BUILD WEEK
Event Report

Introduction

GDSC MJCET hosted an exclusive Build Week, from 20th to 25th May 2024, for its members, providing a unique and immersive opportunity for hands-on learning and project development. Participants had the chance to choose from three domains—Web Development, App Development, and AI/ML—allowing them to focus on their areas of interest and build practical skills relevant to the current tech landscape. This week-long workshop aimed to foster innovation, enhance technical expertise, and provide real-world experience in creating functional projects. By working collaboratively, members not only honed their technical abilities but also developed valuable teamwork and problem-solving skills. The event encouraged networking and peer learning, further enriching the participants' educational experience and preparing them for future challenges in the tech industry. The Build Week exemplified GDSC MJCET's commitment to nurturing talent and fostering a community of skilled and innovative developers.

Web Development

The first day of the Web Development workshop began with Ayman Quadri, Web Lead of GDSC MJCET, introducing the fundamentals of web development, including the concepts of front-end and back-end development. He explained the essential building blocks of a website: HTML, CSS, and JavaScript, and gave a brief HTML demo. Ayesha, Web Lead, then took over, leading a basic HTML course where she guided participants in setting up their IDEs and taught them about various HTML tags such as heading tags, text formatting tags, anchor tags, figure tags, and lists. Ayman resumed the session by covering additional HTML elements like iframes, audio tags, attributes, video tags, and form tags. He also discussed semantic elements

and provided resources for self-learning. The day concluded with a quiz and a Q&A session to address participants' doubts.

On the second day, Ayesha conducted the session, focusing on the basics of CSS. She covered inline, internal, and external CSS, and introduced selectors, class, and div elements, as well as font and text properties. The session was interactive, with participants coding along as Ayesha explained each concept with examples. She then taught the box model, display and position properties, and CSS flexbox properties. Advanced CSS topics, such as pseudo-classes, were also covered. The day ended with a doubt-clearing session and a quiz.

Day three was led by Rayyan uddin, Chief Representative of GDSC MJCET, who demonstrated how to install Node.js and explained its necessity in modern web development. He guided participants through the installation and setup of Tailwind CSS, revisiting the concept of flexbox. Ayman then took over to teach JavaScript, covering its importance, features, and basic concepts such as data types, variables, arrays, objects, functions, callbacks, object-oriented programming (OOP), asynchronous programming, and promises. Rayyan wrapped up the day by teaching loops, functions, type casting, and DOM manipulation.

On the fourth day, Ghouse Tazeem, Chief Coordinator of GDSC MJCET, gave step-by-step guidance to participants on building their first project: a portfolio website. This was a hands-on, code-along session. He also taught how to deploy the website on Netlify, ensuring that participants could see their work live on the internet.

The fifth day saw Ayesha leading the creation of a second project, a secret message app. She guided participants through designing the UI using HTML and CSS, incorporating a library, and then adding JavaScript functionality. The app was then deployed on Netlify. The session concluded with a Q&A session to address any

remaining doubts.

On the final day, Amaan uddin, Web Lead, guided participants in building a to-do list app using HTML, CSS, and JavaScript, which was then deployed on GitHub. At the end Ghouse offered valuable guidance on how to excel in their careers, suggesting what technologies to learn next and providing tips for continuous improvement. The interactive nature of all the sessions ensured that participants' doubts were cleared, making the workshop a comprehensive learning experience.

Application Development

The first session of the Build week focused on introducing participants to application development using Flutter. Maheen Ilyas, General Secretary of GDSC MJCET, commenced the session by elucidating the features and applications of Flutter and Dart. She then meticulously guided attendees through the process of setting up the developer environment. Following this, Habeeb Saleh, Lead of Application Development at GDSC MJCET, conducted an interactive hands-on session on Dart. He covered fundamental concepts such as variables, keywords, lists, sets, dictionaries, loops, functions, and control statements. The day concluded with an engaging quiz and a session dedicated to addressing participants' queries.

On the second day, Maheen Ilyas began by revisiting the previous day's topics to reinforce understanding. She then introduced advanced topics, including classes, objects, constructors, inheritance, method overriding, generics, async-await, and futures. The session concluded with a quiz and an assignment designed to consolidate the participants' learning.

Day three started with a review of the material covered in the previous sessions. Abdul Rafey Waleed, a core team member of the Application Development team, then provided an in-depth explanation of various Flutter widgets such as Stateful and

Stateless widgets, Row and Column widgets, Scroll widget, Text widget, Icon widget, TextField widget, and Scaffold. Practical examples were used to illustrate the styling of these widgets. The session concluded with a quiz to assess participants' understanding.

The fourth day began with a review session, followed by Abdul Rafey's detailed discussion on the previously introduced widgets. He demonstrated practical examples of each widget and introduced new widgets, including Button widget, Container widget, and Image widget. Additionally, he explained the concept of dependencies in Flutter. The day concluded on a high note with a quiz.

On the fifth day, participants began creating a BMI calculator. Abdul Rafey provided a detailed step-by-step guide to crafting the application's UI using the knowledge gained from the previous sessions. He offered thorough explanations and practical examples, ensuring any doubts that arose were meticulously addressed. By the end of the day, participants had made significant progress on the UI, showcasing their growing proficiency with Flutter. Abdul Rafey's guidance and the participants' dedication culminated in a highly productive and enlightening session.

On the final day, participants completed the BMI Calculator project by incorporating the logic to make it fully functional. This hands-on project allowed participants to leave the build week with a tangible and operational application. The session ended positively as the GB addressed the audience, providing valuable career advice and appreciating the participants for their dedication throughout the week. Feedback was also collected from the attendees to help improve future sessions.

This comprehensive training week equipped participants with a solid foundation in Flutter application development, preparing them for future endeavors in the field.

Artificial Intelligence & Machine Learning

The first session of AIML GBW was led by AIML Lead Saniya, who introduced the basic concepts of AI and machine learning to the audience. The session covered the types of machine learning: supervised learning, unsupervised learning, and reinforcement learning. Saniya also discussed real-world applications of machine learning and how AI can simplify everyday tasks. After the presentation, student questions were addressed. Maaz then introduced Python basics, including data types, variables, operators, conditional statements, loops, functions, and libraries, through an interactive hands-on session.

The second session of AIML GBW began with a recap of the previous session. It then delved into regression concepts and types, such as simple linear and polynomial regression. Participants engaged in a hands-on activity involving a regression task to predict which companies to invest in for maximising profit. The KNN algorithm was introduced next, along with its applications, followed by a practical tutorial. The session concluded with a quiz conducted by Saniya.

The third session of AIML GBW was led by Abdul Rasheed Esa, who introduced deep learning concepts. This included an explanation of the YOLO algorithm for object detection. Participants were guided in creating their own custom datasets and using them to build a YOLO object detection model.

The fourth and fifth sessions of AIML GBW were conducted by Hisham, who introduced the concept of retrieval-augmented generation (RAG). He addressed students' questions and led a hands-on tutorial on RAG.

The final session of AIML GBW was led by Saniya, who introduced the concepts of generative AI. In this session, participants created a customized chatbot using the AI tool Droxy.ai, which was trained on a selection of YouTube videos.

Conclusion

The GDSC Build Week was a remarkable success, offering participants an invaluable opportunity to develop hands-on experience in Web Development, App Development, and AI/ML. The projects created during this week highlighted the creativity and technical prowess of the participants, showcasing their ability to apply theoretical knowledge to real-world applications. The collaborative environment fostered a strong sense of community, encouraging peer learning and networking. This event not only enhanced the technical skills of the members but also prepared them for future endeavours in the tech industry. GDSC MJCET's dedication to nurturing innovation and skill development was evident throughout the Build Week, positioning its members to become future leaders in technology.