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Universal College of Engineering

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ITS



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An Initiative By



Department of Information Technology

#SATYAVACHAN

A great accomplishment shouldn't be the end of the road, just the starting point for the next leap forward.

Harvey Mackay

Staff Coordinators:

- Mrs. Sanketi Raut
- Mr. Akshay Agrawal

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Why consider a career in Full-stack Development?

As technology becomes the driving force behind any business, organizations want professionals with both front-end (client-side) and back-end (server-side) software engineering skills. In short, they want full-stack developers.

1. Full-stack engineers are top choice candidates across industries and functions:

There is an ever-increasing demand for full-stack developers. According to a LinkedIn report, India expects a 40% growth in MERN stack development jobs this year. Recruiters are on the lookout for full-stack developers who can work on multiple software development domains and adapt quickly to the diverse complexities of interdisciplinary IT projects.

2. Full-stack developers play pivotal roles in their organizations:

With such rising demand, full-stack development promises to be a rewarding career. Full-stack developers who can use key programming concepts such as Javascript, HTML, and CSS; design and build a React application; and set up a secure full-stack web application using the MERN stack are at the center of their organization's digital transformation.

3. Full-stack developers are paid handsomely:

Since many industries want full-stack developers, they are also willing to hire the most skilled professionals at top dollar. According to Indeed's 2021 India report, full-stack engineers receive a minimum of 70% hike in their salaries, with some professionals getting up to 120% hikes.

4. Opportunity to study with the world's best university:

Keeping this soaring business need and talent shortage in mind, Massachusetts Institute of Technology (MIT) ranked as the number 1 University in the world according to QS World Rankings, 2021, through MIT xPRO, one of its professional education groups, has launched a one year Post Graduate Certificate in Full Stack Development program. It is most suited for graduates and early career professionals in India to help develop their coding skills using the MERN stack. This program will provide you with the tools and technologies to build, deploy, test, run and manage full-stack applications from start to finish.

Source: <https://content.techgig.com/why-consider-a-career-in-full-stack-development/articleshow/88024441.cms>

**- MR. AKSHAY AGARWAL
(Assistant Professor)**

North Korea Cyber-Attacks a Hacker, He Shuts Down their Whole Internet

A hacker in the US has taken credit for the ongoing internet disruption in North Korea. He states that he is performing "denial-of-service" attacks on the country to get back at the regime for targeting him in cyber-attacks a year earlier.

Digital connectivity in North Korea recently took a hit as the country was seen suffering from repeated outages of its few websites.

The experts have been trying to figure out the reason behind this for the past two weeks.

While fingers were being pointed at state-sponsored attacks on the isolated country following its recent missile testing, it turns out, it was an individual hacker sitting at his home in the US who took down North Korea's internet connectivity single-handedly.



The story is that of pure revenge, against a previous cyber-attack from North Korea that our protagonist here was the victim of. At the time, a hacking campaign by North Korea had targeted Western security researchers in an attempt to steal their hacking tools and find chinks in their cybersecurity protocols. Among the many targeted, one American took this attack personally and wanted to get back at North Korea's attempts.

Identified as P4x in a recent report by Wired, the American hacker waited for a year to see if the US government responded to North Korea's strike. Seeing that there was no retaliation, P4x decided to revert to the attacks by himself. "If they don't see we have teeth, it's just going to keep coming," the hacker told Wired.

To get back at North Korea's hacker group, P4x then launched "denial-of-service" attacks on the servers and routers of North Korea's networks. He had found numerous "known but unpatched vulnerabilities" in the systems that allowed him to launch these attacks. Since then, P4x has managed to automate these attacks on the country's networks. Now he just periodically checks the functioning of his programs meant to disrupt the internet of North Korea, right at his home.

"It's pretty interesting how easy it was to actually have some effect in there," he told Wired.

P4x's attacks on North Korea proved effective, as experts noticed almost all the websites within the country go down at several points during the attack. The hacker thus achieved his intention of getting back at the North Korean regime. However, others point out that the hackers behind the original attack on P4x may not even be in the country at any point.

P4x acknowledges this and says that his intention is never to target the country or its citizens itself, but to annoy the North Korean regime with these attempts. Since most of the people in North Korea do not have access to the internet, the crashing websites will certainly have had an impact on the ruling power in North Korea.



Going forward, P4x now plans to actually hack into North Korean systems. For this, he launched a website on dark web named the FUNK Project, or “FU North Korea.” He plans to gain more collective firepower from fellow hackers to conduct these attacks.

Whether ethical (or even legal) or not, P4x's attempts show that the digital world is a common space for everyone and that, if need be, a single individual can possibly disrupt the cyber world as we know it, all while sitting at his home.

Source: <https://www.indiatoday.in/technology/news/story/north-korea-cyber-attacks-a-hacker-he-shuts-down-their-whole-internet-1908311-2022-02-03>

**- MS. ANUSHRI JADHAV
(TE IT)**

3 Everyday Examples of Psychology in Action

The American Psychological Association defines “psychology” as the study of mind and behaviour. Using this definition, studying psychology is often associated with the experience inside the four walls of a therapist’s office and the common image of someone sitting on a couch. Or maybe you connect it to the research and statistics found inside academic textbooks. Although each of those examples are certainly part of it, the truth is that psychology is all around us.

From the decisions we make each moment of the day, to the people we interact with, understanding human behaviour is at the heart of psychology. Look around your world and you’ll find plenty of everyday examples of psychology in action.

1. Psychology in Advertising:

Have you ever noticed that certain ads appeal to you—or even totally convince you to buy something? It was probably because that ad used an advertising tactic based on psychological principles.

Three advertising tactics that take advantage of social psychology concepts include - The scarcity principle, Consensus, The mere-exposure effect

The scarcity principle means that people want what they can’t have, or what they think they can have but others cannot. Advertisers simulate scarcity through emphasizing things like limited time offers, last chance products, and rare items. This makes products and services seem more valuable and desirable.

Just think about the last time you heard that something you wanted was about to go out of stock permanently, how did you feel? Were you more likely to consider buying it?

Advertisers use consensus to show that an item is popular and well-reviewed. If an ad highlights positive testimonials and reviews, or how many happy customers they have, they want to show you the positive consensus about their service or product. This makes you trust the advertiser and service or product more.

Many online marketers include reviews of products in their stores to help consumers make better choices; however, there have also been controversies about whether advertisers are faking their reviews and/or censoring the number of bad reviews for the same reasons.

The mere-exposure effect means that when individuals are exposed to a stimulus more often, they’re more likely to prefer that stimulus. Businesses want to get their advertisements in front of your eyes as often as possible, so you build familiarity with their products and maybe even purchase them.

Many of us can sing along with popular commercial jingles almost as well as songs on the radio. Or we get some well-done taglines in our heads like “Can you hear me now?”, “A Diamond is Forever”, “The Breakfast of Champions”, “Just Do It”, or “Got Milk?”, among many others. These marketing hits help with the exposure effect.

2. Psychology in Health Care:

Psychology also impacts how we think and act about our diet and exercise. For example, a study in Psychological Science demonstrates that people under stress tend to eat high-calorie foods. Individuals who think in a “live for today” mindset ate 40 percent more calories than the control group.

This showcases how much our mental state can affect healthy eating habits. And if eating habits are impacted by our mental state then other lifestyle habits and choices can be as well, like exercises.

Another study illustrates how “gamifying” exercise improved performance. Showing accelerating scores on a screen encouraged individuals to exert more energy and work harder . Even though the scores were meaningless, they still had a clear psychological and physiological impact on the study’s participants.

3. Psychology in the Workplace:

One of the most stressful workplace situations is navigating how to ask for a raise. To build your confidence and increase the chance of receiving what you ask for, it’s important to be prepared. Some psychological principles, like knowledge of recency bias, can help with this.

Recency bias is when people recall things that happened more recently over things that happened a long time ago. Remember this when approaching your manager. Make a list of your successes, positive feedback, and important contributions over a long period and clearly outline them specifically. This will help to combat any potential recency bias and remind your manager that you deserve more.

Psychological concepts can also help you become a better manager. Companies like Google and Aetna have emphasized the importance of mindfulness in management.

Source: <https://www.thechicagoschool.edu/insight/psychology/examples-of-psychology-in-action/>

**- MS. MALIHA MOMIN
(TE IT)**

Earth's interior is cooling faster than expected, study notes

Studying a mineral named bridgmanite commonly found between Earth's core and mantle, researchers have suspected that Earth's inner heat is dissipating sooner, making it cool faster than expected.

About 4.5 billion years ago, the surface of young Earth was covered by magma and over the years, the planet's surface has cooled to form the outer crust. However, there's still enormous thermal energy in Earth's core and mantle which governs plate tectonics, earthquakes, and volcanism. Researchers are yet to find answers about the rate at which Earth cooled and whether there could be a complete cooling of the planet's interior. The international team measured the radioactive thermal conductivity of bridgmanite in the laboratory. The core-mantle boundary of Earth is rich in bridgmanite.

"Radiative thermal conductivity is one of the fundamental heat conduction mechanisms. Since it is strongly dependent on the color (opaqueness), we applied optical absorption measurement of the specimen (bridgmanite) under high-pressure and high-temperature conditions corresponding to the Earth's core-mantle boundary region," explained lead author Motohiko Murakami from ETH Zürich, Switzerland in an email to The Indian Express.

The results showed that the thermal conductivity of bridgmanite was about 1.5 times higher than assumed. These findings also suggest that other rocky planets may be cooling and becoming inactive faster than expected. The paper recently published in Earth and Planetary Science Letters adds that this cooling can weaken many tectonic activities.

When asked if this will lead to lesser earthquakes and volcanic eruptions in the future, Dr. Murakami said: "Yes, I believe so. Since all the tectonic activities (earthquakes, volcanism, and plate tectonics) can be ultimately driven by the thermal energy released from the deep Earth's interior through mantle convection, the dynamics of the Earth's mantle and the surface tectonic activity should be more or less synchronized." However, he adds that it is challenging to track how long it will take for the cooling to happen which will ultimately stop the convection currents in the mantle.

Source: <https://indianexpress.com/article/technology/science/earths-interior-cooling-faster-study-7739443/>

**- MS. LAVANYA DEIVAKARUNATHAN
(TE IT)**

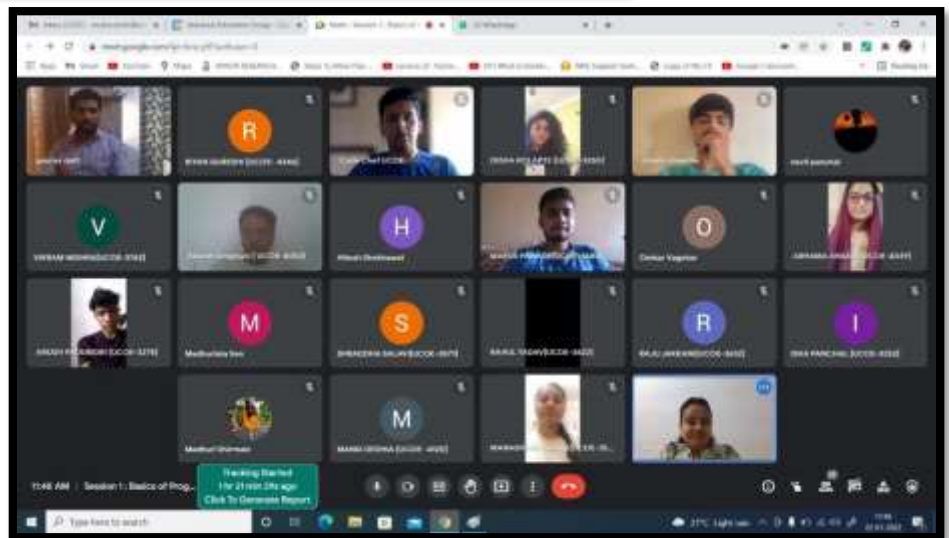
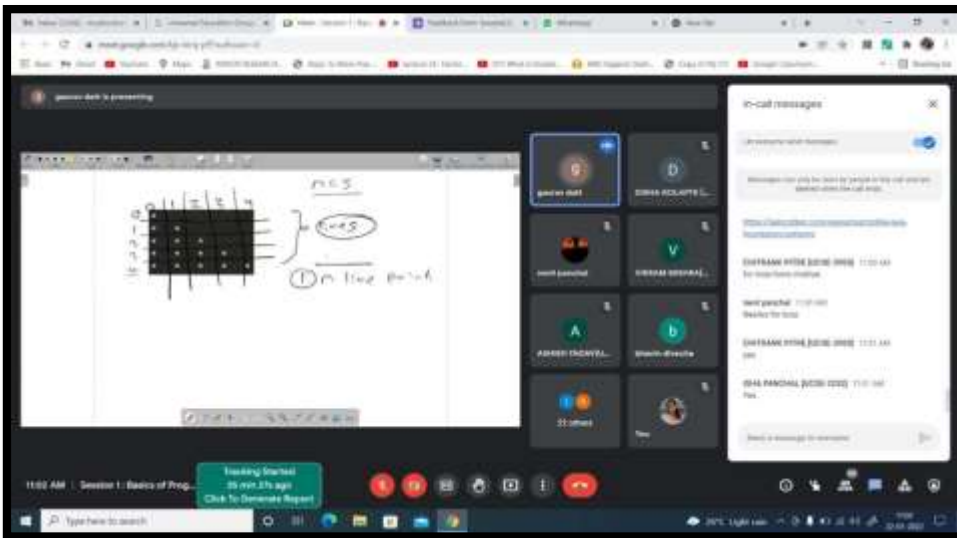
DEPARTMENTAL EVENTS

Workshop on - Basics of Competitive Programming

A Workshop on Basics of Competitive Programming was organized by CodeChef College Chapter of UCOE on 22nd January 2022, 10.00 a.m. – 12.30 p.m. (IST). It was conducted through Google Meet, there were total 69 participants. The speaker throughout the webinar was Mr. Gaurav Datt the lead of CodeChef College UCOE.

The learning outcome through this webinar:

- ❖ Interact with the CP lead and grasp the basic understanding of the fundamentals of competitive Programming.
- ❖ Learn the relevance of Competitive programming with respect to its demand in the employment sector.
- ❖ Getting started with the basics of coding IDEs, Data structures and live problem solving.

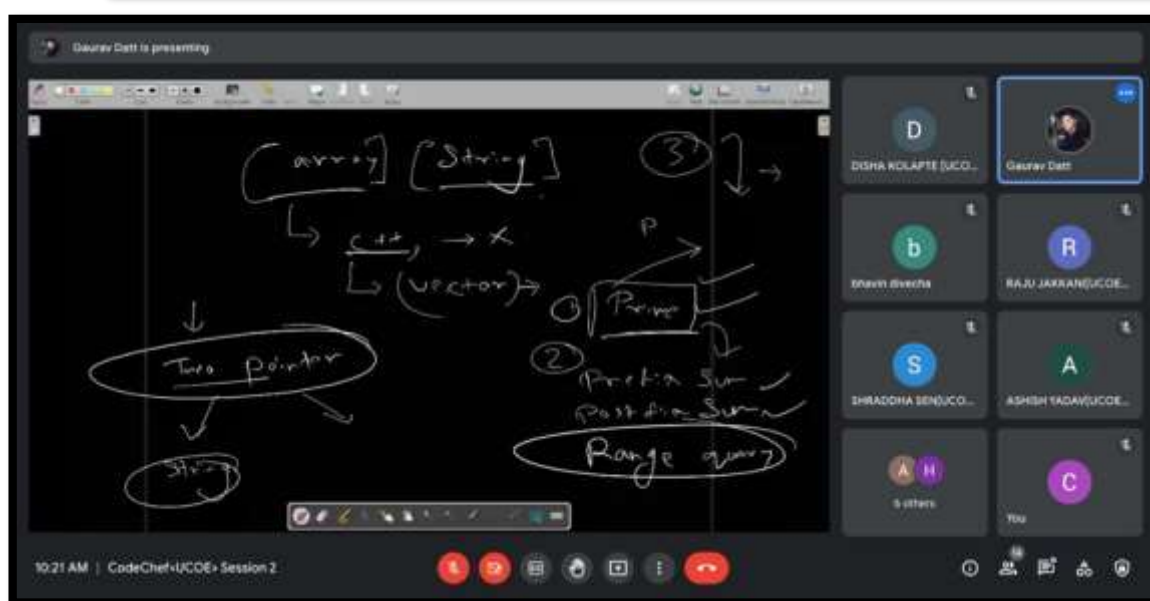
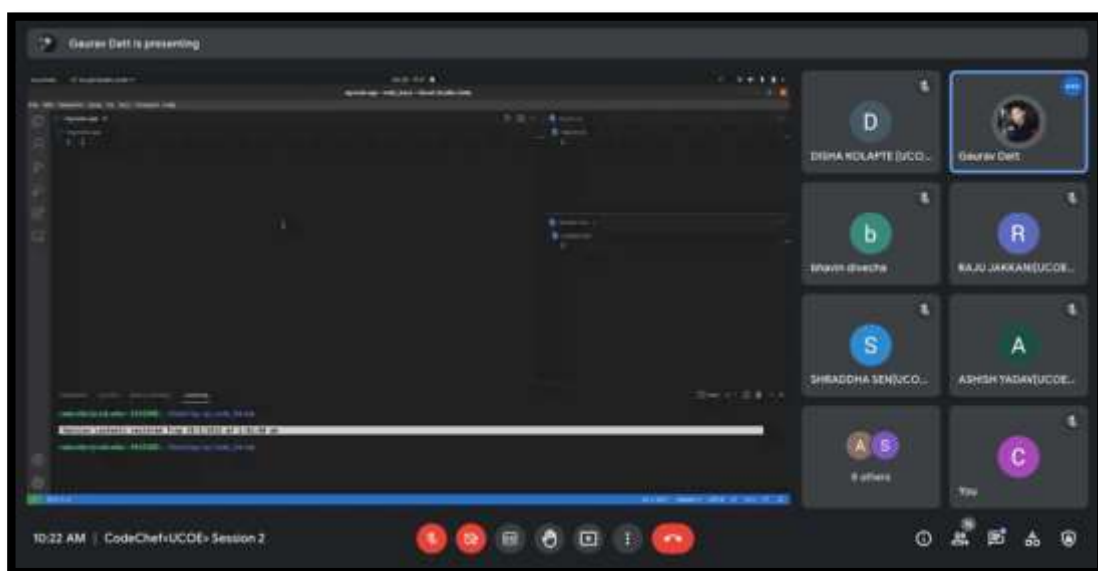


Workshop on -Problems on Arrays and Strings

A Workshop on Problems on Arrays and Strings was organized by CodeChef College Chapter of UCOE on 29th January 2022, 10.00 a.m. – 12.30 p.m. (IST). It was conducted through Google Meet, there were total 30 participants. The speaker throughout the webinar was Mr. Gaurav Datt the lead of CodeChef College UCOE.

The learning outcome through this webinar:

- ❖ Learn about the definition and use of Arrays and strings.
- ❖ Learn how the Arrays work, operate, and perform various functions using Arrays and strings.
- ❖ Indulge in an interactive session with the CP Lead and implement the various topic learnt.



UPCOMING EVENTS

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IS A
**GOOD COMPETITIVE
PROGRAMMING
RECORD BENEFICIAL IN
EMPLOYMENT SECTOR**

Mr. Abhishek Thakur
Software Engineer in Morgan Stanley

SATURDAY, 5TH FEBRUARY 2022
Time - 11:00 am

FREE REGISTRATION

Registration link: <https://forms.gle/mi5aLJm3HQHnky5>
Gmeet link: <https://meet.google.com/xsm-sbua-pdu>

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ORGANIZER
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Student Chapter

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CSI Unit of UCoE
We are glad to invite you to join us for the **WEBINAR** on
**INTRODUCTION TO
NFT**

Mr. Tarangan Patil
Speaker

SATURDAY, 5TH FEBRUARY 2022
Time - 2:30 pm to 4:00 pm
Contact: Aash Jain 9960395351

Registration link: <https://forms.gle/xPzDeMxgfv7UynZQ7>
Platform: Google Meet

Scan for previous edition



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