semester is awarded with the title of Best Speaker in TCS Nagpur's meet.

11.**SATVIK SHRIVAS** of the 5th semester qualified FACEBOOK HACKERCUP and TCS CODEVITA.

12. **APURV GUPTA** of the 7th semester started internship at RESILLIENCE as a Website Developer.

What the Facts!

1. DevOps is not a tool it is a mind-concept, culture, or idea which helps development and operation team work together.

2. DevOps is not just only for continuous delivery its purpose is to increase collaboration and communication between different departments of the company

3. DevOps uses an open-source software and also an application running mainframes and firmware.

4. DevOps do not terminate IT teams it needs IT teams to automate programs that developers can use.

Placed Students

1. Jyoti Manhar (Capgemini)
2. Stuti Agrawal (Capgemini, TCS Codevita)
3. Abhishek Singh (Capgemini)
4. Rishita Rathore (Capgemini)
5. Shrutika Naidu (Capgemini)
6. P Priyanshu Rao (Capgemini)
7. Simar Kaur (Capgemini)
8. Ravleen Kaur Bindra (Capgemini)
9. Riya Tamrakar (Capgemini)
10. B Praveen (Capgemini)
11. Simran Rai (Capgemini)
12. Rishikesh Shrivastava (Capgemini)
13. Ankit Kumar Pithalia (TCS Codevita)
14. Parul Kashyap (TCS Codevita)
15. Md Zafar (TCS Codevita)
16. Shreya Pathak (TCS Codevita)

GATE Qualifiers

1. Anugrah Mishra
2. Chandrakant Sahu
3. Abhishek Tandon
4. Devashish Dewangan
5. Simar Preet Singh Chawla
6. Akshat Singh Parihar

Playing with letters !

WORDS:

1. ALALERTWF
2. FOTAERWS
3. VOSEPD
4. RKEOCD
5. HIGBTU
6. PULSKN
7. NKINSJE
8. EMDYOETPLN
9. DGATOAD
10. ANTIRNOIGTER

ANSWERS:

1. WATERFALL
2. SOFTWARE
3. DEVOPS
4. DOCKER
5. GITHUB
6. SPLUNK
7. JENKINS
8. DEPLOYMENT
9. DATADOG
10. INTERGRATION

Newsletter Team

Dear Students

The whole world is going through this COVID-19 pandemic and I hope that you and your family are safe and in good health. First of all, I want to compliment The CSE department for presenting and administering the best out of waste, smarticus, hackathon, and teacher's day events in this challenging time so successfully, by this they have shown the real quality of leadership and unity.

A newsletter team possesses diverse roles, involving editor-in-chief, designers, picture editors and content writers. To create an effective newsletter team, internal communication is the key. haring of ideas and lucid communication, helps everyone to understand the big picture and how they fit in.

The virtue of the newsletter is, it educates the reader about ongoing technology trends, clear misconceptions and notifies regarding the upcoming events and advancements in technology.

Mentor - Prof. Taniya Jain

Heads

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Bhumika Pankaj Bhandari
(Head Content Writer)

Raghav Shukla
(Head Photographer)

Tanmay Mitra
(Head Designer)

Mounica Thakar
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(Content Writer)

Students may submit their articles in categories such as Technical trends, Interesting facts, small Technical Game. Deadlines of the submission will be informed soon. Please note that Cyber Trinity is a Newsletter for members of large and not a journal form publishing full-fledged research papers. Therefore, we expect articles written at the level of the general audience. Please send your article in MS-word format to Editor in Chief **Abhinav Dubey**, in the email id **cse.newsletter@ssipmt.com** with details of the sender(name, semester, branch). Issued on behalf of the Computer Science Department