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STUDENT CHAPTER
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Chandigarh College of Engg. & Tech.
CCET

DIGITAL OUTLET

THE CCET ACM TECH MAGAZINE

SUMMER VOL. 1
MARCH-APRIL, 2021 (INAUGURAL ISSUE)

VISION

Chandigarh College of Engineering and Technology aims to be a center of excellence for imparting technical education and serving the society with self-motivated and highly competent technocrats.

MISSION

1. To provide high quality and value based technical education.
2. To establish a center of excellence in emerging and cutting edge technologies by encouraging research and consultancy in collaboration with industry and organizations of repute.
3. To foster a transformative learning environment for technocrats focused on inter-disciplinary knowledge; problem-solving; leadership, communication, and interpersonal skills.
4. To imbibe spirit of entrepreneurship and innovation for development of enterprising leaders for contributing to Nation progress and Humanity.

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Advancing Computing as a Science & Profession

LOOK WHAT OUR MENTORS HAVE TO SAY

Our mission at ACM CCET is not only to produce engineering graduates but to produce engineering minds.

- Dr. Manpreet Singh

Principal CCET (Degree Wing) | Source of Inspiration

ACM CCET provides student a great opportunity to learn scientific and practical approach of computer science.

- Dr. Sunil K. Singh

Professor and HOD, CSE | Faculty Mentor

Every person should be provided with an opportunity to learn and explore the field of computer science.

- Sudhakar Kumar

Assistant Professor, CSE | Faculty Sponsor

CCET ACM Student Chapter focuses not only on the growth and development of technical skills but also on an individual as a whole.

- Anshul Gupta

UG Scholar, 6th Semester, CSE | Chairperson

CCET ACM STUDENT CHAPTER

Our Chapter was established on September 18, 2015, and it will be completing its 6 years in the upcoming September. From this year CCET ACM Student Chapter has decided to work on the following initiatives and the team is already working towards it.

Research and Development

Competitive Coding

Designing & Digital Art

Web Development

ABOUT CASC

ACM boosts up the potential and talent, supporting the overall development needs of the students to facilitate a structured path from education to employment.

Our Chapter was established on September 18, 2015, and it will be completing its 6 years in the upcoming September. The total number of members presently stands close to 152. Over the years, CASC has been growing and involving more tech enthusiasts who share their experience and knowledge of their domain with other budding technocrats.

Overall, we at CCET ACM Student Chapter, through collaboration and engagement in a plethora of technical activities and projects, envision building a community of like-minded people who love to code, share their views, technical experiences, and have fun.

BENEFITS

- A vast network of nearly 100,000 highly dedicated student and professional peers.
- Become a member of computing community through one of hundreds of Professional and Student Chapters worldwide
- A full year subscription to ACM magazines and news letters.(Communications of the ACM, XRDS: Crossroads, MemberNet etc.)
- Participation in ACM Distinguished Speakers Program (DSP).Renowned International Thought Leaders Speaking on the Most Important Topics in Computing Today
- The option to subscribe to the full ACM Digital Library, which includes over 2 million pages of text.
- Unique volunteering opportunities to gain hands-on experience and knowledge of the marketplace

MEET OUR TEAM

"Coming together is a beginning, Staying together is progress, and working together is success"
~ Henry Ford

With new aspirations, zeal and triumph, the Executive Board of 2021 promises to climb the ladder of success by striving through myriads of challenges and together leading the Chapter to new heights.

ANSHUL GUPTA
Chairperson

INDERPREET SINGH
Vice Chairman

UDAY KUMAR
Secretary

MUSKAAN CHOPRA
Membership Chair

AAYUSHI BANSAL
Webmaster

KRITI AGGARWAL
Treasurer

MANINDER SINGH
Design Head

MUKESH SAHANI
Executive Member Head

SONAM GARG
Event Manager

TANVEER SINGH
External Public Relationship Manager

SHRIYA VERMA
Editorial Head

ACM RECRUITMENT AND INDUCTION PROGRAM 2021

RECRUITMENT 2021

March 27 - April 02, 2021

HOST-
CORE COMMITTEE
CASC

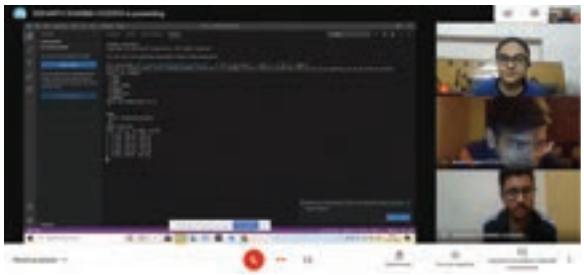
EVENT OUTCOMES

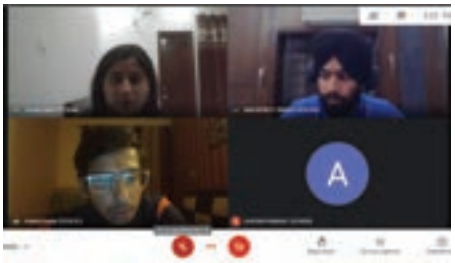
Overall, the event also included the interaction with the new chapter officers and was a huge success within the interest of the students, taking the participation count to 94.

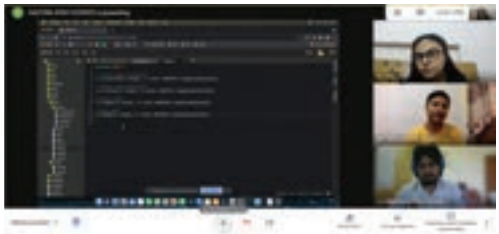
March 27 - April 02, 2021

The expert in anything was once a beginner. With this in mind, to embrace the strength of its members and ameliorate their skills, we at CCET ACM Student Chapter enthusiastically conducted online recruitment for executive members and induction for 2021. Freshmen, Sophomores, and interested juniors from various trades were first introduced to the ACM community, then about the activities and initiatives of the CCET ACM Student Chapter, and that we believe in providing a healthy environment where creativity and imagination can flourish.

EVENT GALLERY







MEET YOUR MENTORS

MEET YOUR MENTORS

11 APRIL, 2021

HOST-
ANSHUL GUPTA

YOUTUBE STREAM LINK

THE ACM@CCET

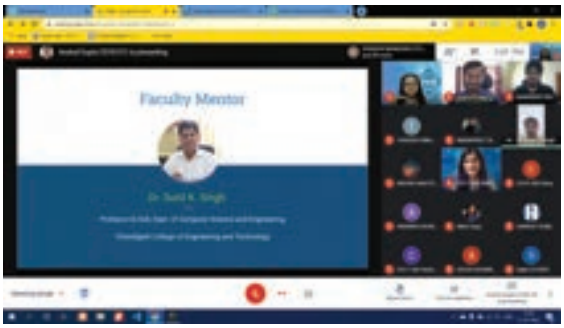
Executive team expresses their special gratitude to CSE HOD, Dr. Sunil K. Singh, Faculty Sponsor Mr. Sudhakar Kumar and all mentors from ACM Student Chapter 2020 for their effort and patience in conducting the incredibly informative event.

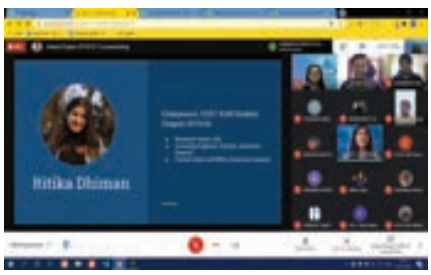
11 APRIL, 2021

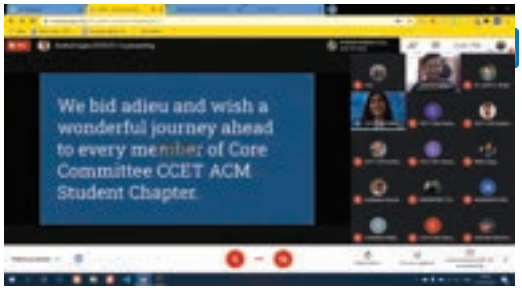
A tech meetup was organized to inspire and encourage the individuals to come up and use the platform of the CCET ACM Student Chapter to evolve and grow as a whole for the year 2021. It was a great opportunity for all the participants to have a one on one interaction with Faculty Mentors, as well as the upcoming Industry Leaders from the CCET ACM Student Chapter 2019-20, currently working at top Organizations, like American Express, CSIR-CSIO, IIT Mandi, to name a few.

Besides this, the newly developed website by the current team, deployed at ccet.acm.org was also launched during this event. Overall, the event was a huge success within the interest of the students, taking the participation count to 80. With the same zeal and enthusiasm, we look forward to showcasing our talents and involve more tech enthusiasts who can share their experience and knowledge of their domain with other budding technocrats, thus building a healthy environment where creativity and imagination can flourish.

EVENT GALLERY







WORKSHOP ON LOGO DESIGN

LOGO DESIGNING

17 APRIL, 2021

YOUTUBE STREAM LINK

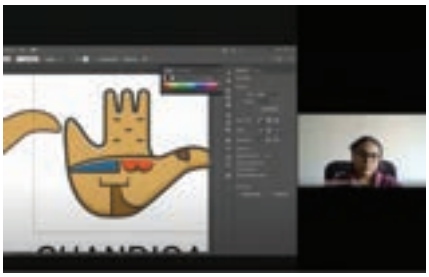
TOPICS COVERED

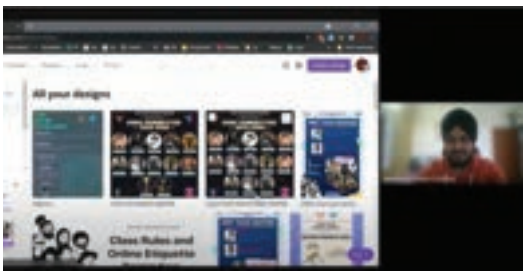
1. Aspects of Logo Designing and Tools available
2. Introduction to Illustrator
3. Workspace in Illustrator
4. Pen Tracing/Drawing
5. Using Online Resources/Vectors
6. Working Demo - Creating a basic logo
7. Next Steps

17 APRIL, 2021

CCET ACM Student Chapter successfully conducted a hands-on Logo Designing workshop in Adobe Illustrator virtually in which the participants were able to understand the importance of logo designing in present times besides focusing on the real-time workspace and tools in Adobe Illustrator.

EVENT GALLERY





SPEAKERS

MANINDER SINGH

AR VR Enthusiast, 3D Designer, He has also worked for projects under SparkAR program of facebook

MUSKAAN CHOPRA

Graphic Designer and Freelancer, Interned at some renowned social media handles as a graphic designer

WORKSHOP ON PYTHON FUNDAMENTALS

PYTHON FUNDAMENTALS

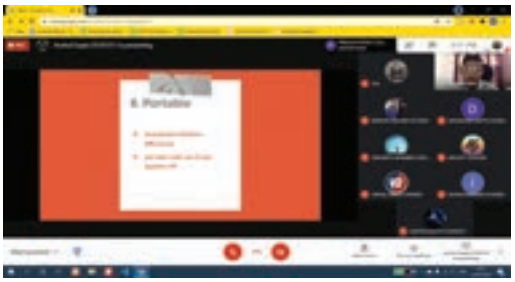
24APRIL, 2021

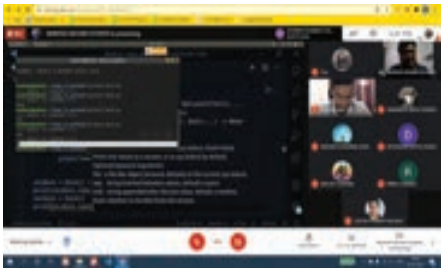
24 APRIL, 2021

CCET ACM Student Chapter organized a session and a hands-on for "Python Fundamentals", that began with a brief introduction about Python Programming Language, its features, functionalities, and evolution through versions followed with a descriptive hands-on on the fundamentals of Python Programming including the advanced concepts that are necessary for Project Development. Besides this, real-life use cases and their importance in the current era were also discussed.

YOUTUBE STREAM LINK

EVENT GALLERY





TOPICS COVERED

1. Introduction to Python
2. Features of Python Programming
3. Development Environments and Design Philosophy
4. Python Necessities
5. Object Oriented Python
6. Module Formation & Hands-On
7. Future Directions & Project Development

SPEAKERS

ANSHUL GUPTA

Microsoft Technology Associate 2020
Researcher
Data Science Enthusiast
Web Developer

MUKESH SAHANI

GATE 2021: #439
Python Dev
Deep Learning

LOGO DESIGNING COMPETITION

LOGO DESIGNING COMPETITION

April 18 - April 25, 2021

PRIZES

The Winning contestant will receive:
i. Winner Certificate.
ii. An ACM t-shirt.
(and the bragging rights to identify him/herself as the logo designer.)

The Runner-up contestant will receive:
i. Runner-up Certificate.
ii. An ACM Pen.
(and also, the same bragging rights to identify him/herself as the logo designer.)
and Certificate of Participation will be provided to all the participants.

April 18 - April 25, 2021

CCET ACM Student Chapter successfully conducted a hands-on Logo Designing workshop in Adobe Illustrator virtually in which the participants were able to understand the importance of logo designing in present times besides focusing on the real-time workspace and tools in Adobe Illustrator.

ENTRIES

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BLOCKCHAIN

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KEYWORDS

Blockchain | Security | Cryptocurrency

In the current world where cryptocurrencies like bitcoin, ethereum, and many more are progressing with leaps and bounds, holds the potential to be the future way of transaction. The only thing that is pulling crypto down currently is the cybersecurity issues and regulation so in order to cope-up with this various tech-enthusiasts have come up with blockchain technology.

The working of Blockchain Technology.

Blockchain is an organization of the framework which permits computerized data to be recorded and conveyed however not changed. Blockchain technology makes it difficult or impossible to change, hack or cheat the system because of a simple reason that the transaction been made over the blockchain is duplicated and distributed across the entire network of computer systems. A very common question that comes to mind is how is blockchain technology different from cryptocurrency. Thus, we will now try to understand how are these things the same but still different.

Bitcoin and Blockchain:

Bitcoin is cryptographic money and Blockchain is the fundamental innovation that controls its execution through different channels. So in simpler terms, we can say that blockchain technology helps us to understand, how cryptocurrency works. After knowing that bitcoin is an application of blockchain, it makes us curious about the working of bitcoin technology.

Working of Blockchain technology:

Initially, when a transaction is made over a Blockchain network, a block is being created, which carries all the information about the transaction. Once a block is being created it is then broadcasted over the peer-to-peer network, computers known as nodes, which then certifies the transaction. A checked exchange includes digital currency, agreements, records, or some other significant data. Every one of the confirmed exchanges is joined with different blocks to make another block of information for the record.

What makes Blockchain so important in present times?

Following are the things that make Blockchain better than the existing centralized system:

i) Immutability: In the current concentrated or conventional framework, there is a high possibility of the structure admin changing the information or somebody hacking into the framework and adjusting the information. Be that as it may, with blockchain, there is no chance of changing the information or adjusting the information, the information present inside the Blockchain is perpetual one can't alter it.

ii)Transparency

Centralized systems are not straightforward, while Blockchain offers total straightforwardness. Blockchain innovation permits associations and ventures to go for a total decentralized organization where there is no requirement for any brought together position, consequently making straightforwardness.

iii)High Availability

In contrast to concentrated or centralized frameworks, Blockchain is a decentralized arrangement of P2P networks which is profoundly accessible because of its decentralized nature. Since in the Blockchain organization, everybody is on a P2P organization so on the off chance that one friend goes down, different companions actually work.

iv)High Security

One of the significant advantages of utilizing Blockchain innovation is that it offers high security, as every one of the exchanges of Blockchain is cryptographically secure and gives uprightness. Hence as opposed to trusting on an outsider, you would now be able to trust on cryptographic calculations.

PYTHON OR POTATO ?

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KEYWORDS

Programming language | Python

In recent times, Python has been very much in use since the past decade or when it was first deployed. Built as a 'pastime' project, the Python programming language has made a huge way long since its initial start. In whatsoever domain you may look at, say, Education, Finance, Datascience, Software Development, Gaming, Web-Development, Desktop Applications, Banking, Automation, and the list goes on, Python has you covered.

My journey into development itself started with working on the Django Web Framework of Python and then moved on to Artificial Intelligence and Machine Learning. These enormous use cases I mentioned before, have been possible due to the unending modules and libraries that Python has. Suppose one wants to work on GUI based applications he has Tkinter for it; Someone wants to work on a data product, NumPy and pandas are there; A person wants to work on scrape something from the web Beautiful Soup is there; One wishes to work on visualizations or analytics, Matplotlib and Seaborn are with us; Another wants to work on computer graphics, Pygame can be used.

So all in all Python provides most of the library and module, where one just has to build the logic and put the problem into the picture without worrying about how, why, and what of minute things. Also, this enormous count of built-in modules and libraries makes it easier to work on solutions rather than building smaller modules for utility purposes that's what can be the limitation of other languages like C.

Truly, the execution speed remains a concern and there has been a long debate since the invention of Python that whether Python is an Interpreted or a Compiled language, to which I believe it is majorly interpreted though it includes compilation in the terms that Python files (.py files) first get converted into something that is called first get converted into something that is called as the bytecode or some code which is understood by the machine and then executed by the machine. This can be a possible reason, when compared to languages like C, Python is accused to be a bit slow.

In my opinion, this surge in the use of Python besides is majorly due to the increment and alignment of tech-savvy people towards the open-source softwares, Python is one of them. This is the fact more new modules are incorporated every year with enough focus on the enhancement of the previous ones. Besides this, in every version, some new changes are brought for the better, and the same is expected in Python 4.0 with some additional ease in development, leading to more excitement among the developer community.

Concluding this I would say, just as a potato is suitable for making most of the vegetables, similar is the case of Python Programming Language. It adds taste to every aspect of a programmer's life whatsoever the use-case may be. Isn't it?

DATA SCIENCE MAGIC

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KEYWORDS

Data science | Machine Learning | Deep learning

Data science has been set with the top trending job opportunities for current scenarios.

With the wide range of application of data science from product analysis to customer satisfaction and nearly any field that comes to your mind, you can associate data science along with it.

In recent days, during the corona pandemic, a prime new use of artificial intelligence and deep learning, the subclasses of data science, has been observed when these techniques have been used to create artificial models for advertisements, i.e., from the data set of all available models and actors, new characters are created which were further used for recording advertisements, removing the problem of availability and health of actors and models available during the pandemic.

For all the new aspirants looking over this domain does seem like a magical experience and wishes to look for someone to guide them through the journey to become another wizard and be able to work around data magically.

Brief workflow for the new learners who wish to work in this field is provided below,

1. Decide on the problem: This step should be the most important and you may wish to give it the most amount of your time, because the more clarity you have in your problem statement, the quicker you would be able to work around stuff collecting and analysing data.

2. Acquiring Data: There are various datasets available to be used for projects and study. These can be looked over Kaggle or the Machine Learning Repository of UCI.

3. Preprocessing of Data: This includes various steps such as data cleaning, feature extraction working around missing data etc.

4. Modelling Process: Once the data collected is ready for use, we need to create and evaluate the models generated over this data. Typically, a variety of models are constructed in order to determine which technique performs best on the problem at hand using the data supplied.

The type of task (classification, regression, etc.) and the amount of data available, as well as desired model properties (speed of usage, interpretability, simplicity of encoding domain knowledge), limit the model selection.

Hope this article provides you with brief information as to how data science works around and how one can start working in this domain, for a more in-depth understanding of the domain, I would suggest you look over courses and materials available online.

One of them available on Coursera is, *https://www.coursera.org/learn/machine-learning#syllabus*

DIGITAL NOSE

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KEYWORDS

Digital olfactory | Smell | Machine olfactory | Coronavirus | Artificial Intelligence

We realize we can instruct machines to see. Sensors enable vehicles to take in visualized data and use decision intelligence for deciding what to do next.

In any case, did you realize machines can smell, as well? Our human noses work by analyzing atoms delivered by natural and inorganic substances in our surroundings. At the point when the energy in objects builds, smell vanishes, making it feasible for us to breathe in and ingest them through our nasal cavities. The odor then, at that point triggers our nasal olfactory neurons and the olfactory bulb. Our minds arrange other data (like obvious signals and recollections of things we've smelled previously) to recognize the smell and choose what to do straightaway.

Digital olfaction imitates how people smell by catching odor marks utilizing biosensors, then, at that point utilizing programming answers to investigate and show the scent information. AI (artificial intelligence) throws light on the database of previously gathered odor data.

It is a typical inquiry to pose to why machine olfaction is important by any means.

The truth of the matter is, that the scope of potential applications is very gigantic. Perhaps the clearest errands for a fake nose are likely applications inside the food business which reduces the R & D time. Electronic noses will likely likewise get significant for police and customs officials where dogs and canines are utilized to distinguish unauthorized substances. Later on, organizations will conceivably be working together on projects that will make digital olfactory libraries for organizations, or in any event, making gadgets that help Coronavirus patients recuperate their feeling of smell. For unsupervised classification, the k-means calculation is presumably the most well-known. Additionally, the utilization of self-organizing maps (SOM) has been accounted for electronic noses. For supervised classification, artificial neural networks and graph neural networks (GNNs) are broadly utilized and ordinarily accessible in business bundles.

LIGHT AND INTERNET | LIFI

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KEYWORDS

Internet | WiFi | Radio frequencies

The huge demand for radio frequencies that transmit data is increasing day by day. However, the radio spectrum is not an everlasting resource, and to unravel this issue, modern innovations are required to supply spectrum relief. This is where LiFi(Life Fidelity) comes into play.

LiFi is a bidirectional wireless optical network technology. LiFi uses visible light as the data transmission medium. The light source uses the emitted light as a medium to transmit data whereby Light-emitting diodes (LEDs) are utilized as light sources. They are equipped with a chip as a signal processing unit. We will be able to access the internet using light from lamps, streetlights, and LED TVs thanks to LiFi technology. It is not only less expensive, safer, and quicker than WiFi, but it also eliminates the need for a router. To surf the net, simply aim your phone or tablet towards a light bulb.

This is a significant technological advancement over today's wireless infrastructures. LiFi boosts the speed and bandwidth of WiFi, 3G, and 4G connections, which have limited capabilities and become overloaded as the number of users browsing the internet increases, leading them to crash, slow down, or even disconnect. LiFi, on the other hand, has a band frequency of 200,000 GHz, compared to WiFi's limit of 5 GHz. The data transmission test of LiFi reached a speed of up to 224 Gbps, which is about 100 times faster than WiFi.

Many experts speculate that WiFi and other wireless communications will become obsolete as LiFi technology develops. We'll really have to wait for a few more years to discover if the street lights can connect us all to the internet, in addition to lighting up the streets.

SOFTWARE DESIGN PATTERNS

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Publicis Sapient

KEYWORDS

Software Engineering | Conceptual Modelling | Software Development

During my engineering career, I encountered various ways to write a code. Lots of people suggested so many different ways to standardize the code across the team. Some of them claimed that their way of writing code is performance efficient whilst others said it standardize their own code so that it can be referred and understood easily.

When I was a fresher, my biggest fear was to write a clean and organized code which everyone would appreciate not only because it can be easily read and understood but because it can be modified, expanded and scaled easily too. After lots of ups and downs through this search, my path crossed with the term Software Design Patterns. Anybody can learn the syntax of any programming language to write up some few thousand lines of code but when it comes to enterprise level code where number of lines of code doesn't matter, the organization of code becomes most important and critical part.

In my 4.5+ years of software development and research experience, I have understood a fact that organizing the code of any programming language is as important as writing an algorithm before any programming problem. If you do not write up the algorithm upfront, highly possible that lots of use cases going to be missed. As a result, there could be major changes in the code to fix some bugs which is going to shake the core code of your application and hence open the never closing door of quality assurance.

I would suggest everyone to make use of Software Design Patterns, whether you are fresher or experience, as it would not only help you to write organized and easy to change code but your aura of imagination would also expand. It would be wrong to say that just by using Software Design Patterns one can over come the future problems and complexities but it'd reduce the level of chaos. Moreover, never underestimate your juniors or anybody having less experience than you, I have seen people giving ideas that have exploded the mindset of other people just like Thanos snapped his fingers. As a result, keep yourself always open to modify the existing design patterns or try to make use of hybrid (more than one design patterns integrated in a single area of your application).

Pros and Cons – Well no doubt I have put lots of emphasis on following Software Design Patterns and learn them due to their advantages but they do have some cons. In some scenarios, we have to fix the code or give the quick solution and we do not have enough time to create all those dao/dto layers and be organized. In such cases, we must follow the best shortest path considering the timelines.

Last but not the least, Software Design Patterns gave me a different perspective to look at programming and solving other engineering problems. Similarly, somewhere somehow something else might act as a kick for you expand your way of thinking but I must suggest to communicate with people of all types, experiences and mindset because nowadays world has shifted from a single responsibility Java Developer to multi-responsibility software engineer. In the end, it is your call, if you would like to stay outdated or work hard to catch up the pace where the whole technology world is heading. See you in the future with more knowledge, understanding and experience.

FOUNDING IDEATORS

We all have faced a similar set of questions while starting up on this journey of engineering about which language to focus upon, what actually should start to work upon and what path should one follow, For seniors, have been through all this stuff or maybe still going through many of these questions. Learning from surroundings and happenings in the field of computing and technology, so to share this experience to be used as a pathway for new beginners is the major focus of this magazine. To shower knowledge about what's all that is trending around the world, and how one can participate in these activities and new technologies to endeavour new horizons and opportunities.
In these tough times, make sure to have some time for yourself, just have your social detox, have calls with friends spend time with family, and if it is just stressing too much take help from friends, seniors or family members, or just talk it out.

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CCET

"We Work on How to Think... Not Only What to Think...!"

professionals.connect
{computing.expand()}

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CCET ACM Student chapter

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We are coming with the inaugural issue of the Digital Outlet Tech Magazine March-April 2021 to all tech-enthusiasts. Also, we regret the delay in the launch of this issue due to the ongoing COVID19-Pandemic situation. The CCET ACM Student Chapter pray for the safety of every individual and request you to vaccinate and follow the medical advisory and Government norms. Stay Safe with your near and dear ones.

- Chairperson, CCET ACM Student Chapter