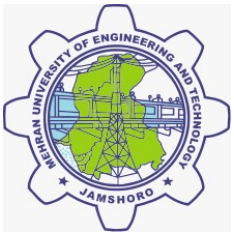
ACKNOWLEDGEMENT

FINAL YEAR PROJECT MANAGEMENT SYSTEM FOR MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY



A thesis submitted by

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In the partial fulfillment of the requirements for the degree of Bachelor of Engineering in software engineering

Faculty of IT, Software Engineering

MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY, JAMSHORO

October, 2022

DEDICATION

This humble effort is
DEDICATED
to our **PARENTS** and
TEACHERS With
GRATITUDE and RESPECT

CERTIFICATE OF APPROVAL

This is to certify that, Project/Thesis report on "**final year project management system for mehran university of engineering and technology**" is submitted in the partial fulfilment of the requirements for Bachelor's degree in Software Engineering by the following students:

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ACKNOWLEDGEMENT

First and foremost, we gratefully thank Almighty Allah for providing us with the power and capability to do this tough endeavor. Our families' prayers also assisted us in completing this project, for which we are grateful. We are grateful to our supervisor, DR.MOHSIN MEMON, for assisting us in completing our final year challenge during the course. We were able to meet the challenge's objectives thanks to their guidance, assistance, and inspiration

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ABSTRACT

Final Year Projects (FYP) Management System Currently FYPs are being managed manually. The aim of this project is to automate FYP selection process. The project will involve developing two portals, one for FYP committee and the other for students. For students, the list of finalized FYP's will be uploaded on the website and students will be able to select projects in real-time based on first come first serve basis. For project selection students' will have to login using their MUET VPN credentials. Admin will decide date and time duration of selection process activation. The selection process will activate on designated time. Students will be allowed to choose only one idea. An idea on Fyp list will become unavailable as soon as it has been selected. Once the selection process ends, admin will be shown details regarding fyp selection. The admin panel will be designed as per the requirements of FYP committee.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The introduction chapter will discuss about the background of the final year project management system, problem statement, aim and objects, and scope of the project.

1.2 BACKGROUND

In today's rationalized world, it is very obvious that humans are totally dependent on modernized technology and the internet.

The internet has enabled humans to cross the boundaries between people all around the world. Technology has enabled man to learn and grow with people from every nock and corner of the world.

The Internet also plays a very important and integral part in the field of education. The advancement in technology can now link institutions to homes, worksites, and colleges and even individuals can present their work globally, with the use of modern technology i.e. the internet. In a similar way, people can also access others' work and makes the most from it.

The final year project management system will help students to choose projects and its procedure and help students to submit their choices and group members information.

When the manual procedure was followed students face many issues i.e students have to select from list and they all have to report desirable projects at the same time. But many students do not get their decided FYP, to resolve this issue Mehran university of engineering and technology decide to develop a system on which students can choose projects, pitch projects, and can comment on given projects by the university.

1.3 PROBLEM STATEMENT

Currently, the FYP Projects are being managed manually, to automate this process, We need a proper FYP Management System, that can manage, post, allocate, and verify these projects.

Many Students face issues in selecting the right project according to their area of expertise.

Instead of Choosing the valuable and relatable projects, Students end up choosing projects that are not even Industry related and their tech stacks related.

It was hard to give priority to who voted first for the project.

Manual management for final-year projects is a quite challenging task.

1.4 PROPOSED SOLUTION

So it would be better if there is a Final year project Management System for the students for choosing projects, proper Final year project advisor assignments, and Student group management.

It was easy to give the priority who voted first for the project because we are using timer.

In the final year project management system, the student can pitch their projects, choose a project and can comment or give suggestions on projects given by the university.

1.5 AIM

To automate the final year projects allocations process.

Final Year project Management System for MUET aims to provide an open repository for the students particularly of "Mehran University of Engineering and Technology" where they can submit their proposal of own project , choose desirable projects ,

can comment on projects given by university and guides with a simple and user friendly environment.

1.6 OBJECTIVES

The main objectives of our thesis are listed below:

Online submission of final year project proposal.

Develop a systematic and convenient online system.

Allow Students, teachers, and industry to submit abstracts within some deadline.

A fair system to enable students to select their Final Year Projects after discussion via comments on the given FYPs.

1.7 THESIS ORGANIZATION

1.7.1 Introduction (Chapter 1)

In this chapter a brief introduction of the final year project management system, the background of the project, aims, objectives, problem statement, scope of the project

1.7.2 Literature Review (Chapter 2)

This chapter reviews the previously done work on " Final year project Management System for MUET" and will present the different websites and research papers that are related to the "Final year project Management System for MUET"

1.7.3 Methodology (Chapter 3)

This Chapter Will Discuss the Methodology used to develop the system "FYP Management System for MUET".

1.7.4 Implementation (Chapter 4)

This Chapter Focuses on the implementation of the system and will describe the functionality and purpose of each page of the website.

It will deep dive into the detailed design Architecture.

1.7.5 Testing (Chapter 5)

This chapter will test and analyze the functional and Nonfunctional attributes of the site along with the analysis of final results.

1.7.6 Conclusion and Future work (Chapter 6)

In this chapter, we will summarize the whole project and conclude the results. This chapter will discuss the Future work as well.

CHAPTER 2

LITERATURE REVIEW

2.1 OVERVIEW

This chapter elaborates the importance of final year management system using electronic mean. It has divided into four sections;

The first section describes the problems being faced by the students while submitting the project proposal manually, choose projects by old method, cannot give any comment or suggestion on given projects by university, it also highlights the importance of using electronic means for

Second section of this chapter includes the brief history of final Year project management system.

Websites where one can submit the proposals , choose projects electronically.

The third section includes the importance of FYP Management system for MUET site

The forth one will show the comparison of MUET FYP Man-

agement site with other sites.

2.2 INTRODUCTION

Final year project is the most important, time-consuming assignment and challenging decision for the students in their degree program. These academics writings express the student's indulgent and understandings in their project work.

Good and high quality academic write up reflects the student's professional attitude towards their field. Students face difficulties while choosing projects , pitching their own project for their Final Year .

In Pakistan, in almost all the public and private sector universities has set the criteria of choose project manually (through lists). Manual selection requires more effort and time. Also in manual listing system it makes difficulties to students to choose desired project related to technology in which students have expertise's, In manual system student do not have access to give comment or suggestion for projects given by university. In manual system staff have to keep hard format records for previous projects and it's difficult to manage and maintain as it

consumes a lot of space and proper management. Working patterns and Technology is changing rapidly, the manual methods are converting into digital systems. Choosing the project in a particular system format is one of the best solutions; it increases the accessibility of projects, reduces the manual work and provides the quick selection of your FYP's.

When manual method convert in to digital system it solves all the difficulties , students easily get to know which supervisor has assigned , which project have approved for their team. System have access of previous data instead of maintain hard records and listing methods. It also provide platform to post innovative project proposals.

2.3 RELATED WORK

2.3.1 A Simple Recommend Engine for Matching Final-Year Project Student with Supervisor

One of the prerequisites that Bachelor degree students in FSKM, UiTM Perlis must complete in order to graduate is the final year project (FYP). The proposal and project construction are the two components of the senior project[1]. Students must identify the project's problem area, its significance, scope, and

objectives, hence the proposal portion is vital. The student may select a problem area based on interests or may speak with a potential supervisor from a list of faculty lecturers to find a problem topic that might be appropriate. In any case, the student may need to pick the supervisor whose expertise most closely matches his or her own. However, due to the fact that they are only familiar with faculty lecturers who have taught them in previous semesters, practically all final-year students are unaware of faculty lecturers' areas of competence. This will have a significant impact on how students choose project titles since they may feel that there are few options for supervisors and may choose project names that are not in line with their own interests. Additionally, students who are still getting used to the idea of research could find it helpful to consult with various professors to find the project topic that best suits them. If the pupils have enough information, the situation can be fixed on possible managers and their areas of specialisation. Additionally, understanding which possible supervisors have interests with one another might help students narrow down the pool of lecturers with comparable research interests from which to choose supervisors. In order to link FYP students with possi-

ble supervisors based on their areas of interest, we thus created a recommend engine. The system would be able to collect the student's input, determine their area of interest, and then provide a list of lecturers that most closely match that input.

2.3.2 FINAL YEAR PROJECT ONLINE MANAGEMENT SYSTEM (FYPOS): CLIENT AND SERVER DESIGN

In order to replace the present manual approach, this study suggested a final year project online management system. This Web-based solution will become the standard for management at University Technology PETRONAS. The manual process is cumbersome, time-consuming, and ineffective. The major goal of this project is to systematically involve all participants in a single collaborative online system for exchanging information for the final year project. Knowledge of web design, web setup, database design, database setup, and server configuration are required for system development. An open source environment will be used to construct the FYP Online Management System. The system will use Apache as the Web server and MySQL as its database system on a server platform running the Linux operating system. PHP is used as the server-side scripting language,

while HTML plus JavaScript is used as the client-side scripting language. Three user groups will utilise the FYP Online Management System, and each group will have a unique interface and purpose. The duty of managing user registrations and accounts will fall under the administration of the system. The system will be secured via user verification. This web-enabled project management and its related features are very valuable, practicable, and pertinent in achieving the goals of the involved parties.

2.3.3 Implementation of a new Preference Based Final Year Project title selection system for undergraduate engineering students in UNITEN

Each student must complete their own Final Year Project (FYP) before graduating from Universiti Tenaga Nasional's (UNITEN) undergraduate engineering degree, which is a requirement. The FYP is applied at UNITEN in two courses, Projects 1 and 2, each worth two or four credits and covering the student's last two semesters. Each student will conduct literature research for Project 1 and create a plan to address the issues raised by a chosen title. Project 2 is a direct continuation of Project 1, where the student will finish the project by carrying out the

plan, evaluating the results, and finally summarising the work done over the two courses in a thesis.

Each student has two possibilities for selecting their FYP titles: either they may come up with their own, or they can select from a list of titles that the lecturer has suggested. While choosing a title from the pool of lecturer-proposed titles would force one to compete with other students who could also be interested in the same title, proposing one's own title ensures the student of that title. UNITEN has developed an Initially Come First Served (FCFS) approach, where students are first given a few days to examine all instructor offered titles online, to provide each student a fair chance at acquiring his or her favourite title.The student who chooses a certain title first will then be given that title. They will then be advised of a time when they may start choosing the titles online.

However, this method is not without flaws. According to student feedback, choosing a title is a very difficult and irritating procedure because if a student is a little slow to click on the title online during the selection time, other students are much more likely to choose the title they are interested in. Only 60

In order to address this issue, the Mechanical Engineering (ME) department has suggested a different approach for students who choose to use lecturer-proposed titles. The students will first be permitted to browse all lecturer-proposed titles online for a few days under this new method, which will be referred to as the Preference Based system moving forward. The next step is for each student to identify their top ten favourite books and order them in that order. This list will then be fed into a computer program, which will use an algorithm to assign each student one of the 10 highest-ranked titles it can.

2.3.4 Tools to select supervisor final year project

The final year project supervisor selection tool makes it easier for students to choose potential supervisors and solves problems for academic staff members who typically lack students to supervise. Additionally, the tool restricts the number of students that any member of the academic staff can oversee, ensuring that no academic staff is responsible for too many pupils. As a result, the final year project students are fairly distributed among the academic staff..

2.3.5 Final Year Supervision Management System as a Tool for Monitoring Computer Science Projects

Students at Universiti Kebangsaan Malaysia's computer science programme are required to create a software prototype and write a dissertation as part of their capstone project. An rising proportion of students have, according to preliminary observation over the past five years, failed to finish prototype development within the allotted time. Currently, meetings and conversations between supervisors and students are recorded in a log book. Despite the fact that a thorough timetable has been suggested, there is no monitoring procedure to demand certain measures to guarantee that all deadlines are completed. A web-based supervision management system prototype was created in order to enhance project monitoring and supervision.Three modules—user profiles, project monitoring (for software development and report authoring), and appointment setting—make up the initial prototype. After the prototype is finished, a user acceptability test will be carried out.

2.3.6 Building an MSC project selection system

By improving the already-existing functions (filtering and ordering) and adding new functions (such as searching projects, booking timeslots, suggesting projects, related projects, and discussion boards) to the new system, this project aims to create a prototype of a new MSc project selection system and respond to students' demands. According to evaluation findings, the new system can meet user demands by supplying more crucial project information and introducing additional capabilities that enable students to more effectively engage with possible supervisors and select the projects they want to work on.

2.4 IMPORTANCE OF FYP MANAGMENT SYSTEM

It would be easy to give priority who voted first for project, in manual way it is hard to give priority who voted first with this system there will a fair distribution of projects.

2.5 WHY FINAL YEAR MANAGEMENT SYSTEM FOR MUET

Why MUET project management when there are so many other websites and solutions available? Students at MUET have ac-

cess to a platform where they may choose the final year projects they want to work on using the MUET Project Management System. The administration website for the MUET FYP is unique in that it was created expressly for the academic tasks associated with the project's final year.

It is a public database, and 60 percent of its information originates from outside. All users are permitted to access the website, and with the right password, batch, or roll number, they can peruse its contents. The records for all the projects from prior batches are available; students in their final year can use these records.just as easy as getting assistance with their own thesis. Due to its academic nature and management of the entire FYP selection process, this website may rank among the most popular websites.

So if there will a single platform for all the students of MUET where they can select their project for final year, it would be very fair and beneficial for the students of MUET

CHAPTER 3

DESIGN AND METHODOLOGY

3.1 DESIGN

3.1.1 Diagram and Models

In this section, I will explaining about the structure of our Final Year Project Management System through following diagrams.

3.1.1.1 Class Diagram

The Above Class diagram shows the Classes and their functions. The Separate Login System helps us, with assigning different roles and permissions to different users. Such System can help us with easy management of the Final Year Projects, Final Year Projects Groups, and their Final year Project Adviser Assignment.

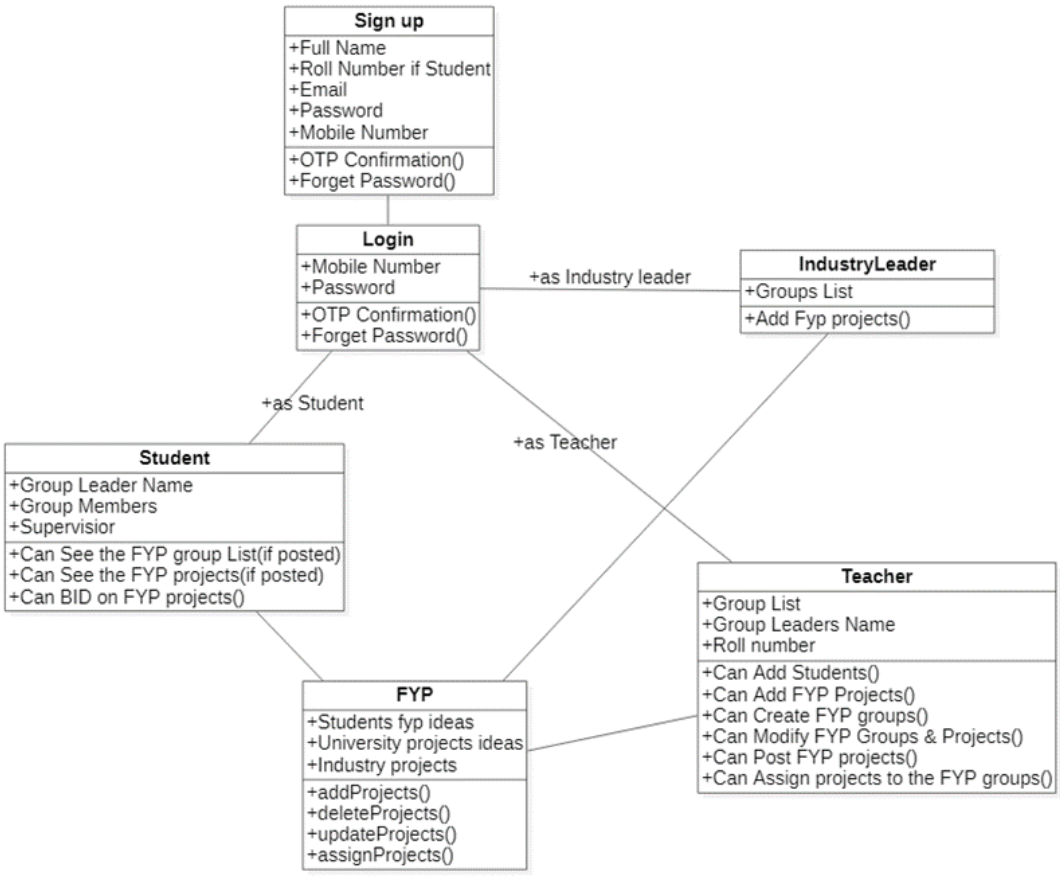

Figure 3.1: Class Diagram

3.1.1.2 System Flow

The above diagram shows the System flow for the User. For Example, If any Student signs-in, then he/she will have certain types of permissions only, While if any Teacher signs-in, then he/she will have a different type of permissions. We can say that a Teacher doesn't have to bid on the project, while it is necessary for a student to bid on the project, if he/she wants to be assigned that project.

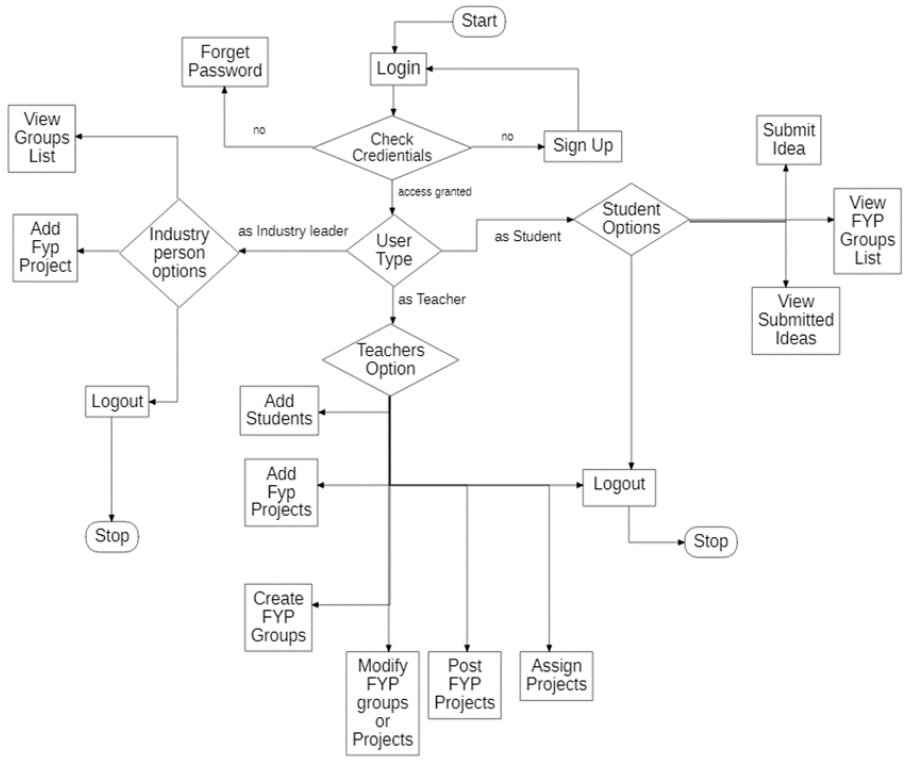

Figure 3.2: System Flow Diagram

3.1.1.3 Use Case

In the above diagram, we can see the graphical depiction of any user in our Final Year Project Management System. As we can see that for the Student User, we have interactions like Login, Sign-Up, Submit Idea, and Comments/Bid.

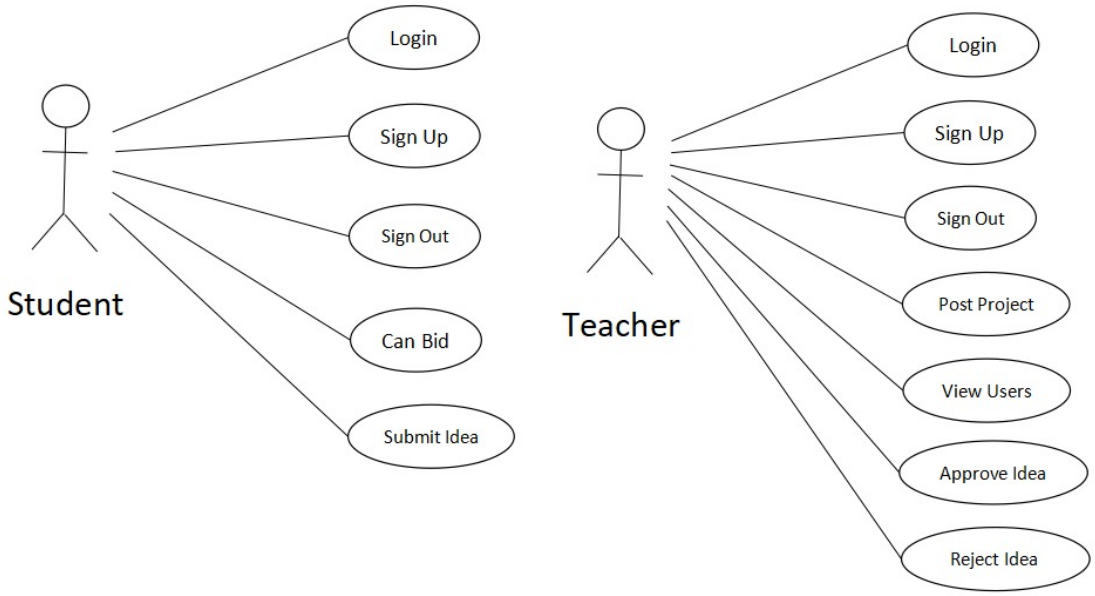

Figure 3.3: Use Case Diagram

3.2 PROGRAMMING APPROACH

3.2.1 Pair Programming

We have used the Pair Programming approach to develop the project. In the Pair Programming Approach, 2 or more than 2 developers work on different parts of the project. This helped us to do development easily, review our project easily, and project division in the 3 members easily too.

Figure 3.4: Pair Programming

Specially in our Final Year Project Management System, it was very helpful for us to do use this approach. Because as a Student we expected some features too, in a well organized Final year project Management System. When developing using the MERN STACK(MONGO DB, Express JS,REACT JS, Node JS), the pair programming helps us specially in the Front End

(REACT JS). The Components are developed separately. **For Example**

The Header of the Website will be coded in a different file and imported in whichever file we want to use it.

Similarly any other component like any Alert, will be assigned values and imported whenever we want to use it. As I have said about the components in React JS, the pair programming approach will help us develop components separately by other developers. This way with the help of Pair Programming, we divided every single component of our Final Year Project management System, from Header to the Alert Notifications templates. After every component development we asked each other for the review to ensure that there is no defects.

3.3 SOFTWARE PROCESS MODEL

3.3.1 Agile Methodology (Flexible)

In this methodology the project is divided into small units of code and then these small units are developed in continuous iterations. Every unit/part of the project should be completed in the mentioned time of the part. Agile Methodology is followed

by many software companies throughout the world, Because it divides the whole project into small pieces, which are easy to develop and test.

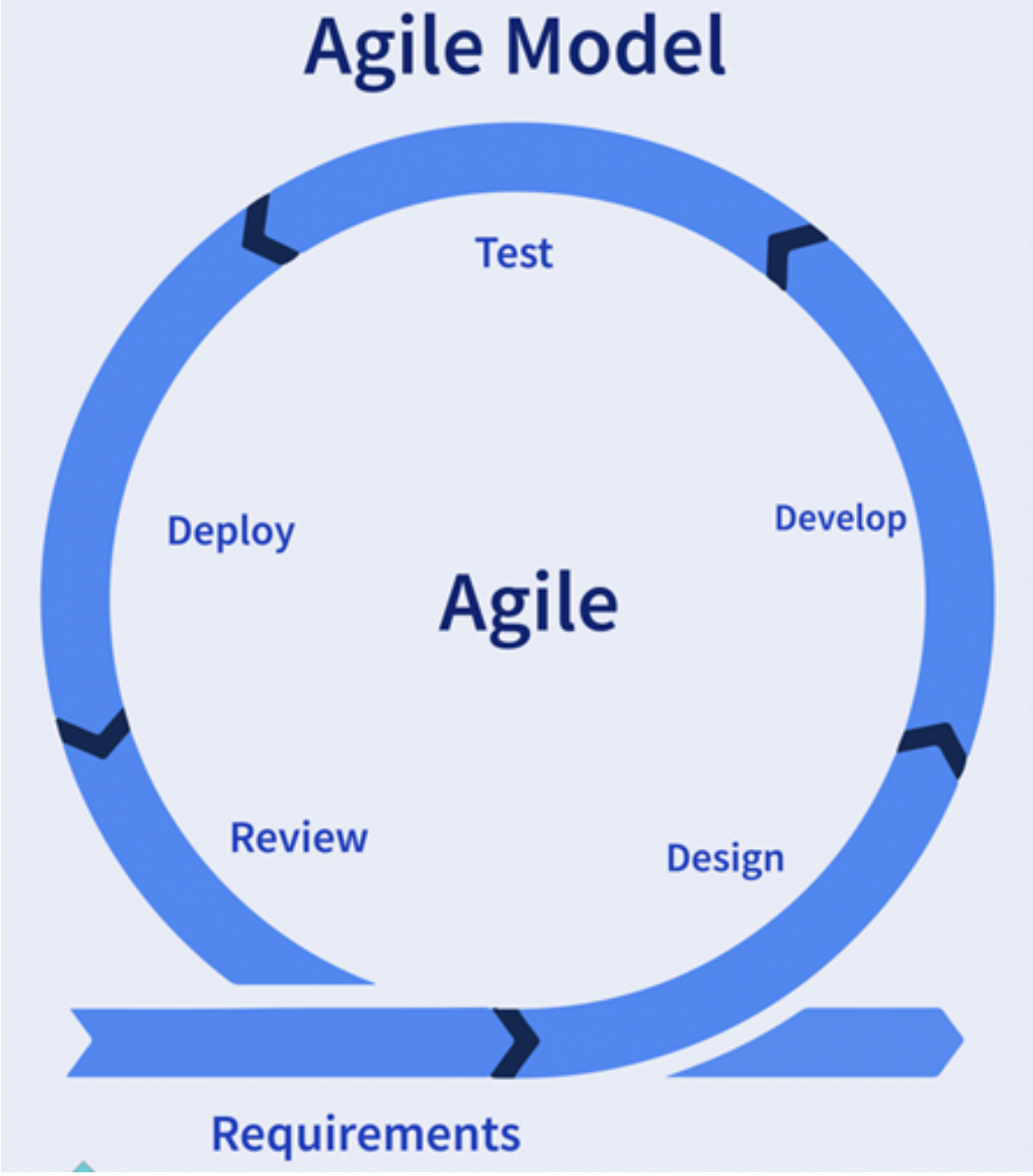

Figure 3.5: Agile Model

Due to its too much flexibility, many processes are based on Agile Methodology. One of these most famous processes is Scrum.

Scrum

In Scrum we divide the project code into small units of 3 weeks to One month. These units are known as sprints, these sprints can not be less than 3 weeks or more than a month and they are chosen such a way that these can be completed in estimated time frame if it does not, then it is considered that the work is not done properly or there was a mistake while creating the units which is the fault of project manager or the lead who divided the project. By Using Scrum we were able to divide our FYP Management System into proper time and team members. In the 7th Semester, all of the diagrams(Class Diagram, System Flow Diagram, Use Case Diagram) were designed along with some of the main Screens(Login, Sign-Up, and Projects Page)

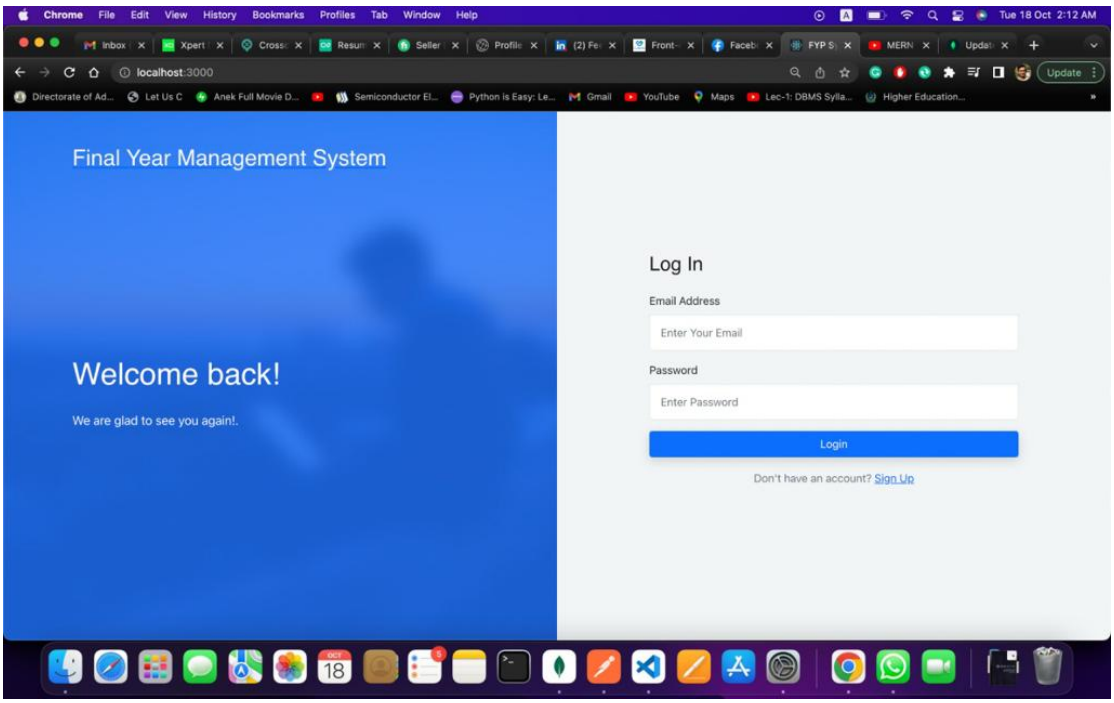

Figure 3.6: Login Page

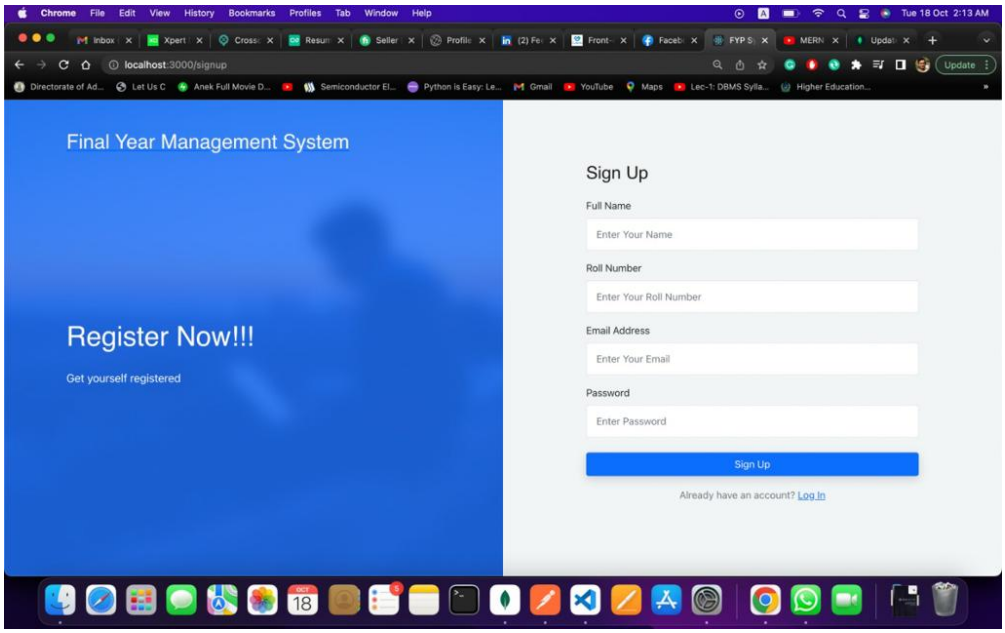

Figure 3.7: sign Up Page

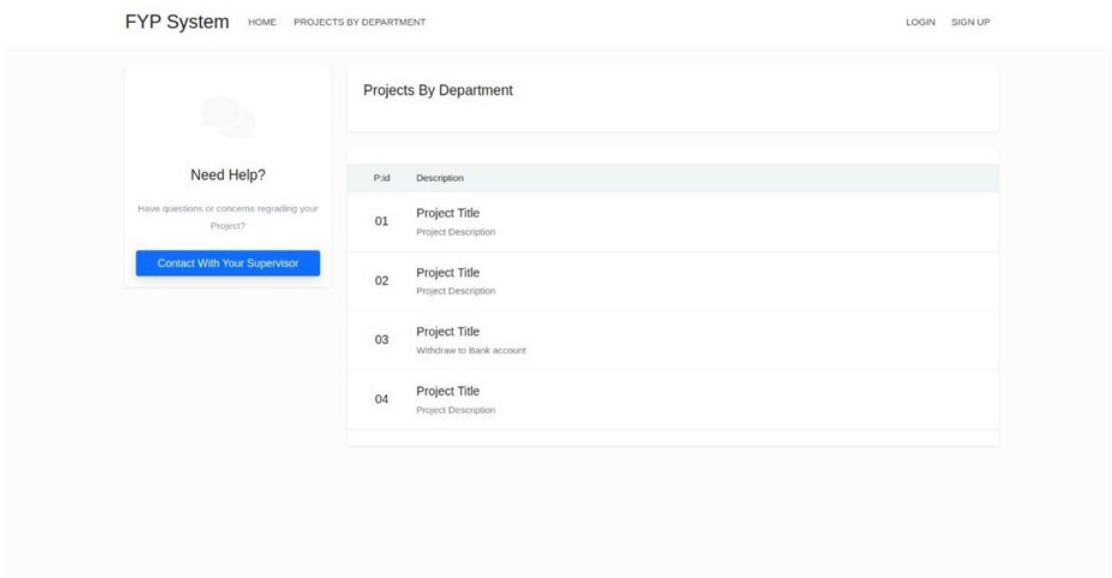

Figure 3.8: Project Page

As for our 8th semester, we developed all of the remaining components of the project, some of which are following (Snapshots available in Implementation Chapter)

- Admin Login
- Admin Sign-UP
- Clock Timer
- Comment Card
- Header
- Home
- Project Card
- Project Details
- Project by University Screen
- Project by Students Screen
- User Details, etc.

All of the above Components are developed using the Scrum approach. Here is an image depicting the Iterative cycle, we used for developing our whole project

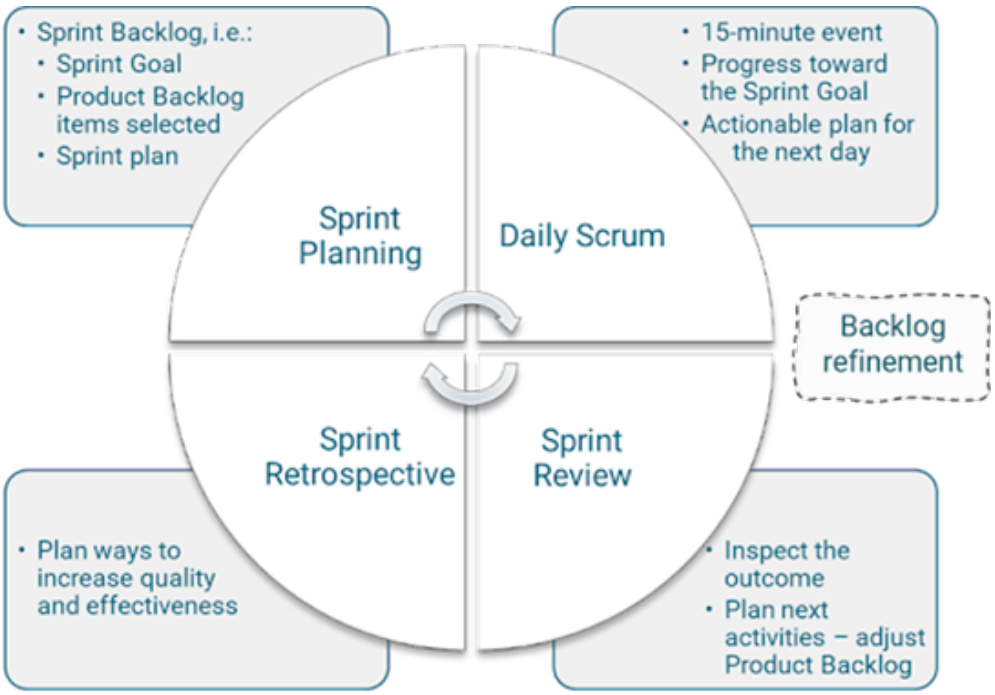

Figure 3.9: Scrum Approaches

Sprint Planning

Every Component was first discussed by all of us. We have thought of the best possible solutions/ for every component and tried our best to do this.

Daily Scrum

We worked every single day, even for every single component. This way we were able to resolve bugs too and helped us learning many new things about the Modern Technologies.

Sprint Review

As I have discussed earlier, that we used Pair Programming as

an approach for both Development Reviews. This way with the help of Pair Programming, we divided every single component of our Final Year Project management System, from Header to the Alert Notifications templates. After every component development we asked each other for the review to ensure that there is no defects.

Sprint Retrospective

Even after development with Pair Programming approach and Daily Scrum, we were still confused about best possible solutions. So we contacted with Our Final year Project Adviser Sir MOHSIN, for suggestions and guidance. Using this Sprint Retrospective approach we achieved improvements in many components quality and use.

CHAPTER 4

IMPLEMENTATION

Final year project management System is an portal particularly designed for the MUET students to select their final year project. This portal allows the students of Mehran University of Engineering and Technology to present their ideas of projects, can comment on projects. The aim of this portal is to process final year project system digitally The final year students first need to register themselves for the fyp procedure. After registration students can pitch or comment on projects with in a limited time frame.

4.1 TOOLS

4.1.1 Vs Code

For Windows, mac OS, and Linux, there is a desktop-based source code editor called Visual Studio Code. It is free to use and runs on your computer. built-in support for more languages and runtimes (C++, C, Java, Python, PHP, go ahead) in addition to JavaScript, Type Script, and Node.js. Debugging, syntax highlighting, intelligent code completion, snippets, code

refactoring, and built-in Git are some of the features of this programme. Users may install extensions that provide additional functionality and adjust settings, shortcut keys, and themes. Developers frequently utilise Visual Studio Code, which is continuously rated as one of the top programming environments for Front-end engineering

4.1.2 Post Man

An programme for testing APIs is called Postman. Because it enables you to test HTTP requests and receive a variety of replies that you must subsequently evaluate, it is a fully graphical HTTP client. Get, post, put, and patch are just a few of the endpoint interaction methods that Postman offers.

4.1.3 MongoDB Compass

Mongo DB Compass is a powerful graphical user interface for querying, aggregating, and analyzing Mongo DB data in a visual environment. MongoDB Compass removes the burden of remembering obscure database and collection names.

This tool allows you to navigate any database or collection from your server with just a few clicks.

4.2 FRONT-END TECHNOLOGIES

4.2.1 Html

Using markup, HTML outlines the structure of Web pages. It needs a clearly defined structure for its components, tags, and other contents because it is a web application. HTML has been utilised to provide the application an appropriate structure and to organise web pages in a clear-cut way.

The browser transforms text, images, and other content using the markup language HTML so that it may be presented in the appropriate manner. In 1991, Tim Berners-Lee created HTML. HTML 2.0, which was introduced in 1995, was the first standard revision after HTML 1.0.

4.2.2 CSS

For specifying how a document created using a language like hypertext markup language should be displayed, CSS may be used as a sheet language. CSS may be one of the three pillars of the world wide web, along with JavaScript and hypertext markup language.

Layout, colours, and fonts may all be separated from presenta-

tion using a sheet called CSS. By specifying the pertinent CSS within a separate CSS file, which reduces complexity and repetition within the structural content, this separation will improve content accessibility, offer more flexibility and management within the specification of presentation characteristics, enable multiple websites to share information, increase page load speed between the pages that share the file and its information, and reduce complexity.

4.2.3 JavaScript

Along with HTML and CSS, JavaScript, sometimes known as JS, is one of the main programming languages used to create content for the World Wide Web. On the user side, over 97 percent of websites employ JavaScript to control how they behave, frequently integrating third-party libraries. All of the main internet browsers feature a JavaScript engine that can run code on a user's device.

JavaScript has the potential to be a high-level compiled language and occasionally just naturally suits ECMAScript. it has amazing features, dynamic authoring, and object-oriented prototypes. It is multi-paradigm, allowing you to program in an

imperative, functional, or event-driven manner. It includes the Document Object Model, among others, as well as arthropod genera for working with text, dates, regular expressions, and common information structures (DOM).

4.2.4 jquery

J-Query is a library for JS. A "write less, do more" JavaScript library, J-Query is compact. J-Query is a fast, compact, and feature-rich JavaScript library that aims to make it simpler for you to utilise JavaScript on your website. With a user-friendly, cross-browser API, it makes it simple to traverse and interact with HTML pages, event handling, animation, and Ajax. J-Query is quick since it offers several short techniques of its own. Any application will need a speedy reaction from the customer, which it will deliver.

4.2.5 BootStrap

Bootstrap is an open source front-end web framework for designing website and web applications. As the system contains many users thus it was difficult to carry laptops or heavy devices everywhere especially for vaccinators because they go door to

door therefore there were need to provide a flexible website that can run on every device whether it is laptop or a PC or a tab or a mobile. BOOTSTRAP supports interface compatibility.

4.2.6 React

React is java script based development library. Facebook and developer community run it.In this era react is the most commonly used frontend library for website development

The purpose of using react js is it makes easy to develop dynamic website applications with efficient code and have more functionality With the use of react technology Components can be reused ,Can create easily dynamic web application , App performance improved The flow of data will uni directional

4.2.7 Redux

Redux is a management lib that can be used with any js library or frame work like angular ,react and vue.

Redux is simply a pattern and library which manage and update the state of application by using event know as actions.

4.2.8 Material UI

The most powerful and efficent tool to develop an application by adding design and animations and using it with technical innovation Material ui is basically a design language developed by google in 2014 It provide number of designs and animations , gird system and provide lightening effects. Material ui can be used with Java script frameworks like react , vue

4.3 BACKEND TECHNOLOGIES

4.3.1 Node js

A server-side platform called Node JS was constructed on top of the JavaScript engine in Google Chrome (V8engine). Node js is ideal for data-intensive real-time applications operating on dispersed devices because it is simple to build a quick and scalable network application utilising an event-driven, non-blocking input-output strategy. Asynchronous programming is used by Node JS.

4.3.2 Express js

node js framework called express js offers fresh features for creating online and mobile applications.

Express is a versatile Node-js web application with a basic design that offers a wide range of functionality for both online and mobile apps.

4.3.3 Mongo DB

MongoDB is a document database that isn't relational and supports JSON-like storage.

4.3.4 JWT Authentication

In accordance with the open standard JWT JSON Web Token (RFC7519), safe data can be sent between parties in a lightweight, self-contained manner as a JWT object. The HMAC or RSA algorithms can be used to sign JWTs with a secret using a public-private key pair.

4.4 INTERFACES

4.4.1 Project By student Screen

On this screen, students can submit the project titles and descriptions which will be shown in the list. Students can see whether the project is approved, declined or it is still pending.

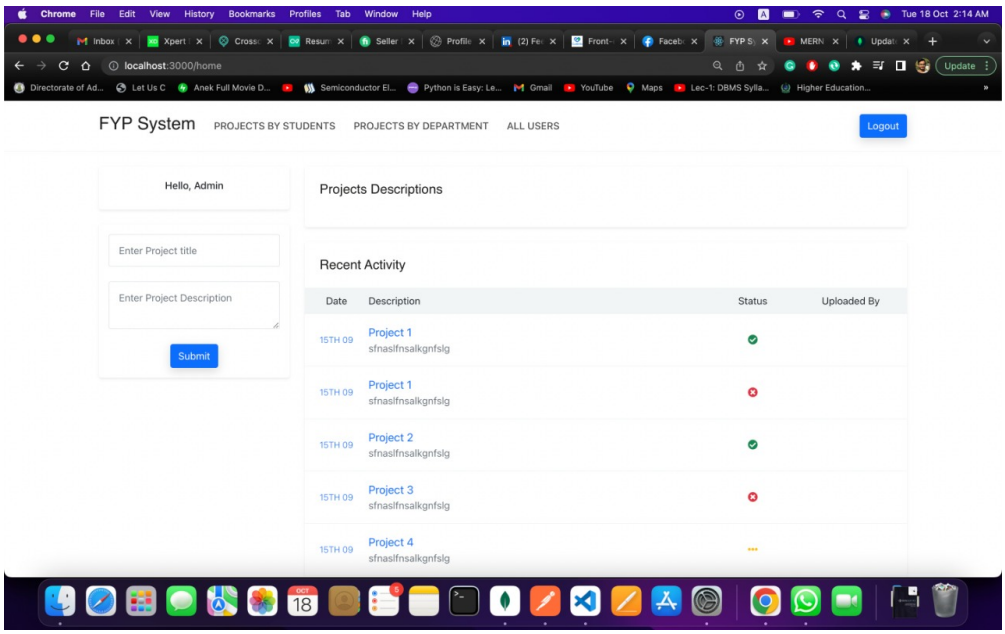

Figure 4.1: Project By Students

4.4.2 Comment Screen

In comment screen student can give comments as proposals with a brief description for desired final year project. // //

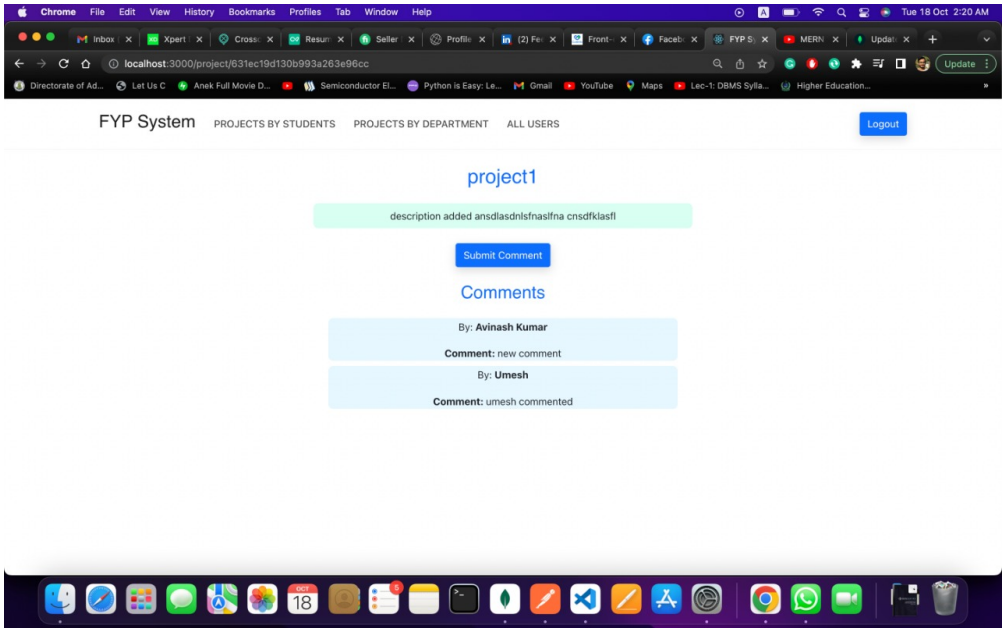

Figure 4.2: Comment Screen

4.4.3 Comment Popup

Students can comment in this pop-up box in figure about the final year project

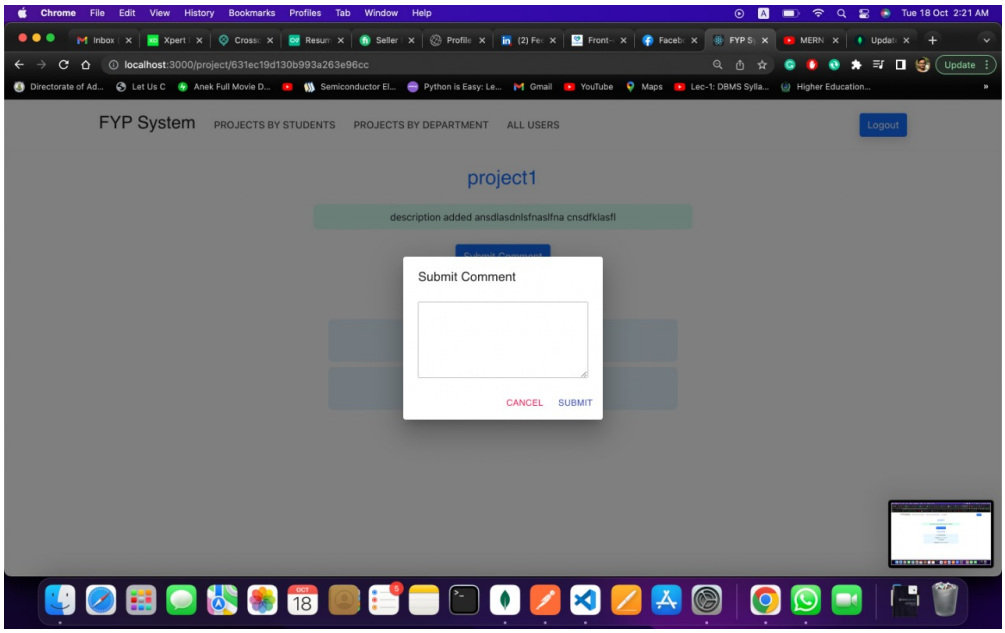

Figure 4.3: Comment Popup

4.4.4 Assign FYP Supervisor

After distributing the project administrators. Admin assigns a supervisor to each group of final-year students.

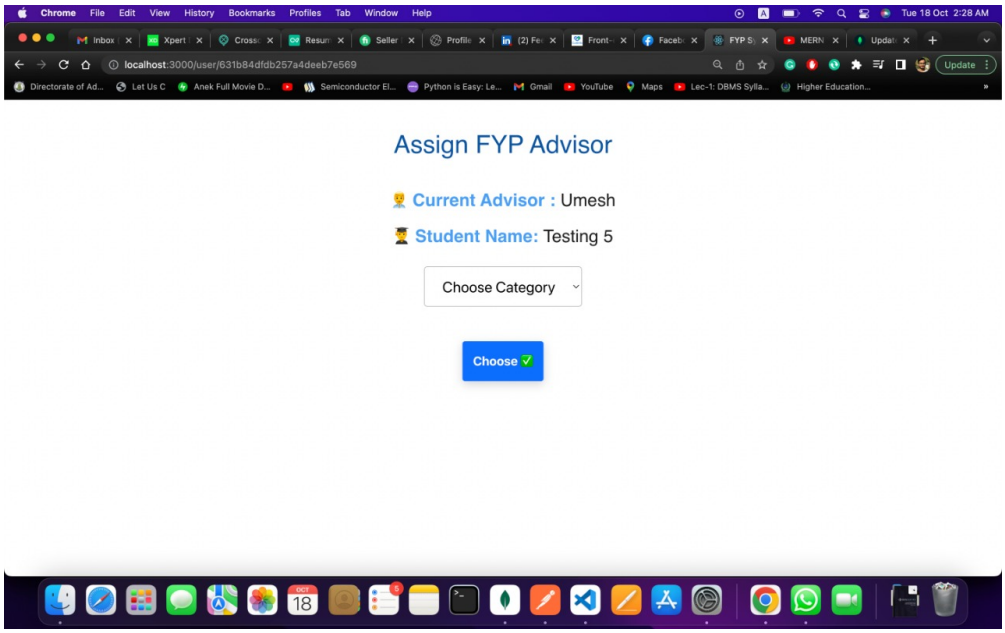

Figure 4.4: Assign FYP Supervisor

4.4.5 Student Detailed Screen

Only the admin can see this screen and this screen contain all detail about students who are working on projects

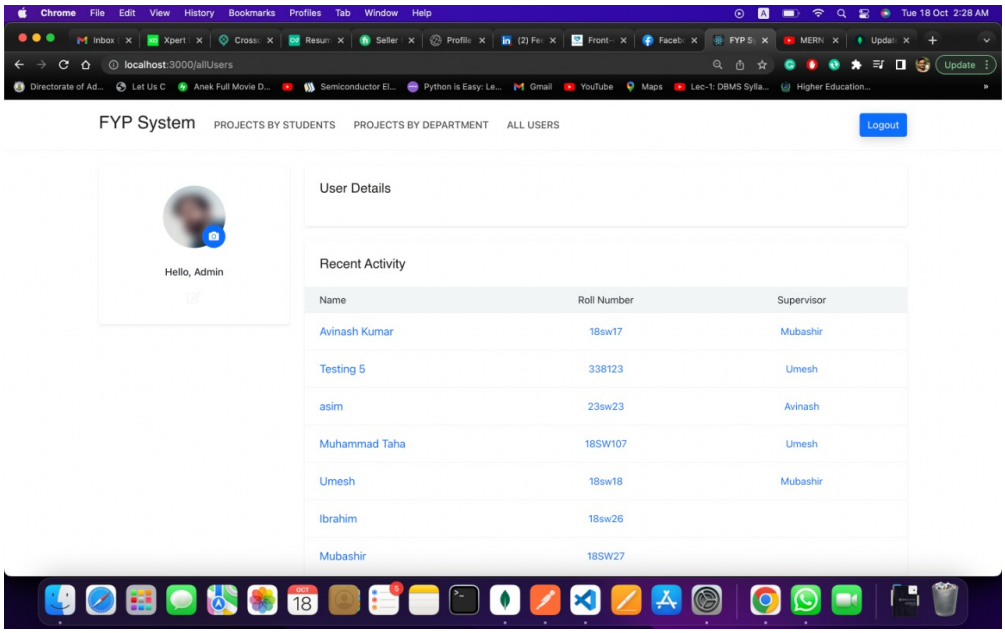

Figure 4.5: Student Detailed Screen

CHAPTER 5

TESTING

Testing is an important part of any development process, if the product is not fully tested before the launch then it will cause lots of issues in the future and to correct those issues would be costlier than doing the testing process and correcting the bugs before the final launch.

Our project, that is an final year project management system developed to overcome manual final year project assignment in digital system for both teachers and students.

5.1 TESTING ON DIFFERENT DEVICES

While building the web application we used 3 different devices with different screen size but it may be possible that users may utilize any other device so it is important to test the application on some of the devices.

Following Table shows the testing performed on different devices.

platform	Load Time	Text and Icon Arrangement	Responsive	Functionality
Apple Mac	Ok	Ok	Ok	Ok
Lenovo Carbon	OK	OK	OK	OK
DELL E6440	OK	OK	OK	OK

Table 5.1: Testing on Different devices

We found the results satisfactorily,there was not any issue while launching our web application or with the look and feel of using the application.

5.2 TESTING TYPES

5.2.1 Functional Testing

5.2.1.1 Different Users Are Able To Login With Different JWT Tokens

When users login through the login page they are securely checked by the database data and logged in accordingly.

5.2.2 Correctly Displaying The Home Page

When user logs in the home page is being shown according to the type of the user and the permission he or she has.

5.2.3 Biding On Project Successfully

When student user type logs in he or she can bid on any project assigned by university.

5.2.4 Non Functional Testing

We are not going to use all of the non-functional testing techniques in our project, but only a few of them were used, which are as follows:

5.2.4.1 Load Testing

In our web application we have to check whether the data e.g. user records are successfully coming from mongodb database correctly or not, so we tested with the different internet connections of different bandwidth the data was coming smoothly in 2mb+ bandwidth of internet connection.

5.2.4.2 Compatibility Testing

The GUI's are the most difficult part to manage when developing an web application, because there are many size screen computers are available in the market, so we took average 3 screen sizes which are mostly available and we run our web application in all these 3 devices the design was perfectly fine and working smoothly.

5.2.4.3 Black Box Testing

Black box testing is a type of test that only checks the functionality of the product and not the code or internal functioning of the project. In relation to our web application, black box tests have also been carried out to check the overall functioning of the website instead of the working or code structure. In this one we only gave a few inputs and checked the outputs and nothing else for the application.

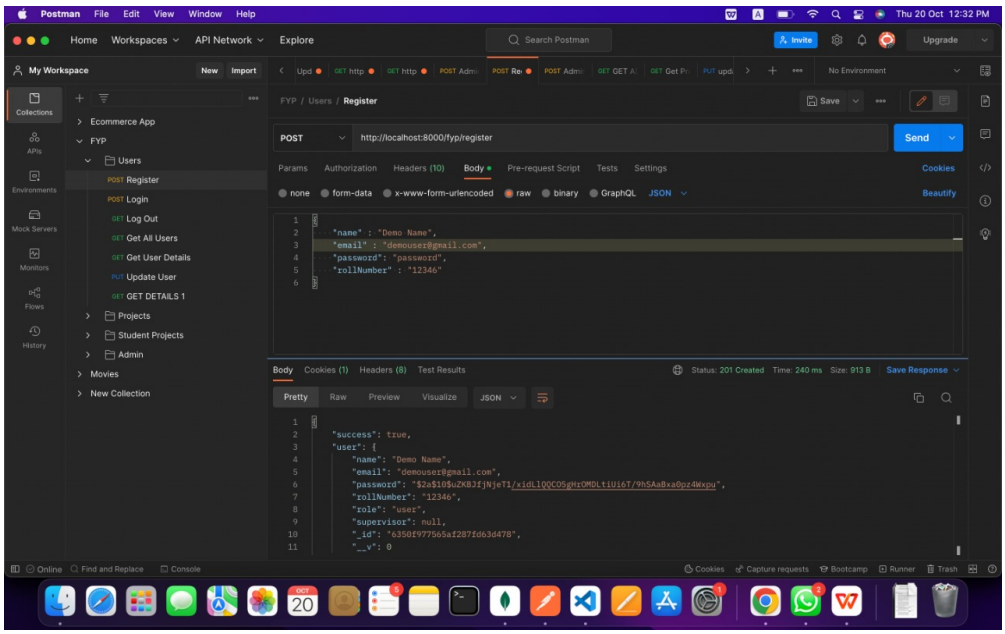

Figure 5.1: API Testing 1

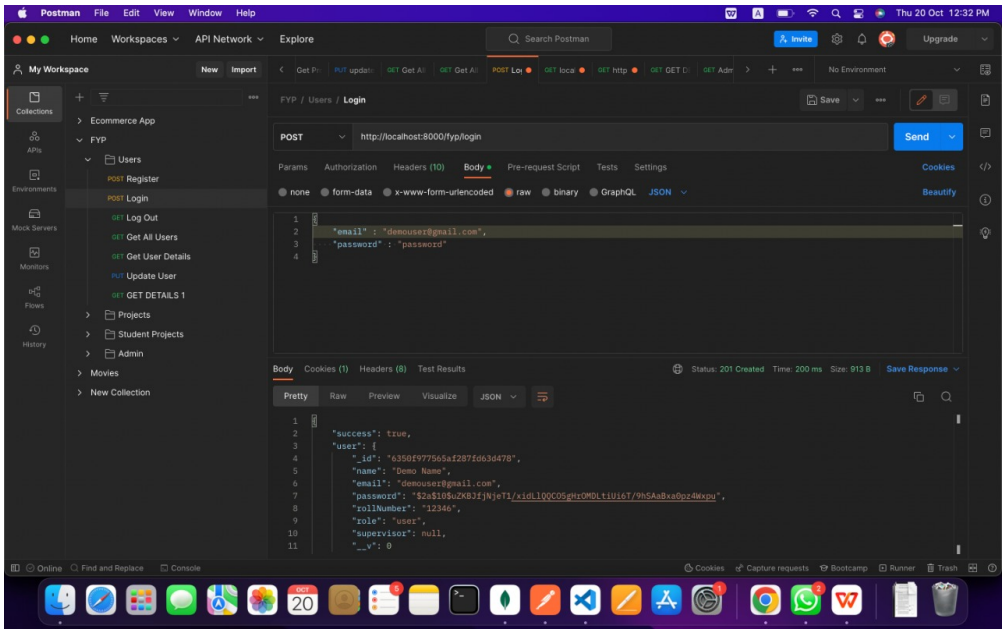

Figure 5.2: API Testing 2

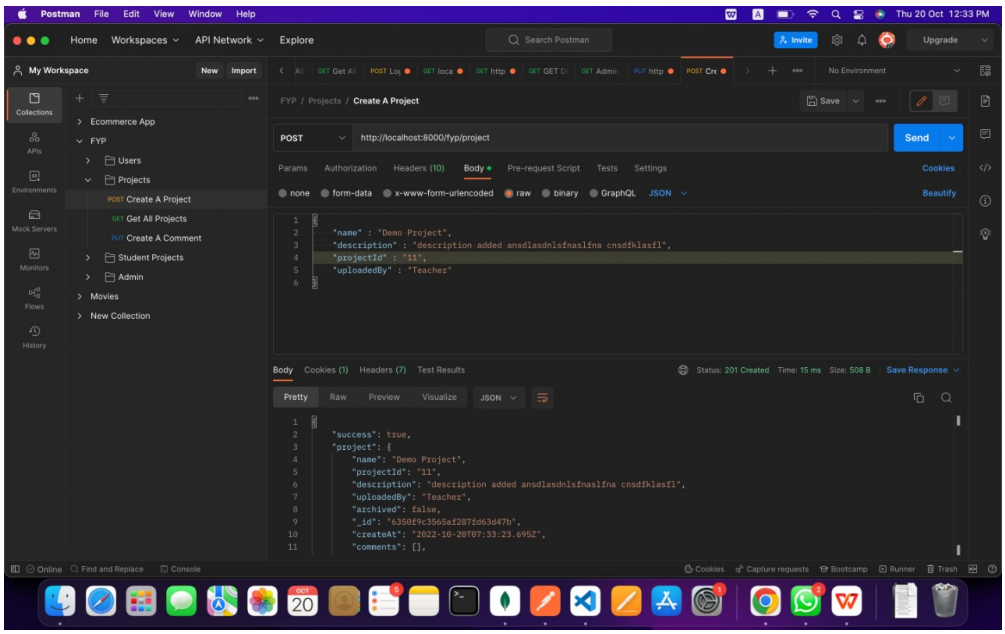

Figure 5.3: API Testing 3

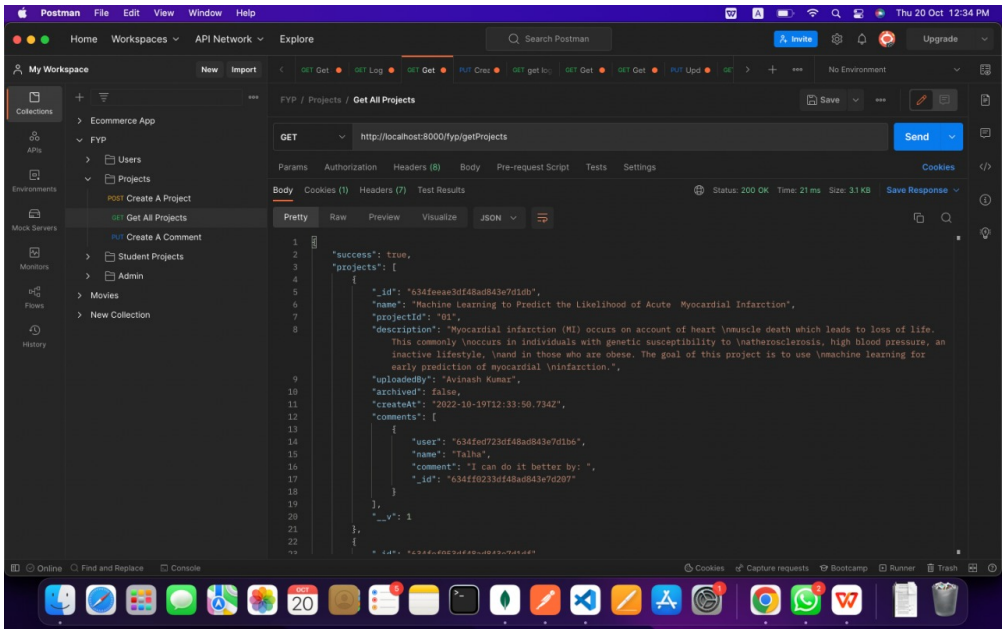

Figure 5.4: API Testing 4

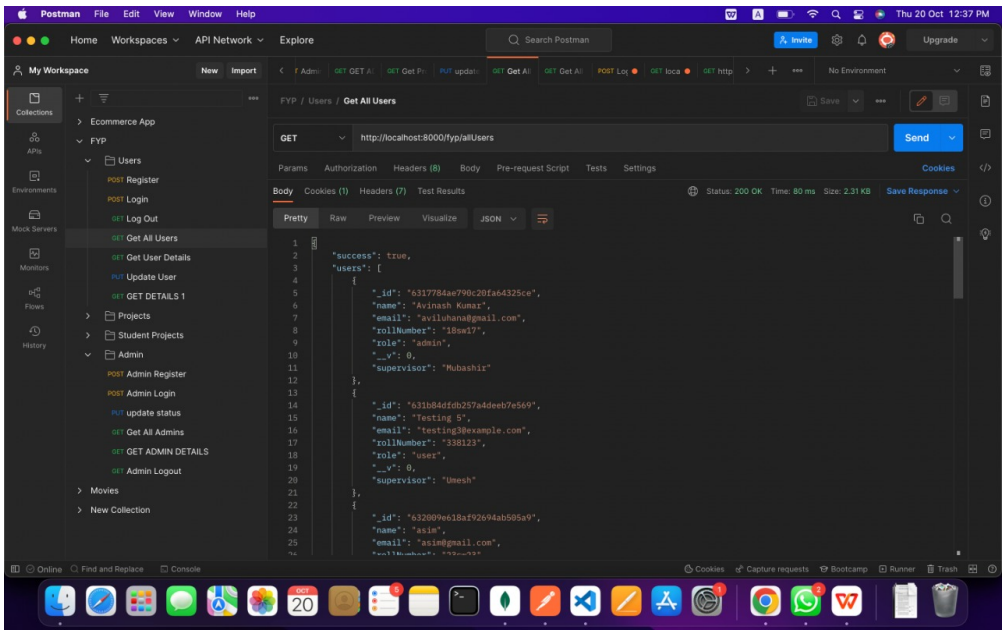

Figure 5.5: API Testing 5

In **Functional Testing** We checked the basic functionalities of our web application discussed below:

- Open the web application without any crash.
- List of projects is displayed.
- User can click any particular from the list.
- When click any project a new page (project details) opens according to the permission user have.
- When user clicks the bid button of that project a biding option is opened.
- When user clicks the buttons users data is updated in database.
- After matching the results the appropriate project screen is shown according the correction percentage.

5.2.4.4 User Acceptance Test

We have done user testing with 10 batch-mates the scope of our project is for final year student and teachers so we took 10 batch-mates of our final year and we find satisfactory results but as the some features of project are under development and will need time to time modification but still results were 85% satisfactory. Because this application can be made more accu-

rate by modifying the application time to time with different technologies and innovative ideas as we have discussed in our future work chapter than this will become more accurate with more adoption of latest technology.

5.2.4.5 User With Student Access

Students Name	Authentication	Project Biding	Submit On idea
Yasir	Yes	Yes	Yes
Babar	Yes	Yes	No
Yameen	No	Yes	Yes
Talha	Yes	No	Yes
Ibrahim	Yes	Yes	No
Aamir	Yes	Yes	Yes
Fayaz	Yes	Yes	Yes
Nikesh	Yes	Yes	Yes
Mohsin	Yes	Yes	Yes
Imtiaz	Yes	Yes	Yes

Table 5.2: Testing on Different devices

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 CONCLUSION

Currently FYPs are being managed manually. The aim of this project is to automate FYP selection process. The project will involve developing two portals, one for FYP committee and the other for students.

For students, the list of finalized FYP's will be uploaded on the website and students will be able to select projects in real-time based on first come first serve basis. For project selection students' will have to login using their MUET VPN credentials. Admin will decide date and time.

6.2 RESULTS AND BENIFITS

- Easy and Rapid Projects bidding and Assignment.
- Increases the comfort for both Teacher and Students.
- Fair System for Projects Distribution among Students.
- All the Student's Data is available at Database, which is accessible only to Admin.

– This Final Year Project Management System overcomes the Manual System of Final year project Management Assignment.

6.3 FUTURE WORK

MUET Final Year Project Management System has multiple functionalities which can be very useful for the students as well as for the teachers. But there are still some features that can be added to the website in order to make it more beneficial. Following are the same features that can be integrated with the website in future:

In future we would be focusing upon the mobile app as well for iOS and android devices And if we found any kind of lack of functionality in our app we would be covering that too.

Along with timer, Google Calendar is one the most used resources that can be embedded in a website for scheduling. Google calendars are used to manage the events, timelines, dead-lines, and reminders. One can integrate the Google Calendar in MUET Final year project Management System to check the supervisor's availability status and to manage the whole FYP submis-

sion process.

It can be integrated with MUET's official website. MUET Final year Project Management System is an organizational site whose users are only the final year students. If it will be integrated with official website, then it would be very beneficial for the students as well as for the admin of the site. Admin can take the data of and assign them projects comfortably for both Teachers and Students. MUET's official site can use this dissertation site as a sub-system of it.

MUET Final Year Project Management website may use the plagiarism server with it, the server can be integrated to enhance its functionalities. Thus, rather than submitting the plagiarism report, the students will be able to check the plagiarism at the same site of their users.

Other Final Year Project management-related projects can be integrated along with this Final Year Project Management, So both students and teachers can access everything in one platform.

CHAPTER 7

REFERENCE

1 M. H. Hasan, K. S. Mohamed Sahari and A. Anuar, "Implementation of a new Preference Based Final Year Project title selection system for undergraduate engineering students in UNITEN," 2009 International Conference on Engineering Education (ICEED), 2009, pp. 230-235, doi: 10.1109/ICEED.2009.5490578.

2 Implementation of a new Preference Based Final Year Project title selection system for undergraduate engineering students in UNITEN. (2009, December 1). [Video]. IEEE Conference Publication — IEEE Xplore. Retrieved October 20, 2022, from https://ieeexplore.ieee.org/abstract/document/5490578

3 M. H. Hasan, K. S. Mohamed Sahari and A. Anuar, "Implementation of a new Preference Based Final Year Project title selection system for undergraduate engineering students in UNITEN," 2009 International Conference on Engineering Education (ICEED), 2009, pp. 230-235, doi: 10.1109/ICEED.2009.5490578.

4 Ismail, Mohammad Hafiz, et al. "A Simple Recommender Engine for Matching Final-Year Project Student with Supervisor."

arXiv preprint arXiv:1908.03475 (2019).

5 ABDUL WAHAB, RAIHANAH BINTI (2012) FINAL YEAR PROJECT ONLINE MANAGEMENT SYSTEM (FYPOS): CLIENT AND SERVER DESIGN. Universiti Teknologi PETRONAS.

6 https://www.interviewbit.com/blog/wp-content/uploads/2022/02/Phases-of-Agile-Model-825x1024.png

7 https://distantjob.com/wp-content/uploads/2017/08/13th-Aug-DJ-Banner-Pair-Programming-Why-You-Should-Care-About-It-and-How-To-Do-It-Remotely.jpg

8 https://upload.wikimedia.org/wikipedia/commons/e/ee/ Scrum$_A gile_e vents.png$