

# **Student Experiential Learning**

*Report submitted to the*

**VIT Bhopal University**

**Bachelor of Technology**

**in**

**Computer Science and Engineering**

*Submitted by*

**Chakshu Shaktawat**

**20BCE10376**



School of Computer Science Engineering

**VIT Bhopal University, Madhya Pradesh**

**15, October, 2022**

# **Declaration of Originality**

I, Chakshu Shaktawat, bearing the Registration Number *20BCE10376* hereby declare that this report of “*Student Experiential Learning*” represents my original work carried out as a undergraduate student at VIT Bhopal University. To the best of my knowledge, it contains no material previously published or written by another person, nor any material presented for the award of any other degree of VIT Bhopal University or any other institution. Any contribution made to this report by others, with whom I have worked at VIT Bhopal University or elsewhere, is explicitly acknowledged in the report.

Date – 15 October 2022

*Chakshu Shaktawat*

VIT Bhopal University

# **Acknowledgment**

First and foremost I would like to thank the Lord Almighty for his presence and immense blessings throughout the experiential learning.

I wish to express my heartfelt gratitude to Dr. S. Poonkuntran, Dean of the Department, School of Computer Science, Dr. Sandip Mal, Programme Chair, Computer Science Department and the whole Experiential Learning team for much of their valuable support encouragement in carrying out this work.

I would like to thank my city coordinators Dr. Siddhartha Maity, Dr. Soumitra Nayak, Dr. Prashant G.K. and Dr. Rakesh R. for continually guiding and actively participating in my project, giving valuable suggestions to complete the project work.

I would like to thank all the technical and teaching staff of all the different venues who extended directly or indirectly all support.

Last, but not least, I am deeply indebted to my parents who have been the greatest support while I worked day and night for the project to make it a success.

**Chakshu Shaktawat**

# **Summary of Your Experiential Learning**

Learning by doing. This was the overall practicality for the Experiential learning programme. The Experiential learning focused on the idea that the best ways to learn things is by actually having experiences. Those experiences stuck in my mind and help me retain information and remember facts.

I had chosen two cities for my learning which are Pune and Bangalore, in consideration of learning the new and emerging Technologies as well as experiencing the working of IT industries.

In Pune, I got the chance to visit Tata Research Development and Design Centre, and learned about various technologies. I visited three venues: Ankush Rao Kangde Natyagraha, Ramakrishna More Natyagraha, and Acharya Atre in Pune where InfinityX company conducted hands-on sessions of Augmented Reality, IoT, Data Visualisation with PowerBI, Blockchain Industry.

At AnkushRao Landge Natyagruha, Pune, I had an opportunity to interact with Mr. Aditya Marathe, Founder of Nugenix Robotics. Nugenix is a world leading robotics company. Mr. Marathe showed us a robot arm that their colleagues made. He allowed us a hand on experience with the robot which was an amazing experience. I also had a conversation with him which boosted my confidence.

An Ideathon was conducted in respect with various problems each student faced in Pune, and a idea for rectifying the problem was presented by many students.

In Bangalore, at Cranes Varsity, Bengaluru, we were given lectures by various members of Cranes on various topics like IOT, MATLAB and ARM. These lectures were meant for Hardware knowledge. We were provided hands on experience by performing various experiments on Google Collab as well as on MATLAB.

The most prestigious B-school in India and Central Asia, IIM, Bangalore, was one of my dream colleges to be in, and I had the chance to visit the premises as well as got the opportunity to learn from the best of best professors about Artificial Intelligence, Data Analytics as well as Technologies such as Tableau used for the above mentioned.

Keywords:

ARM – a family of instructions for microprocessors

campus – VIT Chennai campus

Cranes Varsity – a software training institute in Bangalore

IoT – Internet of Things, a broad summary of the Internet phenomenon and its widespread effects on mankind

IIM – Indian Institute of Management, India's top Business schools

MATLAB – Matrix Laboratory, a programming platform for engineers to design systems

# Contents

	<b>Description</b>	<b>Page No.</b>
	Declaration of originality.....	1
	Acknowledgment.....	2
	Summary.....	3
	Contents.....	4
City Choice – 1	Day – 1 report	10
	1.1.1. TRDDC.....	10
	1.1.2. Objectives .....	10
	1.1.3. Learning outcome.....	10
	1.1.4. Photographs.....	10-11
	1.1.5. Feedback of the day -1.....	11
	Day – 2 report	
	1.2.1 InfinityX augmented Reality.....	12
	1.2.2 Objectives .....	12.
	1.2.3 Learning outcome.....	12
	1.2.4 Photographs.....	12-13
	1.2.5 Feedback of the day -2.....	13
	Day – 3 report	
	1.3.1 Data Visualisation and Companies.....	14.
	1.3.2 Objectives .....	14
	1.3.3 Learning outcome.....	14
	1.3.4 Photographs.....	14
	1.3.5 Feedback of the day -3.....	15
	Day – 4 report	
	1.4.1 Nugenix Robotics.....	16

1.4.2	Objectives .....	16
1.4.3	Learning outcome.....	16
1.4.4	Photographs.....	16
1.4.5	Feedback of the day -4.....	17

#### **Day – 5 report**

1.5.1	Ideathon Design Challenge.....	18
1.5.2	Objectives .....	18
1.5.3	Learning outcome.....	18
1.5.4	Photographs.....	18
1.5.5	Feedback of the day -5.....	18

#### **City Choice – 2**

#### **Day – 1**

2.1.1	Cranes Varsity, ARM .....	20
2.1.2	Objectives .....	20
2.1.3	Learning outcome.....	20
2.1.4	Photographs.....	20
2.1.5	Feedback of the day -1.....	21

#### **Day – 2**

2.2.1	Cranes Varsity, MATLAB .....	22
2.2.2	Objectives .....	22
2.2.3	Learning outcome.....	22
2.2.4	Photographs.....	23
2.2.5	Feedback of the day -2.....	23

#### **Day – 3**

2.3.1	Cranes Varsity, MATLAB.....	24
2.3.2	Objectives .....	24
2.3.3	Learning outcome.....	24
2.3.4	Photographs.....	24
2.3.5	Feedback of the day -3.....	25

#### **Day – 4 report**

2.4.1	Cranes Varsity, IOT .....	25
2.4.2	Objectives .....	25
2.4.3	Learning outcome.....	25
2.4.4	Photographs.....	25-28
2.4.5	Feedback of the day -4.....	28
Day – 5 report		
2.5.1	IIM, Bangalore .....	29
2.5.2	Objectives .....	29
2.5.3	Learning outcome.....	29
2.5.4	Photographs.....	29-30
2.5.5	Feedback of the day -5.....	30
Conclusions		31

**City Choice – 1**

**PUNE, MAHARASHTRA**

## **Day – 1 report**

### **1.1.1 Industry Name –**

**Tata Research Department and Design Centre - Pune**

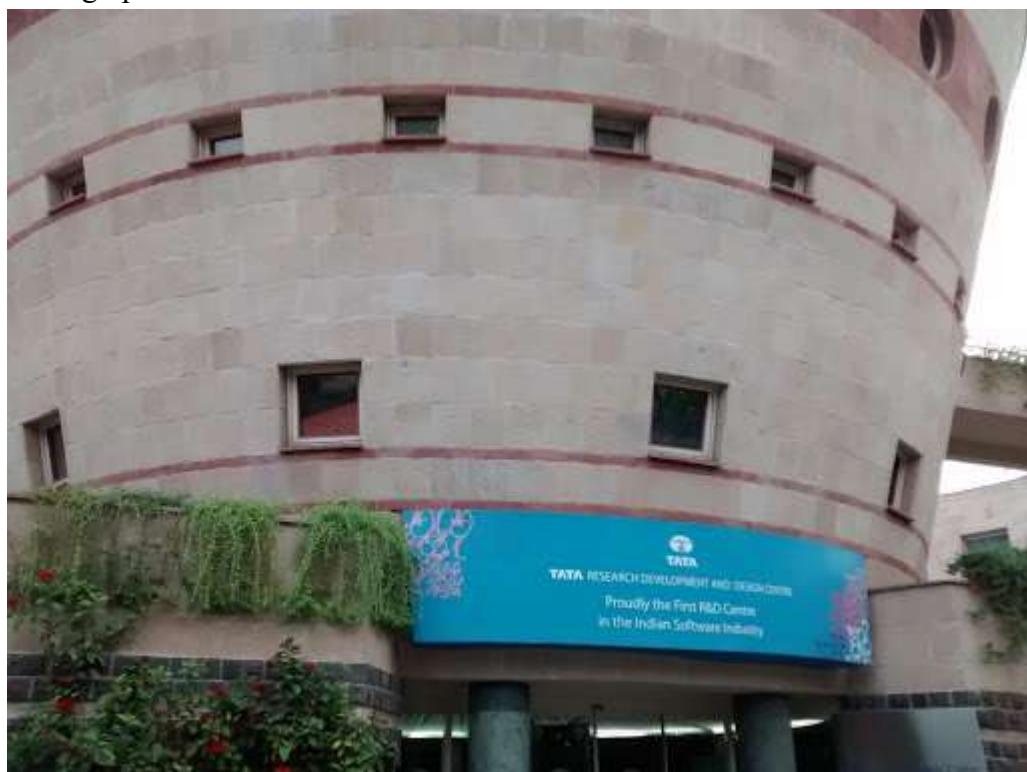
### **1.1.2 Objectives**

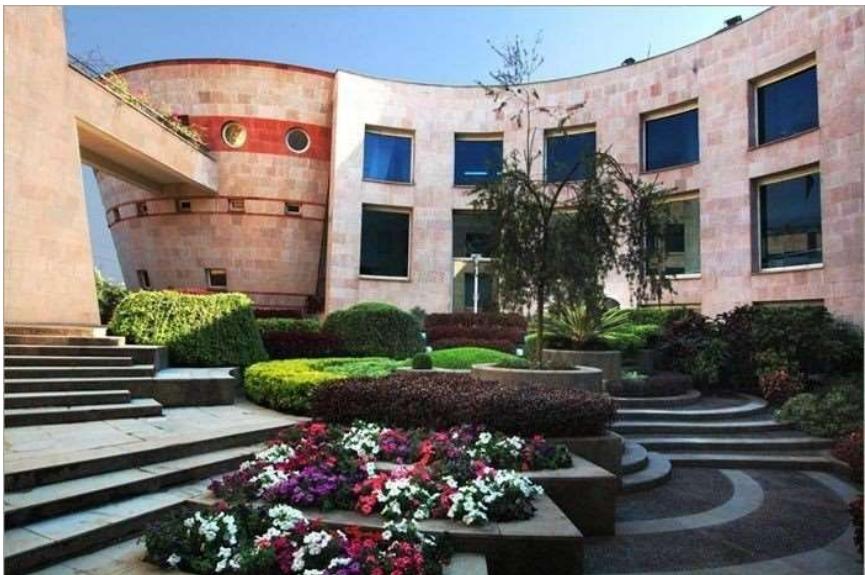
- Learn about emerging Technologies such as Cyber Security, and in demand technology like Software Development
- Understanding the importance of Research and Design in Computer Science and Technology.

### **1.1.3 Learning outcome**

Welcomed with warm regards by the Team of Tata. We were asked to participate in a survey conducted for manual digital keyboard and password management for our learning in data and cyber security fields. We were given sessions on AI, software development, research and Design and the power of learning through the interactive visuals. I was really happy to learn about the various password generation techniques that could be used to safeguard our privacy on the digital world.

### **1.1.4 Photographs**





#### 1.1.5 Feedback of the day – 1

I really enjoyed the atmosphere at TRDDC, the professionals working at the centre were kind and provided the knowledge that would be relevant in the future too.

## **Day – 2 report**

### **1.2.1 Industry Name –**

**InfinityX – Augmented Reality**

### **1.2.2 Objectives**

- To Learn more about the augmented, mixed and virtual realities
- Introducing the audiences to various XR Capabilities and their Use Cases in the Industry followed by the design processes and frameworks involved in XR Development.

### **1.2.3 Learning outcome**

There was a lot of interesting knowledge which encouraged me to be more efficient in the lectures and training. This training helped me to learn the basics of what different realities stand for and how they can be and are being used in different parts of the industry.

I also learned that how these realities can be implemented in the domains I'm working within as well as how it can be used to improve existing projects that I've worked on and also the projects which are available on the internet.

### **1.2.4 Photographs (Paste 4-5 good photogrpahs of hands on experience/visit)**





### 1.2.5 Feedback of the day – 2

It was an exciting experience for me. The program was structured by introducing us to various XR Capabilities and their Use Cases in the Industry followed by the design processes and frameworks involved in XR Development. Development Tools, skills, and software proficiencies were also demonstrated as part of the training session. Overall it was quite informative since these topics were new for me.

I also got to see the Ganesh Visarjan yatra which was near our venue for the day.



## **Day – 3 report**

### **1.3.1 Industry Name –**

#### **Data Visualisation and Companies**

### **1.3.2 Objectives**

- Learning about different data visualization techniques such as Power BI.
- Learning about how companies like Uber, Google, Zomato are using provided data
- Emerging technology such as Blockchain, Metaverse

### **1.3.3 Learning outcome**

The speakers provided us information on Data used by companies to their advantage as well as how it earns the trust of many with the data. We were asked questions realated to how a company acquire data, how a customer reacts to certain situations and the services taking advantage of the situation using data visualization and manipulation tools. We were given the lectures on Metaverse, blockchain technology. Blockchain technology is a structure that stores transactional records, also known as the block, of the public in several databases, known as the “chain,” in a network connected through peer-to-peer nodes. Typically, this storage is referred to as a 'digital ledger.'

The speaker also introduced to the Power BI setup and data , where we were given automobile data as sample as we were required to inspect vehicles and create charts and graphs using this setup , we had different attributes among whose relation could be depicted using charts and graphs.

### **1.3.4 Photographs**



### **1.3.5 Feedback of the day – 3**

Overall a great experience of getting to know about different companies and how automation and data plays a major role in it. Data Analysis acted as cherry on top of cake. Using PowerBI was very interesting and intriguing. The speaker made the session interactive. It was a nice gesture from the speaker to provide us with homework so that we could be well accustomed with the application's UI.

## **Day – 4 report**

### **1.4.1 Industry Name –**

**Nugenix Robotics**

### **1.4.2 Objectives**

To get to know about the basic fundamentals of Robotics. How robots are made. To get to know all about robots, their use cases, how they function and help solve problems that range from as minuscule as screwing a screw to as substantial as serving people who are differently abled in their day-to-day activities.

### **1.4.3 Learning outcome**

Mr. Aditya Marathe, Founder at Nugenix brought along a Nugenix remote-controlled robot arm to give us the demo, we learned things like how it was ideated, designed, and came to life, since the product was conceptualized to work with humans it was also designed to be like a human arm and had all the motors and flexibility just like an actual arm does. Difference between industry and service robots was cleared. Service robots are robots that cater services directly to humans and are generally small in size. We got to know what is the robotic equivalent of android for smartphones, ROS or Robot Operating system.

### **1.4.4 Photographs**





#### 1.4.5 Feedback of the day – 4

I got to know about things like how and why are robots implemented, what's the future of robots on the country level and globally also, and how they will influence the next decade, what developments and which areas will be affected by them. Overall it was an interesting topic which made me glued to my seat for the whole session. The speaker made the session interactive which helped us in understanding the topic clearly.

## **Day – 5 report**

- 1.5.1 Event/Industry Name –  
**Ideathon Design Challenge**

- 1.5.2 Objectives

To pitch an idea as a solution for building sustainability and feasibility through the Technology (AR/VR, IoT, or any other related technology) to overcome the challenges faced during the visit to Pune and while on a city tour.

- 1.5.3 Learning outcome

Identifying various problems on our visit to Pune and the various venues. Working as a team to identify the issues we faced and find solution together. Sharing our views as a team and working towards a solution. We made a PPT together and presented it to our reviewer. I described the PPT to him showing the problems we faced as well as the solution we proposed using AR, VR.

- 1.5.4 Photographs



- 1.5.5 Feedback of the day – 5

A great way to end the Pune Experiential Learning on a high note. The ideathon was a brilliant idea to display our teamwork working towards a idea to eliminate the problem faced by us during the experiential learning. The prizes drove us to win the ideathon anyhow. Everyone tried their best to win.

**Choice – 2**

**BENGALURU, KARNATAKA**

## **Day - 1 report**

**1.1.1 Industry Name -**

**Cranes Varsity**

**1.1.2 Objectives -**

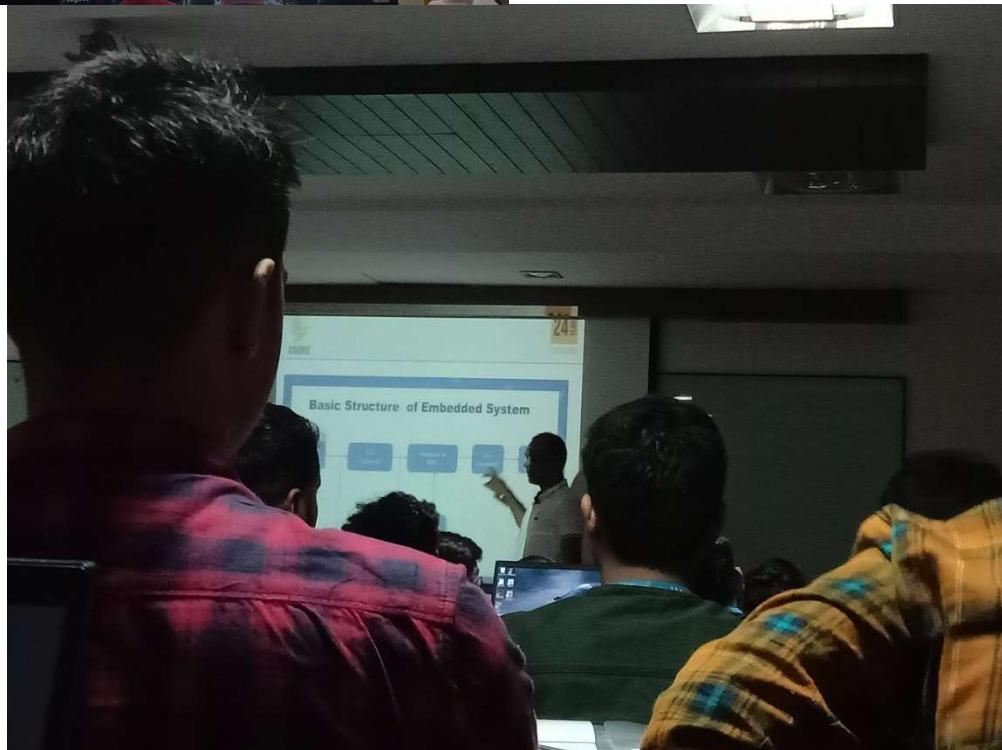
Learning about ARM, which is a family of instructions for microprocessors in computer systems

**1.1.3 Learning outcome -**

Understanding the complexities and necessities of ARM and the types of processors, microprocessors and microcontrollers used in a variety of systems over the years. Also learned about sensors in every day life, I2C protocol, ARM processor, 8086 architecture, and the importance of embedded systems.

**1.1.4 Photographs**





#### 1.1.5 Feedback of the day - 1 -

A great start to the experiential learning program. Thanks to an insightful co-ordinator team and a helpful, eager crowd, ready to learn, I had the great opportunity learning about ARM and all its adjacent topics, such as I2C protocol, embedded systems, microprocessors, and so on.

## **Day - 2 report**

### **1.1.1 Industry Name—**

**Cranes Varsity - ISBC School**

### **1.1.2 Objective**

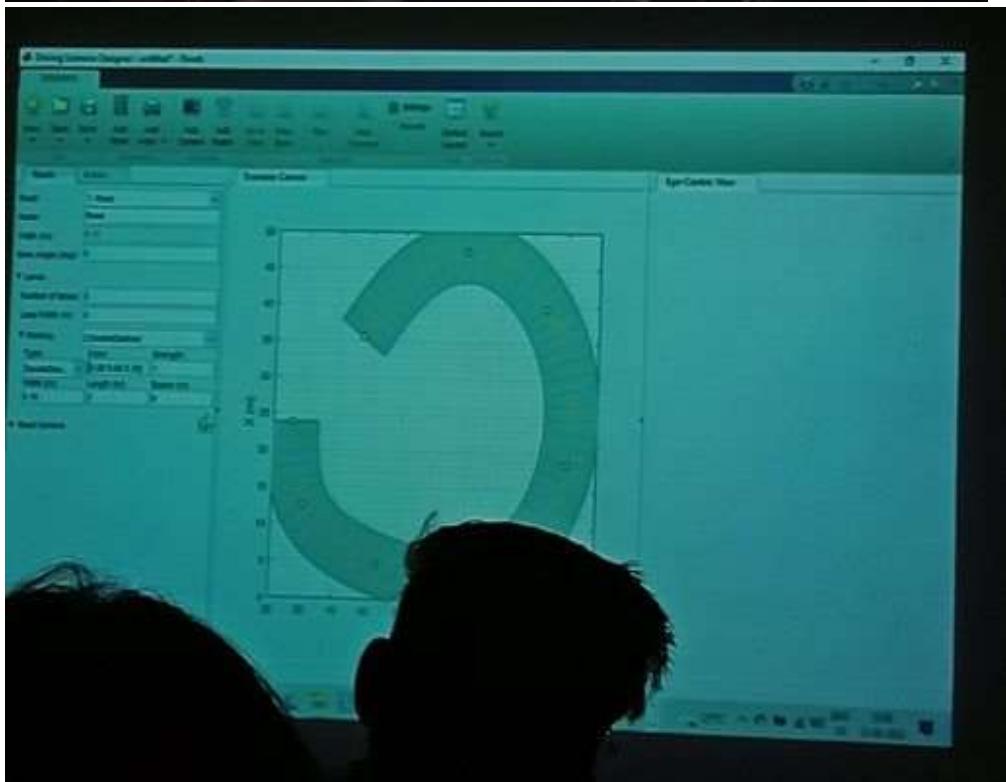
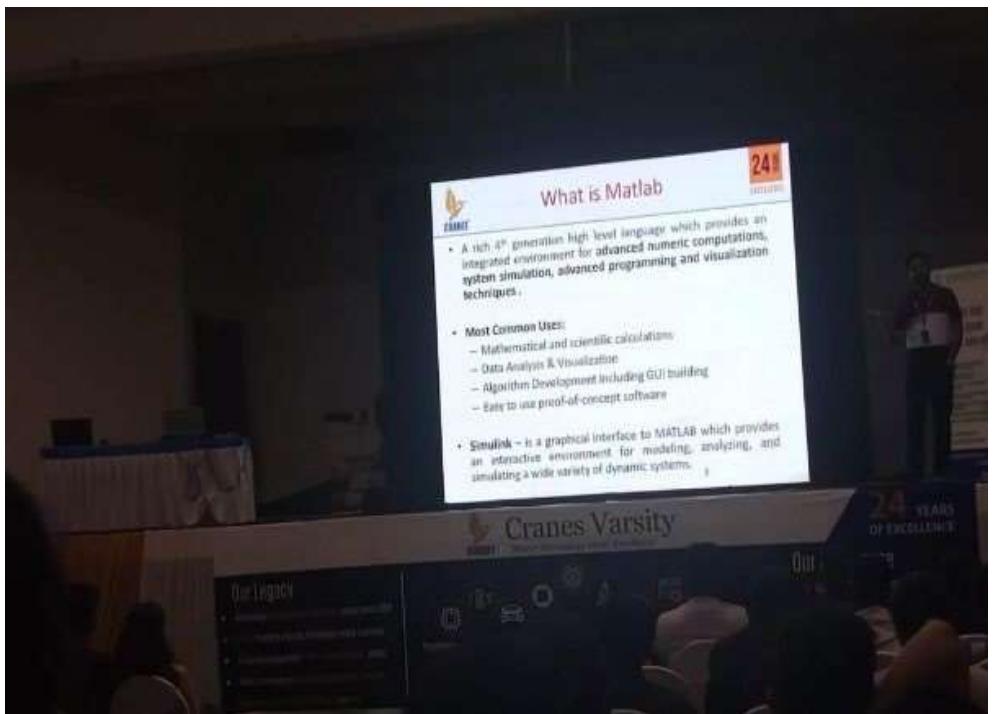
To get to know about Matrix Laboratory (**MATLAB**), its various functions and how it is used to analyze data, develop algorithms, and create models

### **1.1.3 Learning Outcome –**

The trainer helped us design processes with a programming language that expresses matrix and array mathematics directly. We were taught how to use **MATLAB** toolboxes. Learnt how to automatically generate a **MATLAB** program to reproduce or automate our work, train models, tune parameters, and deploy to production or the edge. Develop embedded control and signal processing applications for industrial and energy-related equipment. Also we were trained to develop, simulate, and test electronics systems and devices

### **1.1.4 Photographs –**





#### 1.1.5 Feedback of day 2—

It was a great first day to start off the proceedings at Bangalore. MATLAB was introduced in the easiest way possible by the trainers at Cranes Varsity. It was a 4 to 5 hours long session. We were also asked to take part in a quiz after the day's proceeding was over. The quiz was a nice way to make the audience attentive so that we can try to win the goodies if we win the quiz.

## **Day - 3 report**

### **2.3.1 Industry Name -**

**Cranes Varsity – ISBC School**

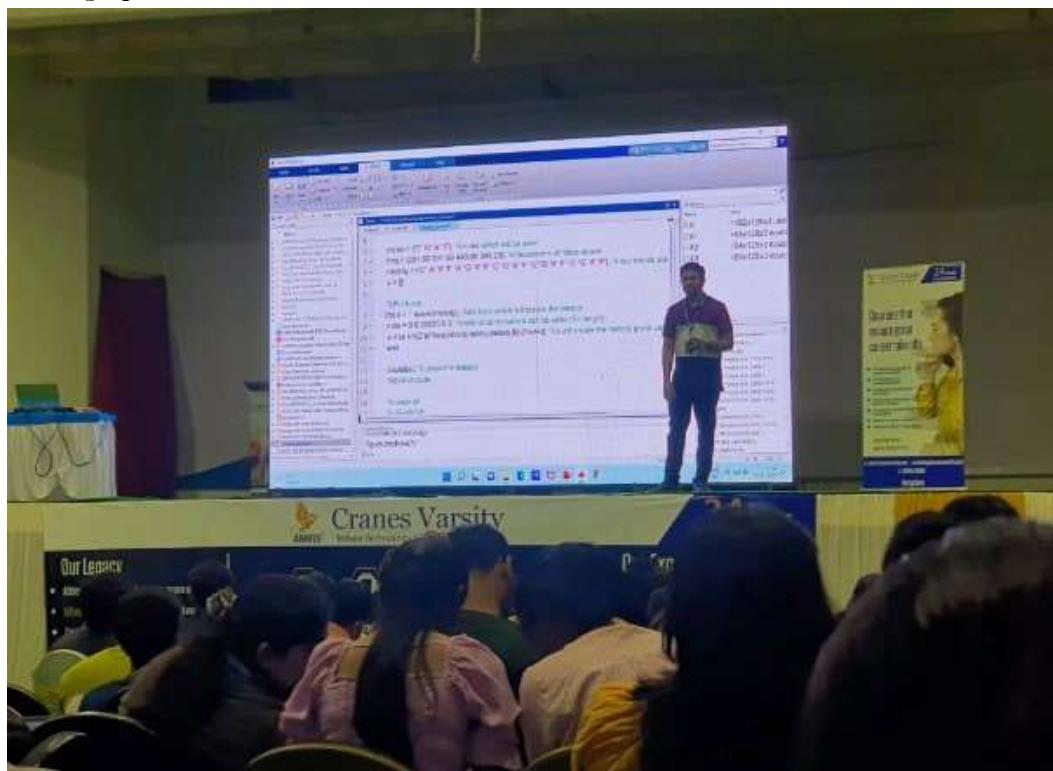
### **2.3.2 Objective**

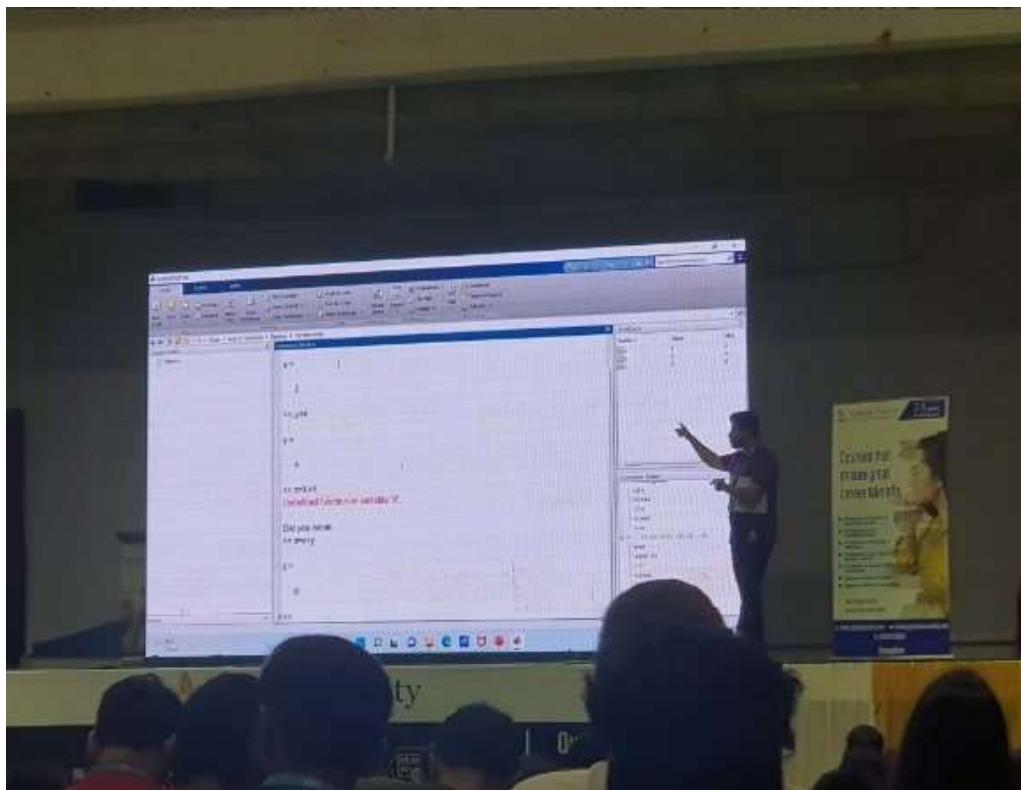
Learning more about MATLAB and using it practically

### **2.3.3 Learning Outcome**

We were already introduced to MATLAB on the second day itself; hence it was time to know more about it and using the software by ourselves. Also we learnt about its capabilities in various fields. We learnt how MATLAB is used in Computer Vision by acquiring, processing, and analyzing images and video for algorithm development and system design. We also learnt how MATLAB is used in field of Data Science by exploring data; building machine learning models and doing predictive analytics.

### **2.3.4 Photographs**





### 2.3.5 Feedback of day 3

Personally, I loved this session the most at Cranes. Building and doing things with the trainer was a great experience. Using the web version of MATLAB made things easier for us since we did not need to download any software. The session started where it was left on Day-1 which maintained continuity for our better understanding.

## Day - 4 Report

2.3.1 Industry Name -  
**Cranes Varsity, ISBC**

2.3.2 Objective

Learning about IoT, or Internet of Things, and its multiple applications in the real world.

2.3.3 Learning Outcome

Getting a much-needed exposure on the phenomenon that is IoT, and learning about its history as well as getting insight into its future and where it's going to evolve.

2.3.4 Photographs







### 2.3.5 Feedback of day 4

A great conclusion to my visits at Cranes Varsity. Not only was there a lot of knowledge to gather about IoT, but we also got to participate in a quiz game based on the topics addressed and taught in the day's lecture. The winners, as pictured, received prizes. And like every other day at Cranes Varsity, there was a lot of incredible learning to be had.

## **Day - 5 Report**

**2.5.1 Industry Name -**

**Indian Institute of Management, Bangalore**

**2.5.2 Objective -**

Our objective was to learn about Artificial Intelligence, Data Analytics and Data Visualisation

**2.5.3 Learning Outcome—**

We were welcomed by very kind staff of the IIM Bangalore who helped us in reaching the auditorium in the big campus. We were taught about the very magnematic Dr Dinesh Kumar about the decision sciences according to data. Extracting the important information through given data provided. Taught about the latest companies, our government, people around the world extract information based on graphs. We were given the brief history of graphs. How it cme into being, i. e. through the early ages of humankind we were dealing with maps and data. New technologies such as robotics and Artificial Intelligence are using data analytics for building more efficient human interactive machines and systems.

In the end we had the hands on session on on Data Visualisation tool, Tableau, conducted by Dr. Padmini Srinivasan. As the market-leading choice for modern business intelligence, our analytics platform makes it easier for people to explore and manage data, and faster to discover and share insights that can change businesses and the world.

**2.5.4 Photograph -**





#### 2.5.5 Feedback of day 5 -

It was one of my best day of the Experimental Learning Experience. I had always dreamed of getting into IIM Bangalore. One day I would achieve my dream of getting into it too. But for this day, I was really happy to visit the esteemed Institute. We all had learned a lot about Data visualisation, AI and Data analytics. WE provided with breaks and refreshments in between sessions to energize ourselves. In the end, a tour was given to us around the campus and we re-created the scenes of 3 Idiot movie, which was filmed in this campus. My last day at Bangalore was really memorable all because of the Experimental Learning.

# **Conclusions**

The whole trip was wonderful and quite educational. We got equipped with the tools needed for real world industry. The experience of visiting industry showed us the skills and zeal we need to be a part of one of these industries. But there were few areas which could have been improved:

## **1. Less time given for preparation of Ideathon at Pune:**

On 5th day of Pune Experiential Learning, we were informed a night before that we have to make a presentation on various challenges faced by us while visiting the different venues. Since we were informed a night earlier, we were not able to give our one hundred percent to the presentation. Most of us had to travel 20-25 km daily to the venues either by public transport or cabs which made us quite weary hence we were not able to do well in the ideathon part. Only if we were informed about it two or three days prior, we would have given our best to complete the presentation.

## **2. Selection of venues at Bengaluru and their repetition:**

We were provided with a Google Form to select our venues at Bengaluru. The venues I selected in the form were different to what I was allotted in. I only selected Cranes once in the 5 day schedule, but I was allotted 4 sessions at Cranes which was disheartening. I got two MATLAB sessions and two IoT sessions on alternative days which broke the consistency a little bit since it was MATLAB on first day and IoT on second, I was not able to grasp both of them efficiently as I would have liked. If the sessions were simultaneous that is MATLAB for first two days and IoT for the next two days, it would have been more productive as per me.

# **ACTIVITY**

**DSN2096**

**Engineering Design**

**Submitted to: Dr. N. Pazhaniraja**

**Submitted by: Chakshu Shaktawat**

**Reg. No. 20BCE10376**

# Project Review - 1

## WEeb – Social Media App for Anime Lovers

### **1. Introduction**

- The project focuses on an audience which comprises people influenced by the anime and otaku culture around the world.
- Aim to provide them a social media platform on the web
- Share their interests, findings with other users on the app.
- users can react and interact with the pictures posted by a user.

### **2. Objective**

- To develop a platform to a single ever growing community and provides people with a place to comfortably share their experiences.

### **3. Problem formulation**

#### ▪ *Need*

- An app to interact with people who share similar interests
- Socialising of otaku or anime lovers in a safe place
- Get a deeper understanding of the community
- A small community without prejudice or judgement

- Space to market their art to their audience
- Media sharing network
- Creating a safe community space for more creativity and innovation

- ***Constraint***

- Space only for otaku people
- Moderation tools like shadow banning and editing comments by the user on their posts.
- User interface for people of different backgrounds
- Customised application
- Safety of users from cyber abuse or conflicts
- Implementation of language that would be understood by most of the users
- Have access to analytics that should be owned or managed by the user itself
- Should have admin access
- Chat/messaging access
- Should have notifications
- Have search options

- ***Criteria***

- Interactive web app
- Use of easier language through customisation
- Safety of the user
- Need of devices like laptop, mobile or tablet
- Easy to learn and use in little time
- Able to share or publish posts of pictures, videos and thoughts
- Able to browse images

- Can easily follow/unfollow people
  - Searching the user safely
  - Immediacy: Recognition for art the user produce
  - Notifications for new activity
  - Easy chat room areas
  - Simple and well-designed features and attractive UI to hook a user
  - Access to whoever a user wants to follow on the App
- ***Safety***
- Moderation tools for security such as shadow banning, editing the comments on the user's own post
  - Admin access to block unreliable users, perform administrative function on their profile
  - Copyrights on one's art or work
  - access to analytics that should be owned or managed by the user itself
  - Age restrictions on content
  - Restrictions on abusive behaviour
  - Warning notifications for triggering content
  - able to manage registrations, review reported entries, and filter users and content, if necessary.

## 4. Problem Statement

When using large platforms to share personal views sometimes creates insecurities, whether or not the people there would appreciate or support your views.

Weeb provides a platform to a single ever growing community and provides people with a place to comfortably share their experiences.

At the same time, it also provides the app makers with a strategy to grow in a market already dominated by companies like META.

## 5. Empathy Mapping

### Empathy Map for WEEb User

- They want to talk to other Anime lovers.
- Wants to sell their artwork to people who appreciate it.
- Wants to secure their artwork
- They find hard to make friends who share similar interests.
- Don't want judgement on their passions
- I want to discuss my favourite Anime theories with other people

SAYS

- Do people think I am crazy?
- Will I ever find good reference to my art work?
- a safe community for people like me
- Something awesome that has simple UI/UX
- I could easily post my work.
- Am I enough?
- Why cant I find any friends?
- Is my artwork good enough to sell?

THINK

DOES

- They are fans of Japanese Anime and loves reading Manga
- They enjoy making friends who share similar interests
- Doesn't find big platforms such as Instagram or facebook to have exclusive communities
- Avoids conflicts
- They love discussing about their passion with others
- They make arts related to Anime

FEELS

- Feels insecure about their choices
- Overly enthusiasts for Anime.
- Waits excitedly for new episodes to drop for the Anime they are hooked on
- Feels anxious when talking to new people who doesn't share interests with them
- Wants to feel good about themselves and their choices

Pains

Most users are young adults and college going students, who find it hard to make friends with other people because of their choice of passion. This stops them from opening up and lose their social life.

Gains

They want a medium to build connections and friends and would help them in opening upto people.

## 6. Mind Mapping

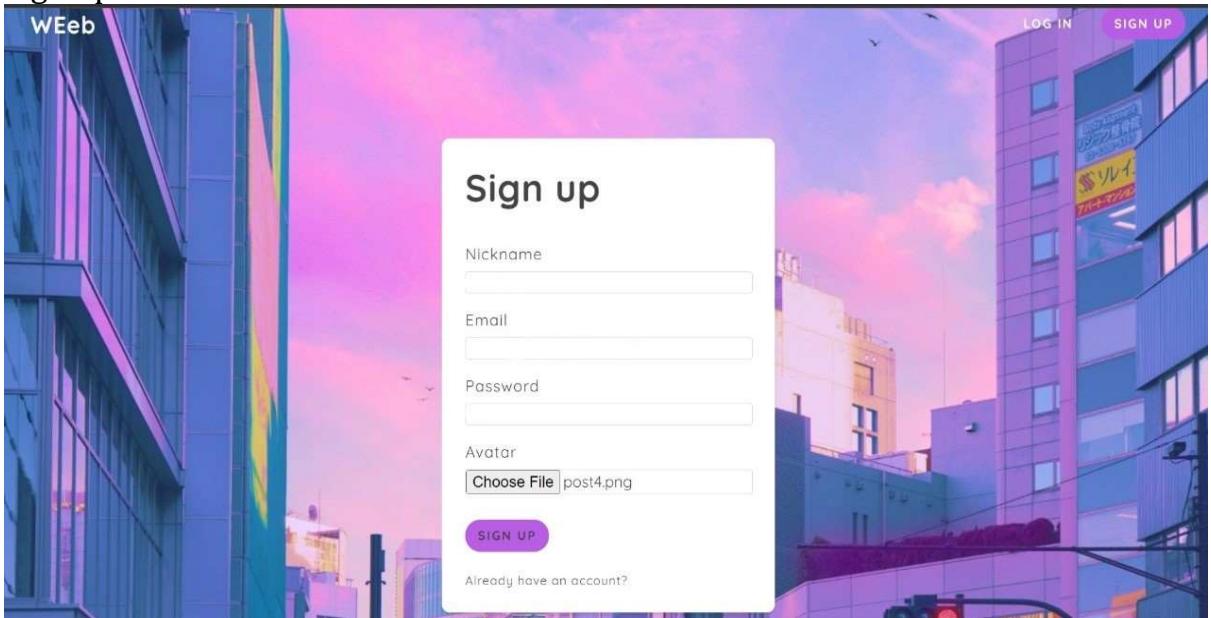
Link to mind map : [Mind Map](#)



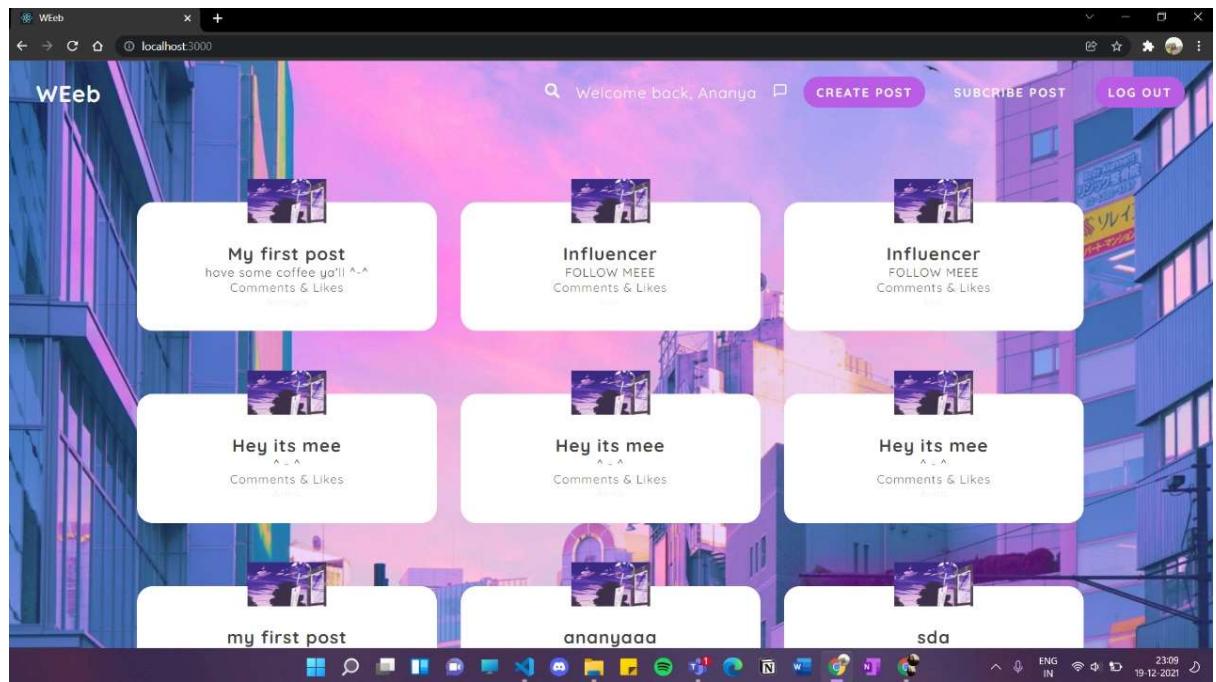
## 7. Usability and Reliability

- online space that is used by people to connect, share, communicate, establish or maintain connection with others.
- The majority of users of the social networking sites are young people constitute the anime community and through our web app
- Enthusiasts can connect and share opinions and have a platform to exhibit their interests and passion.
- From a market standpoint, it is built by keeping in mind the competition the app might face from already existing social media platforms.
- It uses advanced features and technologies like React, Rest API, Express, MongoDB etc.
- The lilac colour scheme and the subtle backgrounds are known to calm the negative emotions like stress and anger welling up inside a person.
- As for the growth in the industry if the product is ever released, we are estimating the same pattern as the existing apps built specifically for this community, or better, as none of the existing platforms provide the users with such interactive experience.
- Pictures of the App after testing its usability:

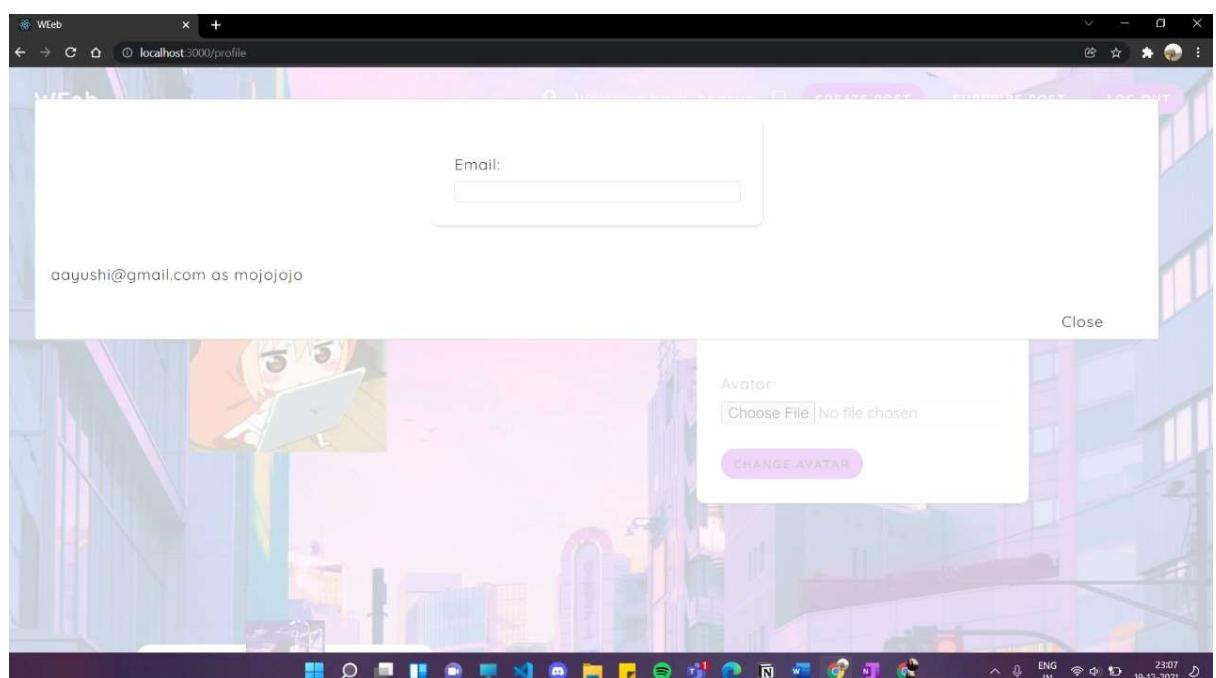
➤ Sign up



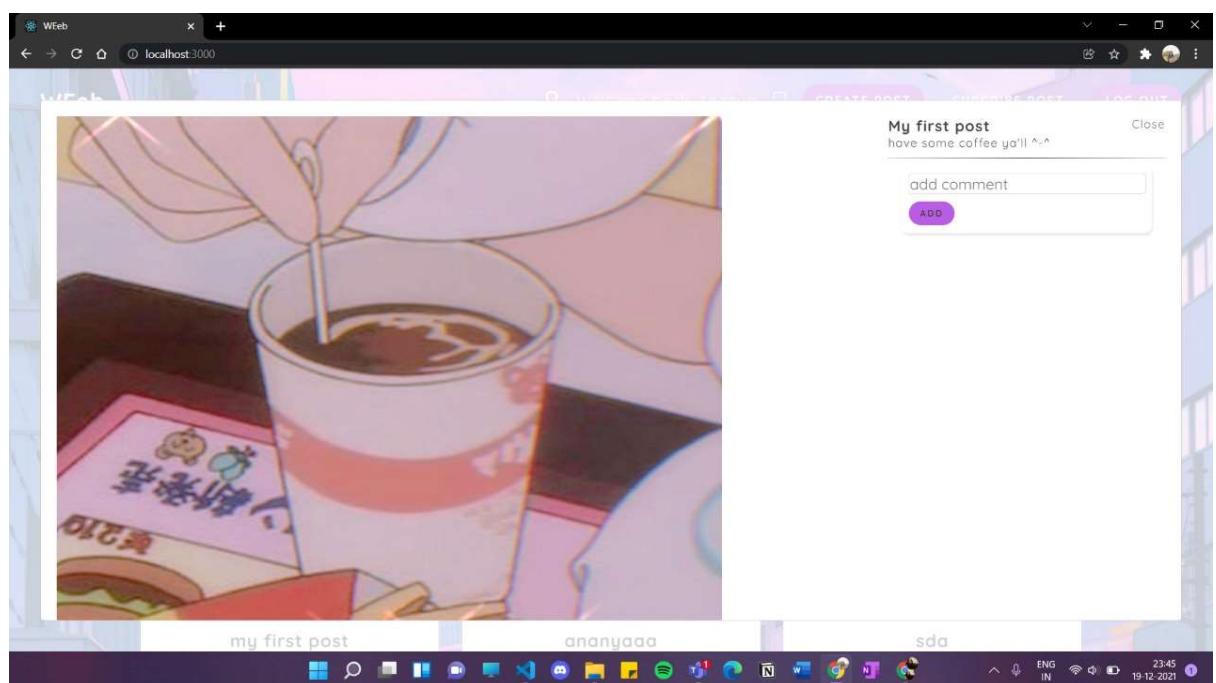
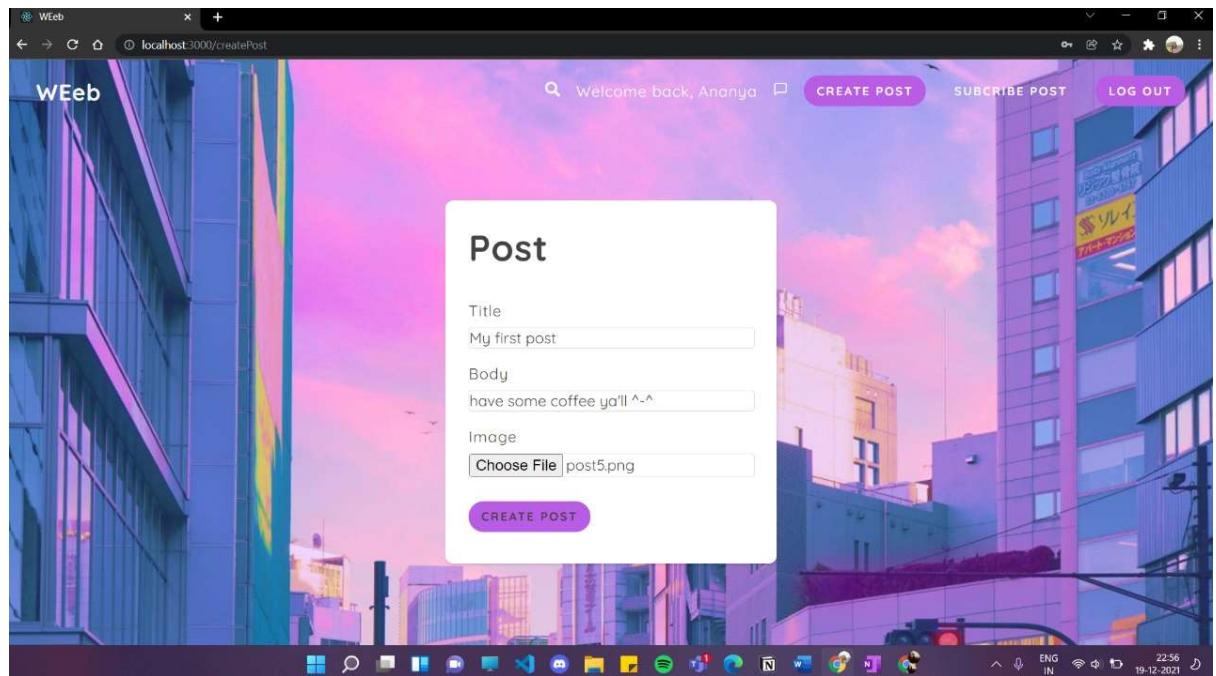
➤ Feed



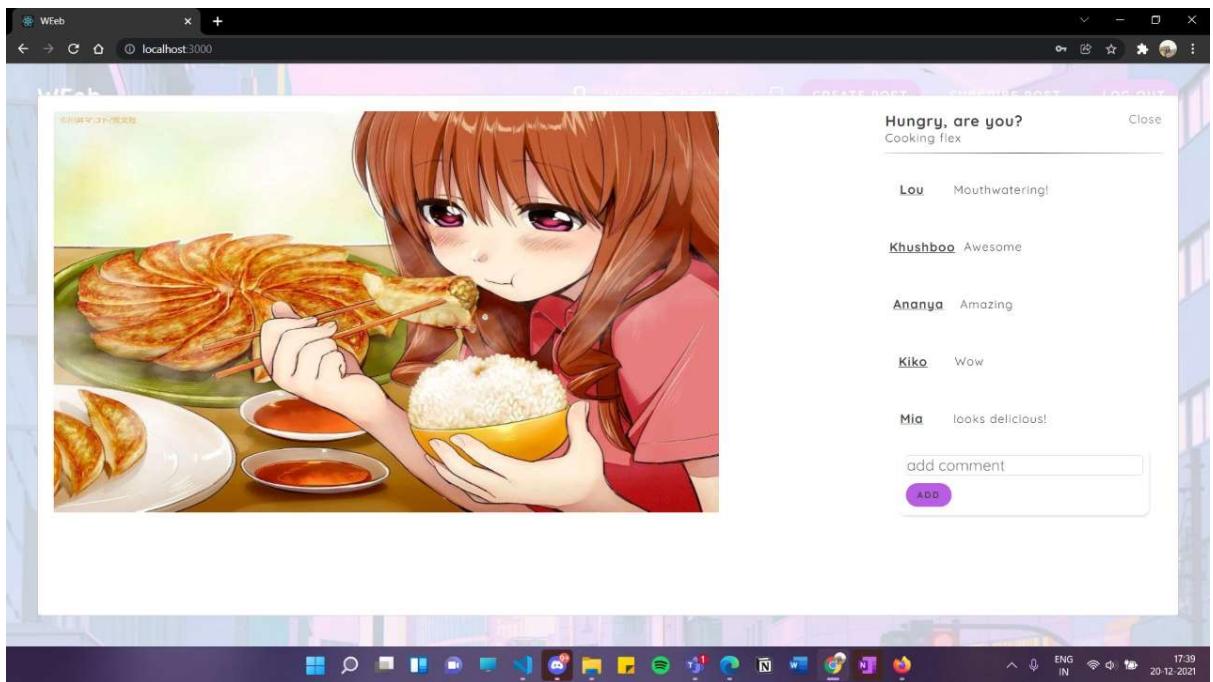
➤ Searching for user



➤ Creating New Post



➤ Comments



➤ Chat Room

