# INSTITUTION OF ENGINEERS INDIA (IEI CSE SB TKMCE)

**Annual Report (2023 June - 2024 May)**

## <u>SUNDARIKK POTTUTHODAL (26 August 2023)</u>

Games are always a fun way to learn new things. Applications of artificial intelligence and computer vision have been on the rise in the past few years. Keeping in mind the need to give youngsters early exposure to the tech in demand and to cultivate an interest in the same, IEI CSE SB TKMCE conducted a technical event "Sundarikku Pottuthodal using AI & CV" on 26th August 2023.



Participants were supposed to control the mouse pointer using their hand gestures which were captured by the camera of the computer. The participants could place a dot(bindi) in the desired position of the picture displayed using hand gestures, whoever placed the dot in the most appropriate position was declared winners. The event was conducted alongside the Onam celebration of TKMCE. Students of all years were part of this event. Over 40 students participated in the same and the event was a great success.

We believe that this gaming event, which was both technical and traditional, helped boost the interest of youngsters in their respective fields and an encouragement to come up with similar ideas.

# FIRST YEAR ORIENTATION (20 September 2023)

The First Year Orientation Program of **IEI CSE TKMCE** was conducted successfully on September 20, 2023, at the APJ Hall, TKMCE. The program aimed to introduce the first-year students to the club's activities, benefits, and provide a platform for interaction.

The session commenced promptly at 4:45 PM, with a warm welcome by our host, Anna Tomson, who set the tone for the evening.

The welcome address was delivered by our esteemed Chairperson, Mr. Sanjay SJ, a 4th-year CSE student at TKMCE. Mr. Sanjay extended a hearty welcome to all the first-year students, expressing his enthusiasm for their involvement in IEI CSE TKMCE.

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Following the welcome address, Prof. Shyna A, our beloved Student Branch Counsellor, took the stage to provide an insightful overview of IEI and its numerous benefits. Prof. Shyna A emphasized why students should consider joining the club, highlighting the opportunities for academic and personal growth that IEI offers.

The program continued with an informative session by our Program Head, Mr. Prathyush, who recounted the past events organized by IEI CSE TKMCE. He shared valuable experiences and insights, giving the new students a glimpse of the club's vibrant history. Next, our dedicated Secretary, Mr. Sinan, took the stage to discuss the exciting upcoming events planned by IEI CSE TKMCE.

To foster interaction and engagement, all executive committee members introduced themselves and assured the first-year students of their readiness to address any queries or concerns. This gesture aimed to create a supportive environment where students feel comfortable seeking guidance and support from the club.

The highlight of the program was a fun and interactive game that encouraged active participation from the attendees. The game not only added an element of excitement but also allowed the students to bond and build connections with their peers.

The orientation program concluded on a positive note at 6:15 PM, leaving the first-year students motivated and informed about the club's activities and the support available to them. Refreshments were also provided following the session.

Overall, the IEI CSE TKMCE First Year Orientation Program was a resounding success, effectively introducing new students to the club's mission, objectives, and commitment to their academic and personal development. The event laid a strong foundation for future collaborations and learning experiences within the IEI community at TKMCE.

# STACK STATION (28 September 2023)



In a dazzling showcase of tech brilliance, the Stack Station session unfolded as a pivotal segment of the Code Craft event, meticulously orchestrated by the esteemed IEI CSE TKMCE. Under the guidance of Aparna, a third-year Computer Science student, the event promised a journey through the diverse realms of technology stacks.

The clock struck 9:24 PM, and the virtual curtains rose on the Stack Station session. Aparna, with infectious enthusiasm, welcomed a diverse audience to embark on a journey through the intricate world of technology stacks.
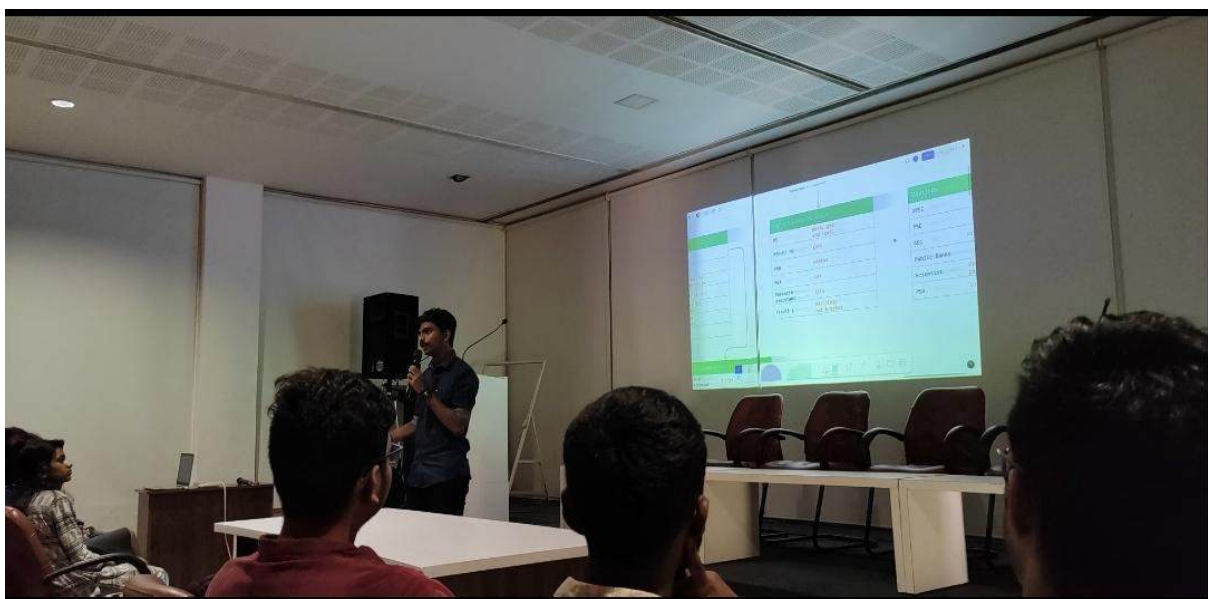
The spotlight then shifted to Prathyush at 10:00 PM, who artfully guided participants through the riveting landscapes of Machine Learning and Deep Learning. The session was a captivating exploration into the future of intelligent systems.



Sreeram and Fayiz seamlessly took over at 10:26 PM, unraveling the mysteries of Data Science. Concepts around data-driven decision-making were dissected, providing a panoramic view of the field.



Aleesha assumed the stage at 10:45 PM, illuminating the path to App Development. From ideation to deployment, participants gained insights into the dynamic world of crafting mobile applications.
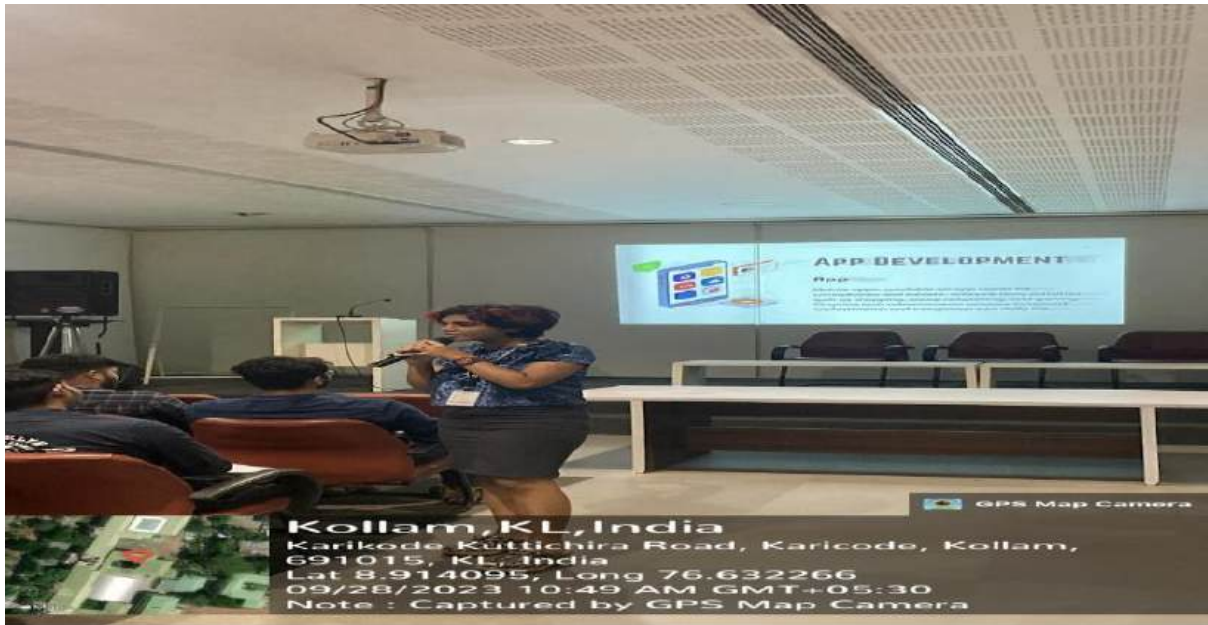
A well-deserved break at 11:35 PM allowed participants to recharge, followed by a delightful and interactive quiz activity. The session seamlessly blended learning with a touch of competitive camaraderie.



Parveen and Thej resumed the session at 11:40 PM, immersing the audience in the intricacies of Web Development. From frontend marvels to backend wizardry, the duo painted a comprehensive picture.

The baton then passed to Abhijith and Anagha at 11:55 PM, who explored the aesthetic world of UI/UX. Design principles, user-centric approaches, and the art of creating delightful user experiences took center stage.

Sajith stepped into the limelight at 12:10 PM. His insights into Cybersecurity illuminated the importance of safeguarding the digital landscape from potential threats.



The grand finale arrived at 12:20 PM, orchestrated by Jijo Johnny, offering a glimpse into the decentralized future with an introduction to Web3. The session left participants pondering the transformative power of blockchain technology.



Aparna concluded the session at 12:50 PM. The event reached its zenith with a photo session at 12:55 PM, immortalizing the shared moments of enlightenment and camaraderie.

The Stack Station session left an indelible mark on participants. Beyond the lines of code, it provided a canvas to paint dreams and aspirations in the vibrant hues of technology. As the virtual curtain descended at 1:00 PM, participants emerged not just informed but enriched, armed with the knowledge to navigate the intricate tapestry of technology stacks. The collaborative efforts of organizers and presenters manifested in an event that transcended expectations, leaving an enduring legacy of inspiration and knowledge.

**Pictures from the Session:**

# CODECRAFT (OCTOBER 2023)

## MACHINE LEARNING BOOTCAMP (started on 08 October 2024)

**Report of Day 1**

On October 8 2023, IEI CSE TKMCE successfully hosted an event titled "Introduction to Python", at Software System Lab TKMCE. It was conducted as an introductory session of its new initiative, "Code Craft", a three-month training program aimed at equipping students with essential technical skills. The event saw enthusiastic participation from around 80 students representing diverse engineering disciplines. The session was led by Devika P Girijan, a passionate Python enthusiast and a third-year Computer Science student at TKMCE.

The session commenced at 9:25 am and was designed to seamlessly integrate theory with practical hands-on coding exercises. Participants were introduced to Python programming via Google Colab, where they engaged in the creation of simple Python programs. Furthermore, the presence of 2nd-year and 3rd-year students in mentoring roles ensured that participants received personalized attention, and any doubts or queries were promptly addressed.

The session began with an informative introduction to Python, highlighting its significance and core features. Attendees also explored into fundamental concepts, including keywords, operators, identifiers, literals, variables, comments, data types, and user input. Throughout the event, students actively participated in various programming tasks, applying their newly acquired knowledge.

A short break from 11:25 am to 11:35 am was allowed to participants to recharge and network with peers. Refreshments were provided to rejuvenate the participants. After that, the session focused more on the basic, but important concepts such as conditional statements, the importance of proper indentation, and the practical application of loops such as for loop and while loop. Students actively engaged with the session by dealing with various simple programming tasks assigned to them, like creating a simple calculator. The session came to an end with 12:25 pm with great success.

Feedback from the participants was overwhelmingly positive, highlighting the effectiveness and impact of the session in imparting essential Python programming skills. Many of the attendees, particularly those from biology-related disciplines, saw this session as their first step towards becoming a skilled programmer.

In conclusion, the Python workshop exemplified a well-structured and comprehensive introduction to Python, a most-demanded programming language in the present scenario. The event not only equipped participants with valuable skills but also served as a testament to the commitment of IEI CSE TKMCE in promoting programming excellence among its students.

**PICTURES OF THE SESSION:**



**Report of Day 2**

On the 5th of November 2023, the second online session marked a pivotal continuation of the Python learning journey initiated during the introductory session held on the 8th of October 2023. With an encouraging turnout of 27 enthusiastic participants, the session, skillfully facilitated by Devika P Girijan, a proficient third-year CSE student, delved into essential topics. These included strings, slicing, functions, and string functions in Python.

Devika's adept guidance and approachable teaching style created an interactive and engaging online learning environment. Participants actively absorbed and applied their knowledge, gaining a deeper understanding of these foundational Python concepts. The session not only

expanded on the basics but also provided practical insights into the application of strings, slicing techniques, and the utilization of functions in Python.

As the virtual learning journey unfolds, these sessions play a pivotal role in establishing a solid foundation for participants. The emphasis on interactive learning, coupled with Devika's expertise, instills confidence in participants, enabling them to navigate the intricacies of Python programming with ease. The collaborative nature of these online sessions contributes to a positive and conducive learning atmosphere, fostering a sense of community among the participants.

In conclusion, the second online session, led by Devika P Girijan, served as a valuable step forward in building a comprehensive understanding of Python, laying the groundwork for participants to embark on more advanced concepts in their learning journey.

**PICTURES OF THE SESSION:**
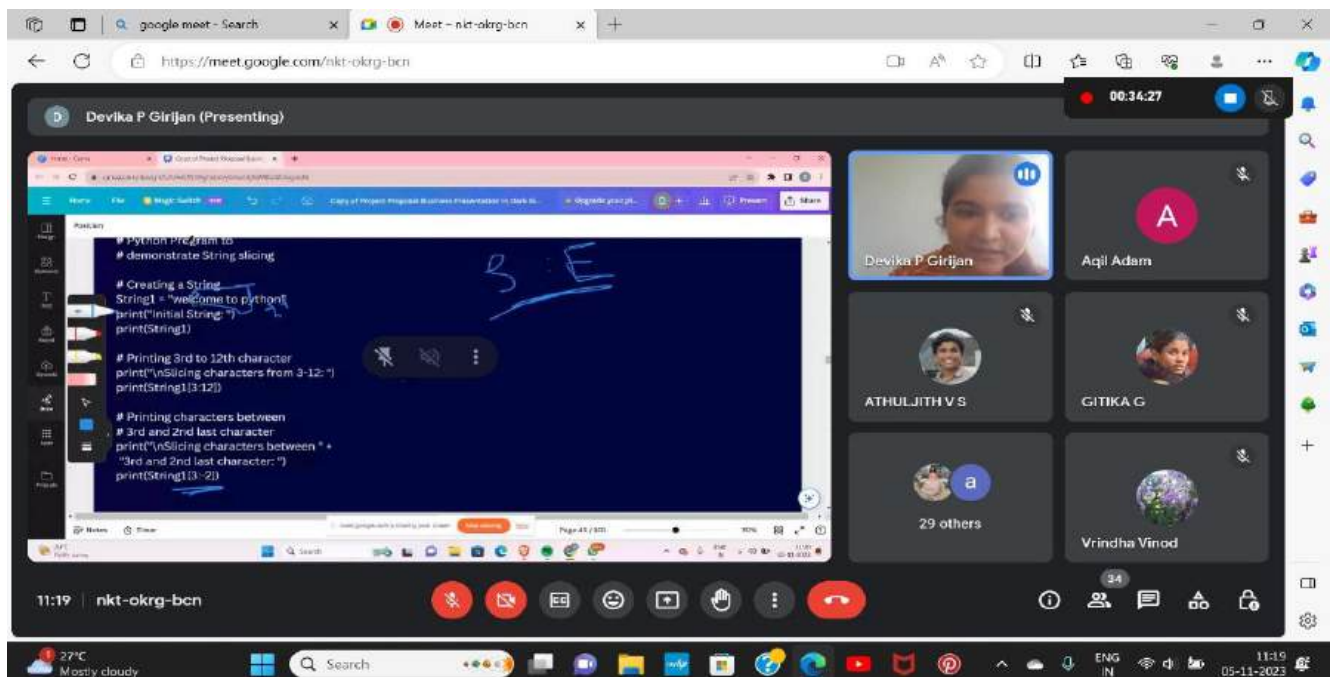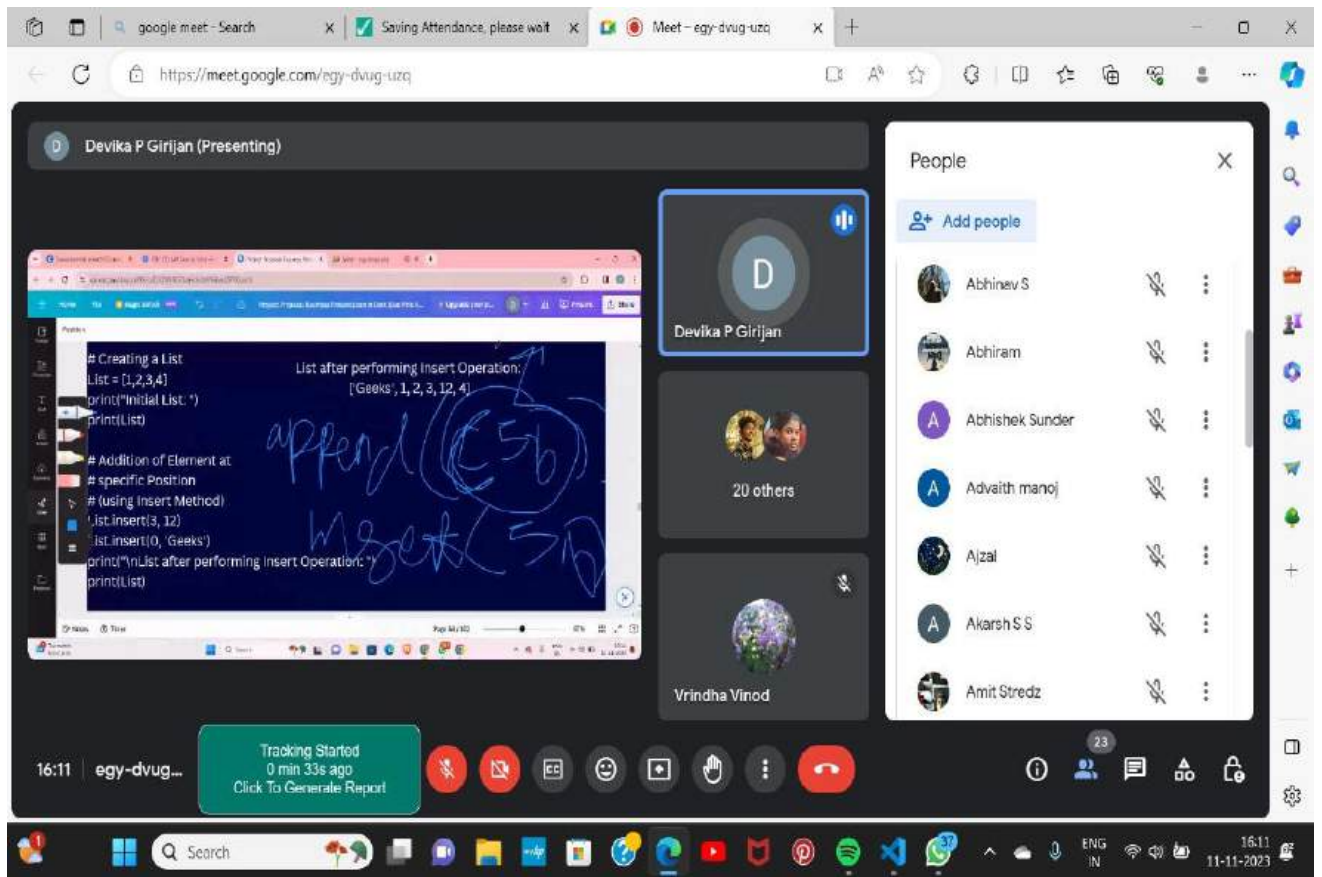
**Report of Day 3**

On November 11, 2023, the Code Craft Bootcamp conducted its second class virtually via Google Meet, with Devika P Girijan leading the session. Twenty-six participants actively engaged in the ongoing Python journey under the guidance of Devika, a skilled third-year CSE student.

The session delved into crucial topics, including lists, operations within lists, tuples, and dictionaries. Devika focused on building a solid understanding of working with lists and the various operations applicable to them. Her explanations simplified these concepts, making them more accessible to participants. Additionally, the class explored tuples and dictionaries, expanding the comprehension of data structures in Python.

The online learning environment, skillfully facilitated by Devika, proved to be engaging and instructive. The session not only deepened comprehension of Python concepts but also

equipped participants with practical skills in navigating different data structures. As the sessions progress, the collaborative learning experience fostered by Devika continues to boost confidence in Python programming among participants.

**PICTURES OF THE SESSION:**



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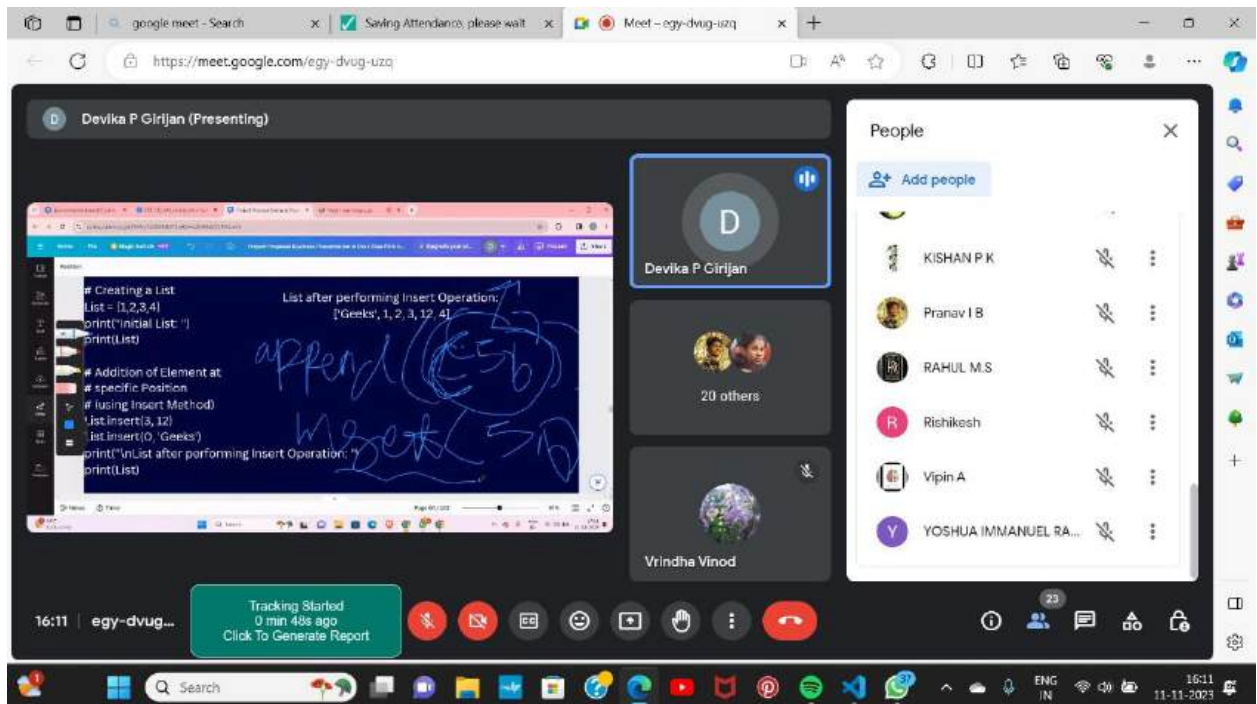
**Report of Day 4**

On November 13, 2023, the third session of the Machine Learning journey provided an immersive, in-person learning experience for 29 participants from 5:20 to 6:30. Devika P Girijan initiated the session by revisiting key Python concepts covered in the last class, including strings, slicing, lists, tuples, and dictionaries. Her clear guidance played a crucial role in solidifying the participants' understanding, fostering a collaborative learning environment.

Following the Python review, Prathyush Madhu took the lead to introduce the basics of Machine Learning. Participants gained valuable insights into approaching ML problems and became acquainted with essential ML libraries. Prathyush's expertise ignited curiosity and enthusiasm among the group, setting an engaging tone for the ongoing learning journey.

The combined efforts of Devika P Girijan and Prathyush Madhu, encompassing Python fundamentals and delving into the world of ML, create a dynamic and comprehensive learning experience. As participants progress, this collaborative approach not only enhances accessibility to complex concepts but also instills confidence in exploring Python and Machine Learning.

**PICTURES OF THE SESSION:**

**Report of Day 5**

On the 15th of November 2023, the fourth session provided an engaging in-person learning experience for 21 participants from 5:00 pm to 6:00 pm. The session focused on two fundamental topics, linear and logistic regression, with Prathyush Madhu, a knowledgeable third-year CSE student, leading the discussion.

Prathyush delved into the algorithms behind linear and logistic regression, providing participants with insights into the workings of these key concepts in Machine Learning. The session also included graphical representations, helping to visually understand the practical applications of these algorithms.

The interactive nature of the session allowed participants to actively engage with the content, posing questions and clarifying doubts. Prathyush's expertise and approachable teaching style created a conducive learning environment, making complex concepts more accessible.

As the session concluded, participants left with a deeper understanding of linear and logistic regression, laying a foundation for their continued exploration into the field of Machine Learning. The collaborative efforts in this offline session contribute to the ongoing success of the learning journey.

**PICTURES OF THE SESSION:**

**REPORT OF DAY 6**

On November 25, 2023, the sixth and final online session marked the conclusion of the Machine Learning Stack within the Code Craft Bootcamp, engaging 16 participants in a virtual learning experience. Prathyush Madhu, a proficient third-year CSE student, led the session, covering essential topics of clustering and DBSCAN (Density-Based Spatial Clustering of Applications with Noise).

Prathyush guided participants through the intricacies of clustering techniques, shedding light on how data can be grouped based on similarities. The session further explored DBSCAN, a clustering algorithm known for its proficiency in identifying clusters of varying shapes and sizes within datasets.

The online learning environment fostered interaction, enabling participants to actively engage with the content and seek clarification on the discussed topics. Prathyush's expertise and approachable teaching style contributed to an environment conducive to learning, making complex concepts more accessible.

As participants concluded the final session, they not only gained foundational knowledge in clustering and DBSCAN but also celebrated the culmination of the Machine Learning Stack in the Code Craft Bootcamp. This marks a significant milestone in their learning journey, equipping them with valuable skills for further exploration into the realms of data clustering and analysis.

**PICTURES OF THE SESSION:**
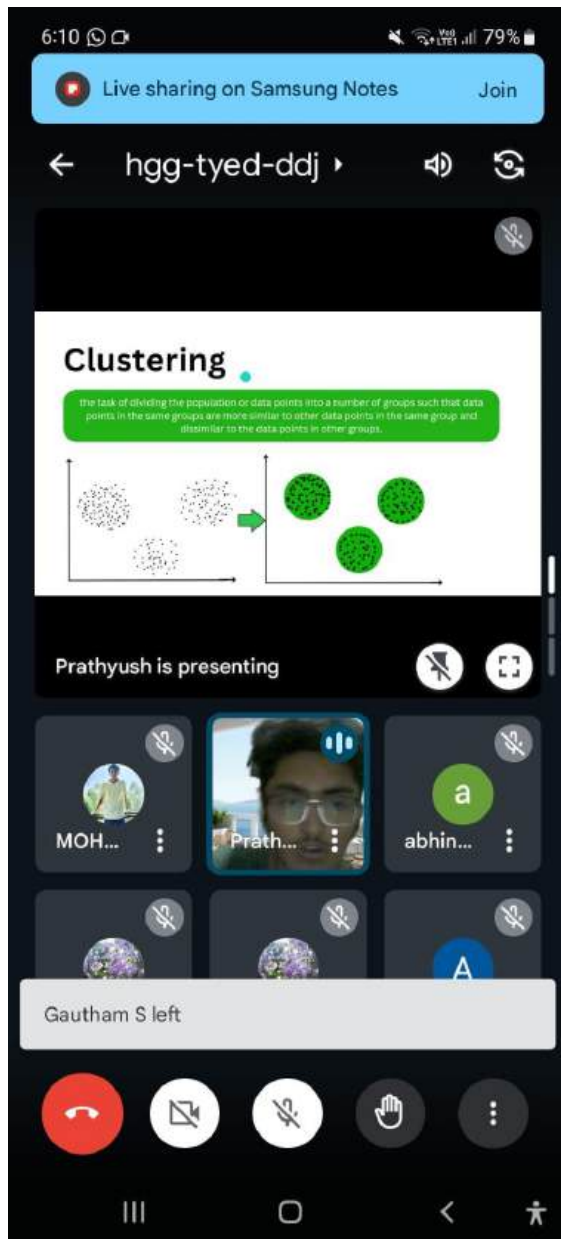
# WEB3 BLOCKCHAIN DEVELOPMENT BOOTCAMP(started on 15<sup>th</sup> October)

## Day-1: Online Session - October 15, 2023

The inaugural online session, held from 10:00 am to 12:30 pm on google meet, served as a dynamic introduction to blockchain concepts. With an active participation of 32 individuals from diverse backgrounds, facilitator Jijo Johny provided a comprehensive exploration.

The session covered foundational elements, including a general introduction to blockchain, an overview of different blockchain types, a detailed examination of Smart Contracts, DApps, DAOs, and an insightful exploration of the transformative concepts of Web1, Web2, and Web3. This session not only laid a solid groundwork but also ignited the curiosity of participants for subsequent in-depth discussions and practical applications.

## Day-2: November 13, 2023

The offline session on November 13, 2023, at Operating System lab of college, marked a significant continuation of the Web3 Blockchain Learning Program, attracting a group of 10 engaged participants from 4:30 pm to 6:30 pm. Guided by facilitators Kiran and Sinan, this session honed in on the practical aspects of blockchain development. The key areas covered included the basics of Solidity, elucidation of different data types, an in-depth examination of various functions, the application and creation of constructors, understanding the concept of struct and array, implementation of modifiers, and the hands-on experience of deploying smart contracts using Remix IDE. This session aimed at equipping participants with the essential tools and knowledge required for navigating the intricacies of blockchain development, fostering a deeper understanding of Solidity and practical application within the realm of decentralized technologies.

## PICTURES FROM THE SESSION

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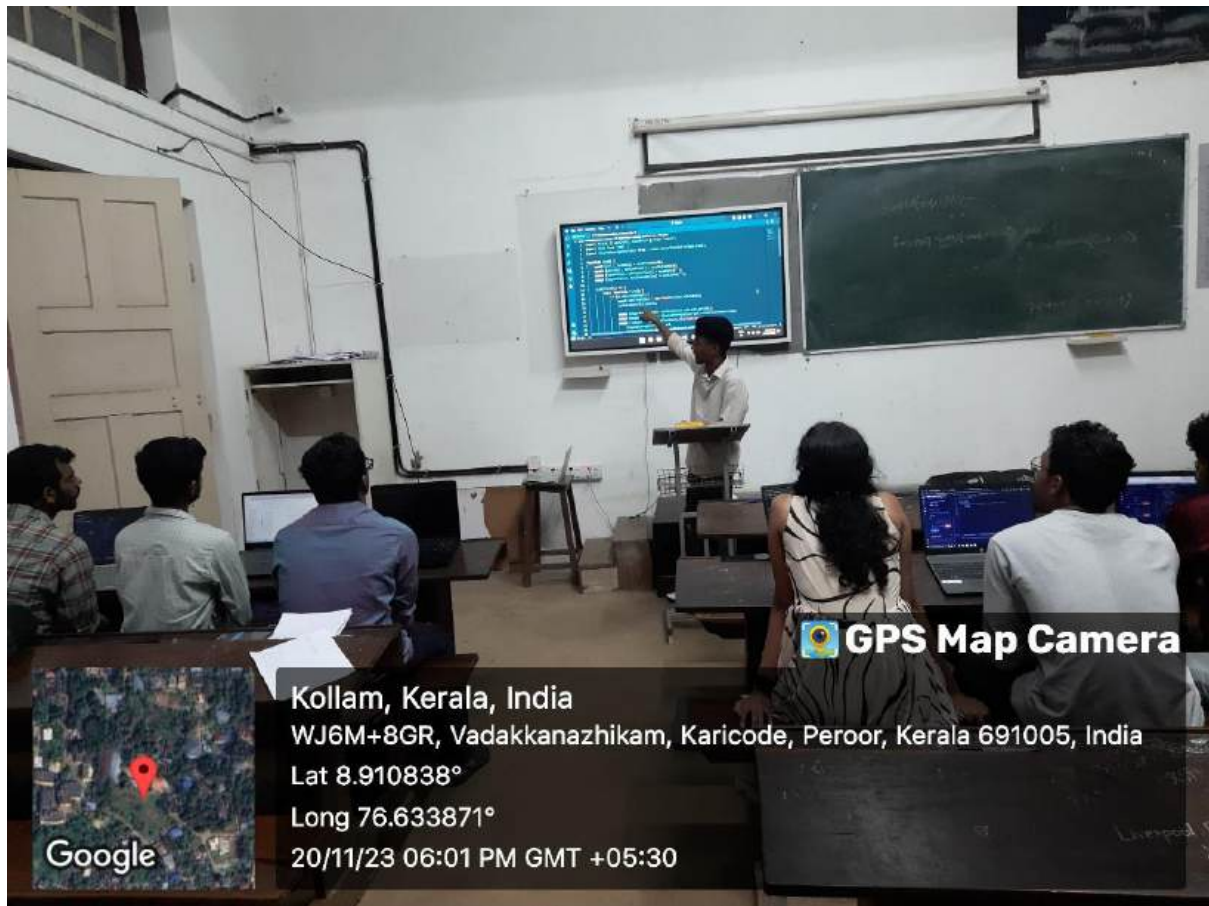
**Day-3: Offline Session - November 20, 2023**

The offline session held on November 20, 2023, at Room number 217 of college, brought together a focused group of 6 participants for a detailed exploration of advanced topics in blockchain technology. Taking place from 4:45 pm to 6:30 pm and facilitated by Sinan, the session commenced with a quick recap of the preceding session, ensuring participants had a solid foundation for the day's discussions. The session unfolded with an explanation of the basic structure of smart contracts, followed by an in-depth examination of the essential components of smart contracts.

Participants were guided through an exploration of different data types in Web3, gaining insights into the elaborate concept of address members, visibility types, and a comprehensive understanding of different types of functions, with a detailed explanation of four specific functions. The session further delved into advanced topics, including structures and arrays in Web3, conditional statements, the concept of looping in Web3, mapping, access specifiers, modifiers, and an exploration of inheritance and overriding principles.

A hands-on approach was integral to the session, with participants actively engaged in the practical application of their knowledge. This involved creating a smart contract for a basic calculator, providing a real-world context to the theoretical concepts covered. Additionally, participants were guided through the process of building a DApp, connecting both frontend and backend components using a simple library. This practical exercise not only reinforced the theoretical learnings but also equipped participants with valuable skills for decentralized application development.

**PICTURES OF THE SESSION:**

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The Web3 Blockchain Learning Program has successfully covered a broad spectrum of blockchain topics, from foundational concepts to practical application. The combination of online and offline sessions, along with hands-on tasks and assignments, has created a dynamic learning environment. Participants are encouraged to actively engage with follow-up tasks to reinforce their understanding and practical skills in the blockchain space. The facilitators, Kiran and Sinan and Jijo, have played a pivotal role in delivering valuable content and guidance throughout the program.

## APP DEVELOPMENT BOOTCAMP (started on 15 October)

**REPORT OF DAY 1 (OPEN SESSION)**

The App Development Bootcamp's Open session, held on 15th October from 1:30 pm to 3:30 pm via Google Meet, drew a crowd of 52 participants, with 33 actively

participating from app development group. Alisha, who led the session, made sure things were easy to follow.

Beginning with the basics, participants got a solid introduction to Flutter and Dart, understanding their roles in app development. The discussion then dived into Widgets, those essential building blocks in Flutter. Alisha made sure everyone grasped the differences between Stateless and Stateful Widgets, using practical examples to drive the points home. The highlight was a hands-on session, guiding participants through creating a simple app

Continuing our exploration of the App Development Bootcamp session, the learning journey extended beyond the live class with a Flutter Fundamental Quiz held on 15/10/23. The quiz served as a practical application of the day's lessons, providing a chance for participants to test their grasp of the basics of Flutter. A commendable total of 38 participants actively attended and participated in this quiz.

Comprising 10 questions, the quiz delved into key concepts discussed during the session, including Flutter essentials, Dart programming language, and the intricate details of Widgets, along with the distinctions between Stateless and Stateful Widgets. The high attendance showcased the commitment and enthusiasm of participants to reinforce their understanding of the materials covered in the class.

This quiz not only added an interactive dimension to the learning process but also offered valuable insights into the participants' comprehension levels. It serves as a beneficial feedback loop for both participants and facilitators, guiding future sessions to address specific areas of focus or clarification.

# Pictures Of the Session:
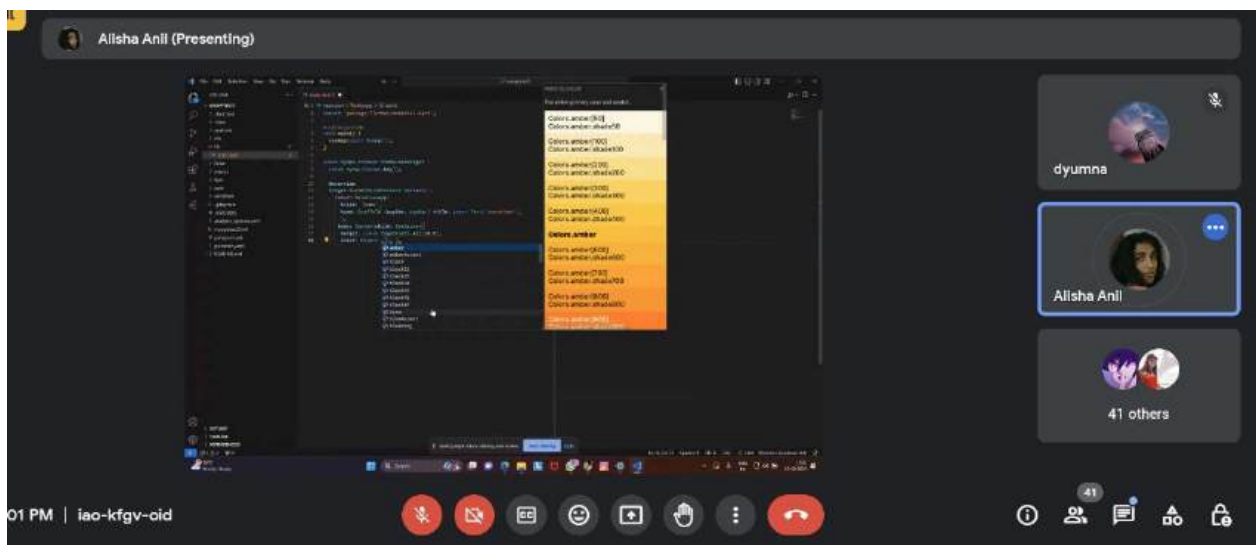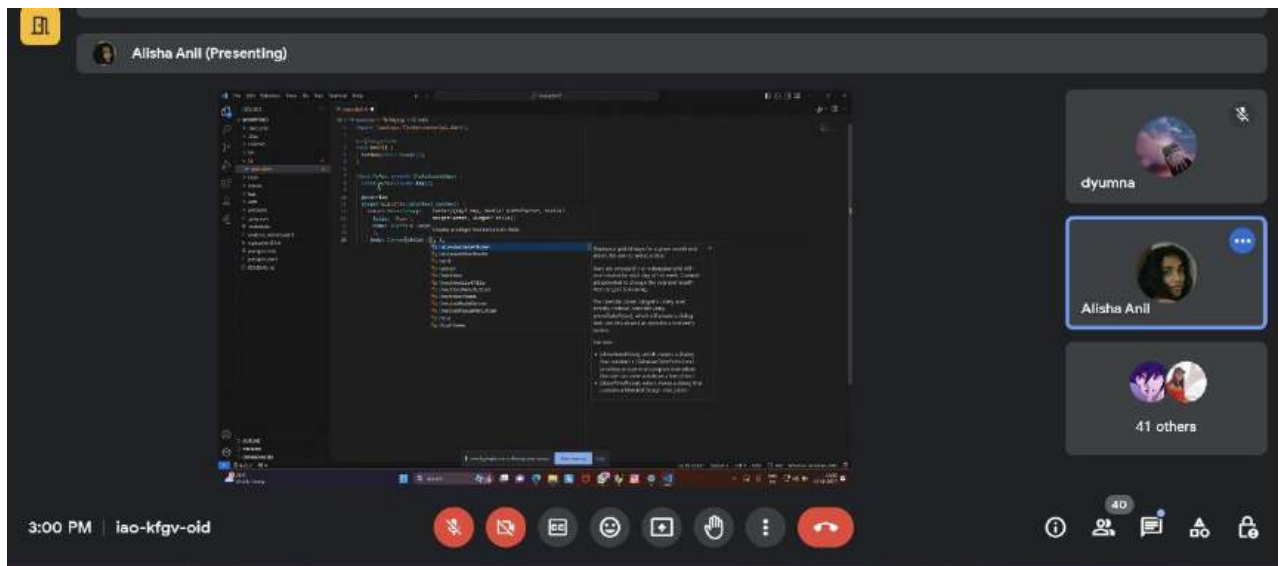
**Report of Day 2**

The next app development session for Code Craft bootcamp took place offline at TKM College of Engineering in room 101 on 13 November 2023. Alisha, our experienced facilitator, led the session.

The session, running from 4:45 pm to 6:30 pm, was hands-on, focusing on building a to-do list app to teach the basics of app development. Alisha's approach made the learning environment interactive and engaging.

Participants actively delved into coding, gaining practical insights into fundamental app development concepts. Alisha's encouragement of questions ensured everyone could apply their knowledge in real-time.

This hands-on experience not only equipped participants with essential skills but also honed problem-solving abilities crucial in the coding world. The session concluded with each participant successfully building a functional to-do list app, a tangible win in their coding journey.

In conclusion, the session showcased the effectiveness of practical, hands-on learning in app development, setting a positive tone for future Code Craft bootcamp sessions.

## PICTURES OF THE SESSION:

**Report of Day 3**

On 15/11/23, the Code Craft bootcamp held an offline app development session in Room 101 at TKM College of Engineering. Elizabeth led the session from 5:00 pm to 6:30 pm with 10 eager participants. Elizabeth focused on implementing important widgets like Material App, Scaffold, Body, Container, Text Widget, Padding, Row, and Alignment.

Throughout the session, the 10 participants actively worked on implementing widgets, getting hands-on experience in creating functional and visually appealing components. Elizabeth's guidance made the concepts easy to grasp, encouraging questions and interaction.

The portions covered, including Material App, Scaffold, Body, Container, Text Widget, Padding, Row, and Alignment, gave participants a strong start in understanding widget implementation. The offline setting created a collaborative and immersive learning experience.

Participants were encouraged to practice and explore these widgets on their own. Additional resources were made available to support their continued learning in app development.

In conclusion, the offline session at TKM College of Engineering, led by Elizabeth, effectively covered the implementation of crucial widgets, setting participants on a solid path in the Code Craft bootcamp.

**PICTURES OF THE SESSION:**

**Report of Day 4**

The concluding session of the App Development Bootcamp took place offline on 20/11/23, from 5:00 pm to 6:30 pm, with a total of 17 participants. Facilitators Elizabeth and Alisha guided the participants through the implementation of crucial widgets, including Row, Column, and Text Widget.

The collaborative efforts of Elizabeth and Alisha created an engaging atmosphere, allowing participants to actively apply these concepts through hands-on activities. This final class served as a culmination of the bootcamp, emphasizing the practical application of fundamental app development skills.

The portions covered during the session, focusing on Row, Column, and Text Widget implementation, aimed to provide participants with practical skills for their continued journey in app development. The offline setting contributed to a conducive learning environment, fostering interaction and focused learning.

As participants move forward beyond the bootcamp, they are encouraged to independently explore and experiment with the application of these concepts. Additional resources remain available to support ongoing learning in app development.

In summary, the offline session on 20/11/23, led by Elizabeth and Alisha, not only covered the implementation of essential widgets but also marked the final class of the App Development Bootcamp, leaving participants equipped with practical skills for their future endeavours.

**PICTURES OF THE SESSION:**

# WEB DEVELOPMENT BOOTCAMP (started on 15 October 2023)

**Day-1: October 08, 2023**

The session "Introduction to HTML", which held on October 8 2023, hosted by IEI CSE TKMCE, was an enlightening experience. This session marked an initial step of upcoming Web Development Bootcamp as a part of Code Craft. The session was expertly facilitated by the mentors Parveen Navas and Elizabeth Shaji, both esteemed third-year Computer Science Engineering students at TKMCE. The participation of over 50 students from 1st, 2nd and 3rd years highlighted the special attention the event received among the students.

The event began at 2:00 pm in the Software System lab TKMCE. The primary focus of the session was to provide participants with a strong foundation in HTML. The event was thoughtfully hosted on the OneCompiler platform, where the participants could explore the world of web through HTML. Additionally, a brief demonstration was conducted in Visual Studio Code, offering a holistic learning experience. The session featured topics including HTML syntax, HTML tags, comments, list etc. accompanied by concurrent hands-on exercise that encouraged active participation.

One notable aspect of the session was the mentorship provided by third and second-year students. They played a crucial role in ensuring that every participant received individual attention, helping learners progress at their own pace. At 2:38 pm, a text formatting exercise was introduced, allowing participants to apply the concepts they had learned in a practical context. They further delved into their tasks by including images, hyperlinks and videos on their web page along with some styling tips.

Following a short break from 3:45 pm- 4:00 pm, the session resumed with an exploration of more advanced HTML elements such as tables, password fields, input forms, radio buttons, select options, text areas, and fieldset elements. Participants were challenged to put their newfound knowledge to the test by creating a table. This hands-on approach was designed to reinforce their understanding of HTML and encourage practical application.

The event concluded at 5:00 pm, leaving the participants with a comprehensive understanding of HTML. The overwhelmingly positive feedback received from the attendees highlights the value and usefulness of this session. The dedication of mentors and the enthusiasm of the students ensure a promising path forward, setting high expectations for the remaining sessions of IEI CSE TKMCE.

**PICTURES FROM THE SESSION:**

**Day-2: November 11, 2023**

On November 11, 2023, Thej Zain conducted an interactive online JavaScript class via Google Meet, focusing on essential topics such as styling, components, borders, and buttons. Zain's teaching approach seamlessly integrated theory with practical demonstrations, fostering participant engagement and prompting active involvement with questions and clarifications on JavaScript concepts. The class underscored the practical application of JavaScript in web development, providing attendees with deeper insights into styling principles, the significance of components, and the practical aspects of creating borders and buttons. Participants left the session with valuable takeaways and a heightened appreciation for JavaScript's role in enhancing web development, making Thej Zain's class a comprehensive and enriching learning experience.

**PICTURES FROM THE SESSION:**
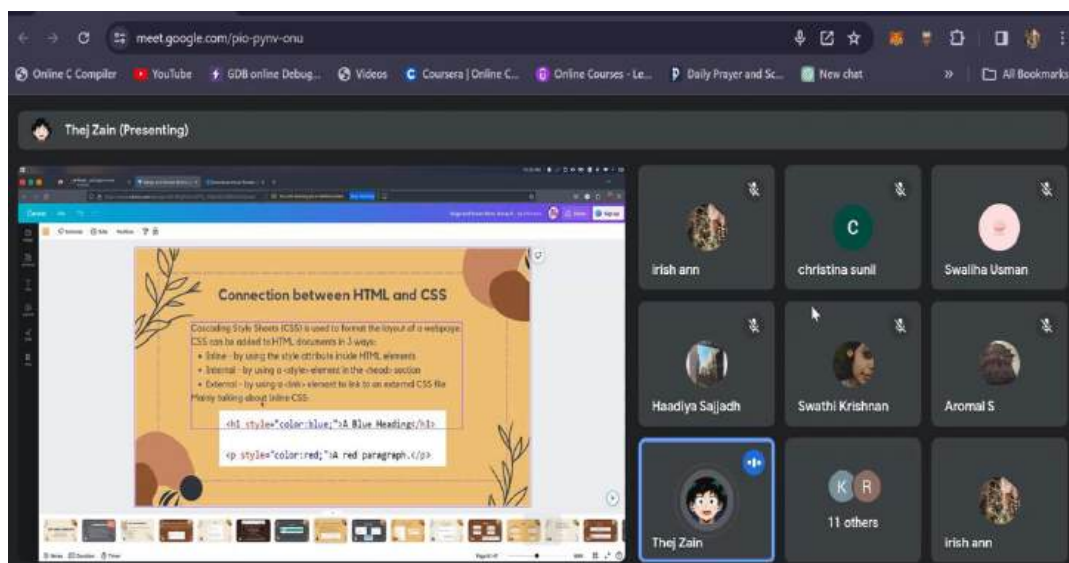


**Day-3: November 13, 2023**

Continuing the momentum, Thej Zain conducted a hands-on web development session on November 13,2023, at the Software System Lab of TKMCE. Sixteen participants actively engaged in the learning process from 4:45 PM to 6:15 PM. The focus of the session was on practical coding, as Thej led the participants through the basics of JavaScript using Visual Studio Code (VS Code). The class included an

introduction to loops, providing attendees with a fundamental understanding of this essential programming concept. The hands-on approach allowed participants to apply theoretical knowledge directly, enhancing their coding skills and practical proficiency in JavaScript. Overall, the session was a valuable learning experience, combining theoretical understanding with practical coding exercises under Thej's guidance.

**PICTURES FROM THE SESSION:**



**Day-4: November 15, 2023**

On November 15, 2023, at the Operating System Lab of College, Thej Zain conducted an instructive session covering Node.js project setup and React fundamentals with the participation of seven students. The class began with a comprehensive guide on setting up a Node.js project, providing participants with foundational steps involved in creating a Node.js environment. The session seamlessly transitioned to React, where Thej guided the participants through the process of setting up a React project. Key topics included the creation of basic components in React and an exploration of state management, providing participants with essential skills for building dynamic and interactive user interfaces. The practical nature of the class allowed participants to actively implement what they learned, solidifying their understanding of Node.js and React fundamentals. Overall, the session on the 15th was a pivotal step in equipping

participants with the tools and knowledge necessary for proficient web development using Node.js and React.

**PICTURES FROM THE SESSION:**
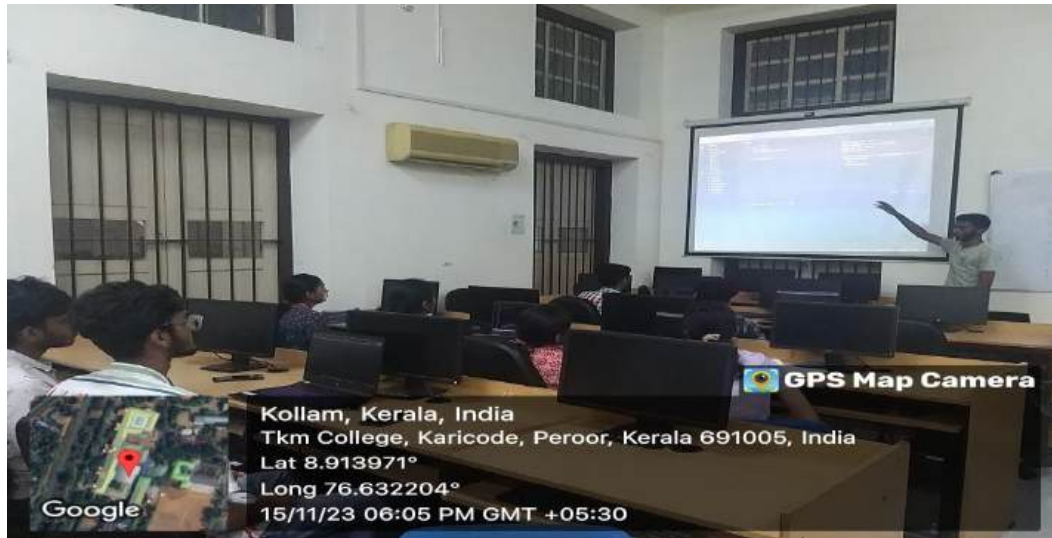


**Day-5: November 20, 2023**

On the 20th of November 2023, in room number 202 at the main block of the college, Thej Zain led an insightful web development session, guiding 11 participants through advanced topics such as REST requests using Axios, the map function, Tailwind CSS, and the integration of progress indicators in React web applications. The class delved into making asynchronous requests to RESTful APIs, leveraging the map function for dynamic component rendering, and efficiently styling React components with Tailwind CSS. The practical demonstration of incorporating progress indicators highlighted the importance of enhancing user experience during asynchronous operations. This comprehensive session equipped participants with advanced skills for building sophisticated and responsive React web applications, emphasizing the practical application of RESTful concepts and modern styling techniques. Overall, the class on the 20th played a pivotal role in expanding participants' proficiency in web development, covering crucial aspects of data fetching, functional programming, styling, and user interface enhancement.

**PICTURES FROM THE SESSION:**



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In conclusion, Thej Zain's web development classes provided participants with a holistic and enriching learning experience, covering fundamental and advanced concepts. The practical approach, coupled with insightful demonstrations, not only imparted knowledge but also empowered participants to apply their skills in real-world scenarios. Thej Zain's teaching methodology has proven to be instrumental in bridging the gap between theory and practical application, creating a well-rounded educational experience for all participants and significantly contributing to their growth as proficient web developers.

# MEMBER'S EVE: ANNUAL MEMBERS MEET (14 NOVEMBER 2023)
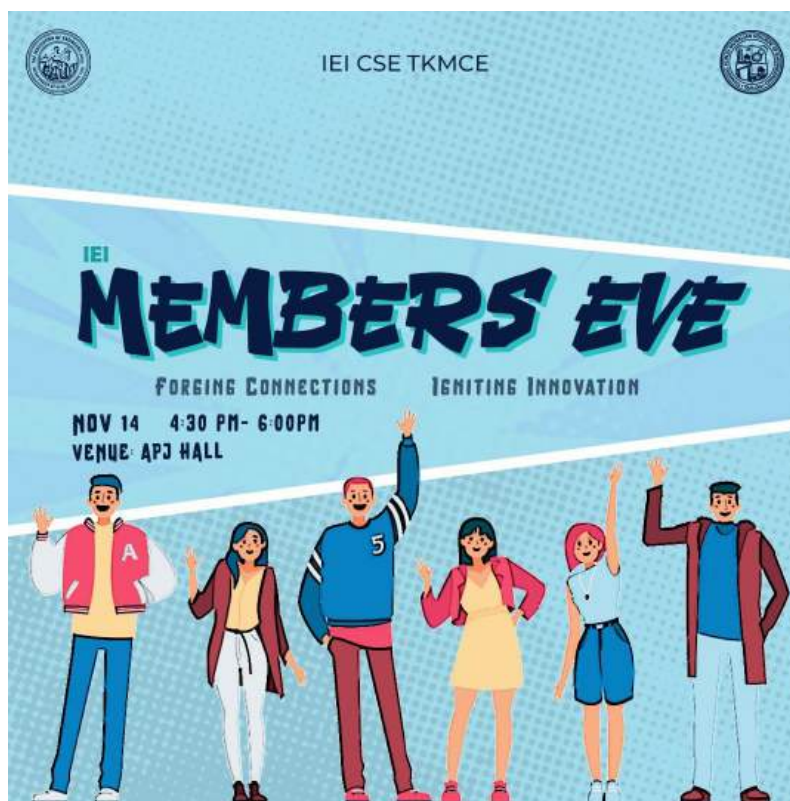


The captivating event, "Member's Eve", the annual members meet, organized by IEI CSE TKMCE, unfolded on 14 November 2023 at 5:00 pm in the APJ Hall of the college. The event aimed to facilitate better understanding among members and foster transparent relationships. Coordinated by Anna Tomson and Parvathy S Nair, both second-year Computer Science and Engineering students, the event promised an evening of connection and camaraderie.

The event commenced with a warm welcome from the engaging anchor, Anna Tomson, who gracefully handed the stage to Prathyush Madhusoodhanan. He provided a comprehensive introduction to IEI and its diverse array of events, setting a positive tone for the evening.

Participants were divided into six teams, each named after Marvel characters, at 5:15 pm. This set the stage for collaborative fun as, from 5:20 to 5:50 pm, teams engaged in a spirited logo guessing game. The activity showcased both creativity and teamwork as teams endeavoured to identify logos displayed on the screen, earning points in the process.

Between 5:50 and 6:00 pm, teams participated in an introduction game, emphasizing unity as members introduced their fellow teammates. This challenge added a layer of friendly competition, contributing to a positive atmosphere throughout the event.

The ambiance was further enriched when the Music Club members took the stage at 6:05 pm. With enthusiastic audience participation, they delivered a delightful musical performance that echoed through the venue.

The climax of the evening occurred at 6:25 pm with a prize-giving session where Sinan Pakkada, Secretary IEI CSE TKMCE and Anagha Mohan, Program Coordination team member honoured the victorious teams with prizes. Subsequently, an insightful feedback session allowed the audience members to share thoughts, providing a valuable perspective on the event. This segment gracefully concluded within 8 minutes.

The curtains fell on the vibrant evening at 6:33 pm, with Anna delivering her closing remarks. As a gesture of appreciation, snacks were graciously distributed to the departing audience. In summary, Member's Eve was a simple, joyful, and respectful gathering that celebrated camaraderie, showcasing the vibrant spirit of IEI CSE TKMCE.

## SHARDEUM BACKPACKING INDIA (15 November 2023)



In an enriching collaboration with Shardeum, IEI CSE TKMCE conducted the event "Shardeum Backpacking India," a profound exploration into the vast opportunities of Web3. Kicking off at 5:00 pm, Nived Gop P, a key Shardeum contributor, guided attendees through the basics in a simple yet enlightening manner.

The event initiated with a focus on "Blockchain Basics," laying a sturdy foundation by elucidating the ABCs of blockchain technology. This approach ensured that participants of all levels could grasp the intricacies of this transformative technology.

A brief journey through the "Evolution of Web" provided attendees with insights into the historical development of the internet, seamlessly paving the way for the imminent era of Web3.Addressing the intricate "Scalability Trilemma" and Shardeum's innovative solutions, Nived navigated through challenging concepts with clarity, making the subject matter easily digestible for the diverse audience.

An "easy-to-follow rundown" on "What is Shardeum?" clarified its essence, functions, and significance in the Web3 landscape, ensuring that even those unfamiliar with the topic could appreciate its relevance.

The event continued with a clear comparison between "Sharded vs Unsharded Blockchain," avoiding technical jargon to facilitate a better understanding of the distinctions for all participants.Demystifying the complexities of sharding, the presentation on "Shardeum's Sharding Magic" broke down the intricacies in a manner accessible to newcomers, fostering comprehension among all attendees.

Ending on a high note, a fun quiz added a lively touch to the event, ensuring everyone stayed engaged until the end. At 6:00 pm, the gathering wrapped up with smiles and a group photo, capturing the shared experience.

**Pictures from the Session:**

# Mint an Elon Musk NFT on Polygon Blockchain(05 December 2023)



IEI CSE TKMCE conducted the event "Mint an Elon Musk NFT on Polygon Blockchain," which explored the opportunities of NFTs and blockchain technology. The event began at 5:00 pm on December 5th in Room 209 of the Civil Block, with Vinay Arun Kumar, a full stack blockchain developer at Doge Capital, leading the session.

The event commenced with an introduction to "NFT Basics," providing a foundational understanding of non-fungible tokens. This approach ensured that participants of all levels could grasp the essential concepts of this technology.

A brief overview of the "Evolution of NFTs" gave attendees insights into the historical development of digital assets, leading into a discussion on the current state of NFTs. Vinay Arun Kumar then explained "Blockchain and NFTs," clarifying complex concepts and making them accessible to the audience.

A session on "What is Polygon Blockchain?" provided an easy-to-understand explanation of its functions and significance in the NFT landscape. This ensured that even those unfamiliar with the topic could appreciate its relevance.

Following this, attendees learned to create a simple user interface (UI) with buttons to mint, burn, and transfer NFTs. The workshop then covered the creation of an ERC-721 smart contract

using Solidity, incorporating the functions for minting, burning, and transferring NFTs. The smart contract was subsequently run, deployed, and connected with the UI using Hardhat.

All 17 participants engaged in a hands-on session where they created their own unique Elon Musk NFTs, which were deployed on the Polygon blockchain using Solidity and Hardhat.

The event concluded at 6:00 pm, marking the end of an informative and engaging session.

**Pictures from the Session:**

Kollam, Kerala, India
WJ7J+VWC, Karicode, Peroor, Kerala 691005, India
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Long 76.632325°
05/12/23 05:35 PM GMT +05:30

## CP& DSA Dynamics: Placement Pro Session (27 January 2024)



The highly anticipated CP & DSA Dynamics: Placements Pro session, meticulously organized by IEI CSE TKMCE in collaboration with Coding Club TKMCE, unfolded virtually on the interactive stage through Google Meet with more than 50 attendees. The evening commenced with the seasoned Mr. Praveen Krishna, an esteemed Application Engineer at Oracle, setting the stage with a compelling introduction about himself and the exciting journey that awaited the participants.

The official initiation at 7:40 pm marked the commencement of an intellectually stimulating journey into the realms of competitive programming and data structures and algorithms (CP & DSA). Mr. Praveen, with his wealth of experience, delved into a challenging LeetCode problem, transforming the session into a hands-on problem-solving experience. This seamlessly transitioned into a comprehensive Amazon interview case study, strategically covering online assessments, leadership principles, technical intricacies, bar raiser scenarios, gate questions for aptitude, and a deep dive into operating systems.

At 8:00 pm, the session metamorphosed into an interactive forum where participants actively engaged with Mr. Praveen. Drawing from his vast reservoir of knowledge, Mr. Praveen shared invaluable real-life interview experiences sourced from prominent platforms like GeeksforGeeks (GFG), providing attendees with practical insights into the dynamics of technical interviews. The session emphasized the significance of platforms like LeetCode and InterviewBit in honing coding skills and preparing for the rigorous placement processes.

The discussion evolved to explore the nuances of technical round preparation, a critical aspect of the placement journey. Attendees were meticulously guided through the importance of solving questions at various difficulty levels. Mr. Praveen generously shared a curated list of Data Structures and Algorithms questions, fostering a proactive learning environment. A detailed explanation of another DSA problem unfolded, accompanied by an in-depth exploration of diverse sorting techniques.

Delving into the technical landscape, Mr. Praveen shed light on the suitability of different programming languages for solving DSA questions. The session accentuated the significance of platforms like YouTube for concept familiarization, providing a holistic view of the resources available to coding enthusiasts.

The clock struck 8:30 pm, marking the commencement of an engaging Q&A session. Mr. Praveen addressed questions submitted via GForms, offering comprehensive insights and clarifying doubts raised by participants. The interactive exchange further enriched the learning experience, creating an atmosphere of collaborative exploration.

In the final leg of the session, Mr. Praveen provided insightful perspectives on the evolving role of Artificial Intelligence in the job market. Practical advice on resume building, the strategic importance of participating in hackathons, and maintaining a healthy work-life balance added a holistic touch to the discussion.

The CP & DSA Dynamics: Placements Pro session reached its crescendo at 9:05 pm, concluding with a sense of accomplishment and empowerment among the participants. The event successfully delivered on its promise, equipping attendees with practical knowledge, valuable insights, and a deeper understanding of the dynamic intersection of coding and placements. The collaborative effort of Coding Club TKMCE and IEI CSE TKMCE truly brought forth a session that transcended expectations, leaving participants inspired and well-prepared for their upcoming placement endeavors.

**Pictures from the Session:**
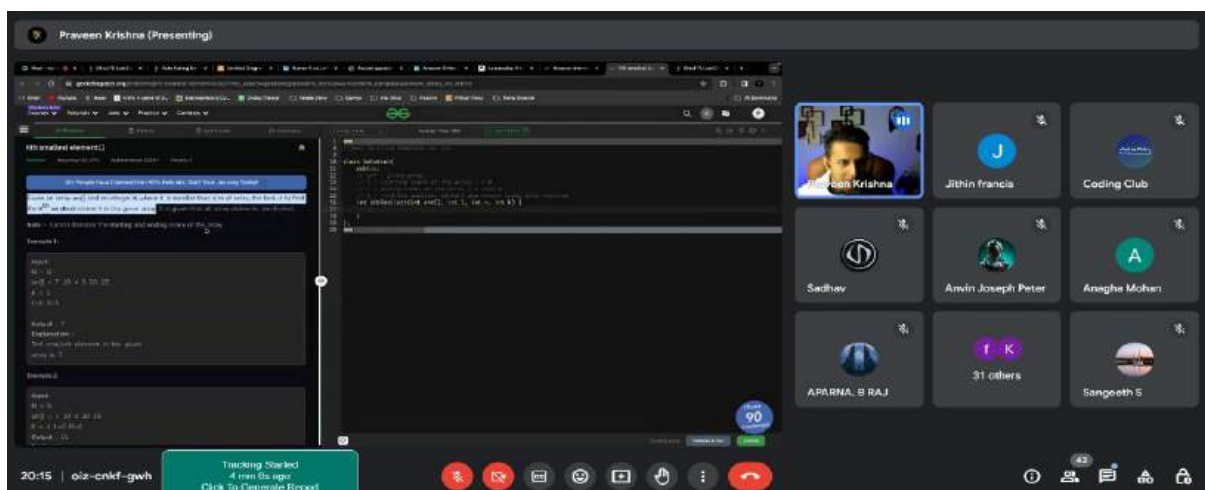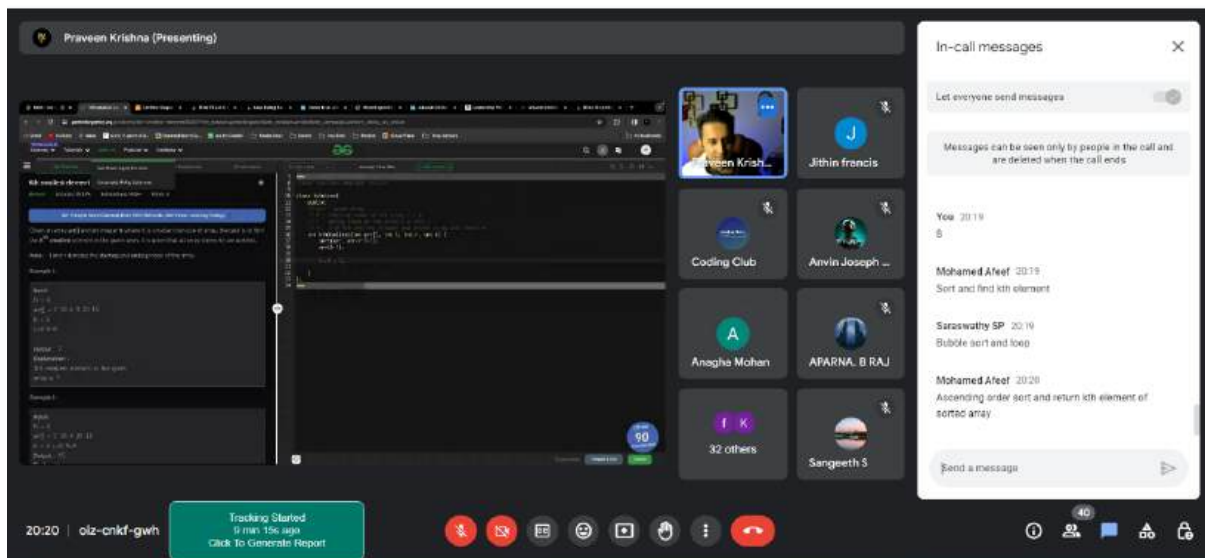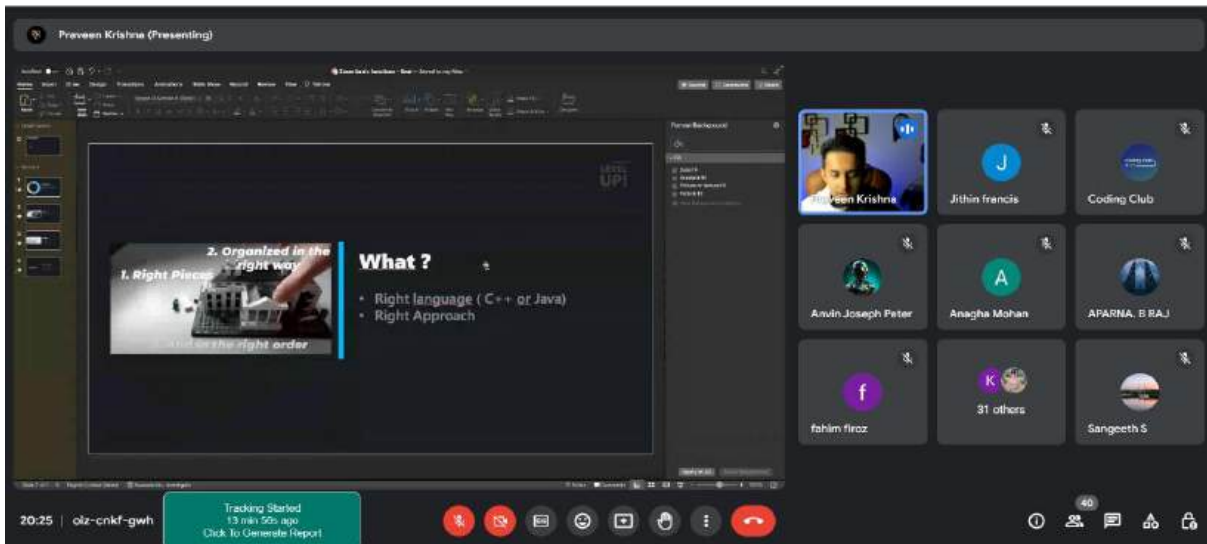
# BASICS OF C PROGRAMMING(03 February 2024)



IEI CSE TKMCE conducted a highly anticipated hands-on session on "Basics of C Programming," driven by student requests to delve into the fundamentals of programming. The event took place on February 3, 2024, from 9 am to 12 pm in the SS Lab at TKMCE.

The session was led by Anagha Mohan, a third-year CSE student, who adeptly guided participants through the essentials of C programming. The class began with an explanation of the basic structure of a C program, ensuring that all attendees, regardless of their prior experience, could follow along and build a strong foundation.

Anagha covered key topics such as data types, arrays, loops, and conditional statements, providing a comprehensive overview of these critical concepts. To reinforce learning, simple programs were discussed, demonstrating the practical application of the topics covered.

Participants were then challenged to write programs on their own, fostering an interactive and engaging learning environment. This hands-on approach not only enhanced understanding but also helped students build confidence in their programming abilities.

The informative session enabled students new to programming to learn a lot and overcome their fear of programming. By the end of the session, participants had a clearer understanding of C programming basics and were better equipped to tackle more complex programming challenges in the future.

The workshop concluded at 12 pm, marking the end of a productive and enlightening session that left students eager for more learning opportunities.

**Pictures from the Session:**



Kollam, Kerala, India
Tkm College, Karicode, Peroor, Kerala 691005, India
Lat 8.914275°
Long 76.632298°
03/02/24 09:49 AM GMT +05:30

Kollam, Kerala, India
Tkm College, Karicode, Peroor, Kerala 691005, India
Lat 8.914275°
Long 76.632298°
03/02/24 09:49 AM GMT +05:30



Kollam, Kerala, India
Tkm College, Karicode, Peroor, Kerala 691005, India
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Long 76.632298°
03/02/24 09:50 AM GMT +05:30

# CODE STREAK(05 February2024 to 04 April 2024)



CodeStreak was a 60-day coding contest conducted on the Hackerrank coding test platform in association with Coding club TKMCE. The main objective of the program was to consistently solve one coding challenge continuously for 60 days. The contest was divided into 4 spells each spanning over 15 days. Each spell witnessed challenges of increasing difficulty level. Different challenges were based on different themes which increased the interest of the students to tackle them.

A registration form was released two days prior to the starting date of the contest and a total of 160 registrations were recorded. This included registrations from TKMCE and other colleges too via our IEI Campus Ambassadors. The link of the Google form used for registration is attached herewith: https://forms.gle/HyeNSjU9wC71kNZG7. The queries and concerns of the students, especially the beginners regarding the coding challenge and the hackerrank platform were considered and dealt with directly and also through the Google form. A feedback form was also released after each spell to assess the responses and initiate necessary changes.

A price pool amount of ₹ 2000 was offered. This amount covers a cash award of ₹ 500 to the title winner and IEI CSE exclusive T-shirts for the winners of each spell. The attractive price pool rocketed the fame and drove wide participation for CodeStreak. The winner of each spell is the person who tops the leaderboard of each spell. A bonus challenge was also provided after each spell which was a gained advantage for the participants to maintain their lost streak.

Solving bonus challenges will also help the participants to top the leaderboard easily though they could not solve the daily challenges consistently.

**Detailed spell-wise report**

Spell 1 was the most basic and beginner friendly spell of CodeStreak. It spanned between 5ᵗʰ February and 18ᵗʰ February, 2024. It showcased basic level challenge to help the beginners to familiarize with the system. Most of the challenges had a success rate of above 80%. The winners of the spell were Sooraj SJ from TKMCE, George Skaria from TKMCE and Sheron Rajesh from TKMCE bagging the first, second and third positions respectively.

The leaderboard for the challenge is attached here.

| Rank | User | Score | Time | Country |
|------|------|-------|------|---------|
| 1 | SoorajSJ | 100.00 | 3112:18:40 | 🇮🇳 |
| 1 | georgeskaria2003 | 100.00 | 3112:46:14 | 🇮🇳 |
| 1 | drdunken | 100.00 | 3119:11:11 | 🇮🇳 |
| 1 | sabirmohammeda | 100.00 | 3122:40:55 | 🇮🇳 |
| 1 | raj180303 | 100.00 | 3137:21:55 | 🇮🇳 |
| 1 | elizebechshaji8 | 100.00 | 3141:00:34 | 🇮🇳 |
| 1 | olly_nm | 100.00 | 3153:02:21 | 🇮🇳 |
| 1 | ameyashabanait | 100.00 | 3172:52:08 | 🇮🇳 |
| 1 | u2132703 | 100.00 | 3205:53:08 | 🇮🇳 |
| 10 | swarag2005 | 99.20 | 3180:50:43 | 🇮🇳 |
| 11 | esabel0001 | 98.13 | 3457:19:58 | 🇮🇳 |
| 12 | Vichnu1253005 | 96.25 | 3219:19:33 | 🇮🇳 |
| 13 | thijinnambiar9 | 95.00 | 2958:13:24 | 🇮🇳 |
| 13 | abhesapremsing | 95.00 | 2972:30:15 | 🇮🇳 |
| 15 | anusreekunnummus1 | 94.00 | 3028:44:23 | 🇮🇳 |
| 15 | kiranbijun1 | 94.00 | 3137:03:20 | 🇮🇳 |
| 17 | aparnasuni00 | 93.33 | 3222:33:29 | 🇮🇳 |
| 18 | shiladthepriz2 | 91.50 | 3152:25:34 | 🇮🇳 |
| 19 | muhammedaheenra1 | 90.00 | 3159:54:26 | 🇮🇳 |
| 20 | kripaani7711 | 89.50 | 3225:11:55 | 🇮🇳 |
| 21 | anjobju2311 | 88.13 | 3396:00:05 | 🇮🇳 |
| 22 | TGVCS080 | 82.33 | 3314:45:07 | 🇮🇳 |
| 23 | abythomkachor_31 | 79.00 | 2913:45:51 | 🇮🇳 |
| 24 | saraswathysachu7 | 75.00 | 2563:49:48 | 🇮🇳 |
| 25 | elosafeof | 74.00 | 3025:44:41 | 🇮🇳 |
| 26 | starunchozen | 73.17 | 3081:14:57 | 🇮🇳 |
| 27 | anugrahyamieve | 71.75 | 2792:26:21 | 🇮🇳 |
| 28 | udeid633 | 71.17 | 2935:12:26 | 🇮🇳 |
| 29 | adityas0384 | 69.75 | 2855:42:47 | 🇮🇳 |
| 30 | anmebal santony | 64.83 | 2338:50:05 | 🇮🇳 |
| 31 | thunmasharavan1 | 64.17 | 2052:37:01 | 🇮🇳 |

Codestreak Spell 2, conducted between 19th February 2024 and 10th March 2024, presented 15 intricate challenges varying from medium to hard difficulty levels. Among these challenges

were Linguistic Anagram Quest, World Puzzle Adventure: The Hidden Tale, The Time in Words, and Chief Hopper, each testing participants' coding acumen. Remarkably, participants showcased their proficiency with success rates ranging from 75% to 100%. Notably, the winners of the spell were Amiya Shabana from MES College of Engineering Kuttipuram, securing the first position, followed by Sooraj SJ from TKMCE in second place, and George Skariah from TKMCE, clinching the third position.

The third spell of CodeStreak commenced on 11ᵗʰ March, 2024 which involved 15 easy to medium level challenges. Just like the other spells, this challenge also witnessed active participation from students. Certain surprises were also included which boosted the interest and the competitive spirit. The winners of this contest were Sheron Rajesh, George Skariah and Shamseena Vahab of TKMCE occupying the first, second and third positions respectively. The spell concluded on 23ʳᵈ March, 2024. The leaderboard of spell 3 of CodeStreak is attached.

CodeStreak Spell 4 was the concluding round of the competition, held from March 31 to April 4. It offered a variety of coding challenges for different skill levels. Divided into two parts, CodeStreak Pro and CodeStreak Mini, it welcomed both experienced coders and beginners. CodeStreak Pro provided experienced coders with complex problems that tested their skills, which included data structures and problem-solving. Vishnu S, Shamseena Vahab, and Sooraj SJ secured the first, second, and third positions respectively in CodeStreak Pro. Conversely, CodeStreak Mini was exclusively for first-year coders, with easier challenges to introduce the basics of competitive programming. Noah John, Raihan Rasheed, and Jeena Grace claimed the first, second, and third positions respectively in CodeStreak Mini. The event aimed to help participants learn and grow in the coding community. Positive feedback from students showed that it achieved this goal well and became a helpful place for new coders to start.

| Rank | User | Score | Time | Country |
|---|---|---|---|---|
| 1 | | 25.00 | 1:26:03 | India |
| 1 | | 25.00 | 2:01:36 | India |
| 1 | | 25.00 | 3:00:19 | India |
| 1 | | 25.00 | 3:11:01 | India |
| 5 | | 24.38 | 1:18:38 | India |
| | | 23.75 | 1:19:52 | India |
| 6 | | 23.75 | 3:00:01 | India |
| 8 | | 22.50 | 12:40:55 | India |
| 9 | | 20.00 | 1:52:42 | India |
| 10 | | 18.75 | 3:28:40 | India |
| 11 | | 13.75 | 35:13 | India |
| 12 | | 11.33 | 17:41 | India |
| 13 | | 10.00 | 27:21 | India |
| 13 | | 10.00 | 42:59 | India |
| 15 | | 5.00 | 45:16 | India |
| 15 | | 5.00 | 45:18 | India |
| 16 | | 5.00 | 1:05:28 | India |
| 18 | | 3.75 | 2:28:10 | India |
| 19 | | 2.50 | 35:10 | India |
| 19 | | 2.50 | 20:55:20 | |
| 21 | | 0.00 | 00:03 | India |

As a part of the prize pool T shirts were distributed to 5 winners of each spell(including the winner of Code Streak-Mini) and a cash prize of Rs. 100/- was distributed to each of the 6 title winners.

# DUET CODING (12 February 2024)



On February 12, 2024, the Duet Coding Competition was held at the SS LAB, TKM College of Engineering, Kollam. Organized by IEI CSE TKMCE, the event aimed to promote collaboration, innovation, and skill development among students, operating on a budget of Rs 750.

The competition featured 18 teams, each composed of two students, and began at 4:45 PM. Participants, ranging from novices to seasoned coders, engaged in a series of coding challenges over the course of an hour and a half. These challenges included algorithmic puzzles and real-world scenarios, designed to test creativity, logic, and perseverance.

Throughout the event, teams demonstrated strong collaboration as they brainstormed solutions, debugged code, and celebrated their progress. The atmosphere was charged with excitement and determination, making the competition a valuable experience in shared learning and growth.

As the submission deadline approached at 6:00 PM, teams finalized their solutions. The team of Kripa Anil and Neha Ann John from R6B secured first place with their outstanding teamwork and innovative problem-solving skills. The runners-up, Sheron

Rajesh and Adwaitha Nair from R2B, also showcased exceptional skill and determination.

The winning team received a cash prize of Rs 500, while the runners-up were awarded Rs 250. The event concluded with participants leaving with a sense of accomplishment and camaraderie.

**Pictures from the Session:**
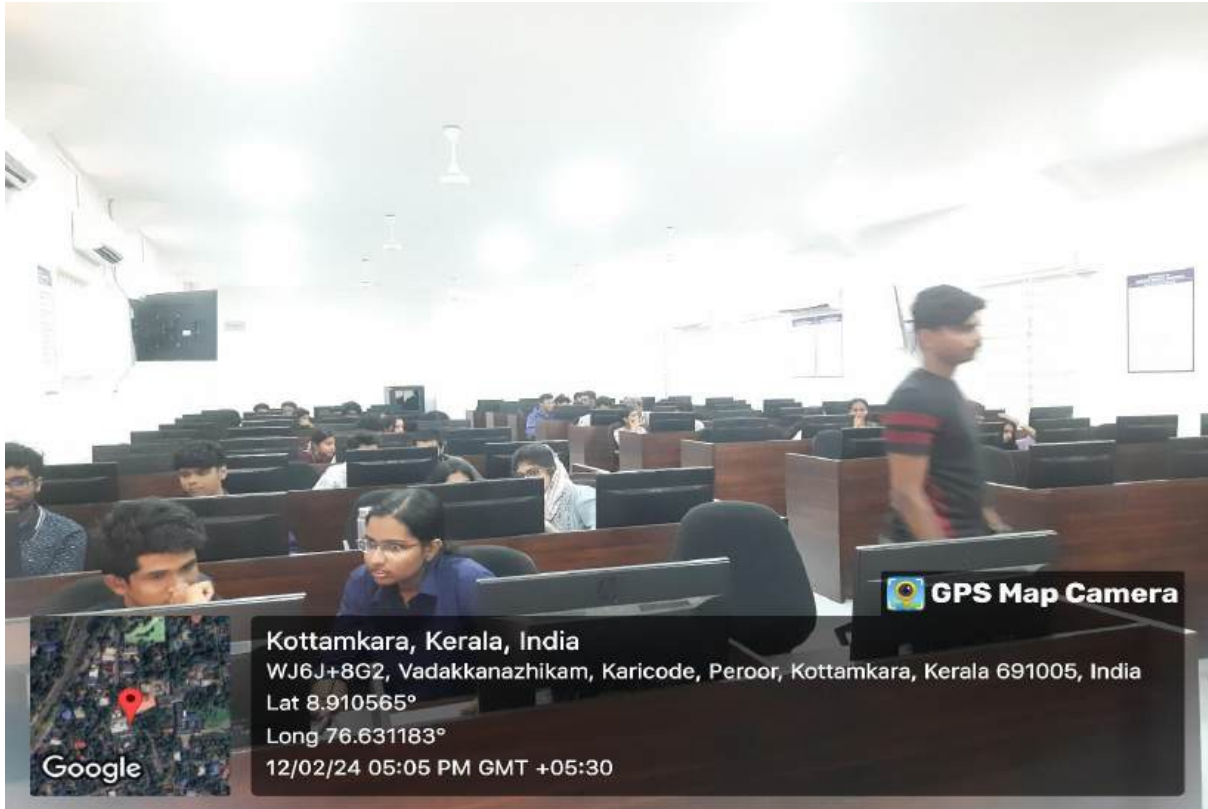
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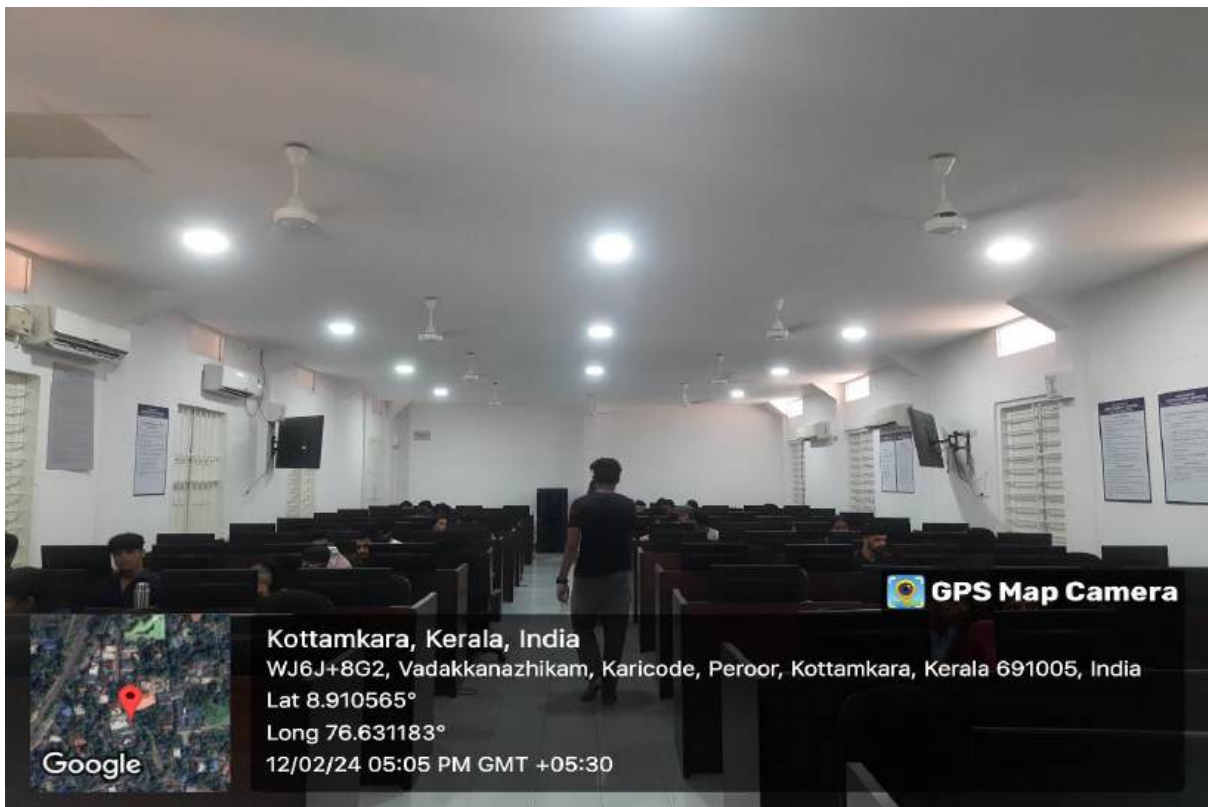


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# OPEN SOURCE WEEK ( 02 to 10 March 2024)

## Introduction to Open Source (02 March 2024)



**IEI CSE TKMCE** and **FOSS CELL TKMCE** organized an insightful session titled **"Introduction to Open Source;"** as part of Open-Source Week. The session, led by Ananthu CV, took place on 2nd March, 2024, from 9:30 AM- 12:00 PM, attracting participants eager to learn about the fundamentals and benefits of open-source software.

Ananthu CV, with a background in literature rather than computer science, shared his unique journey into the world of open source. He recounted how his passion for computer science led him to discover open-source software, eventually becoming the maintainer of DBN and currently working at UST Global. This personal narrative set the stage for an engaging and informative session.

The session began with Ananthu providing an overview of open source and its historical background. He highlighted the advantages of using open-source software over proprietary systems, emphasizing its enhanced security, transparency, and the extensive scope it offers for innovation and collaboration.

Following this, Ananthu introduced the participants to the basics of Git, a crucial tool for version control in open-source projects. He explained various types of open-source licenses, such as BSD, MIT, and GPL, and discussed the importance of choosing the right license for a project.

The session also covered the diverse communities that drive open-source development, illustrating how collaboration and shared knowledge contribute to the robustness and security of open-source software. Ananthu concluded by summarizing the advantages of open source, including its strong community support, security features, and the opportunities it provides for learning and professional growth.

The event was organized by Neeraj Manivarnan and Anjana KV, both 3rd-year Computer Science students, whose efforts ensured the session ran smoothly and provided a valuable learning experience for all attendees.

## Linux Essentials: Mastering the Basics (05 March 2024)
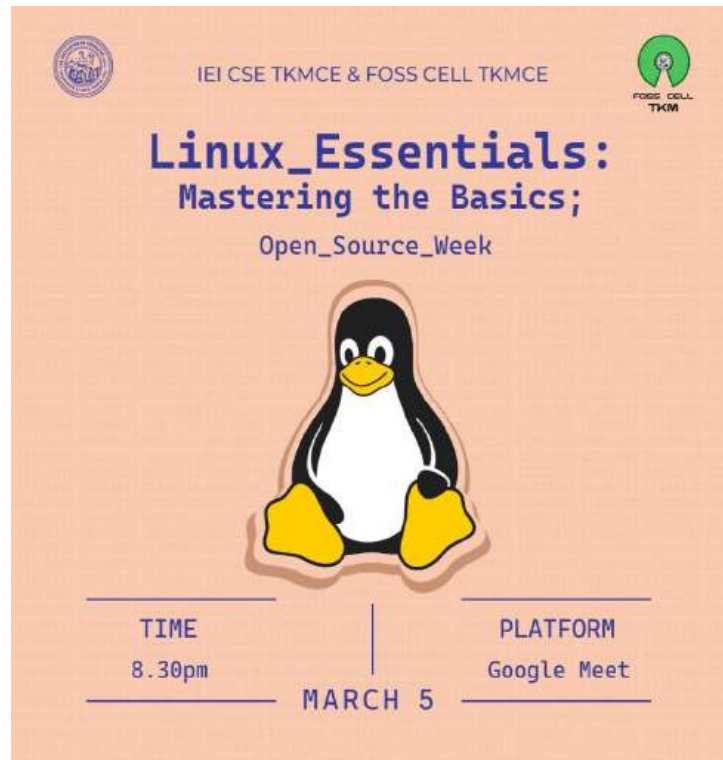


**IEI CSE TKMCE** and **FOSS CELL TKMCE** joined forces for an enlightening online session as part of Open-Source Week, aimed at mastering the fundamentals of Linux. Titled

**"Linux_Essentials : Mastering the Basics ;"**, the session, led by Thejus G Sajan, a proficient third-year computer science student at TKMCE, commenced on March 5th, 2024 at 8:30 PM, attracting participants eager to delve into the world of Linux. The coordination for the event was handled by Nibal Iqbal (3rd year CS) and Archana M (2nd year CS).

Hosted on Google Meet, Thejus kicked off the session with an insightful introduction to command-line basics, covering essential topics such as terminal navigation, file manipulation, directory operations, and text manipulation commands. Even beginners found their footing as they navigated through the intricacies of the Linux command line, gaining a solid understanding of fundamental commands essential for everyday tasks.

The second part of the session delved into the realm of shell scripting using Bash, offering participants a glimpse into the power of automation. Thejus guided attendees through the process of writing and executing simple scripts, demonstrating how automation can streamline repetitive tasks and enhance productivity in a Linux environment.

Overall, the session served as a valuable stepping stone for participants to deepen their understanding of Linux and harness its capabilities to their advantage. By providing practical guidance and hands-on experience, Thejus and the organizing team empowered attendees to embrace Linux with confidence and explore its potential for innovation and efficiency. As participants departed with newfound skills and insights, the event marked another successful endeavour in fostering a culture of learning and collaboration within the open-source community.

**Photos From the Session:**
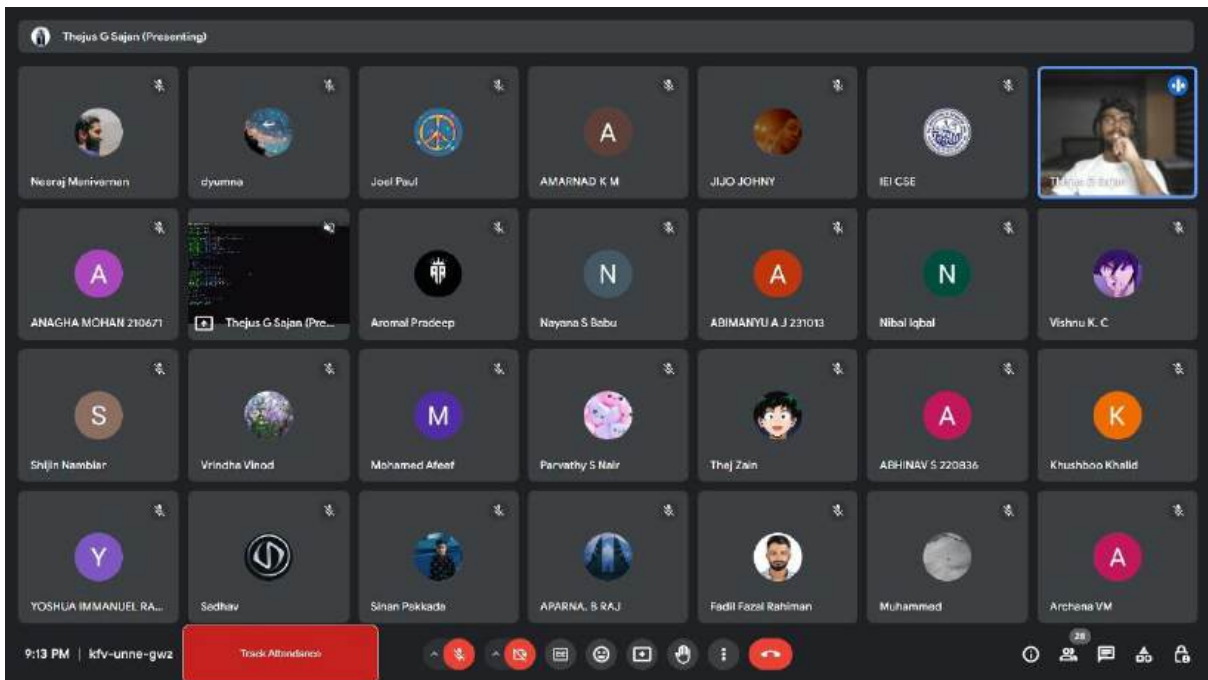
# GITHUB FOR BEGINNERS- A STEP-BY-STEP GUIDE(08 March 2024)



**IEI CSE TKMCE** and **FOSS CELL TKMCE** continued their exploration of open-source technologies with an online session during Open-Source Week, dedicated to demystifying GitHub for beginners. Titled **"GitHub for Beginners: A Step-by-Step Guide;"**, Neeraj Manivarnan, a skilled third-year computer science student at TKMCE, took the reins of the session, which commenced promptly at 8:30 PM on March 8th, 2024 on Google Meet, attracting an eager virtual audience. Behind the scenes, Nibal Iqbal (3rd year CS) and Archana M (2nd year CS) ensured seamless coordination for the event.

Neeraj started by breaking down Git commands, ensuring everyone had a solid understanding of the basics. From creating and cloning repositories to making commits and pushing changes to GitHub, participants were guided through each step with clarity and patience, fostering a sense of confidence among attendees to embark on their GitHub journey.

The session also delved into branches within Git, with Neeraj guiding participants through the process of creating, switching between, and merging branches, fostering a deeper understanding of version control practices. Despite the virtual setting, the collaborative spirit was palpable as participants engaged with the material and each other, leveraging online platforms to ask questions and share insights.

Overall, the session was a hit, inspiring participants to explore GitHub further on their own. By providing a supportive learning environment and practical guidance, Neeraj and the organizers succeeded in sparking curiosity and enthusiasm for open-source development. As attendees departed with newfound knowledge and resources, the event left a lasting impression as a celebration of learning and collaboration in the world of tech.

**<u>Pictures from the Session:</u>**
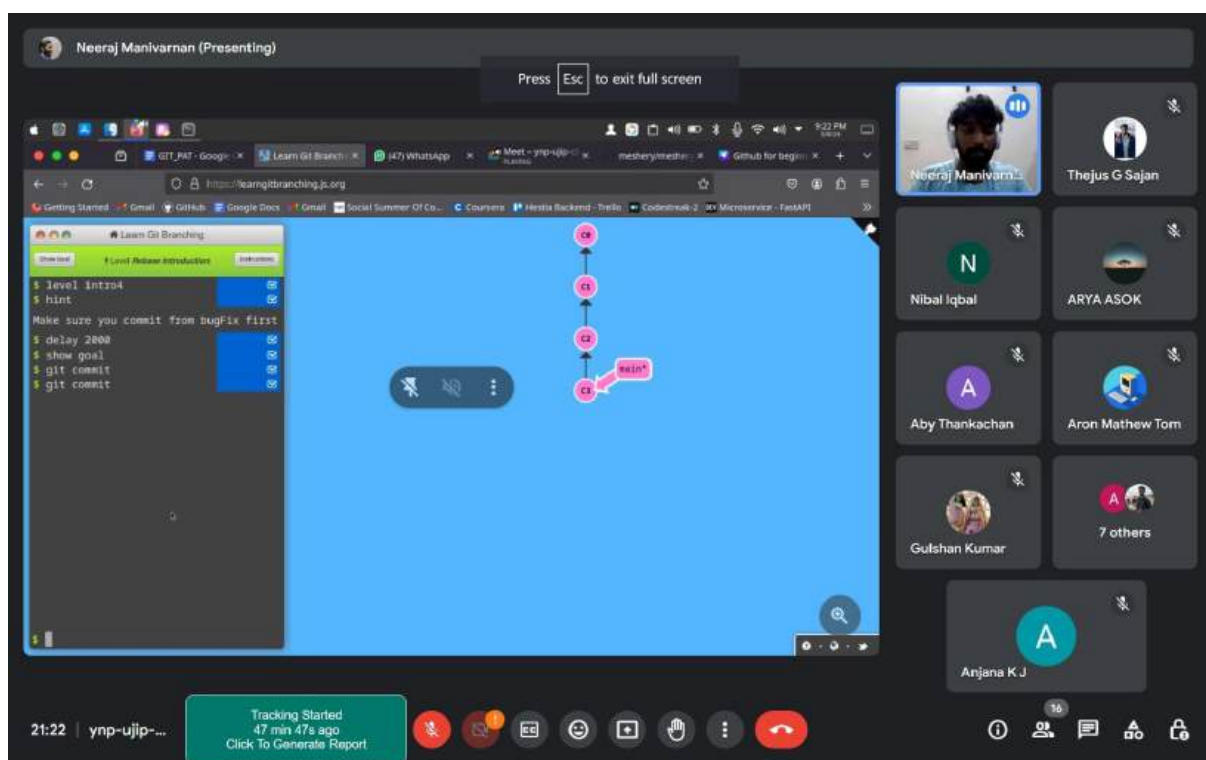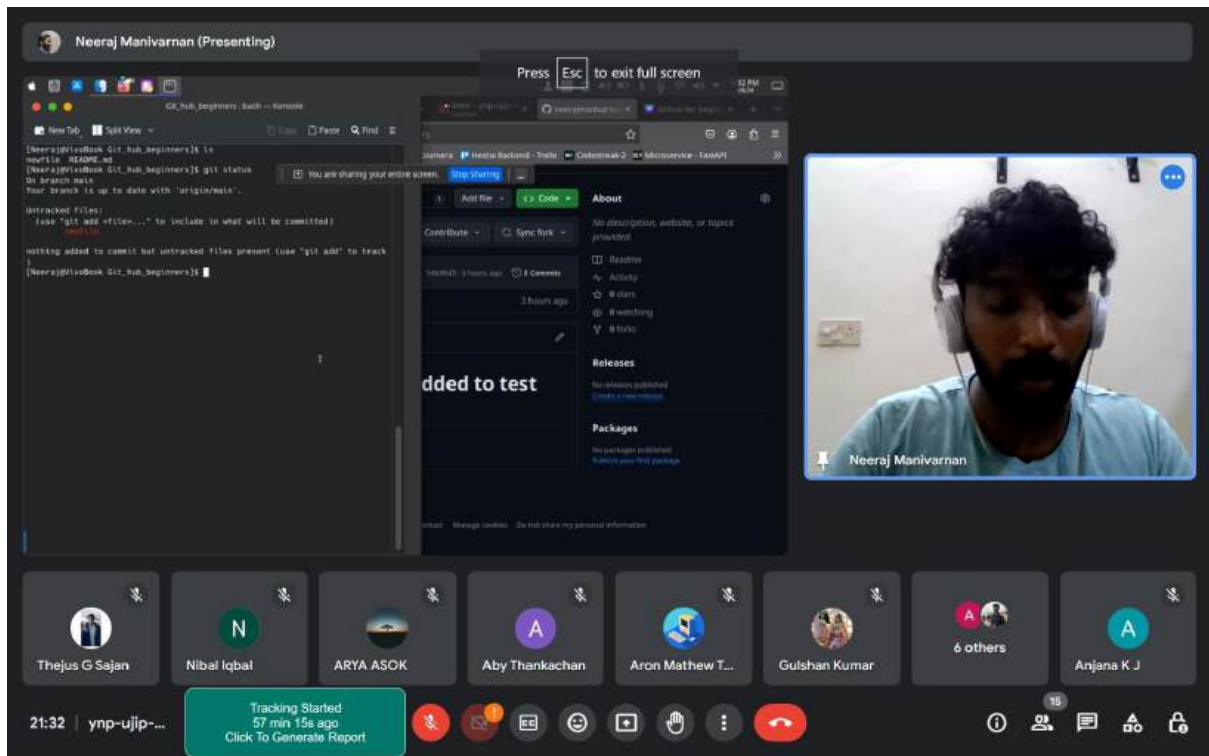
## Docker Simplified- A Beginner's Guide (09 March 2024)
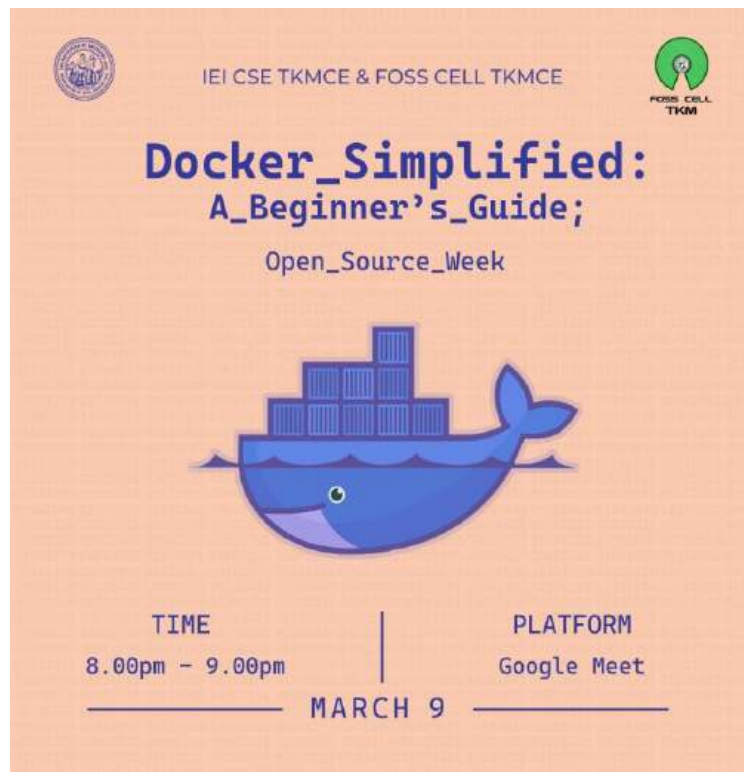


**IEI CSE TKMCE** and **FOSS CELL TKMCE** convened an enlightening session during Open-Source Week, titled **"Docker Simplified: A Beginner's Guide;"**, aimed at demystifying Docker and its

relevance in contemporary software development practices. Held on March 9th, 2024 from 8 PM to 9 PM via Google Meet, the event commenced with an exploration of foundational concepts such as "What is Docker?" and "Why use Docker?". These discussions provided attendees with a solid understanding of Docker's purpose and advantages in modern software deployment workflows.

Led by Neeraj Babu, a 3rd-year computer science student at TKMCE, the session transitioned seamlessly into an in-depth examination of Docker's architecture. Through Neeraj's expert guidance, participants gained insights into Docker's intricate components and their interconnections, fostering a deeper appreciation for the technology's underlying principles.

Furthermore, the session then transitioned into practical demonstrations, focusing on Docker containers, images, networks, and volumes. Through live demos, participants gained hands-on experience with Docker containers, understanding their role in encapsulating applications and dependencies. The concept of Docker images was elucidated, showcasing how they serve as the building blocks for containerized applications. Attendees also learned about Docker networks, facilitating communication between containers, and Docker volumes, enabling persistent data storage within containers.

The coordination for the event was managed by Nibal Iqbal (3rd year CS) and Archana M (2nd year CS), ensuring the smooth execution of the session. By the end of the session, participants departed with a comprehensive understanding of Docker and its practical applications in software development. The event exemplified IEI CSE TKMCE and FOSS CELL TKMCE's commitment to providing valuable educational opportunities and fostering a culture of continuous learning within the open-source community.

## Pictures from the Session:
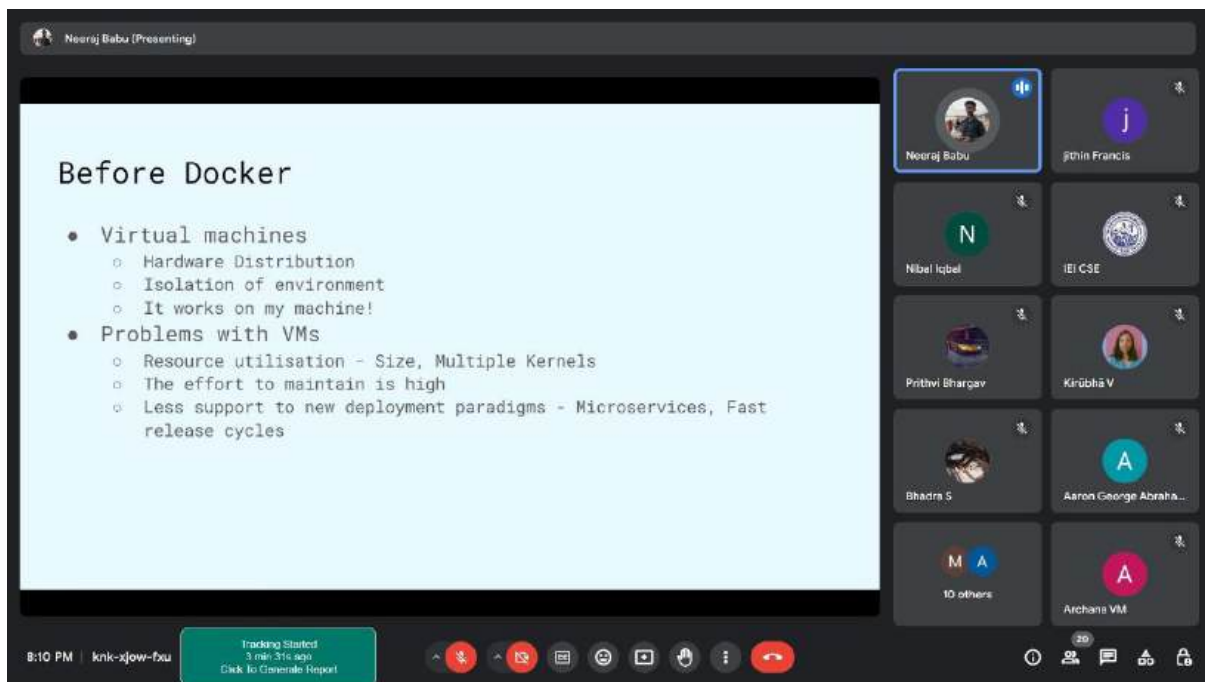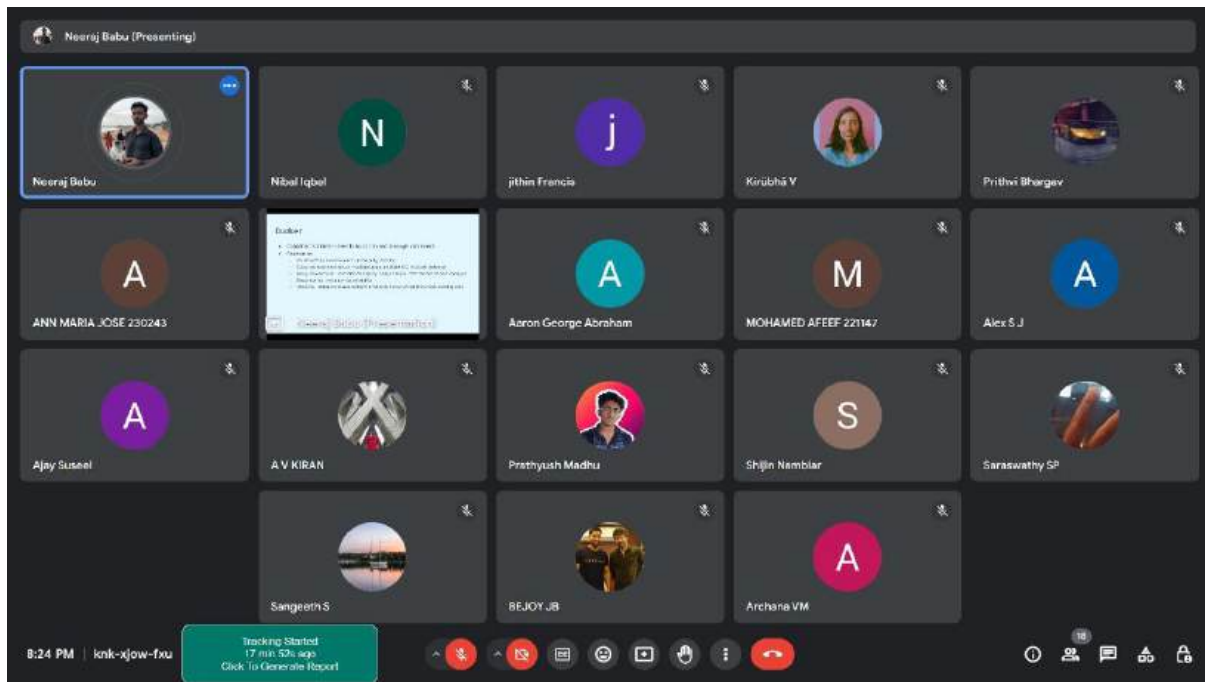
# TREASURE HUNT (10 March 2024)
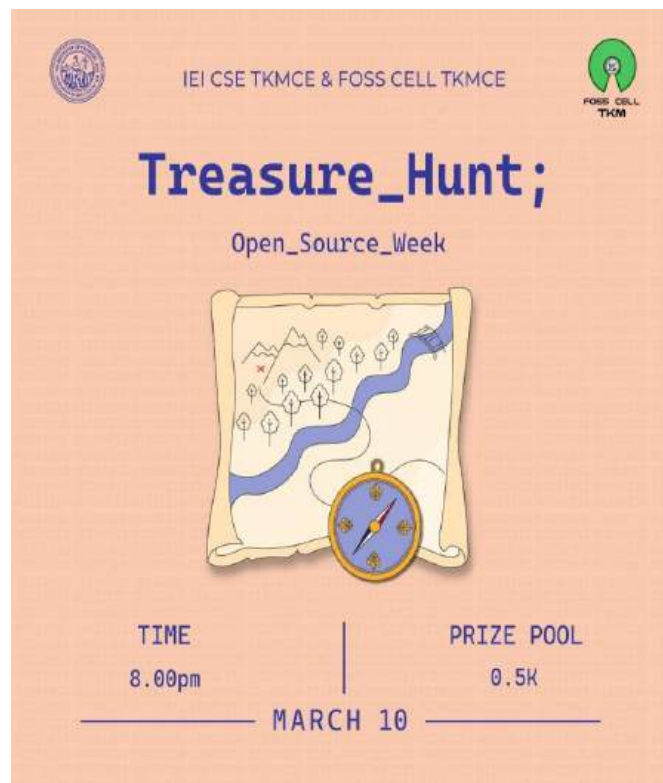


**IEI CSE TKMCE** and **FOSS CELL TKMCE** orchestrated an enthralling Online **"Treasure Hunt;"** as a highlight of Open-Source Week. The event, conducted on March 10, 2024, at 8:00 PM, immersed participants into a captivating journey of problem-solving and exploration.

Participants embarked on their adventure by navigating through a series of GitHub repositories, each presenting a unique challenge. Along the way, participants received clues via email after solving the challenges in the first two repositories, guiding them through the hunt's progression and leading them to the next set of repositories.

The journey commenced with an HTML form utilizing JavaScript, followed by a to-do list, and culminated in a stimulating game of tic-tac-toe. Successfully solving the challenges in each repository propelled participants forward, ultimately leading them to the final destination: a hosted website. Here, they utilized provided credentials to log in and uncover a hidden page, marking the final stage of the hunt. The first participant to capture a screenshot of this page and submit it emerged victorious.

The first, second, and third prize were accomplished by Ashwin S H, Sheron Rajesh, Aby Thankachan respectively. These winners demonstrated exceptional problem-solving skills, tenacity, and adaptability

throughout the competition, earning them well-deserved recognition for their achievements in the Online Treasure Hunt.

Special recognition goes to the coordinators, Prathyush, Anjana, and Neeraj, all 3rd-year Computer Science students, whose meticulous planning and execution ensured the success of the event, contributing to a memorable and engaging experience for all participants.
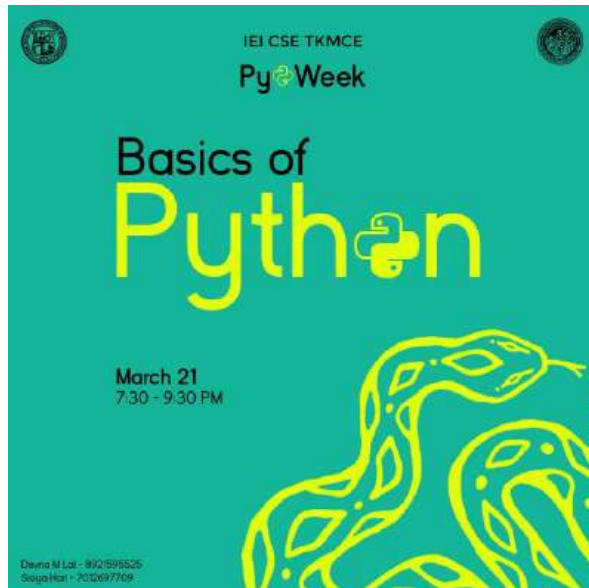
**Photos From the Session:**

# PYWEEK (21 to 28 MARCH 2024)

## BASICS OF PYTHON WORKSHOP (21 March 2024)



The "Basics of Python" workshop hosted by IEI CSE TKMCE during PYWEEK was both enlightening and engaging for participants. It was conducted online on March 21, 2024, under the coordination of Devna and Shreya. The workshop aimed to provide attendees with a strong foundation in Python programming, essential for their journey in the field.

The session commenced at 7:00 PM, with the active participation of about 45 students. Devna gave an introduction to the event to all. The facilitators of the session were George Skaria and Abheda K P. It began with a thorough introduction to Python syntax, data types, and variables, ensuring participants grasped fundamental concepts effectively. By explaining control flow structures like conditionals and loops, the workshop helped students create efficient and logical code. Furthermore, participants explored essential data structures like lists, tuples, dictionaries, and sets, gaining insights into their usage and manipulation within Python programs. Functions were also covered, where students learned to define, call, and leverage functions effectively in their code. This segment not only provided practical skills but also instilled confidence in participants to write modular and reusable code snippets.

The workshop delivered a comprehensive understanding of Python basics, equipping attendees with the necessary skills to kickstart their programming journey. The combination of

theoretical concepts and hands-on activities ensured an enriching learning experience for all participants and set a solid groundwork for their future endeavours in Python programming. The workshop came to an end at 9:00 PM with closing remarks from Shreya.

**Pictures from the Session:**
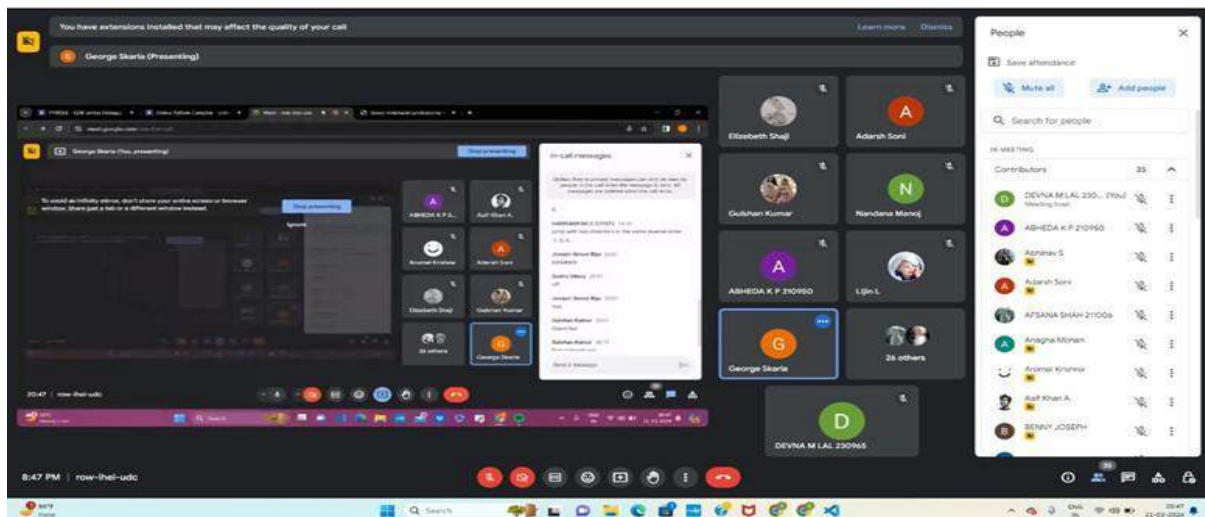


# DATA SCIENCE WORKSHOP(22 March 2024)
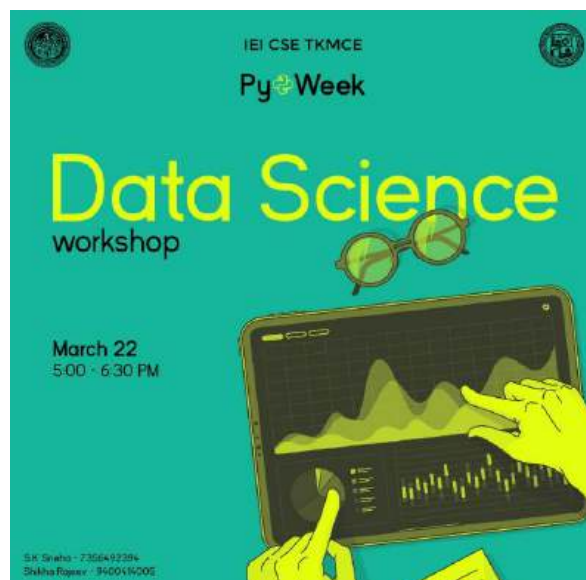


The Data Science Workshop, organized by IEI CSE TKMCE, was held on March 22, 2024, as part of PYWEEK. The workshop aimed to introduce participants to fundamental

concepts and techniques in data science, with a focus on analysis, visualization, and deriving insights from complex datasets. Its goal was to give participants a clear understanding of data science fundamentals. The event was coordinated by S K Sneha and Shikha Rajeev.

The workshop commenced at 5:00 PM and took place on Google Meet. After a brief introduction, the session was skillfully conducted by the facilitator, Namritha N, who guided attendees through a series of essential topics tailored for aspiring data scientists. The workshop began with an exploration of basic Python programming, emphasizing its importance as the foundational language in the field of data science. Participants were introduced to key Python libraries such as NumPy and Matplotlib, which play crucial roles in data analysis and visualization tasks. Through hands-on exercises and demonstrations, attendees gained practical experience in using these libraries to manipulate data and create meaningful visualizations. Furthermore, the workshop provided an insightful overview of fundamental data science concepts, tools, and techniques. Participants were introduced to the broader landscape of data science, including its various applications and methodologies. This comprehensive understanding equipped attendees with the knowledge necessary to navigate the complexities of the field and embark on their data science journey with confidence.

During the session, everyone was encouraged to ask questions and share thoughts, making it a lively and collaborative learning atmosphere. By the end, everyone had a good grasp of what data science is all about and its basics. The workshop was a great learning opportunity, giving participants a strong foundation in data science concepts and methods. The session wrapped up at 7:00 PM, with Sneha providing closing remarks.

**Pictures from the Session:**
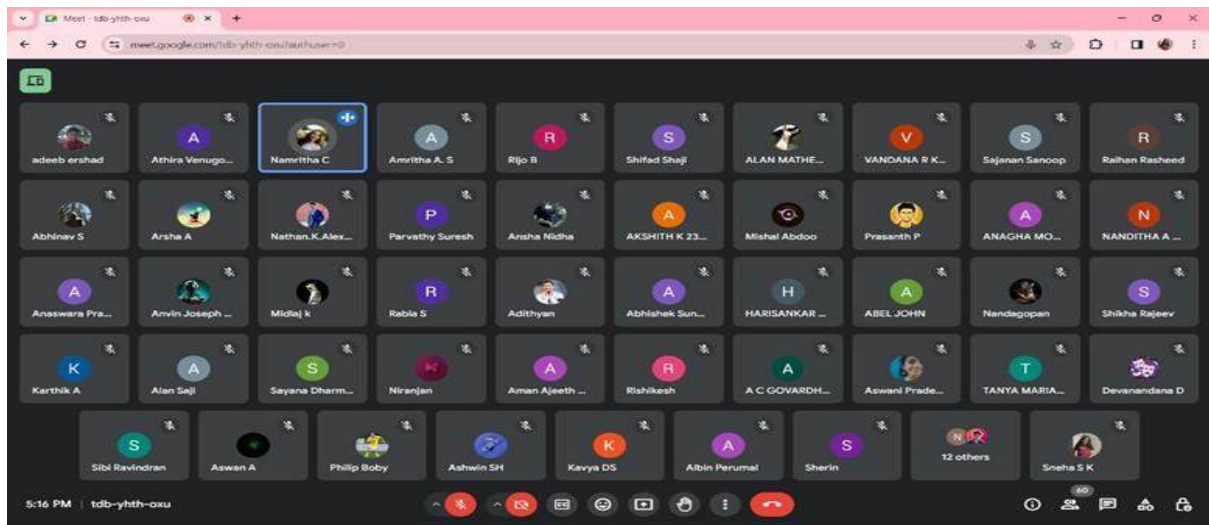


# Gen AI with LLM Workshop(23 March 2024)
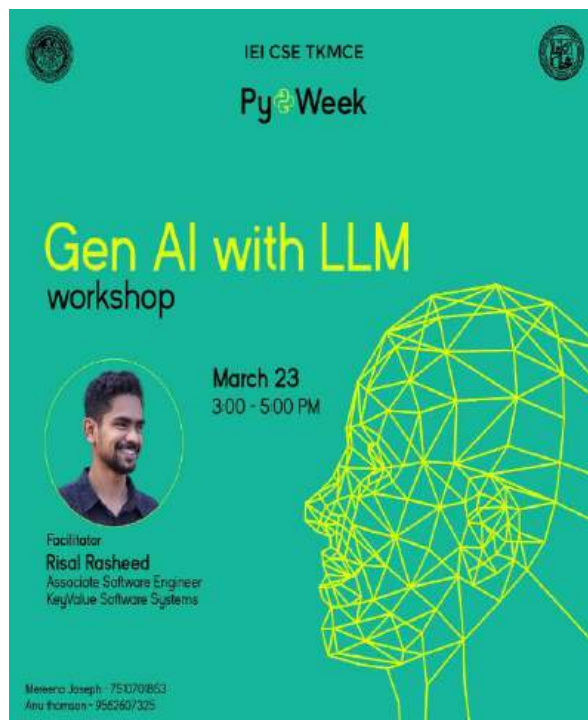


The session commenced at 3:00 pm with Anu Thomson's introduction, welcoming participants to the highly anticipated online session. The introduction set a warm and inviting tone, preparing attendees for an engaging and informative experience.

Mr. Rasheed, an Associate Software Engineer at KeyValue Software Systems, then assumed control of the session, leading participants through an interactive and in-depth exploration of several key topics in modern software development and artificial intelligence.

The session began with a comprehensive overview of Application Programming Interfaces (APIs). Mr. Rasheed emphasized the pivotal role of APIs in facilitating seamless communication between different software applications. He illustrated this with real-world examples, highlighting how APIs are integral to modern software development practices, enabling functionalities like data exchange and service integration across diverse platforms. Participants gained valuable insights into how APIs underpin various technologies they use daily, from social media integrations to cloud computing services.

Next, Mr. Rasheed introduced participants to Basic Large Language Models (LLMs), elucidating their significance in natural language processing tasks. He explained how LLMs, such as GPT (Generative Pre-trained Transformer), are foundational to a wide range of applications, including text generation, language translation, and sentiment analysis. Through detailed examples and use cases, he demonstrated how LLMs can transform unstructured text data into meaningful, actionable insights, enriching participants' understanding of these powerful AI models.

The session then delved into the world of Neural Networks and Convolutional Neural Networks (CNNs). Mr. Rasheed provided a comprehensive overview of their structures, functions, and varied applications. He explained the fundamental architecture of neural networks, including how neurons and layers interact to process and learn from data. The discussion extended to CNNs, highlighting their specialized design for image and pattern recognition tasks. Participants were captivated by examples of neural network applications such as image recognition systems used in medical diagnostics, speech synthesis technologies in virtual assistants, and recommendation systems employed by e-commerce platforms.

Throughout the session, engaging discussions ensued, with participants actively contributing questions and insights. Mr. Rasheed's ability to demystify complex concepts and relate them to real-world scenarios facilitated a rich exchange of knowledge. The interactive nature of the session encouraged dynamic participation, allowing attendees to explore the burgeoning domain of generative artificial intelligence (AI) with confidence and curiosity.

The workshop emerged as a resounding success, providing fertile ground for the exchange of knowledge and exploration. With the active participation of approximately 57 attendees, the

session thrived with dynamic discussions and interactive engagement. Participants left with a deeper understanding of the critical technologies shaping the future of software development and AI.

The session concluded at 5:00 pm, leaving attendees inspired and equipped with new knowledge to further their pursuits in the field of AI and software development.

**Pictures from the Session:**
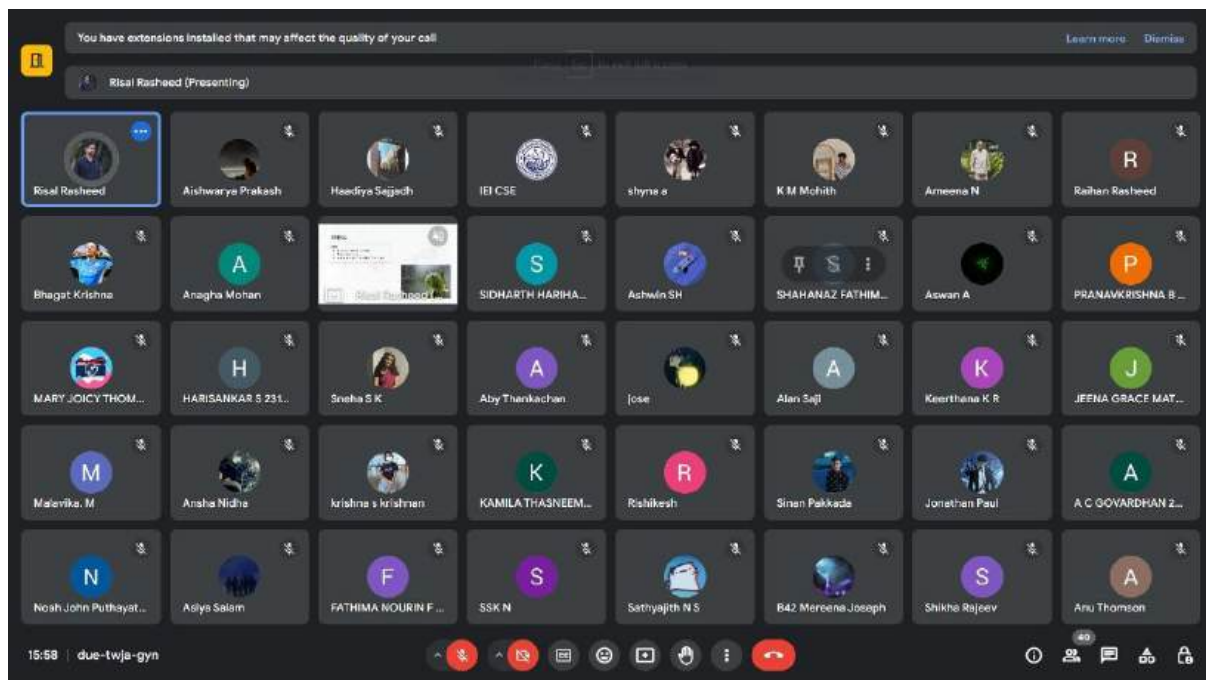
# DEEP LEARNING WORKSHOP(24 March 2024)
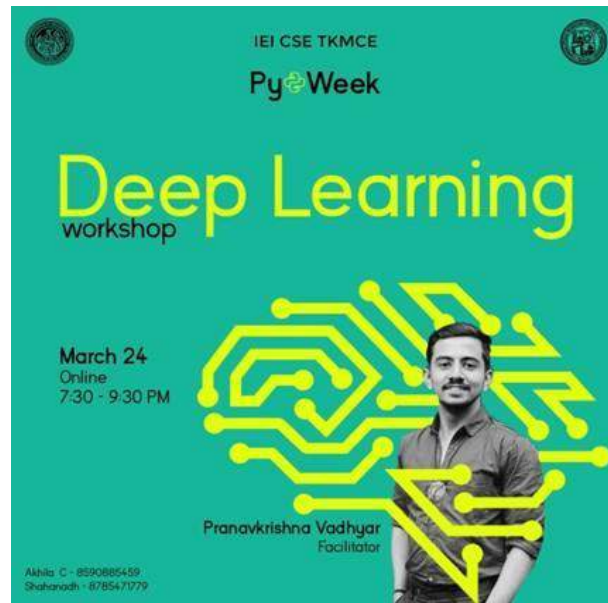


The "Deep Learning" session, led by PranavKrishna Vadhyar, took place on Google Meet and spanned from 7:45 PM to 8:56 PM, drawing the participation of 35 eager attendees. This session provided an in-depth exploration of deep learning techniques and applications, facilitated through a blend of discussions, presentations, and interactive activities.

PranavKrishna Vadhyar began the session with an engaging introduction to deep learning, setting the stage for a comprehensive learning experience. His adept facilitation skills ensured a smooth and informative session, fostering an atmosphere of collaboration and knowledge sharing. Throughout the session, he navigated participants through the complex concepts of deep learning with clarity and precision.

The session covered a range of fundamental topics, starting with an overview of artificial neural networks (ANNs). PranavKrishna explained the basic structure and functioning of ANNs, using visual aids and practical examples to illustrate how these networks mimic the human brain's learning process. Participants were introduced to key concepts such as neurons, layers, and activation functions, providing a solid foundation for understanding more advanced topics.

Building on this foundation, the session delved into convolutional neural networks (CNNs), a critical architecture for image recognition tasks. PranavKrishna demonstrated how CNNs process visual data through layers of convolutional and pooling operations, enabling computers

to identify and classify images with high accuracy. Real-world applications, such as facial recognition and object detection, were discussed to highlight the practical significance of CNNs.

The exploration continued with recurrent neural networks (RNNs), which are particularly suited for sequential data and time-series analysis. PranavKrishna elucidated the workings of RNNs, emphasizing their ability to retain information across different time steps, making them ideal for tasks like language modelling and speech recognition. Examples of RNN applications, including text prediction and sentiment analysis, were presented to illustrate their versatility.

Throughout the session, PranavKrishna employed interactive activities to reinforce learning. Participants engaged in hands-on exercises, applying the concepts discussed to real-world scenarios. These activities encouraged active participation and facilitated a deeper understanding of the material. The session's collaborative atmosphere enriched the discussions, offering diverse perspectives and broadening the collective understanding of deep learning.

PranavKrishna's dedication to facilitating an engaging and informative session was evident in his thorough preparation and responsive interaction with participants. He addressed questions with patience and clarity, ensuring that all attendees could follow along and grasp the intricate details of deep learning.

By the end of the session, participants left with newfound insights and a sense of empowerment to apply deep learning principles in their respective fields. The comprehensive coverage of topics, combined with practical examples and interactive elements, equipped attendees with the knowledge and confidence to explore further applications of deep learning in their projects and careers.

The "Deep Learning" session, under PranavKrishna Vadhyar's expert guidance, emerged as a resounding success. It provided a fertile ground for the exchange of knowledge and ideas, paving the way for continued exploration and innovation in the dynamic field of deep learning.
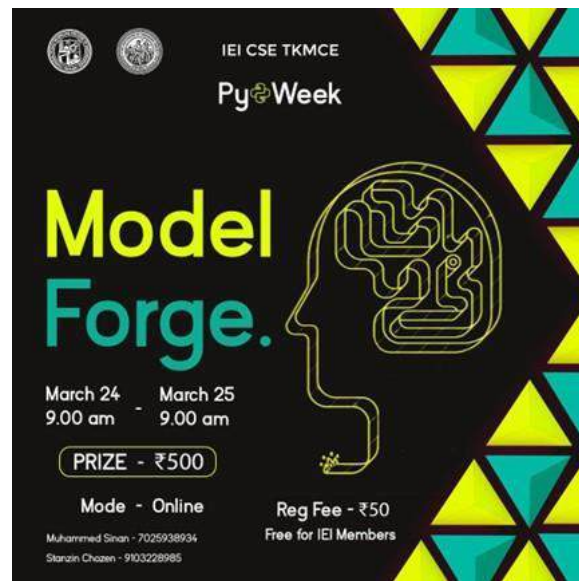
**Photos from the session:**

## MODEL FORGE COMPETITION(24 March 2024)



The 24-Hour Model Forge Competition, held on March 24, 2024, as part of PyWeek by IEI CSE TKMCE, proved to be a thrilling showcase of data analysis and predictive modeling prowess. Seven eager participants embarked on a day-long challenge, commencing at 9 AM, to test their skills and vie for a share of the Rs. 500 prize pool. Conducted online via Kaggle, the competition attracted enthusiasts eager to demonstrate their expertise.

Participants, fueled by the spirit of competition, dedicated themselves to crafting innovative models within the tight time constraints. The event charged an entry fee of Rs. 50 for non-IEI members, while IEI members enjoyed free registration, ensuring inclusivity and participation from diverse backgrounds.

Ultimately, Aby Thankachan emerged victorious, showcasing exceptional talent and ingenuity, and received an official IEI T-shirt as a gift. Sriram R secured a commendable second place, earning 120 rupees cash prize, followed closely by Noah JP in third, who received 80 rupees. Congratulations resonated for all participants, acknowledging their dedication and hard work throughout the intense competition. The event not only celebrated individual achievements but also fostered a collaborative atmosphere, promoting skill development and camaraderie within the data science community.

## PIXEL CRAFT GEN AI WORKSHOP (27 March 2024)



Pixel Craft's Gen AI Image Generation session, led by the esteemed facilitator Amal Nath, an Associate Software Engineer at Keyvalue Software Systems, captivated 35 enthusiastic participants as part of PYWEEK, hosted by IEI CSE TKMCE. Held via Google Meet from 8:30 AM to 9:40 AM, the session served as an insightful introduction to the fundamentals of image creation using Generative AI techniques.

The session commenced with a warm welcome from Amal Nath, who set the stage for an exciting exploration into the world of AI-powered image generation. Amal began by providing a comprehensive overview of Generative AI, explaining its significance in the broader field of artificial intelligence. He highlighted how Generative AI techniques enable computers to autonomously create images, transforming the way we approach digital art and content creation.

Under Amal's guidance, attendees embarked on a journey into the intricacies of AI-powered image generation. He introduced key concepts such as neural networks, particularly focusing on Generative Adversarial Networks (GANs). Through interactive discussions, Amal elucidated how GANs consist of two neural networks, a generator and a discriminator, that work in tandem to produce realistic images. This fundamental understanding laid the groundwork for deeper exploration into the mechanics of AI-driven image creation.

Amal's teaching methodology was both engaging and accessible. He utilized practical demonstrations to showcase how AI algorithms generate images from scratch. Participants observed firsthand the step-by-step process, from training the neural network on a dataset of images to the final output of new, AI-generated images. These demonstrations were accompanied by detailed explanations, ensuring that even those unfamiliar with the topic could grasp the concepts and appreciate the underlying technology.

One of the session's highlights was the discussion on real-world applications of Generative AI in image creation. Amal provided examples of how these technologies are being used in various industries, such as entertainment, fashion, and marketing, to create visually stunning content. He also touched upon ethical considerations and the potential implications of AI-generated media, prompting thoughtful reflections among the participants.

The interactive nature of the session encouraged participants to engage actively, asking questions and sharing their perspectives. Amal's approachable demeanor and expertise created an environment conducive to learning and curiosity. He addressed queries ranging from the technical aspects of GANs to the broader implications of AI in creative fields, fostering a rich dialogue that enhanced the overall learning experience.

The session not only equipped participants with basic knowledge but also ignited a curiosity to explore further. Attendees left with a newfound appreciation for AI's creative potential and a desire to delve deeper into the intricacies of image generation. Many expressed their excitement to experiment with Generative AI tools and techniques in their own projects, inspired by the possibilities demonstrated during the session.

Overall, the event provided a welcoming environment for learning and discovery, paving the way for continued exploration and experimentation in the captivating realm of Generative AI image generation. The session concluded with participants feeling empowered and eager to apply their newfound knowledge, marking a successful and inspiring segment of PYWEEK hosted by IEI CSE TKMCE.

**Pictures from the Session:**
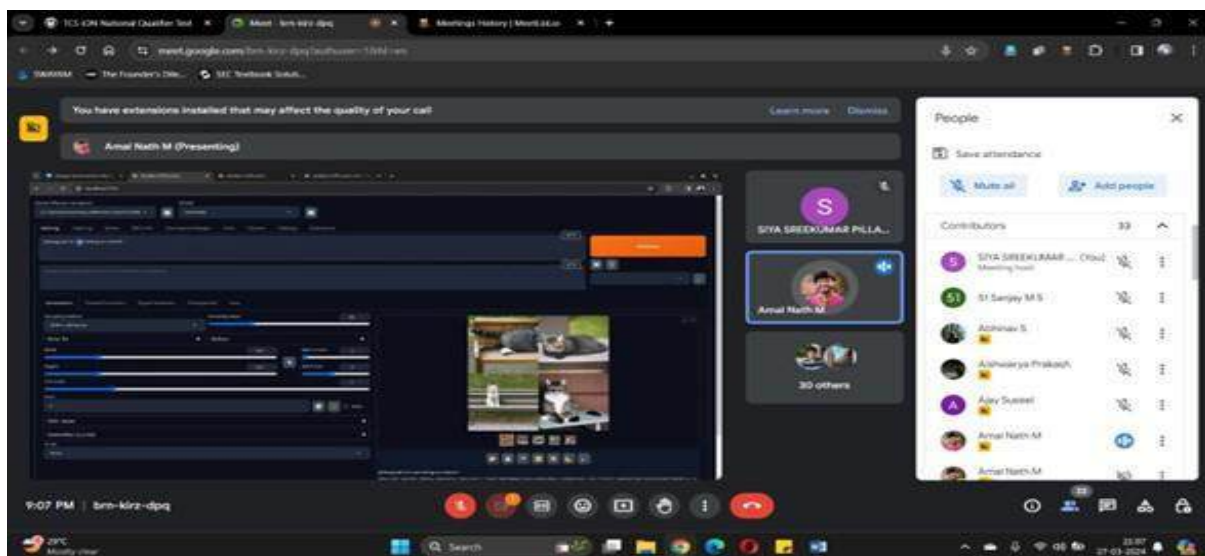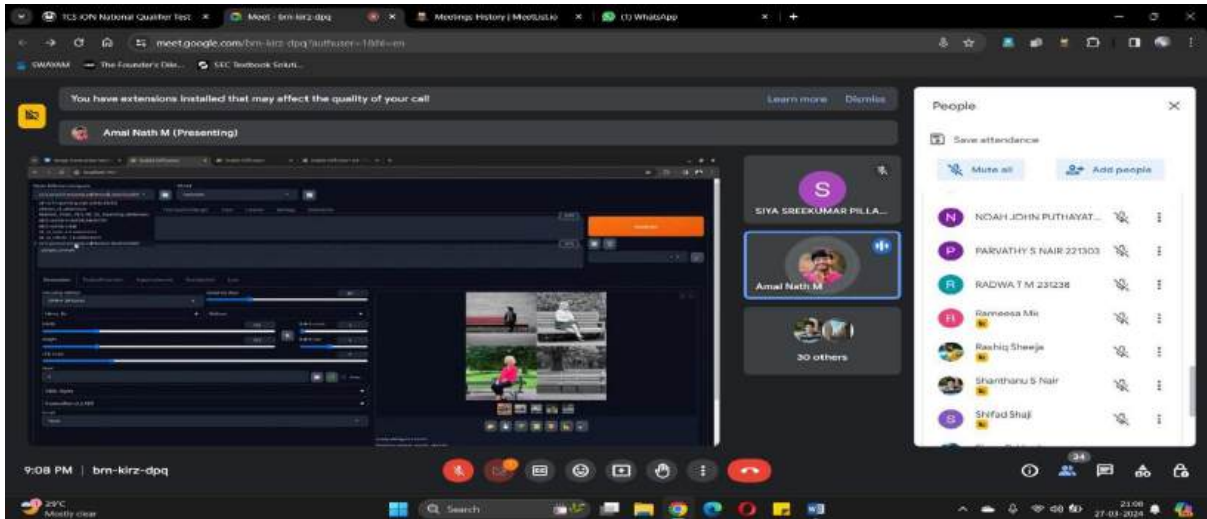
## ARTIFEX COMPETITION(28 March 2024)



The Artifex competition, held on the Gemini platform, gathered 10 participants for an AI image generation event focused on illustrating the ramifications of water scarcity on communities and ecosystems. From 12:00 PM to 12:00 AM, contestants had a 12-hour window to craft and submit their entries via a Google Form. The event welcomed everyone, with a small registration fee of 25 rupees for non-IEI members and free for IEI members.

The resulting images depicted various facets of water scarcity, showcasing the struggles of individuals coping with inadequate water access and the adverse effects on nature. Through the creative lens of AI-generated imagery, participants conveyed powerful messages about the

urgent need to address water scarcity. Muhammed Sinan from R6B emerged as the winner and was awarded an official IEI T-shirt.

The competition not only served as a platform for artistic expression but also as a means of raising awareness about this critical issue. By engaging with the theme of water scarcity, Artifex fostered a deeper understanding of its far-reaching implications and inspired innovative approaches to tackling the challenge. Overall, Artifex successfully united creativity and advocacy, encouraging thoughtful reflection and action on a pressing global concern.

## Django Workshop (29 March 2024)
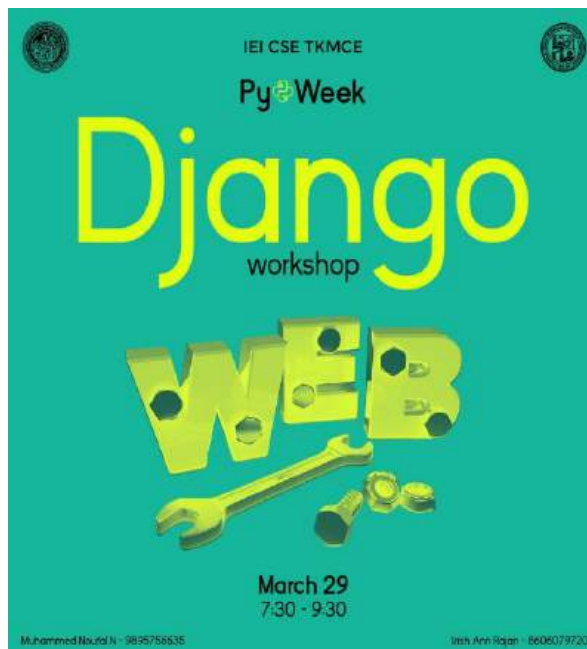


The Django Workshop hosted by IEI CSE TKMCE on March 29, 2024, as part of PYWEEK, was a resounding success, attracting participants eager to delve into the world of web development using the Django framework. The workshop aimed to introduce attendees to Django's capabilities, guiding them through its role in web development, project setup, and model creation. The event was coordinated by Muhammed Noufal and Irish Ann Rajan.

The session commenced at 7:20 pm with an introduction by Irish Ann Rajan followed by Arjun taking over as the session facilitator. He provided participants with an overview of Django and its significance in web development, including guidance on the necessary installations. Attendees gained a comprehensive understanding of Django's architecture,

learning about its components and their collaborative role in crafting dynamic web applications.

As the session progressed, participants were guided through practical aspects, such as initiating a Django project from scratch. This included setting up the development environment and structuring the project effectively. He also covered Django models, demonstrating how to define data models to represent database tables and manipulate data efficiently within their projects. Additionally, he discussed the creation of apps and the utilization of admin panels. Through these detailed discussions and practical demonstrations, participants gained valuable insights into Django's fundamental concepts, empowering them to embark on their web development journey with confidence.

The workshop ended at 9:45 pm, leaving attendees with valuable insights into Django's basic concepts and practical uses. With this newfound knowledge and confidence, participants were well-equipped to start their web development journey using Django.
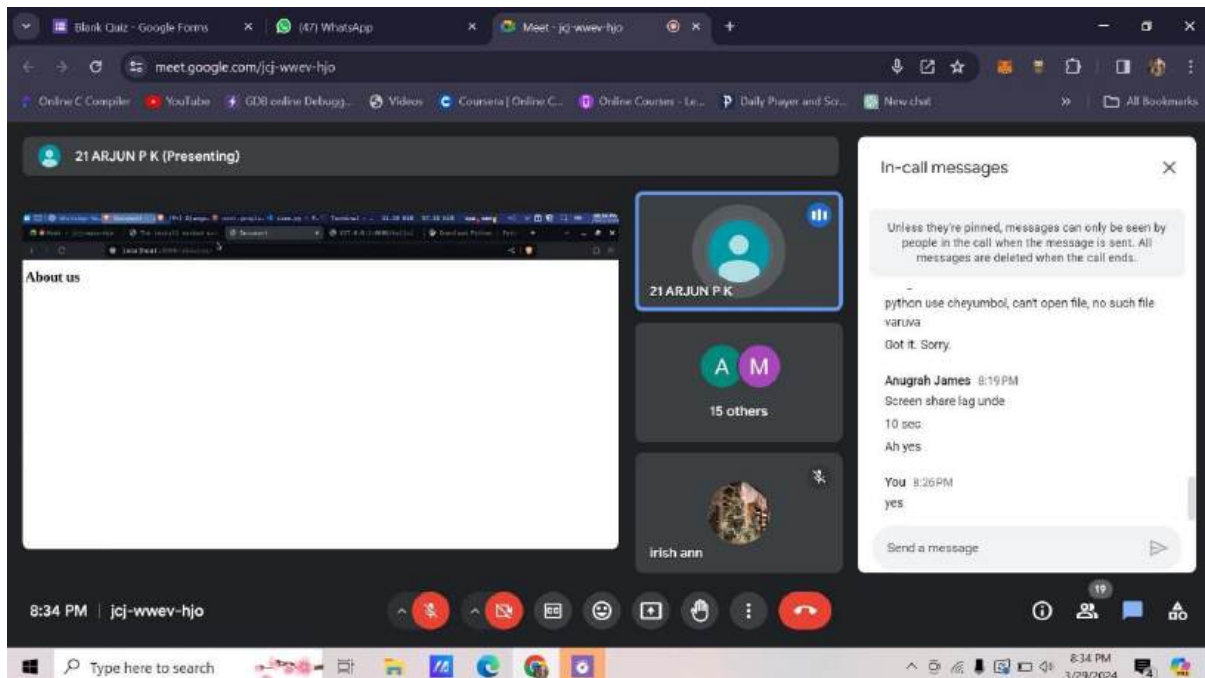
**Pictures from the Session:**

# CAPTURE THE FLAG (04 May 2024)



The Capture the Flag (CTF) competition at TKM College of Engineering was a significant highlight of the college fest, Hestia 24. Held in the Software Systems Lab on May 4, 2024, the event was organized by IEI CSE TKMCE and the infrastructure for the competition was provided by the cybersecurity team BUFF3R. It featured 40 participants forming 14 teams, each competing to demonstrate their cybersecurity skills.

The competition began at 9:30 am and concluded at 4:30 pm, with participants tackling various challenges including cryptographic puzzles and network exploitation tasks. These challenges tested the participants' skills and ingenuity.

The event attracted participants from various institutions, providing a platform for both seasoned cybersecurity enthusiasts and novices to learn and compete. The average accuracy across all challenges was 55%.

The hosting server crashed at 10:52 am due to heavy traffic caused by some participants attempting brute forcing. A new server was set up and became operational at 11:15 am. The team responsible for the brute forcing was warned that any further attempts would result in their expulsion from the competition.

The winning team, GhostSquad, comprised Hari Shankar and Sidharth SS from Mar Ivanios College. Team Cognito, with Bijoy Abraham JS from Marian Engineering College and Joel I Patrick, secured second place. Devnath NS from Amrita Vishwa Vidyapeetham earned the third position.

After the competition, a feedback session was held where participants shared their insights. Prizes were then distributed, with a total prize pool of ₹7500. The first prize was ₹4500, the second prize was ₹2000, and the third prize was ₹1000.
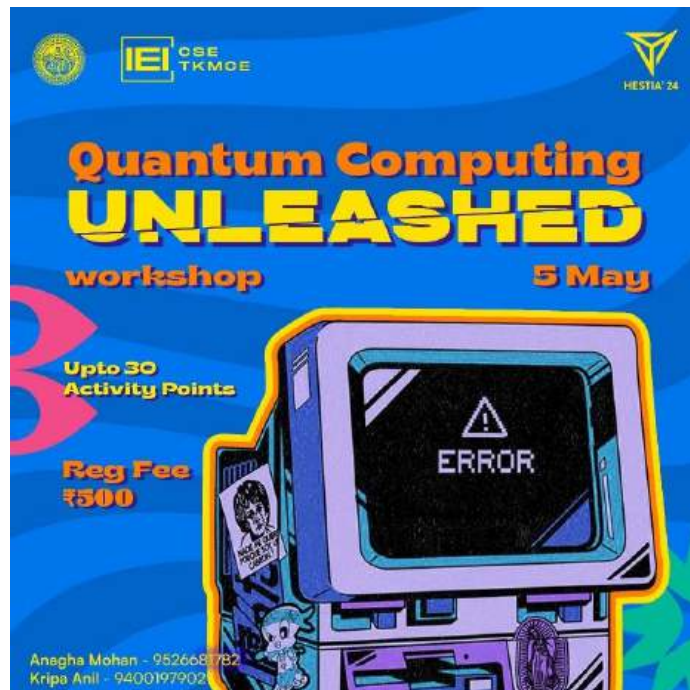
**Pictures from the Session:**

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# QUANTUM COMPUTING UNLEASHED(05 May 2024)



Amidst the vibrant atmosphere of TKM College of Engineering, the Quantum Computing based workshop titled 'Quantum Computing Unleashed' unfolded on the Operating Systems Lab, serving as a pivotal highlight of the prestigious college fest, Hestia 24. Organized with meticulous attention to detail by the IEI CSE TKMCE, the workshop aimed to unravel the mysteries of Quantum Computing, a burgeoning field at the forefront of technological innovation.

Held on May 5, 2024, from 10:00 am to 1:00 pm, the workshop drew the eager participation of 57 attendees hailing from various esteemed institutions across Kerala. Enthusiastic minds congregated to delve into the realm of quantum mechanics, poised to embark on a journey of discovery led by none other than Dr. Shailesh Sivan, an esteemed Assistant Professor at CUSAT renowned for his pioneering research in Quantum Computing.

The workshop commenced with a captivating introduction to the fundamental principles of Quantum Computing, laying the groundwork for a deeper exploration into this revolutionary paradigm. Dr. Shailesh Sivan adeptly elucidated complex concepts, distilling intricate theories into comprehensible insights that ignited curiosity and fascination among participants.

As the session progressed, attendees were afforded the invaluable opportunity to engage in hands-on activities, immersing themselves in the practical application of quantum algorithms and protocols. Guided by Dr. Shailesh Sivan's expertise, participants navigated the intricacies of quantum circuits and algorithms, gaining firsthand experience in harnessing the unique properties of quantum systems to solve computational problems.

The workshop served as a melting pot of diverse perspectives and intellectual exchange, fostering an environment conducive to collaborative learning and innovation. From seasoned researchers to budding enthusiasts, participants embarked on a shared journey of exploration, united by a common passion for unravelling the mysteries of quantum mechanics.

As the clock struck 1:00 pm, signalling the conclusion of the workshop, participants departed with enriched knowledge and newfound inspiration, equipped with the tools to embark on their own ventures in the realm of Quantum Computing. Feedbacks from the participants were also analysed at the end.

The Quantum Computing Unleashed workshop at Hestia 24 not only served as a platform for academic enrichment but also stood as a testament to the spirit of innovation and collaboration that defines the ethos of TKM College of Engineering. The concerted efforts of IEI CSE TKMCE and the dynamic leadership of Dr. Shailesh Sivan laid the foundation for a legacy of excellence, inspiring future generations to push the boundaries of technological innovation and pave the way for a quantum-powered future.
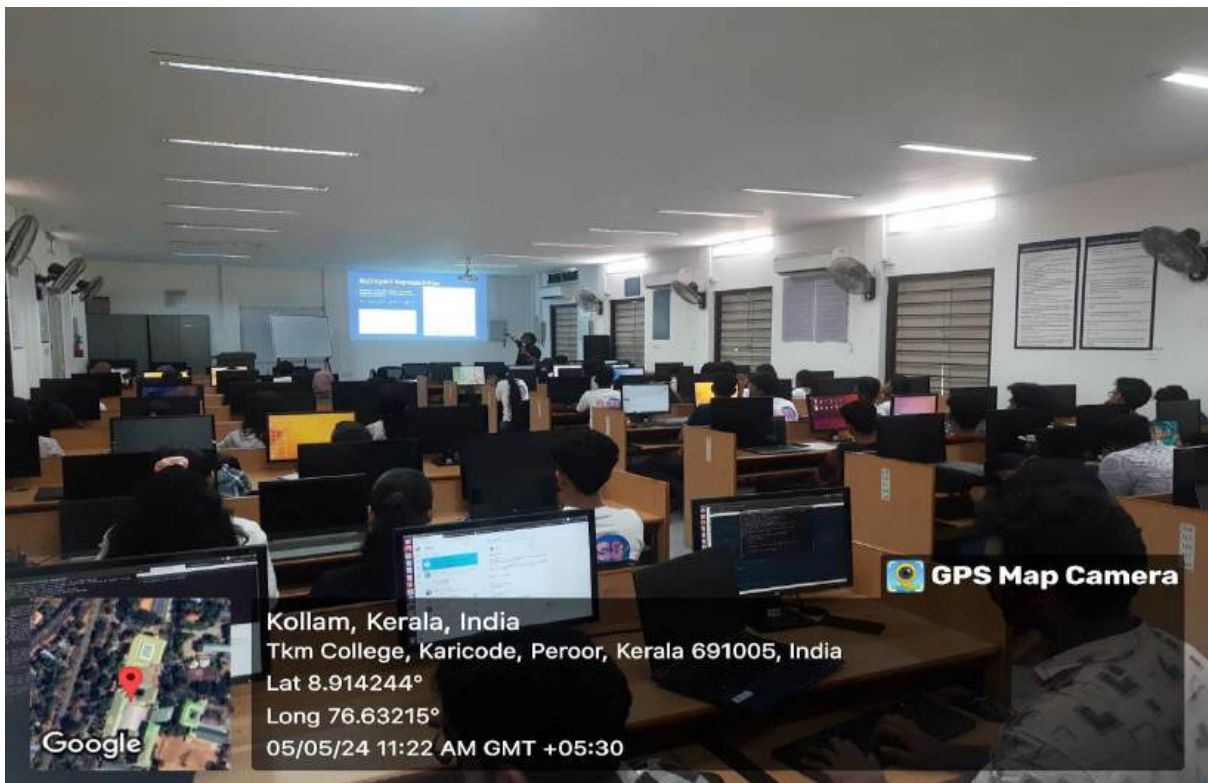
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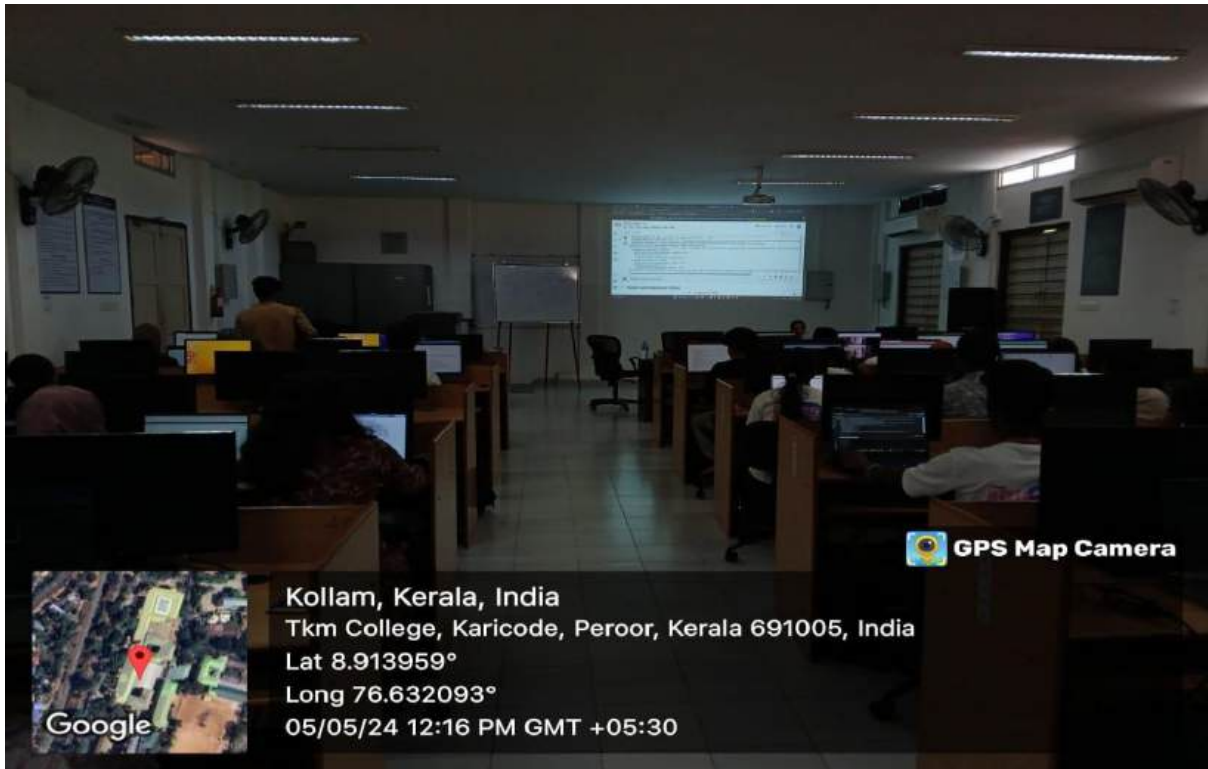
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