

Supervisor Selection System

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Attock Campus - Pakistan
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Supervisor Selection System

**A project presented to
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PROJECT ID		NUMBER OF MEMBERS	2
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CERTIFICATE OF APPROVAL

It is to certify that the final year project of MCS “**Supervisor Selection System**” was developed by **Sumbal Bano (CIIT/SP19-MCS-011)** and **Sania Begum (CIIT/SP19-MCS-008)** under the supervision of “**Mr. Armughan Ali**” and in his opinion; it is fully adequate, in scope and quality for the degree of Masters of Computer Science.

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Abstract

As all of us know about supervisor selection is still a basic problem in the current existing time of project decision. When the students are already under pressure of difficult studies it is just like a heavy weight on the shoulders of the students which are already bearing a lot of problems related to studies. All final year's student are required to undertake a final year project to complement the attainment of program learning outcomes thus students are expected to conduct research work activity independently under the supervision of supervisor. So the basic problem while making a final year project is to hire a competent supervisor who can help them and guide them properly. For this purpose students have to rove the cabinets of supervisors but cannot find because they told them about their own expertise and don't pay much attention to students' ideas because they are also busy in their sturn routine of attending classes, and supervisors having specific slots which they do not exceed. As students have limited and very short time ,in which they have to select their final year project as well as to complete course and prepare themselves for daily routine assignments quizzes etc, so their expensive time, which they could utilize in preparing their subjects, get wasted .This application allows the most suitable supervisor be selected because every supervisor has not expert in every field. Then we identify these problems our application solve these problems provide great help according to the need or interest of the student according to the expertise of supervisor and for finding available slots of supervisor through system

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Chapter 1

Introduction

1 Introduction

Many activities in the Comsats university but one of the most important activity of the university is the final year project. To well score in final year project a professional supervisor should be selected. The important role of the supervisor is to make the project better or worse. Process of selecting a supervisor is very important and critical. The advancement of technology almost every field adopted the online services for enhances their system. Selecting supervisor the final year projects of students is using manual process is a very arduous/listlessness job. Supervisor selection system is android based on application which is beneficial for final year projects students and their supervisor. The main aim of our application is to select a supervisor on the basis of her expertise. This application has several interfaces:

- For students
- For supervisor's
- For Admin

In this application, First of all the supervisors and students need to register into the system using registration form, then registered supervisors and students can login into the system using their registration id and password to get authenticated. Supervisor selection system will provide profile of supervisors, list of all past project which they supervised, current project's list, proper detail or availability of slots, students request, students feedback and also provide students and supervisor chatting. This application will store all the records of current faculty members and their expertise criteria along with suggested interesting ideas related to their cross over knowledge and skill. Supervisor view the project progress report of students. The users can easily use this application. Usage of this application will greatly help reduce timing in students and supervisor difficulties. This project is to create an automated system for student and supervisor.

1.1 Problem Statement

Students can face many problems when selecting supervisor for final year project. When a time comes to selecting supervisor many problem arises such as which supervisor to select and which area of project to select. It is very difficult for the students to find a supervisor according to his interest. The students want to work in the particular field but it is difficult to find a supervisor. If

supervisor is found, but the supervisor is overburdened and due to which he does not give much attention to the students. After a while it turns out that the supervisor didn't take the project because he was overburdened and in the end, a lot of student time is wasted. While the students are already under pressure of difficult studies and already bearing a lot of problems related to studies.

The main Problem students have to rove the cabinets of supervisors but cannot find because they told them about their own expertise and don't pay much attention to the students. Sometimes the student does not have good ideas that's why the supervisor pitch his own ideas. The supervisor selection process is manual that are taking more time that is very difficult to analyze it. That's why we're making the automated supervisor selection system.

1.2 Proposed Solution

After following the discussion of problem statement we are try to provide a best solution to solve these problems through our project application. We will develop system named as "Supervisor Selection System" which will providing the students ease of supervisor selection in an easier and efficient way. Supervisor selection system will provide profile of supervisors, list of all past project which they supervised, current project's list, proper detail or availability of slots, students feedback and also provide students and supervisor chatting. For recommendation perspective projects will be categorized or enlisted in every supervisor profile on the basis of his or her speciality of knowledge and expertise of field. The application can provide to the student can connect with their supervisor and they see the profile of supervisors. The student will view the supervisor's recommended ideas and the supervisor also views the students uploaded ideas. Our application has simple and user friendly interface because most of the users of application are not well educated. This application changes the manual system into automated system for supervisor selection.

1.2.1 Limitations:

- Constant connectivity with the internet is required.
- The application works based on the views of the students and supervisor's.

1.2.2 Performance:

- The application quickly responds to the user.
- The application handles all the modules efficiently.
- The application works properly if internet access is strong.

1.3 Objectives

- To provide students to save time and efforts.
- Being the responsive that will provide proper platform to students.
- This application is helpful to resolve the headache of finding supervisor and project topic.
- To provide help and satisfaction about final year project and supervision also provide a proper guideline.
- To automate the process of Supervisor Selection in Comsats Attock.
- To help the students in decision for making about final year project.
- To enable students to select a supervisor on the basis of:
 - area of interest of student.
 - area of expertise of supervisor.
 - feedback provided by students.
- The system will provide better communication between the student and the supervisor.
- Usage of this application will help to reduce timing in students and supervisor difficulties.

1.4 Scope

Currently there is no standalone application in our university that suggests the supervisor and project with some constraints and limits that is so time consuming. Students went door to door for the selection of supervisor. Students cannot get proper channel for their project and supervision need. So, our selection system resolve this problem and provide great help to students in selection of supervisor on the basis of profile alone with their number of vacant slots. To overcome all these problems we design this application that will provide an online platform to search for willing supervisors along with an interesting ideas set.

1.5 Features

- Select supervisor on the basis of experties.
- Supervisor upload new own ideas.
- Student also upload his/her ideas.
- Student's Feedback/ rating.
- Students and supervisors chatting.
- Admin approve and disapprove the users.
- Admin Add the batch and disable the batch.

Chapter 2

Literature Review

2 Literature Review

In this part, we discussed some previous work that is somehow related to our current application from which we can get a new idea for our application with some new and unique features. Several applications were developed in past for final year project but all these applications were created and controlled by their admins who can only allowed adding into application. Like Existing system, fyp management system, field master supervisor, UTAR and MMU FYP portal

2.1 FYP Evaluation System

This system works manually so it contains several issues. It is inefficient and also time consuming to manage all the activities of Final year project manually. Manually result calculation might contains errors and also it takes more time. No direct communication between supervisor and students is possible. In today's world, nobody takes an initiative to look for notices which are displayed on the notice boards. Notifications are displayed on the notice board many students miss the information related to their Final year project also the students are not keep track of their final year project activities under their Supervisor's supervision. No record maintain of any project progress. No repository is maintain during the whole project data loss is not retrieve back.

COMSATS INSTITUTE OF INFORMATION TECHNOLOGY (CIIT)				FYP Evaluation Form		Date:	
Project Title		Name of Student		Student ID S/N	Student ID S/N		
Name of Student				Star	Star		
S. No.	Evaluation Criteria	Very Good		Good		Pass	
		External		Internal		Supervisor	
		1. Introduction (including problem statement and methodology)		2. Description of method (including data collection and analysis)		3. Preliminary Results (including results, tables, etc.)	
		4. Final Project (including conclusions and confidence during Q&A session)					
		Total		Overall Decision (Based on the best)		Comments must be provided if decision is either one of these two categories	
Comments for candidate's reference/Improvement		SATISFACTORY		SATISFACTORY (with minor deficiencies)		SATISFACTORY (with major deficiencies)	
Name of Examiner:		Name of Internal:		Name of Supervisor:			
Signature of External		Signature of Internal		Signature of Supervisor			

Figure 2. 1FYP Evaluation System

2.2 FYP Management System

FYP management system is web based application which working quite close to our project application. 'FYP Management System' in this project we will tries to develop an online platform which facilitates the final year projects (FYP) student to communicate with their supervisor more efficiently. In the FYP Management System, each user can registered and login to their profile through their registration id and password. This will help the student to upload their proposal and documentation to the system and view any notification in their message box in the profile. Supervisor registers their student. With the help of this system, student and supervisor view the deadline about the FYP activities. But in this system, the selection of supervisor is not based on his expertise.



Figure 2. 2 FYP Management System

StudentRegNo	StudentName	RegistrationStatus	Remove
FA17-MCS-1	Aqsa Hameed	1	<input type="button" value="Remove"/>
FA17-MCS-40	Fazila Malik	0	<input type="button" value="Remove"/>

Figure 2. 3 Project Registration view

2.3 Field Master Supervisor

Field Master Supervisor is an Android application which uploaded on Google play store by a random person. This android based application which working quite close to our project application. In this application, Firstly all the supervisors need to register into the system using registration form, then registered supervisors can login into the system using their username and password to get authenticated. Field master supervisor system will provide profile of supervisors, list of all past team task which they supervised. Field master supervisor allows the managers to supervise their team remotely. But in this system does not have a selection of supervisors.

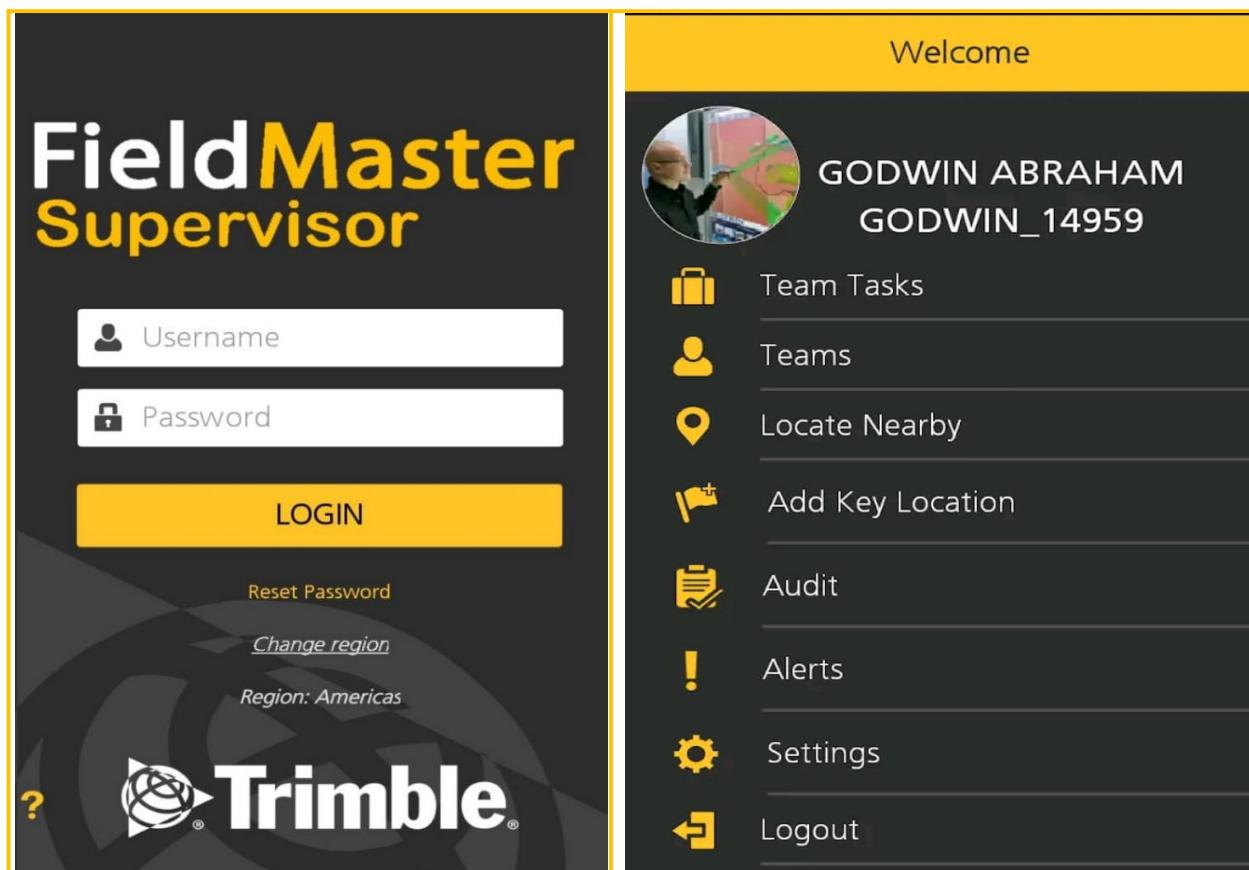


Figure 2.4 Field Master Supervisor and Supervisor's Dashboard

Figure 2. 5 Supervisor's Dashboard and Supervisor's Dashboard

2.4 UTAR and MMU FYP portal

UTAR and MMU FYP portal is web based application which working quite close to our project application. Both of them have the announcement and update portion for the students taking final year projects. In MMU university portal the students can feedback on the portal to the management team. MMU also have the feature to search the supervisors based on the project title.



Figure 2. 6 UTAR FYP portal

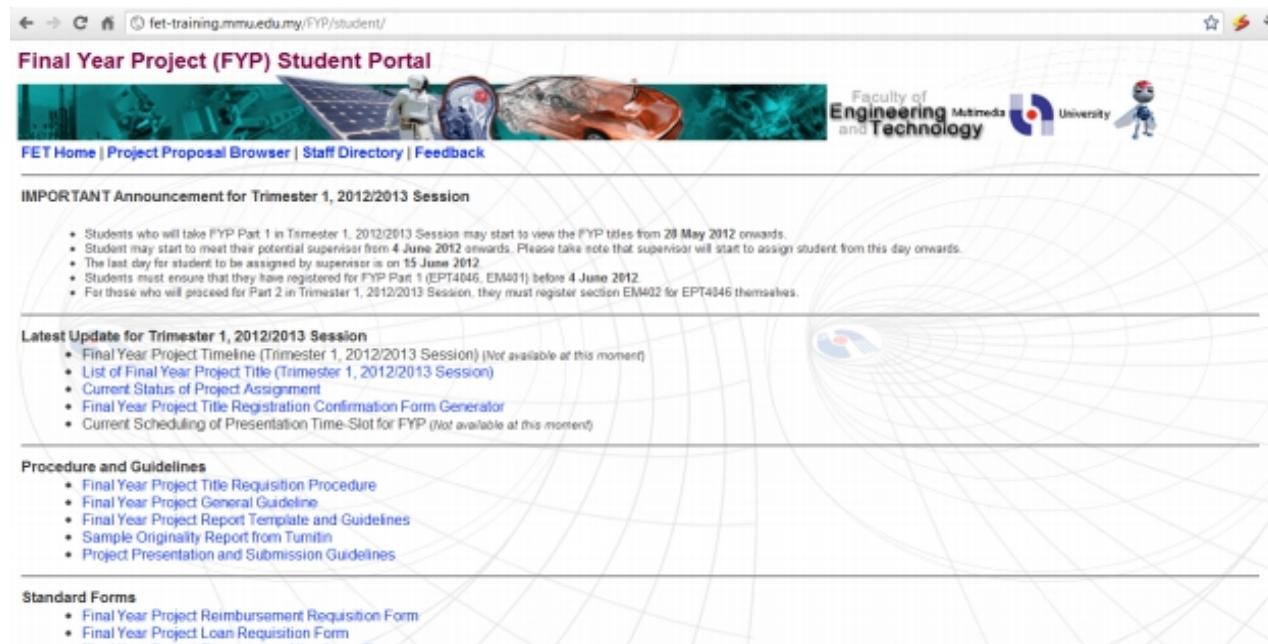


Figure 2. 7 MMU FYP portal

2.5 Related work

Table 2. 1 Comparison Table

Features	Supervisor's Profile with details	Project ideas posted by supervisor	Provide all available supervisor's list	Vacant-occupied slots of supervisors	Student's feedback About supervisors
Field-Master Supervisor selection	Yes	No	Yes	No	No
FYP Evaluation System	Yes	No	No	No	No
FYP-Management System	Yes	No	Yes	No	No
MMU FYP portal	Yes	No	No	Yes	No
Supervisors Xpress	Yes	No	Yes	No	No
Schoolgirl supervisor Extended	Yes	No	Yes	No	Yes
UTAR FYP portal	Yes	No	No	No	No
Supervisor Selection System (Own App)	Yes	Yes	Yes	Yes	Yes

Chapter 3

Requirement Specification

3 Requirement Specification

In this chapter we explain the services, features and operations that our project application in complete details. In this chapter we explain our system functional and non-functional requirements in form of paragraph of statements and in upcoming chapters we will define system requirements graphically with the help of use cases and other diagrams. Requirements are gathered to document analysis and interviewing techniques. The main reason to choose these techniques is unavailability of exact same system. It is so, because of security and privacy of the universities that have similar systems.

“Systems that have information about students, projects and supervisors will not be published to the public.” (WIFI notes,2012)

Another reason to chose interview as requirement gathering technique is that it would be enough and detailed to interview the actual users of the system because they will be using the system. The actual user will be able to precisely describe the requirement of the system.

3.1 Functional Requirements

Functional requirements are the essential services that a system should do and how a developing system should react to specific inputs and how the output would be generated. In other words functional requirements specify the functionalities, features or the use of system from the perspective of its users or domain.

3.1.1 Students Registration

Table 3. 1 FR of Students Registration

Identifier	FR-01: Students Registration
Rationale	To save the record of each user separately.
Summary	Students will create their account by providing their details.

3.1.2 Sign In for Student

Table 3. 2 FR Student Sign In

Identifier	FR-02: Student Login
Rationale	To keep the record of signed in user for different operations in application and for security reason.
Summary	Students will enter their email and password and there is a mechanism that will determine if user is registered to application or not.

3.1.3 Modify Profile

Table 3. 3 FR Modify Profile

Identifier	FR-03: Modify Profile
Rationale	Users will need to change their profile for privacy issues or any other personal data.
Summary	User can modify his/her profile details like password, image, name .

3.1.4 View area of interest

Table 3. 4 FR View area of interest

Identifier	FR-04: View area of interest
Rationale	Students need to see the list of faculty members according to their expertise.

3.2 List of supervisors

Table 3. 5 List of supervisors

Identifier	FR-05: list of supervisors
Rationale	Students can view list of all registered supervisors of related field.
Summary	Student can scroll list of supervisors of different fields and choose one of them and view his/her profile then send request.

3.2.1 Supervisor's Registration

Table 3. 6 FR Supervisor's registration

Identifier	FR-08: Supervisor's registration
Rationale	To save the record of each user separately.
Summary	Supervisor will create their account by providing their details.

3.2.2 Sign In for Supervisor

Table 3. 7 FR Supervisor Sign In

Identifier	FR-02: Supervisor Login
Rationale	To keep the record of signed in supervisor for different operations in application and for security reason.
Summary	Supervisor will enter their email and cell number and there is a mechanism that will determine if user is registered to application or not.

3.2.3 Add own idea

Table 3. 8 FR Add own idea

Identifier	FR-06: Add own idea
Rationale	Supervisor can add His/Her own idea of final year project.
Summary	Supervisor can upload new ideas along with some details in the form of abstraction.

3.2.4 View Student's requests

Table 3. 9 FR view student's requests

Identifier	FR-02:View students requests
Rationale	Supervisors view student's requests and then accept or reject them.
Summary	Students view Supervisor's profile then send requests and supervisor can reject or accept their requests.

3.2.5 Chatting

Table 3. 10 FR Chatting

Identifier	FR-13: Chatting
Rationale	Students can chat with Supervisor for better communication.
Summary	Student can select supervisor from list and chat with them. They can also share pdf documents etc.

3.3 Admin

Table 3. 11 FR Admin

Identifier	FR-13: Admin
Rationale	To save the record of each user separately and approve users.
Summary	Admin login into the system and monitor accounts, approve or disapprove users,manage repository,add,disable batches also

3.3.1 Project's repository

Table 3. 12 FR Project's repository

Identifier	FR-13: Project's repository
Rationale	To save the record of previous projects.
Summary	All projects stored in this repository along with short detail of abstraction. Selected projects add with previous projects after completion and stored in this repository.

3.4 Non-Functional Requirements

These requirements specify the criteria that can be used to judge the operation of a system, rather than specific behavior. It ensures the quality of a software. It essentially specifies how the system should behave and the constraints upon the system.

3.4.1 Validation

Table 3. 13 NFR Validation

Identifier	NFR-01: Validation
Rationale	To validate application users and details that user can enter while login or sign up.
Summary	When user can create new account the validations are require to ensure that user can enter details according to following pattern.

3.4.2 Security

Table 3. 14 NFR Security

Identifier	NFR-02: Security
Rationale	To secure the data and privacy of proposed application users.
Summary	Registered users data are saved securely in firebase and no user will be able to access the data of any other user.

3.4.3 Usability

Table 3. 15 NFR Usability

Identifier	NFR-03: Usability
Rationale	System can be easy to use by all of his users and organized in such manner that user errors will be decreased.
Summary	Application has user friendly and understandable enough by all users. So users can easily perform all operations.

3.4.4 Availability

Table 3. 16 NFR Availability

Identifier	NFR-04: Availability
Rationale	To ensure system is available to its users all time.
Summary	System will be available to users all the time if there is an internet connection. Internet is required for system availability.

3.4.5 Performance

Table 3. 17 NFR Performance

Identifier	NFR-05: Performance
Rationale	System performance will be efficient.
Summary	Average response time of system is shorter so users don't get bored or frustrated by application and left to use it.

Chapter 4

Project Design

4 Project Design

Project design is phase in which we discuss the design of a system in complete details with the help of different diagrams. For every system for every system to work correctly or properly, the design of that system must be correct. Project design helps to minimize major risks of system development. Following chapter describes the design of **Supervisor Selection System**. We use many diagrams in this chapter for increasing the understandability of our system.

4.1 Methodology

We are using incremental model for the development of our project application. The incremental model can divides the whole system into smaller parts called increments and each increment has its own feature or functionalities, time duration and phases.

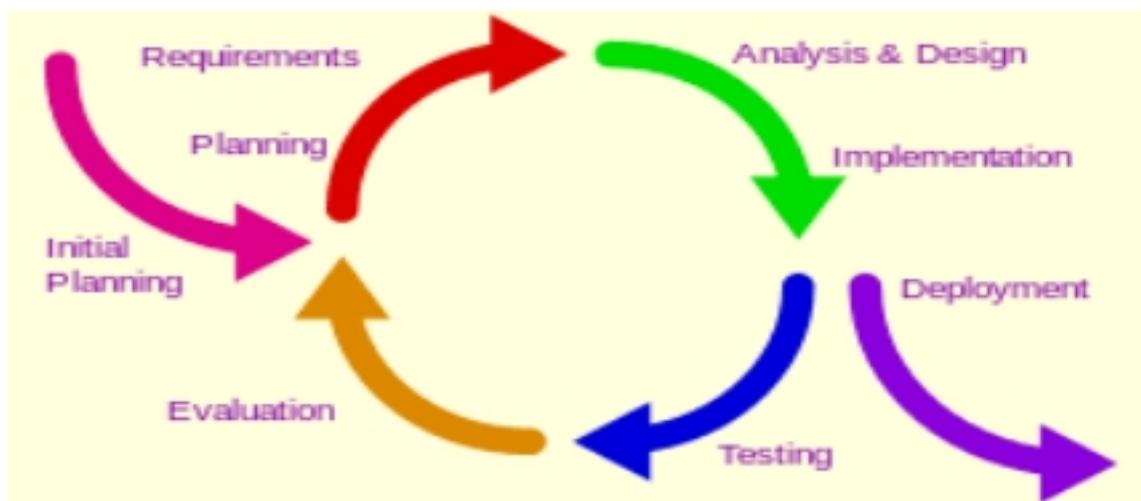


Figure 4.1 Incremental Model

We use incremental model for development of our project application in which requirements are break downs in smaller parts. And if our supervisor or invigilator supposed any changes then we can easily make those changes without changing in other modules.

4.2 Use Case Diagrams

Use case diagram represents the system with other elements those are involved in system.

4.2.1 Use Case for Students

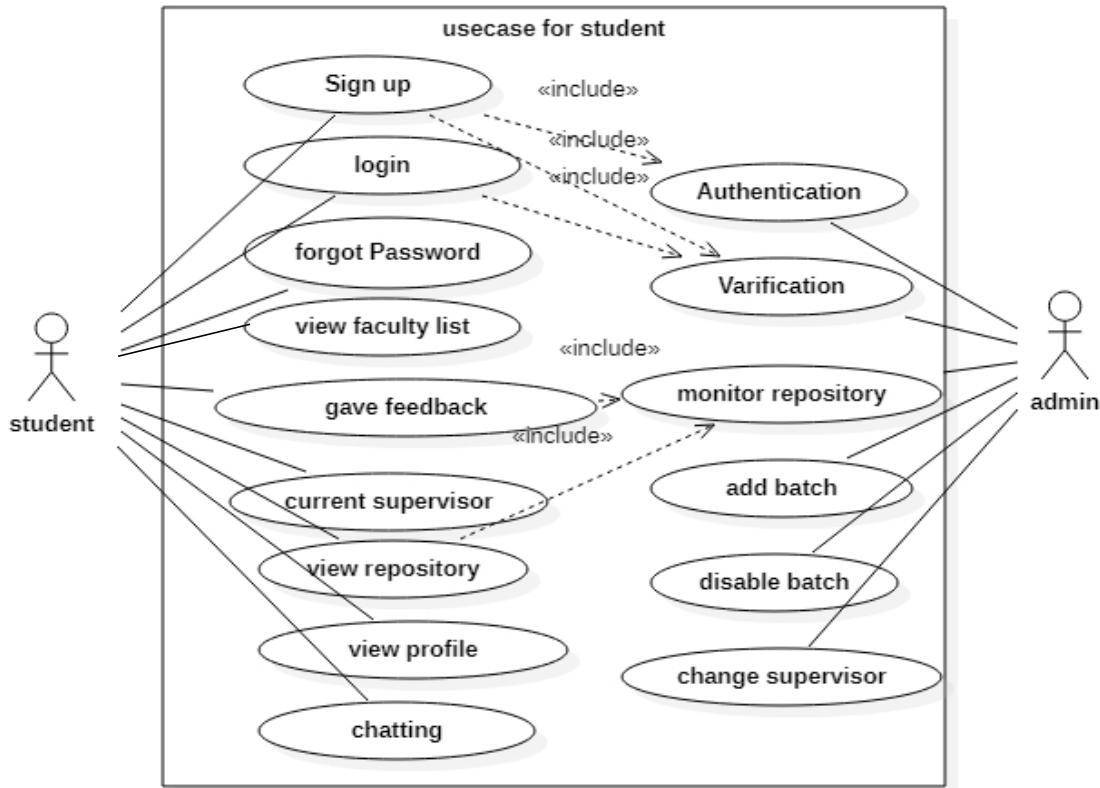


Figure 4. 1Use Case for Students

4.2.1.1 Sign up

Students sign up by filling the page write their email and password .if email is authentic then added in database if email is already register then display a message that already registered.

4.2.1.2 Login

Students can login by writing email and password, if same then login successfully otherwise incorrect details message appeared.

4.2.1.3 Forgot password

If student forgot password App provide the facility to correct it which required correct email which already registered in firebase.

4.2.1.4 View list

After successfully registration, student get list of supervisors according to platform choices.

4.2.1.5 Select supervisor

Students select one of them according to interest

4.2.1.6 View profile

Student view supervisor's profile ,firstly check His/Her numbers of available slots select their proposed ideas of Fyp or student also add his/her own idea of fyp on the basis of interest.

4.2.1.7 Send request

Student send request to selected supervisor.

4.2.2 Use Case for Supervisor

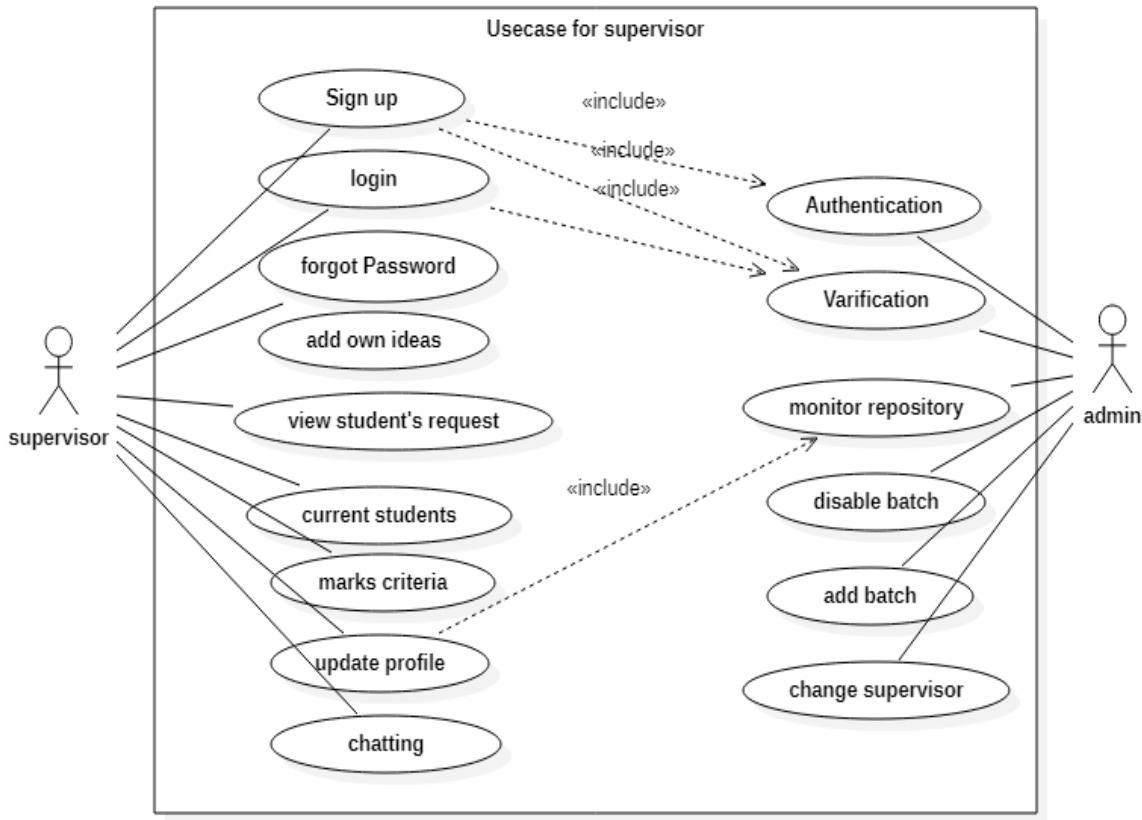


Figure 4. 2 Use Case for Supervisor

4.2.2.1 Sign-up

Supervisor enter details and credentials and credentials submitted in firebase for check authentication.

4.2.2.2 Login

Supervisor can login by writing details and password login is used for verification, if details are match with the firebase system then supervisor login successfully otherwise incorrect details message appeared.

4.2.2.3 View and update profile

Supervisor view profile and update it by including their available slots ,current fyp students list and also offer new ideas,check students requests.

4.2.2.4 View student's requests and chatting

Supervisor check new requests of final year students then accept and also discuss with them in detail through chat room.

4.2.2.5 Marks criteria

Supervisor also include marks of final year project of previous students which is very helpful for new students in the selection process of supervisor.

4.3 Activity Diagram

Activity diagram represents the flow of activities and actions. These can be shown in it.

4.3.1 Student Activity Diagram

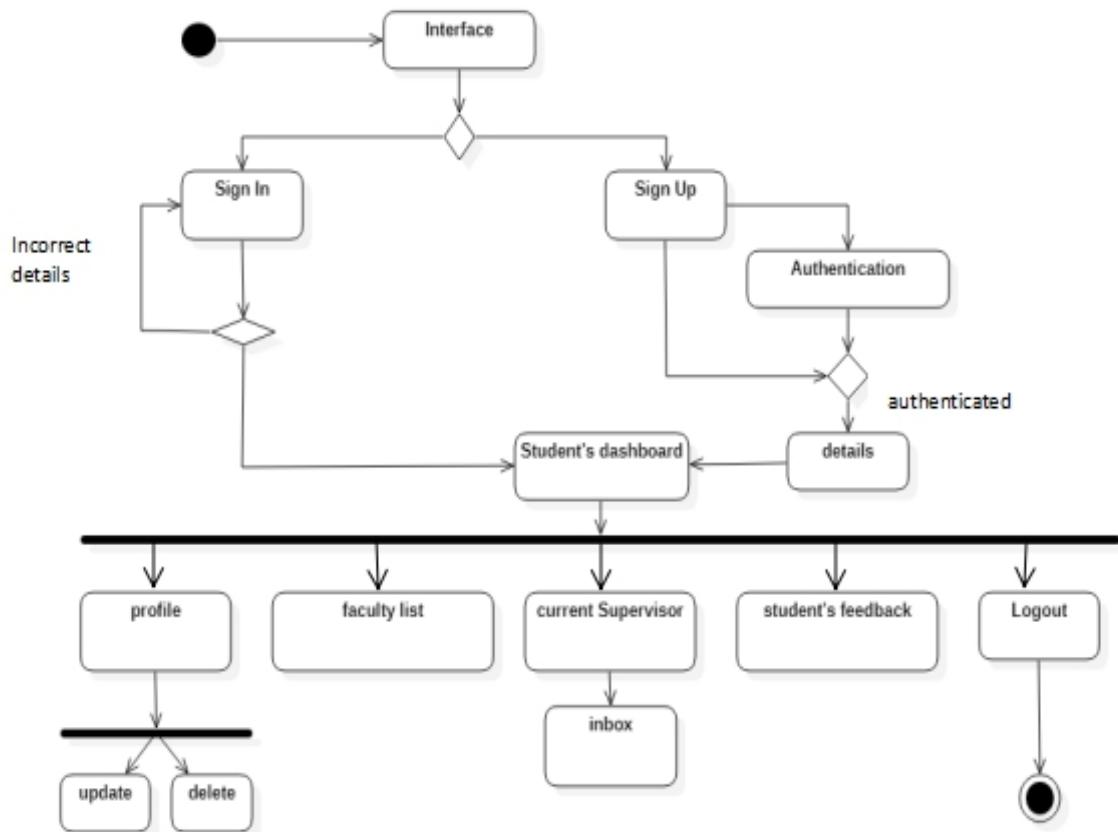


Figure 4.3 Activity Diagram for Student

Above figure show the activity of student in supervisor selection system. First of all student login screen appear for students. If he or she correctly type details with password and after authentication process he or she will be added or registered in System. After successfully registration dashboard appear as profile which included list of supervisors including His/Her specialization and free slots student can select one of them and send request.

4.3.2 Supervisors Activity Diagram

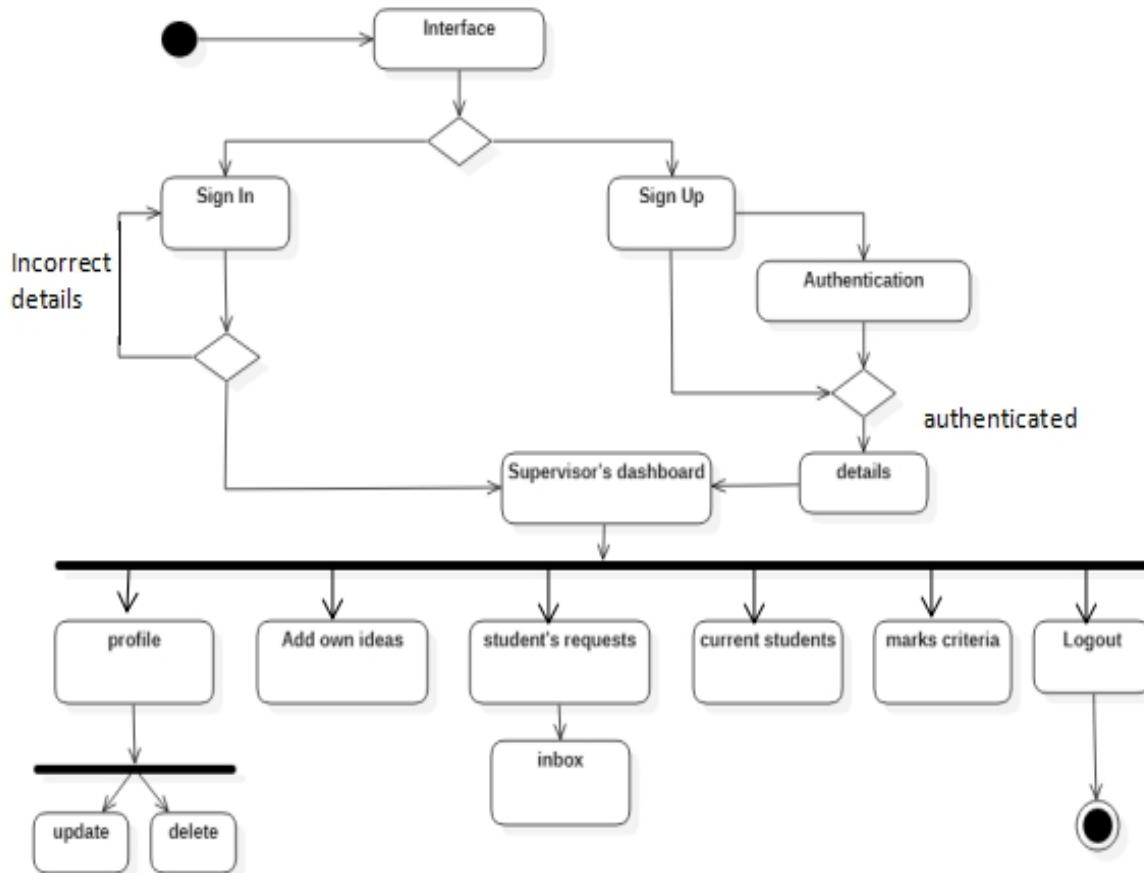


Figure 4.4 Activity Diagram for supervisor

Above figure show activities of supervisors. First of all login screen appear if then after authentication and verification process supervisor view faculty member dashboard ,own profile in which He/She view student's requests and also new student's requests.

4.4 Sequence Diagrams

Sequence Diagrams show elements as they interact over time and they are organized according to object (horizontally) and time (vertically).

4.4.1 Students Sequence Diagram

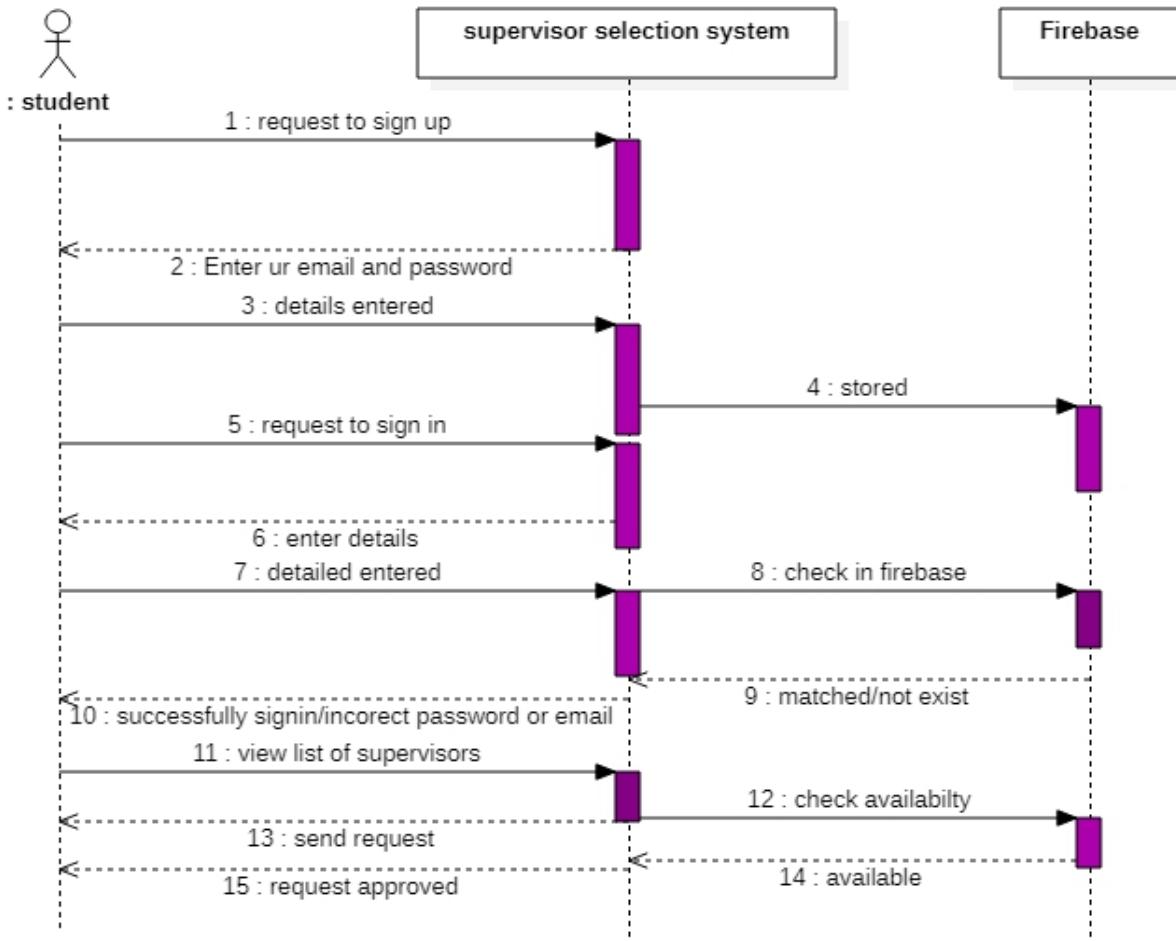


Figure 4. 5 Sequence Diagram of Students

Above figure shows sequence of student's all activities that how he/she entered in this Application by fulfilling the requirements .First of all student requests to sign up on the basis of email and password after entering the detail record would be stored then he/she get sign in and after verification He/she select any supervisor check available number of slots and then send request.

4.4.2 Supervisors Sequence Diagram

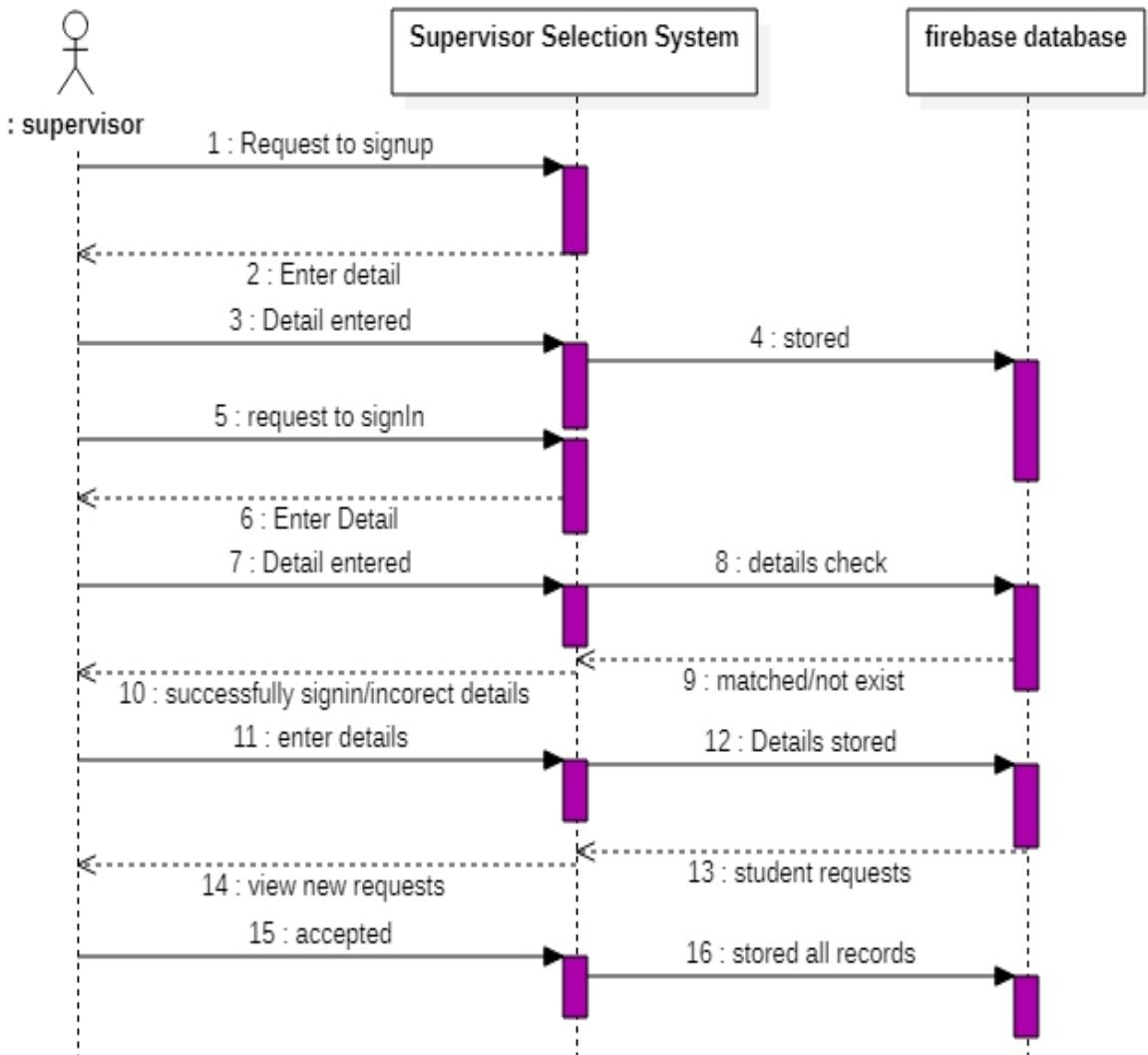


Figure 4. 6 Sequence Diagrams for Supervisor

Above figure show the sequence for supervisor. First of all supervisor request to sign up and then after authentication and verification supervisor view His/Her profile and student's requests also update His/Her profile and records store automatically in firebase, as previous project's records along with their marking summary.

4.5 DFD (Data flow diagram 0 Level)

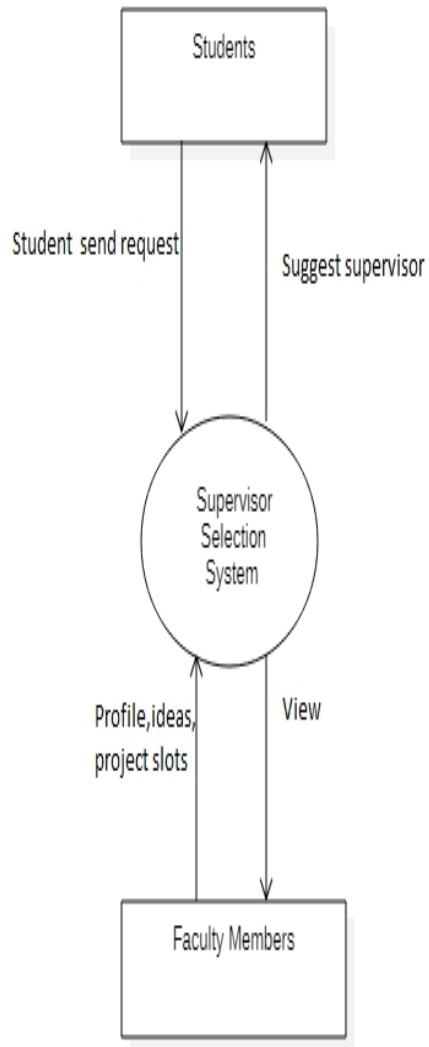


Figure 4. 7 DFD (Data flow diagram 0 Level)

Above figure shows the basic working of supervisor selection system in which a student get supervisor and can send request to supervisor through selection system and on the other hand faculty members interact with selection system after successfully registration supervisor view and edit His/Her profile by adding new ideas time to time and available slots also mentions and student can view it easily and supervisor handled student's requests accordingly.

4.6 DFD (Level 1 diagram)

A level 1 data flow diagram (DFD) is more detailed than a level 0 DFD. This is deep view of Supervisor Selection app functionalities. All functionalities are given in this deeply.

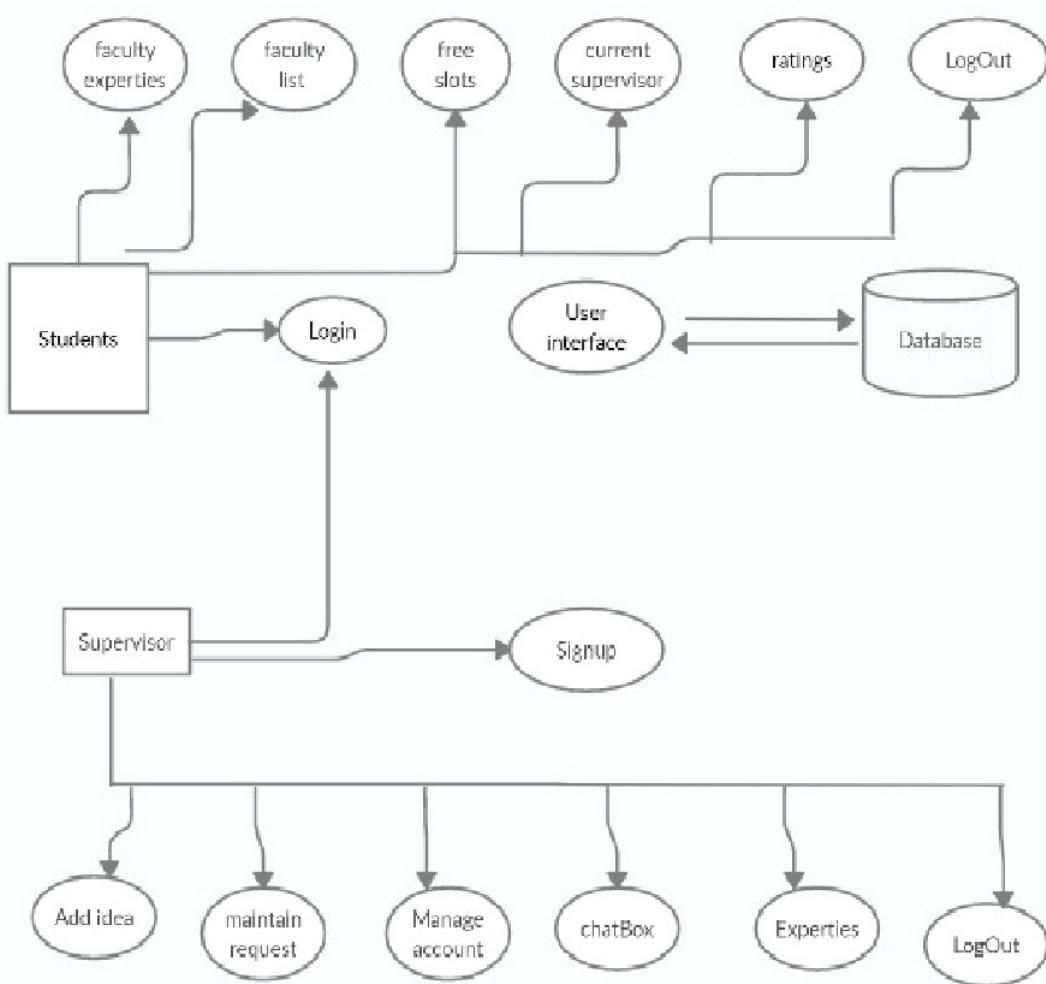


Figure 4. 8 DFD (Data flow diagram 1 Level)

Chapter 5

IMPLEMENTATION

5 Implementation

In this chapter we are going to discuss about the tools and technologies that we used during the development of the project. The implementation phase is important because at this stage the idea start converting to a physical form. Each module of our project will be developed in this phase. Each module will be developed in separate function which leads to independency. Code modification is made easy by creating modules. Also, bugs can be fixed easily. Reusability is also a factor that modules provide.

5.1 Tools and Techniques:

Tools are essential requirement for software development, a software developer cannot write programming code without tools. Technologies are also essential for development of software. Technologies provide basic building blocks for software development.

5.1.1 Languages

- Java[17] (For back end coding)
- XML[12] (For front end designing)
- Python

5.1.2 Data Access

- Firebase Database[1][4]

5.1.3 Software Requirements

- MS Word
- MS PowerPoint
- Start UML

5.1.4 Hardware Requirements

- Intel® Core™ i5
- Android cell phone (Minimum Lollipop 5.0 version OS)

5.1.5 Tools

- Android Studio[12]

5.1.6 Android Studio

It is a software that is designed for special purpose of android system. On 2013, 16 May android studio was announced at the Google I/O conferences by Google products manager. Following are the features provided in current version of android studio

- It provides android specific refactoring (A process of restricting existing computer code).
- It supports to build android wear applications.
- It also have Android virtual device to run applications in android studio.
- It have Gradle based built support.

5.1.7 Android Gradle Plugin

Android gradle plug-in contains several features that are helpful in building specific android applications. In android studio there are plug-in and gradle, build system of android studio is based on gradle and plug-in can be run indecently or updated separately. Whenever android studio is updated a prompt message is displayed to upgrade android plug-in for gradle.

5.1.8 Android Application SDK

For our Android application API 15 is used. Minimum API is 15 required to build Supervisor selection project in Android studio.

5.1.9 Engineering Diagrams

Engineering diagrams are data flow diagram (DFD), Activity diagram, Sequence diagram, Use case Diagram. These all diagrams are already done in chapter 4.

5.1.10 Development modules

When engineering diagrams are completed, we started working in android studio.

5.2 User Interface

As our project is an android application so it is necessary to create interactive and understandable user interfaces, so everyone can easily use the application. It is important to develop creative and responsive screens that can target every android device. Below are the screenshots of screens of our project application.

5.2.1 Splash Screen



Figure 5.1 Splash Activity

Figure 5.1 shows the first screen of an application. This screen is called “splash screen”. When we run the application on our android device first we see splash screen for few seconds then we move to the main activity screen of our application.

5.2.2 Signup Activity

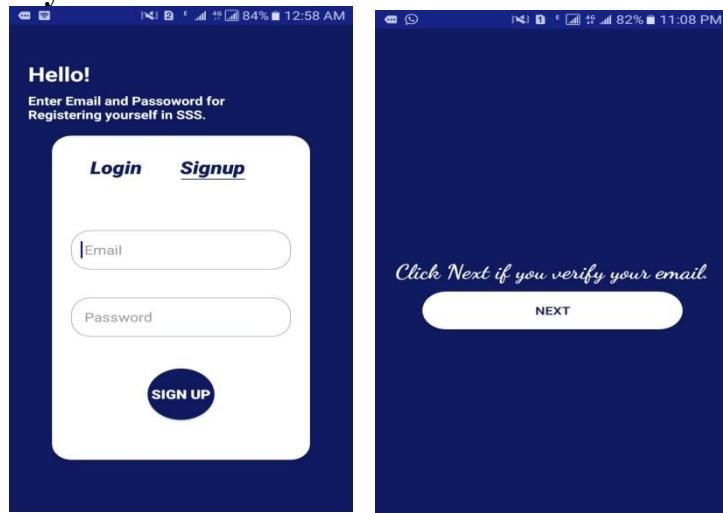


Figure 5.2 Signup and verification

In above figures user have to enter the email and password, user move towards tracking activity and on clicking sign-up button user move towards email page and verify mail notification by just clicking on it then click on next button after proper verification

5.2.3 Registration Activity

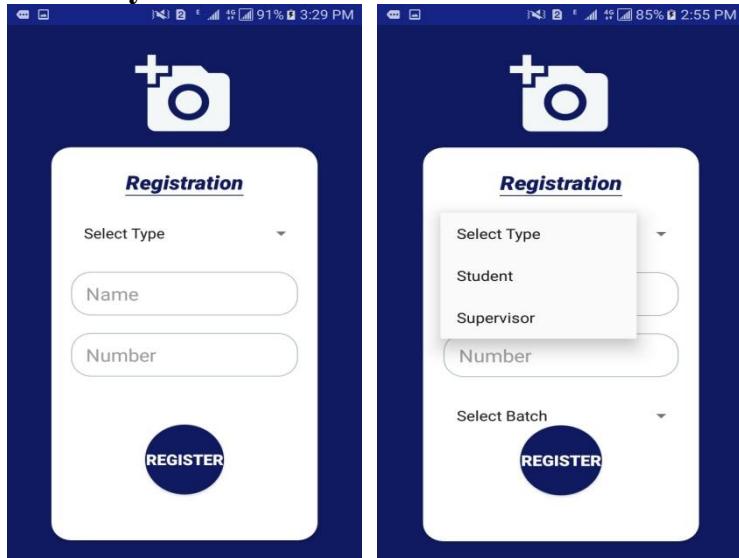


Figure 5.3 Registration Activity

Registration page appears when User verify himself as a user. In these figures user have to select type that either he is supervisor or student, user move towards on clicking type of user from drop down list.

5.2.4 Student Registration Activity

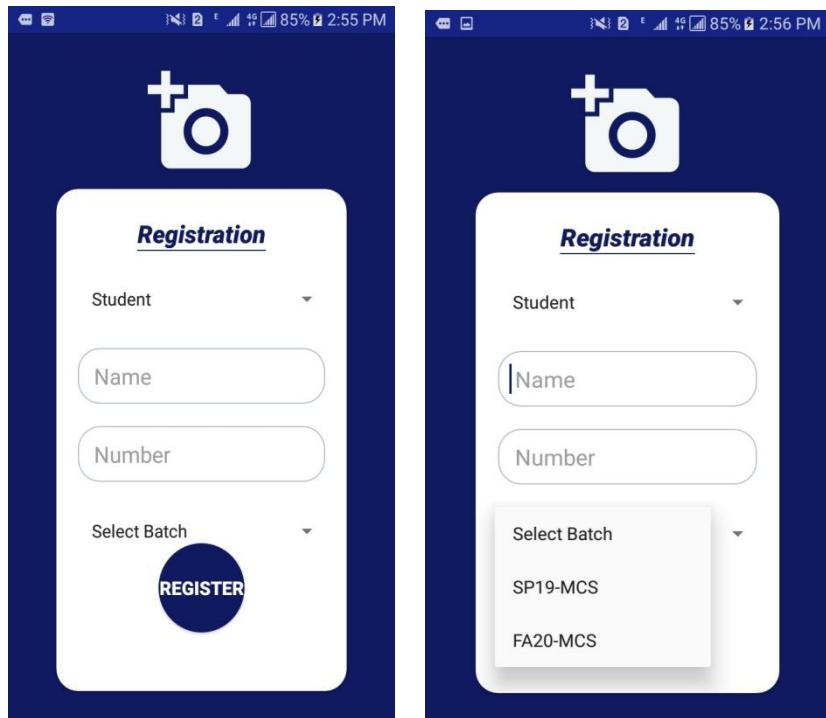


Figure 5.4 Student Registration Activity

If user select type as student from previous activity then this display will be shown as in above figures then student select batch and then enter his/her official email and password.

5.2.5 Student's Login Activity and Dashboard

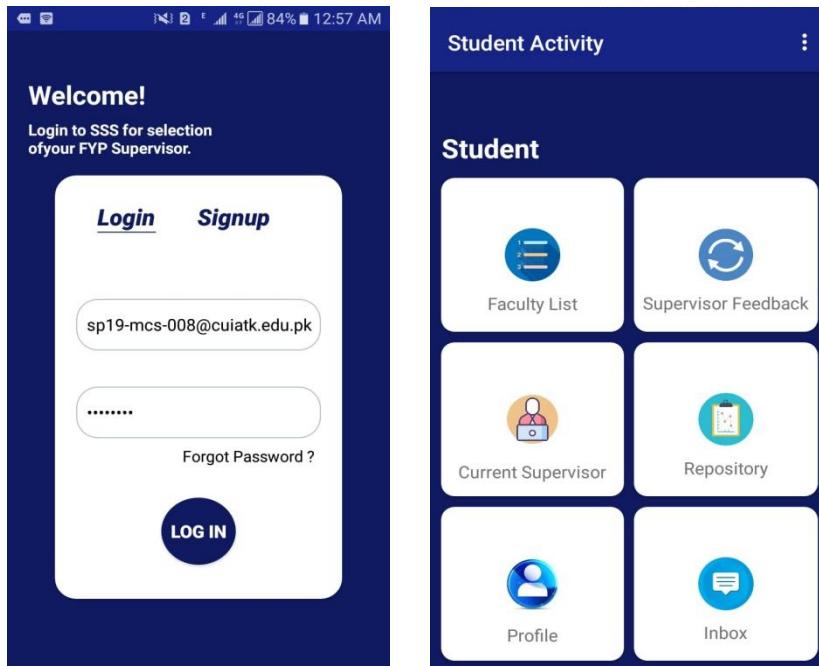


Figure 5. 5 Student login Activity & dashboard

Above figures shows that when student register himself in this application and admin approve this user successfully then student easily login himself and move towards students dashboard where he found following icons as faculty list on the basis of expertise and supervisors feedback as if student send request to any supervisor and supervisor accept his request successfully then this supervisor will move in current supervisor icon and in student dashboard students can also get easy access of previous completed projects repository ,also update profile and chat with supervisor efficiently.

5.2.6 Category selection and Supervisors' list

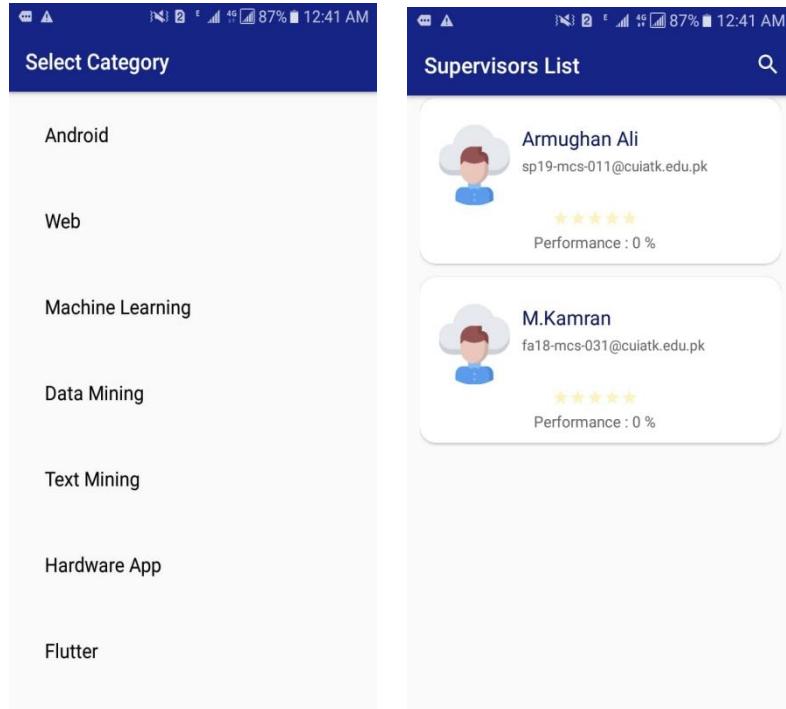


Figure 5.6 category selection and supervisors list

After selection faculty list following display will be shown in which different categories are mentioned according to expertise basis and after selection of specific field as android or web following list will be display as in above figure.

5.2.7 Supervisors details and add idea

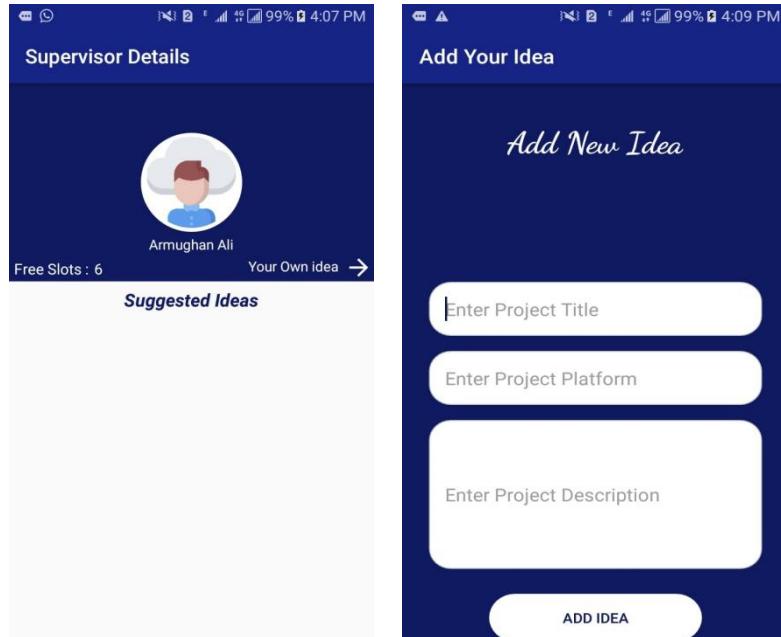


Figure 5. 7 supervisors details and add idea

In these figures Student will be able to see complete details of supervisors as like their number of available slots and their suggested ideas if they offered and it will be the student's choice either he select supervisor's offered idea or he gave his own idea by clicking on your own idea option and then he enter project title ,project platform and project description then if this ideas will not match with previous done projects then it will be successfully added and student would be able to send request to that supervisor.

5.2.8 Supervisors feedback and rating

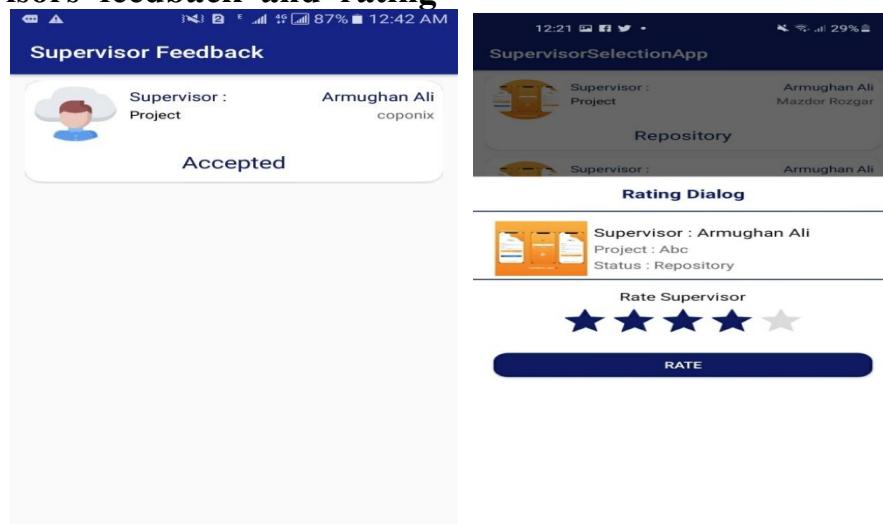


Figure 5. 8 supervisors feedback and rating

Above figures show that by clicking on student feedback student get response from supervisor and after project completion students can gave rating as a feedback to supervisor. Maximum rating is 5 star and 5 max stars are for good and min stars are for bad upto 1 star.

5.2.9 Current Supervisor and Repository

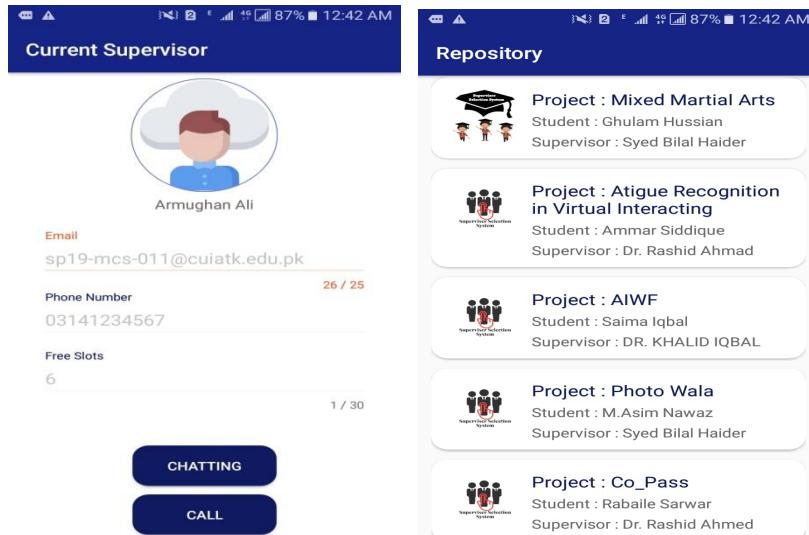


Figure 5. 9 current supervisors and repository

In Students dashboard after selection of any field student can view supervisors of that specific field and after acceptance of request he/she can found his/her current supervisor and student would be able to see previous projects repository.

5.2.10 Supervisor's Registration and expertise selection

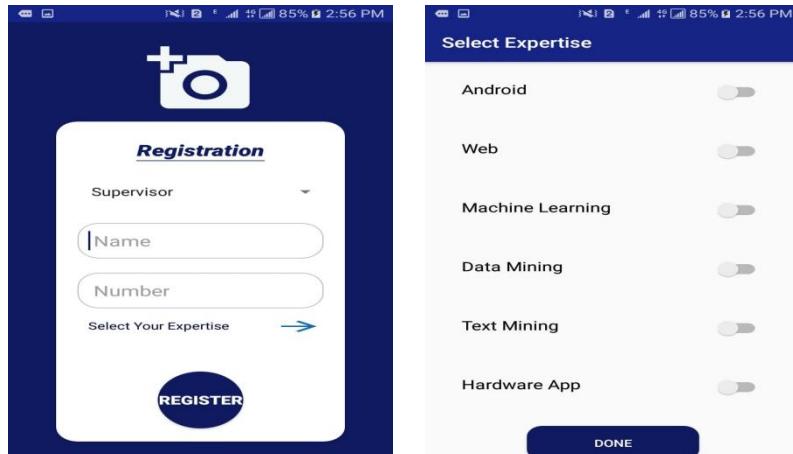


Figure 5. 10 supervisors registration and select expertise

Now above figures shows that if user select type as supervisors then he would firstly select his expertise as in which category he is expert the most here supervisor can select multiple categories also as if he is expert in data mining as well as in machine learning also.

5.2.11 Supervisors Login and Dashboard

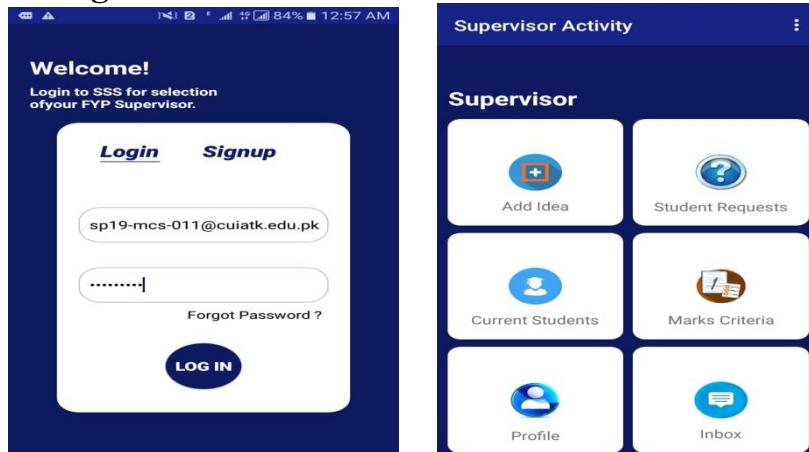


Figure 5. 11 supervisor login and dashboard

Above figure shows that Supervisor logged in but after proper successful verification process and also approved by admin then supervisors dashboard will be appear which consists on following activities as profile supervisor view and update his profile any time ,supervisor add his new idea and by clicking students requests tab supervisor can view students request if he accept them then those students would be shifted in his current students .After proper completion supervisor gave marks to students .

5.2.12 Supervisor profile and add new idea activity

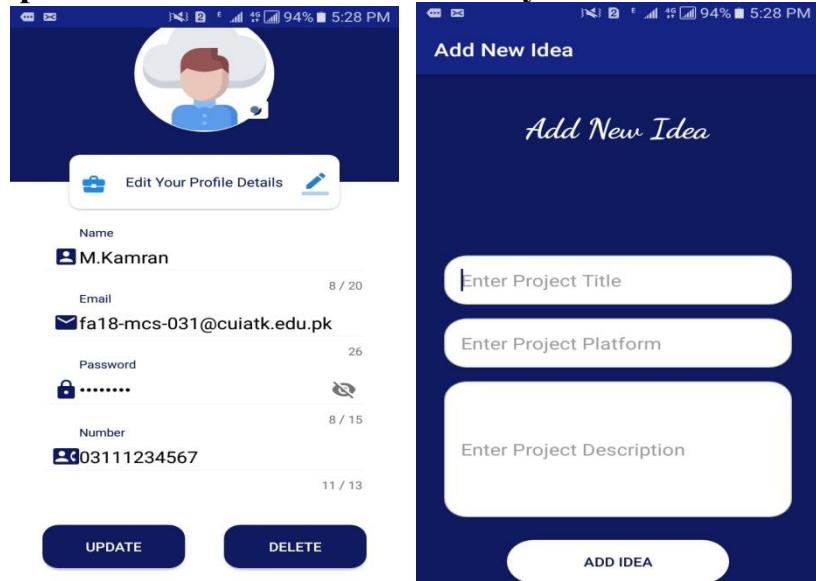


Figure 5. 12 Supervisors profile and add ideas

These activities are displaying supervisors profile ,supervisor would be able to update his profile and second activity shows that supervisor can add new ideas by clicking on add idea icon.

5.2.13 Students requests and chat list

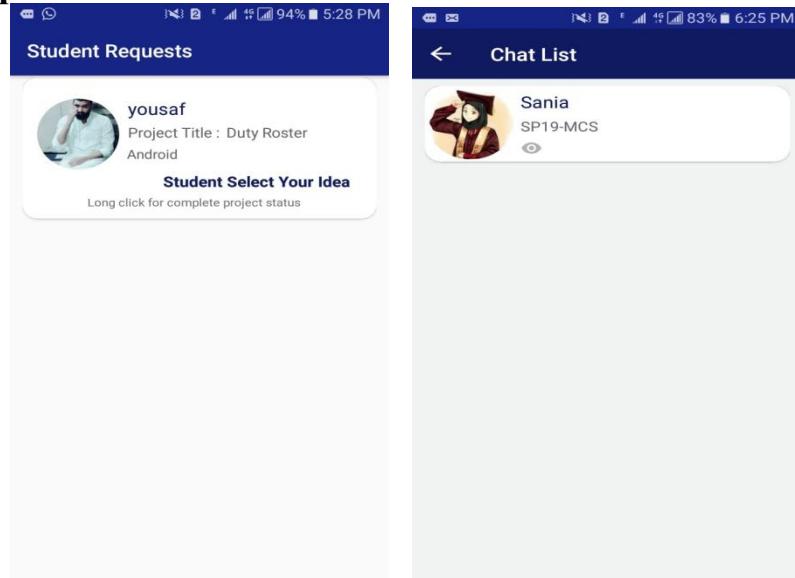


Figure 5. 13 students requests and chat list

According to above activities supervisor would be able to see student's requests and student can easily send message as well as student can upload any file with selected supervisor.

5.2.14 Current student list and assign marks

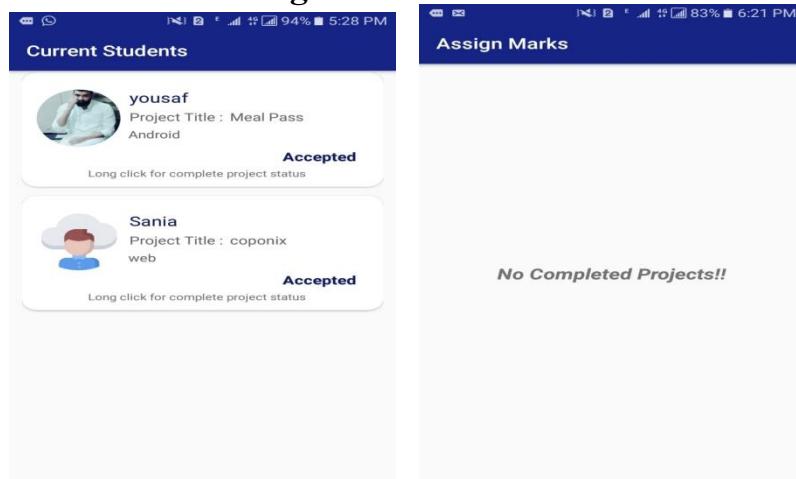


Figure 5. 14 current students list and assign marks

Above figure is for displaying list of current students that a supervisor has accepted for their FYP, and when student completes his final year project, supervisor would be capable to assign marks to them but here yet no project is in complete state so no completed project record would be displayed now.

5.2.15 Admin Login and dashboard

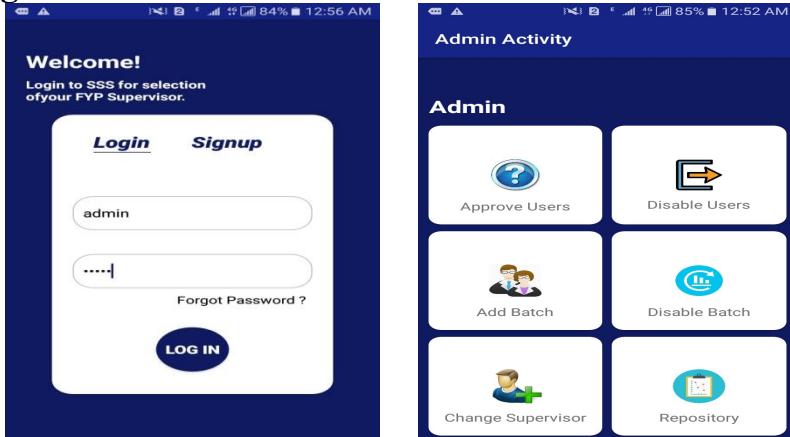


Figure 5. 15 admin login & dashboard

Admin firstly logged himself in the system then dashboard is appear, which is for admin use only, it is shown in above figure from this activity admin can approve user as if user is part of comsat university or not, disable user in case when student has completed his degree along with successful final year project, disable batch if admin want to make disable all students as a whole, add batch while new session will be started, change supervisor in case when any supervisor leave university due to any issue and manage repository.

5.2.16 Disable User and change supervisor

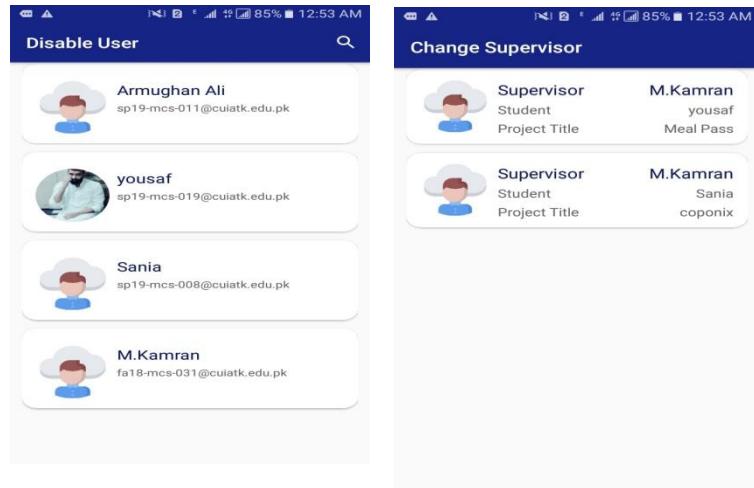


Figure 5. 16 Disable User & change supervisor

This activity is for disable user that admin does not want in its Application anymore and change supervisor if any one leave university due to any reason.

5.2.17 Add batch and Repository

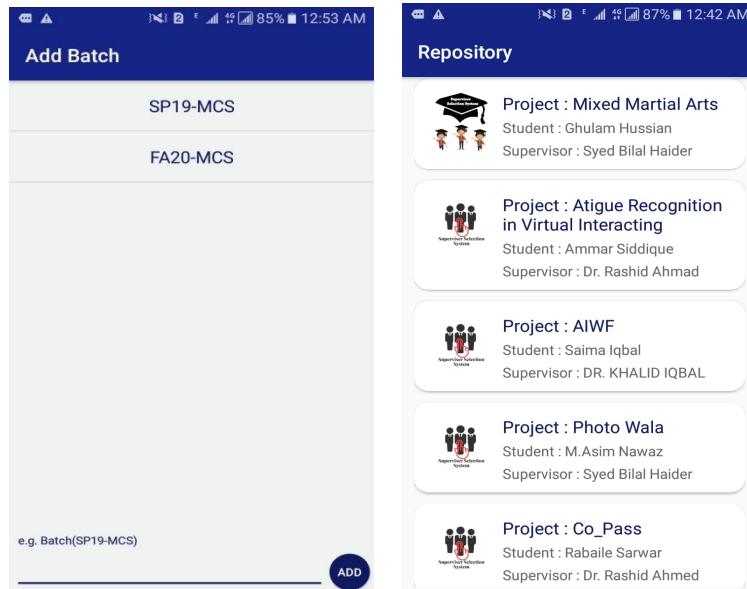


Figure 5. 17 add new batch & Repository

These figures shows that how admin add new batch and here we also store repository of previous projects .

5.2.18 Disable Batch

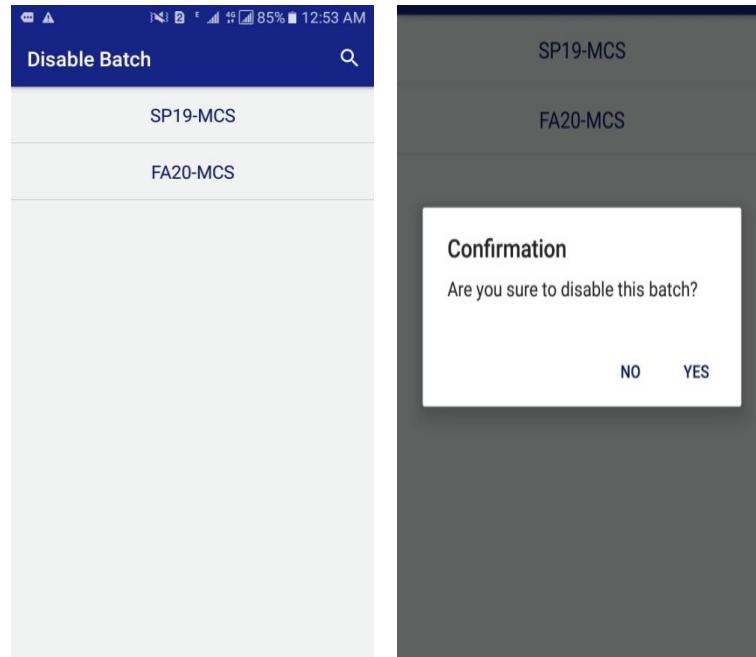


Figure 5. 18 Disable batch & Confirmation

This activity is for disable any batch as shown in figure above when admin click on disable batch a pop up menu will appear for confirmation or cancel. Admin select according to his choice.

Chapter 6

EVALUATION

6 Evaluation

In this chapter, we evaluate our android application by applying different test cases to check the working of application. It is a primary goal to check the results of all modules that whether these modules are working properly or not. Throughout development it is necessary to check the effectiveness of the system we must have to perform some evaluation techniques. It is important because we must check whether the system is working properly or not and to examine that the requirements we have mentioned in chapter 3 are fulfilled or not. So, evaluation is beneficial for project current progress and for its future work also.

6.1 Testing

Testing is very important phase of the development of software system. Testing strategies are used to verify the functionalities of the system. Testing strategies are building with the help of different test cases. If test cases give the desired result then it means module working properly or vice versa. As testing is more important feature, therefore we did testing in each step of implementation. We run application in different android mobile to validate the functionality of each module.

6.1.1 Black box testing

Black box testing is a type of testing technique, in science black box is refer to a device which can be viewed only in terms of its input, output without knowledge of any internal working. In this type of testing tester test the behavior of system by giving input and looks output on the screen. They are external users who test the system according to their requirements. Black box testing also considered as functional testing because testers just check the functionality of the system that they are getting the desired output when they insert input commands. They don't know that how the program arrives at those results. There are many advantages of black box testing some of them are:-

- Testers (External users) do testing according to the user's point of view. In this way hidden errors figure out easily.
- For testing there is no need to have internal knowledge of implementation.

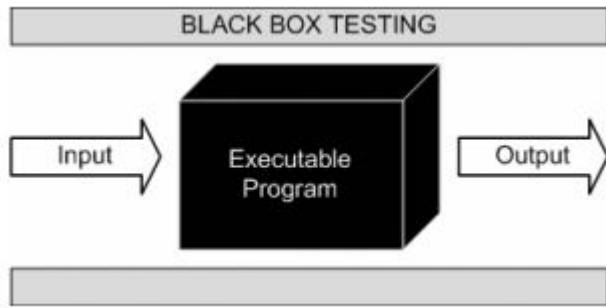


Figure 6. 1 Black Box Testing

Application of Black Box Testing in developed System

In black box testing as we discuss above tester did not know internal code instead he/she can run different input test cases on system and view its behavior. We ask several users such as classmates to install our project application and we also install project app on our smartphones and perform all the functionalities and record the feed backs provided by users and note down every single response and result of testing. At basis of feed backs by user and input test cases run by ourselves we comes to that system pass all the test cases.

6.1.2 White Box Testing

White box testing is also known as glass box or structural testing. This type of testing is use to test the internal structure or working of application. In this type of testing, tester has visibility of internal structure and implementation. For operating white box testing, internal perspective and good programming skills are required. We use this testing type to find out logical mistakes and to optimize the code as much as possible. In this type tester give input to system and track the path from where input is converted to output. White box testing is done by developers who have internal knowledge of coding. This testing is done parallel with coding because developers find out the main problems where the errors arise. White box testing aim is to perform testing on each and every aspect of programming logic so that no logical error or run time error arises.

Advantages are given below:

- As developers and supervisor have more internal knowledge therefore test cases are easily derived.
- Code optimization is done by finding the hidden errors.

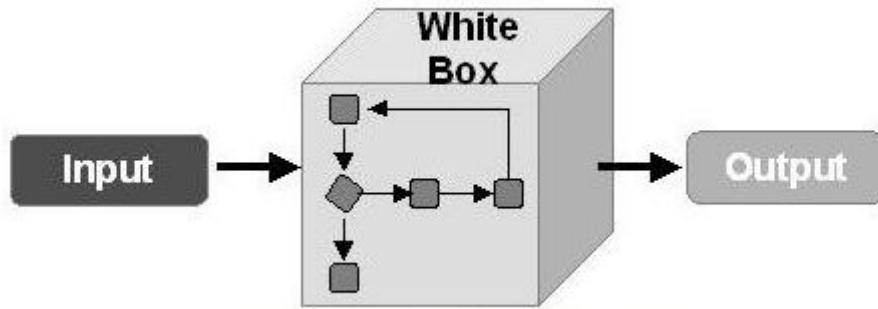


Figure 6.2 white Box Testing

Application of White Box Testing in developed System

In white box testing as we discuss above tester has the knowledge of internal code of the system. We can verified our project internal code structure by our supervisor who has good quality skills in programming and also verify the system code structure by programming teacher of our university and developers. They guided us some logical improvements and we made the changes according to these improvements then again verified by the same people.

6.1.3 Unit testing

Unit testing is a type of testing in which units or parts of system tested separately. Unit testing is something in which each module of the system can be checked independently to examine its accuracy and performance with the pre-requisite conditions and functionality of the application mentioned in the above chapters. We checked each piece of code, the expected problems, and bugs after each phase. And if the specific module is not working accurately or according to the expected performance, we try to sort out the problem and debug it to make it working properly.

6.1.4 Integration testing

As the application is developed in the form of different small modules and these modules are then integrated to form a specific application as one module depends on the second module. So, we have tested these modules by integrating them by specific testing techniques to confirm the effectiveness of the system.

6.1.5 Function Testing

Function testing is applied or used when software system is completely developed. In this phase we can check all functionalities of application that they provide required output or not. Requirement specification document is used by tester to determine where software is meeting its requirements or not.

Application of Function Testing in developed System

We can perform all functionalities of application after installing project app on different smartphones. For example in our application we can authenticate mobile number, check login signup constraints and all the features of application of shopkeeper, wholesale dealer, renter, market and supplier that they are working correctly or not.

6.1.6 System testing

In system testing we concern with all functional demands which we have already mention in our chapter 3. Functional requirements are the major keys of any system because if anyone is failed then our system will not work correctly and may be the system will fail or crashed.” We have tested each and every functional requirement to confirm that our application satisfy all that. We also test that all the features which we add in application like request generation, up vote/down vote criteria, marking criteria etc. is working properly.

6.2 Objective

The main aim of testing objective is to make sure that our application is free from blunders and logical errors. And it is ready for the proper use for the users. Testing is necessary to find the errors and remove them.

6.3 Test cases

6.3.1 Test Case (Student Login)

Table 6.1 Test Case (student Login)

<p>Test Case Name: Student Login Testing</p> <p>Project Name: SSS</p> <p>Precondition: Student must have login details</p> <p>Steps:</p>				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Student enters his/her official email and password	System checks the validity of email , password	As expected.	Pass
2	Entered email is invalid	Show warning of invalid email address	Warning showed	Pass
3	Entered password is invalid	Show warning of invalid password	Warning showed	Pass
4	Password field is empty	Show warning” password required”	Warning showed	Pass
5	Email field is empty	Show warning” email required”	Warning showed	Pass
Post Condition: Login form is working properly.				

6.3.2 Supervisor Login:

Table 6.2 2 Test Case (supervisor Login)

<p>Test Case Name: Supervisor Login Testing</p> <p>Project Name: SSS</p> <p>Precondition: Supervisor must have login details</p> <p>Steps:</p>				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Supervisor enters his/her email and password	System checks the validity of email and password	As expected.	Pass
2	Entered email is invalid	Show warning of invalid email address	Warning showed	Pass
3	Entered password is invalid	Show warning of invalid password	Warning showed	Pass
4	Password field is empty	Show warning” password required”	Warning showed	Pass
5	Email field is empty	Show warning” email required”	Warning showed	Pass
Post Condition: Login form is working properly.				

6.3.3 Admin Login:

Table 6. 3 Test Case (Admin Login)

Test Case Name: Admin Login Testing Project Name: SSS Precondition: Admin must have login details Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Admin enters his/her name and password	System checks the validity of name and password	As expected,	Pass
2	Entered password is invalid	Show warning of invalid password	Warning showed	Pass
3	Password field is empty	Show warning "password required"	Warning showed	Pass
Post Condition: Login form is working properly.				

6.3.4 Student Sign Up:

Table 6. 4 Test Case (student Signup)

Test Case Name: Student Sign up Testing Project Name: SSS Precondition: none Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	student enters his/her name, registration number and contact number	System takes them correctly	As expected,	Pass
2	Student enters invalid email	Show warning of invalid email address	Warning showed	Pass
3	Student enters valid email	System sends confirmation email to the entered email address	Email sent successfully	Pass
4	Password and confirm password are not equal	Show warning "password do not match"	Warning showed	Pass
5	Student uploads picture	Picture attached	As expected,	Pass
6	Student clicks submit button	Data received successfully	As expected,	Pass
Post Condition: Sign Up form is working properly.				

6.3.5 Email Confirmation:

Table 6. 5 Test Case (Email Confirmation)

Test Case Name: Email Confirmation Testing Project Name: SSS Precondition: sign up form submitted Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Entered email is authentic	Email is authentic	As expected,	Pass
2	Sends email	Email sent successfully	successful	Pass
3	Student enters verify option	Account created	successful	Pass
4	Student not enters on verify option	Show warning" you are not verified"	Warning showed	Pass
Post Condition: email confirmation module works correctly.				

6.3.6 Upload Project:

Table 6. 6 Test Case (Upload Project)

Test Case Name: Upload Project Module Testing Project Name: SSS Precondition: student logged in Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Student enter project title, ,area of project or platform and add abstract as a description.	Data received successfully	As expected,	Pass
2	Student insert invalid Document Format	Show warning" File type is not allowed"	Warning showed	pass
3	Student clicks submit button	Uploads data and sends notification to supervisor	Successful	pass
Post Condition: upload module works correctly.				

6.3.7 Lists of Supervisors:

Table 6. 7 Test Case (List of Supervisors)

Test Case Name: List of supervisors Module Testing Project Name: SSS Precondition: student logged in Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Student enter expertise, platform	Received data	successful	Pass
2	List of supervisors is visible	List is ranked	successful	Pass
3	Click on view profile	Redirected to supervisor profile	successful	Pass
Post Condition: list of supervisor module works correctly.				

6.3.8 Supervisor Approve request:

Table 6. 8 Test Case (Supervisor Approve request)

Test Case Name: Supervisor Approve request Module Testing Project Name: SSS Precondition: Student send request to supervisor Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Request is send to supervisor	Notification is displayed	successful	Pass
2	Supervisor clicks on notification	Project approval page displayed	successful	Pass
3	Supervisor clicks on accept button	Project status is updated to accept	successful	Pass
4	Supervisor clicks on reject button	Project status is updated to rejected	Successful	pass
Post Condition: Supervisor approve request module works correctly.				

6.3.9 Test Case (Chatting):

Table 6. 9 Test Case (Chatting)

Test Case Name: Chatting Module Testing Project Name: SSS Precondition: Student send message to supervisor Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Send message without typing any text and send to supervisor	Please type something	Please type something	Pass
2	Send message with type something in chat field	Message sent	Message sent	Pass
3	Deleted message and check its deleted only at user own side	Deleted message is shown to other recipient in chat	Deleted message is shown to other recipient in chat	Pass
Post Condition: Student send message to supervisor module works correctly.				

6.3.10 Supervisor Response:

Table 6. 10 Test Case (Supervisor Response)

Test Case Name: Supervisor response Module Testing Project Name: SSS Precondition: student logged in Steps:				
No.	Step	Expected Result	Actual Result	Pass/Fail
1	Student goes to completed project page	Previous ratings are visible	successful	Pass
2	Student enters his/her review	rating added successfully	successful	Pass
3	Review added	Review is visible	successful	Pass
Post Condition: Review module works correctly.				

Chapter 7

Conclusion and Future Work

7 Conclusion and Future work

In this chapter we discuss conclusion and future work of our project application after completing implementation and evaluation phases.

7.1 Conclusion

We are developed android application which is helpful for FYP students and supervisor. This application have no bugs and also it is user friendly and working efficiently. This application is specially designed for those students who want to enroll in FYP and are searching for supervisor. It is not just for students also for supervisors. Supervisor have also hectic job to select appropriate student by setting meetings with them.

Now by this application student easily search supervisor and check his profile from predefined set of data. Students also have registration and login he/she signup and login and maintain their profiles. Student can request Supervisor and incase of any further query student can easily chat with supervisor through chatting. The main focus of the application was time saving and to simplify the activities of choosing supervisors for final year project. This application will be available for students, supervisors and admin. This application is tested on many devices. This application provide ease both to students and supervisors.

7.2 Future work

As we develop android application, android studio provides very interesting and useful new updates that help us to expand our project application. In future, there is a list of functionalities that can be added to this application.so that more benefits can be attained.

7.2.1 Alert

System generate alert when a Student request is added.

7.2.2 IOS Application

IOS is holding good number of market shares, to increase the app user we need to make IOS app too in future.

Chapter 8

References

8 References

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