

ESSENTIAL MEET



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In the name of ALLAH, the Most benevolent, the Most Courteous

CERTIFICATE OF CORRECTNESS AND APPROVAL

This is to officially state that the thesis work contained in this report

“ESSENTIAL MEET”

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*under my supervision and that in my judgement, it is fully ample, in scope and excellence, for
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Date: _____

DECLARATION OF ORIGINALITY

We hereby declare that no portion of work presented in this thesis has been submitted in support of another award or qualification in either this institute or anywhere else.

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Allah Subhan'Wa'Tala is the sole guidance in all domains.

Our parents, colleagues and most of all supervisor, Dr Hammad Afzal without your guidance this all would not be possible..

The group members, who through all adversities worked steadfastly with their due assignment responsibilities. This was a combine effort of every individual associated with the project and all thanks to almighty allah that we have reached to its completion. Still many enhancements can be done according to the need of the time.

Plagiarism Certificate (Turnitin Report)

This thesis has 14% Similarity index. Turnitin report endorsed by Supervisor is attached.

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ABSTRACT

Education system outlines the backbone of every nation. Technology can play a very crucial role in streamlining the whole system of education. Exploring the technological approach to education, streamlining education process and spiraling acquaintance among students, sta and management becomes essential for today's fast growing educational environment. Today every schools/University needs to manage more information than ever before. Without a solid internal infrastructure for teachers, administrators and departments to share data, critical school and student information can be lost, or worse | communicated incorrectly | leading to a host of problems that can a ect your university image and endurance. To remain competitive, university needs a simple solution that can run individual functions, connect their entire operation, use the web as a key communication tool and simplify day-to-day operational responsibilities, giving sta more time with students. The proposed project is a FREE video conference app for and Android aimed at providing hassle free face time with teachers, students or colleagues. It's a secure platform where anyone can create an account and get connected to their professional ones without worrying of data theft

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Chapter 1: Introduction

Essential Meet is an online-based meeting system. The enterprise has all the services that a university can help you communicate and deliver lectures using online Meetings. Essential Meet helps you to connect with the people, whatever the location is. So people can communicate effectively. Face Attendance is a secure way to join the meeting without worrying about your data lost.

Essential Meet is a FREE video conference app for Android to provide hassle-free face time with students, teachers, or colleagues. It's a secure platform where anybody can make an account and communicate with their loved ones without having to fear about their data being stolen. It can also be used in offices during covid and even afterwards in normal routine life for effective conferences. Any one that involves to share data with a group or individual can be an audience of this application

1.1 Overview

This project's objective is to build a mobile application. We are a video communications platform with an all-in-one chat system that brings joy to people and profoundly alters their communication. We provide face-to-face video experiences for thousands of individuals in a single conference across various devices and locales using frictionless video, audio, chat, and content sharing. The following are some of the most critical aspects of our Project: The following specific goals will aid in the implementation of this System.

- Secured Face Attendance: Join the Meeting with secure Login using face recognition.
- Register Swiftly: Two-step registration process
- Register in two steps: For further security, receive an authentication link through email.
- Join swiftly: Join meetings with the team without logging in
- Secure pass codes: Create discussions with extra secure pass codes
- Chat system: Can chat with other users during face time.
- The edibility of design: Easy to restyle and theme according to your preferences.
- Expand the horizon: Conference calls up to 70 members.
- Two-factor authentication: Get one-time pass code if you forget your login password or not able to recognize your face.
- Smooth Video and Audio Calls: Make video or audio conference calls and communicate with frictionless System.

1.2 Problem Statement

Conventional video conferencing applications like zoom or Microsoft teams , are sometime over complicated for a user who has little interaction with technology, so this is a very easy and user friendly application, secondly the feature of attendance has been introduced but facial recognition while login and during class for attendance was still missing in the big players. In the last the integrity of the classes was compromised in the conventional applications like whoever has the code can join the meeting or there was no guarantee that whether the person attending the meeting is the same person who was supposed to attend the meeting or not. If we also talk about technological perspective the companies gather user data to the extreme level and invade the user privacy.

1.3 Proposed Solution

Essential Meet is a FREE video conference app for Android to provide hassle-free face time with students, teachers, or colleagues. It's a secure platform where any-body can make an account and communicate with their loved ones without having to fear about their data being stolen... Face attendance feature is a secure login to join the meeting. One can send messages within the System and communicate with the audio-video calling feature. The System has a high-security feature for communication.

1.4 Assumptions and Constraints

1.4.1 Assumptions

The essential meet app is quite similar to Microsoft teams. Still, but it has more secure features. The system can recognize the user face at the run time. Be-cause our attendance system is solely based on faces recognition, and if the System recognizes the student, only then can join the meeting. People can communicate

through a smooth chat system and enabled video or audio call conference at any time. Moreover, it is a location-independent mobile app.

- It will reduce the amount of work required and allow you to develop more quickly.
- The system collecting commands from the user and host is simple.
- The user must have to get his face recognized by the app before entering the meeting or class.
- The user can surely organize the meeting using the meeting generator and can do so without much difficulty.
- The user will be able to join the meeting classes.
- The user allow to send messages through chat system in the meeting room.
- The user's background for face identification should be clear.

1.4.2 System constraints

The fundamental constraint in our system is that the user cannot log in without specific credentials entered into our database. Secondly, the significant condition is that the face recognition system should identify the student correctly and let the authentic student attend the class or meeting and vice versa.

The system uses the re base machine learning kit to recognize the face and objects in the images. Machine learning kits remember the things at run time, and in this way, the system can identify the beginning of the attendees.

1.4.3 Restrictions

- Data of the user must be protected.
- Every user has privacy so that no other non-registered user accesses the meeting and vice versa.
- The user must have to get his face recognized by the app before entering the meeting or class.

1.4 Working Principle

The project mainly works on the principle of developing different functionality of the system like login facial recognition than integrating them together. The project is divided into different modulus and every module is inter-woven with the next module. The list of modules is as under

- Facial recognition
- Decision based upon Output
- 5Integration
- GUI presentation

1.5 Output Extraction:

Output is extracted on the basis of information collected and correction.

1.5.1 Decision based upon Outputs:

1.5.1.1 Login:

Login is only granted if the user gets his face recognized same as that of registration.

1.5.1.2 Meeting:

The person joining the meeting can only join if he gets recognized that is again through facial attendance.

1.5.1.3 Attendance:

Attendance is also based upon facial recognition attendance will only be marked if the gets recognized

1.5.1.4 Integration:

The different modules are integrated together to work stand alone a single software

1.5.2 GUI presentation:

The visual demonstration of the project is done through the aid of GUI (graphical user interface).

1.6 Objectives

1.6.1 General Objectives:

To develop a FREE video conference app for Android to provide hassle-free face time with students, teachers, or colleagues using flutter dart and fire bases with idea as android studio.

1.6.2 Academic Objectives:

- Development of a video conferencing app.
- To implement facial recognition to enhance security and integrity of meeting
- To increase productivity by working in a team
- To design a project that contributes to the welfare of society

1.7 Scope of project

Essential Meet is a FREE video conference app for Android to provide hassle-free face time with students, teachers, or colleagues. It can find its scope anywhere where people need to communicate with each other in a group or individually, for example in schools ,colleges , offices any sort of public private meeting can be conducted as of the covid 19 we have known that there should be alternative methods of conventional meeting that anyone can adopt if something like that happens again.

The user and the meeting host are both included in this part (admin).

Meeting Host(Admin): The user selected to utilize the system and organize a meeting that other participants can attend. The system provides to communicate within the session using chat system integration.

Attendees: The user have to join the meeting with a secured login face recognition layer and then attend the conference and communicate with the chat system. The system is attached to lose any user data.

1.8 Deliverables

1.7.1 Video conferencing app

It serves as a video conferencing that allows easy interaction and has easy user interface to make sure not to complicate problems the best traffic flow time by using a combination of image processing and machine learning techniques with the help of camera and a pre-fed data set in real time

1.7.2 Facial recognition:

To detect and analyze whether that person trying to login is the same person or not, whether person attending the class in the same or not.

1.8 Relevant Sustainable Development Goals

Relevant Sustainable Development Goals (SDGs)

SDG 4: quality education , once of the adantages of online lectures is that they can be heard as many time as you want in your own time.

SDG 13 : Climate action , because during covid era the whole in the ozone layer was fixed because of people working from home thorough application like these .

1.9 Structure of Thesis

Chapter 2 contains the literature review and the background and analysis study this thesis is based upon.

Chapter 3 contains the design and development of the project.

Chapter 4 introduces detailed evaluation and analysis of the code.

Chapter 5 contains the conclusion of the project.

Chapter 6 highlights the future work needed to be done for the commercialization of this project.

Chapter 2: Literature Review

A new product is launched by modifying and enhancing the features of previously launched similar products. Literature review is an important step for development of an idea to a new product. Likewise, for the development of a product, and for its replacement, related to meeting application, a detailed study regarding all similar projects is compulsory. Our research is divided into the following points.

- Industrial background Existing solutions and their drawbacks
- Research Papers

2.1 Industrial background

In today's era, one of the major issues faced across the world is many further problems, as discussed in Problem Statement, which increases need for a smart and effective system. Ultimately, results in a big marketplace for industrial development.

- Pakistan majorly depends upon Microsoft, Google, and other international companies when it comes to software and applications in doing that we end up compromising our data because now as we know data is everything,
- There are many applications like the project we are building like Microsoft teams or zoom etc. They provide a way to communicate with teachers and students and continue their studies in the era of COVID-19. But the significant difference between these apps and our project is that we made our project more secure and reliable. The primary issue with Teams and zoom was that anyone could join the class who had the course link, disturbing the integrity of the class. We found a solution to this, and we made a new feature in which students can only log in through face recognition. This way, only the students allowed in the class can attend the course, and no extra student or person who is not enrolled in the class cannot enter the classroom. Moreover, we provide a complete copy of the classroom system (but online).

2.2 Existing solutions and their drawbacks

Different solutions that we build by Microsoft and Google were used to maximum extent in the covid times and then people realized that technology can be a substitute not just in times of difficulty but to ease our lives but technology must be enhanced as to support our need and minimize the drawbacks.

- Joining a meeting was relatively very easy and in many cases anyone who has the meeting code can join it.
- Attendance was limited there was no concept of facial recognition in attendance.
- Interface was not user friendly simple tasks required effort.
- Always there were chances of data theft.
- No facial recognition system while sign up and login.

2.2.1 Class integrity being compromised

Class integrity in app like teams and zoom was compromised easily , anyone can join the meeting using the code and there was no guarantee that the person joined is supposed to be the part of the meeting or not, by involving facial recognition during class join and attendance we can certainly sure that the person joined is the same person for whom meeting was generated , even if in the existing apps the person generating the meeting applies a check on the joining of the meeting then still there is no guarantee that the person joined is the same and then again the person who has generated the meeting has to except and decline the meeting generation request manually one by one thus causing disturbance during the class, again by involving facial recognition during the joining of the meeting he can be sure who is attending the meeting secondly everything it done automatically.

Chapter 3: Requirement Analysis

3.1 Requirement Elicitation

3.1.1 Functional Requirement

The system allows to host meeting and join up to 70 members at a time. The system helps to connect with each other using chat system. The system has high security to recognize the user before entering the meeting room. The user have to enter one time password if the user would not able to recognized his face at the run time. One time password is the 6 unique digit code to identify the user account. The system has smooth video or audio calling features to connect with others. essential meet enables users to construct a meeting room, as well as an application program interface for generating meetings and a chat system that allows users to communicate with one another.

Functional Requirement Table

Requirement Code	Requirements	Description
FR-00-01	Sign Up	System sign up the user by verifying email id and face recognition and password change functionality After signing up.
FR-01-01	Login	System logs in the user by verifying email id or face recognition and password change functionality after logging in.
FR-02-01	Meeting Pass-code	Admin creates meetings by generating secure pass-code, and students join the discussion by entering that pass code.
FR-03-01	Join Meeting	Attendees join meeting using Meeting ID.
FR-04-01	Face Attendance	System verifies the Attendees by face detection.
FR-05-01	Conference video/audio call	Organizer and attendees can communicate using audio and video call through Application Program Interface API.
FR-06-01	Chat System	Organizer and attendees can also communicate us-chat box through Application Program Inter-Face API.
FR-07-01	Invite Friends	Attendees can also invite friends.
FR-08-01	Log Out	User can log out by clicking on logout button.
FR-09-01	Edit Profile	Users can edit profile in the profile information.
FR-10-01	End Meeting	Users can end Meeting By clicking on it he ends Call button.

3.1.2 Non-functional Requirement

Non-Functional Requirement Table		
Requirement Code	Requirements	Description
NR-00-01	Availability	E-Meet will be available 24/7/365. Anyone with correct email and password can access this Application any-time.
NR-01-01	Scalability	For physical installations, this will include Less space to install it in the future.
NR-02-01	Security	Only those users can access that are already Sign-up or login. All controls are under the Authority of admin. This system will block All illegal operations such as hacking.
NR-03-01	Performance	Response Time is very fast.
NR-04-01	Usability	The user will interact with the system e - Client.
NR-05-01	Supportable	This System will not support remote access- Usability for external required resources.

3.1.3 Requirement Traceability Matrix

Sign Up

Test Case ID	Test Case Description
TC-01	User click on the Register option from the Mobile App.
TC-02	User must enter the First Name to be used in Account.
TC-03	User must enter the Last Name to be used in account.
TC-04	User must enter the Email to be used for login account
TC-05	User must create a Password for login.
TC-06	User must re-enter the password for confirmation.
TC-07	User click on \"Sign Up\" button for account

Login

Test Case ID	Test Case Description
TC-08	User must enter the correct email and the password.
TC-09	User may enter the incorrect email and the Password.
TC-10	User may enter incorrect email and correct password.
TC-11	User may enter correct email and incorrect Password.
TC-12	User Navigate Properly over the login page.

View Meeting chatting room

Test Case ID	Test Case Description
TC-13	User can generate meeting by him/her self
TC-14	User can join meeting by entering 8 digit Meeting code.
TC-15	User can chat with others that are currently in meeting
TC-16	User can call in group of peoples that are in meeting
TC-17	User can choose the theme of Day or night.

3.2 Use Case Description

3.2.1 Mobile Application - Sign Up

Use Case ID:	UC001
Use Case Name:	Sign Up
Created By:	Muhammad Uzair Saeed
Last Updated By:	Muhammad Uzair Saeed
Date Created:	10/05/2021
Last Revision Date:	10/05/2021
Actors:	All user of the system..
Description:	The user must enter some valid information for register into the system.
Trigger:	User needs an account.
Preconditions:	User should access the System Login page and Sign up button. User Must have valid e-mail.
Post conditions:	<ul style="list-style-type: none">• Users click on the create account option from the navigation bar.• The user enters the First Name to be used in the Account.• The user enters the Last Name to be used in the Account.• A user enters Email or Phone to be used for a login account.
Normal Flow:	<ul style="list-style-type: none">• The user inputs his meeting pass code to attend the meeting.• The user puts in his personal information.• The user picks the option to "Join Meeting."• The system checks to see if the user name and password are accurate.• The system displays the main page to the user, which they may use to continue the operation.

Alternative Flows: Alternate Flow 1 { No Network]	<p>If the account is not created by clicking the "Sign Up" button. At Least</p> <ul style="list-style-type: none"> • one of the fields filled is incorrect or empty. • System will re-load the page and user re-enter the data.
Priority:	High
Frequency of Use:	High

3.2.2 Mobile Application - Login

Use Case ID:	UC002
Use Case Name:	Login
Created By:	Muhammad Uzair Saeed
Last Updated By:	Muhammad Uzair Saeed
Date Created:	10/05/2021
Last Revision Date:	10/05/2021
Actors:	All the account holders of system.
Description:	The user enters the username and password to login to the system.
Trigger:	User wants to login into its account.
Preconditions:	The user must sign up into the system.
Post conditions:	<p>User account has been created.</p> <ul style="list-style-type: none"> • User is logged into the system. • The system displays a main page according to the role that has logged in.
Normal Flow:	<ul style="list-style-type: none"> • The user enters their email address. • The user is prompted to enter his password. • The user selects "Join Meeting" from the drop-down menu. • The System verifies the correctness of the user name and password. (E-1) • The System shows the user the main page, which they may utilize to continue processing.
Alternative Flows: [Alternative Flow 1 { No Network}]	If user-name or password is wrong system asks the user to reenter his User-name or password accordingly. In step 4 of the normal flow, If the user enters a wrong user-name or Password.
Priority:	High
Frequency of Use:	High

Face Recognition Attendance

Use Case ID:	UC003
Use Case Name:	Face Recognition Attendance
Created By:	Muhammad Uzair Saeed
Last Updated By:	Muhammad Uzair Saeed
Date Created:	10/05/2021
Last Revision Date:	10/05/2021
Actors:	All user of the system who want to join the meeting.
Description:	The user want to recognize face to ensure attendance
Trigger:	User want to scan face for attendance and join meeting
Preconditions:	User Must login with valid email and password to generate meeting.
Post conditions:	<ul style="list-style-type: none">• Users click on the create account option from the navigation bar.• The user enters the First Name to be used in the Account.• The user enters the Last Name to be used in the Account.• The user enters an Email to be used for the login account.
Normal Flow:	<ul style="list-style-type: none">• The user enters his meeting passcode.• The user must have to recognize the face.• The user will join the meeting.
Priority:	High
Frequency of Use:	High

Generate Meeting

Use Case ID:	UC004
Use Case Name:	Generate Meeting
Created By:	Muhammad Uzair Saeed
Last Updated By:	Muhammad Uzair Saeed
Date Created:	10/05/2021
Last Revision Date:	1 0/05/2021
Actors:	All the account holders of system.
Description:	The user want to generate meeting to connect others
Trigger:	User want to generate meeting
Preconditions:	User Must login with valid email and password to generate meeting.
Post conditions:	Meeting has been created <ul style="list-style-type: none"> • User click on the create account option from navigation bar. • User enter First Name to be use in account.
Normal Flow:	<ul style="list-style-type: none"> • The user enters his email to enter the app. • The Manager can view the Status of Table. • The Manager can Update or Edit Status.
Priority:	High
Frequency of Use:	High

Normal Flow:	<ul style="list-style-type: none"> • The Manager is Logged in • The Manager can view Status of Table • The Manager can Update or Edit Status
Priority:	High
Frequency of Use:	High

3.4 Use Case Diagram

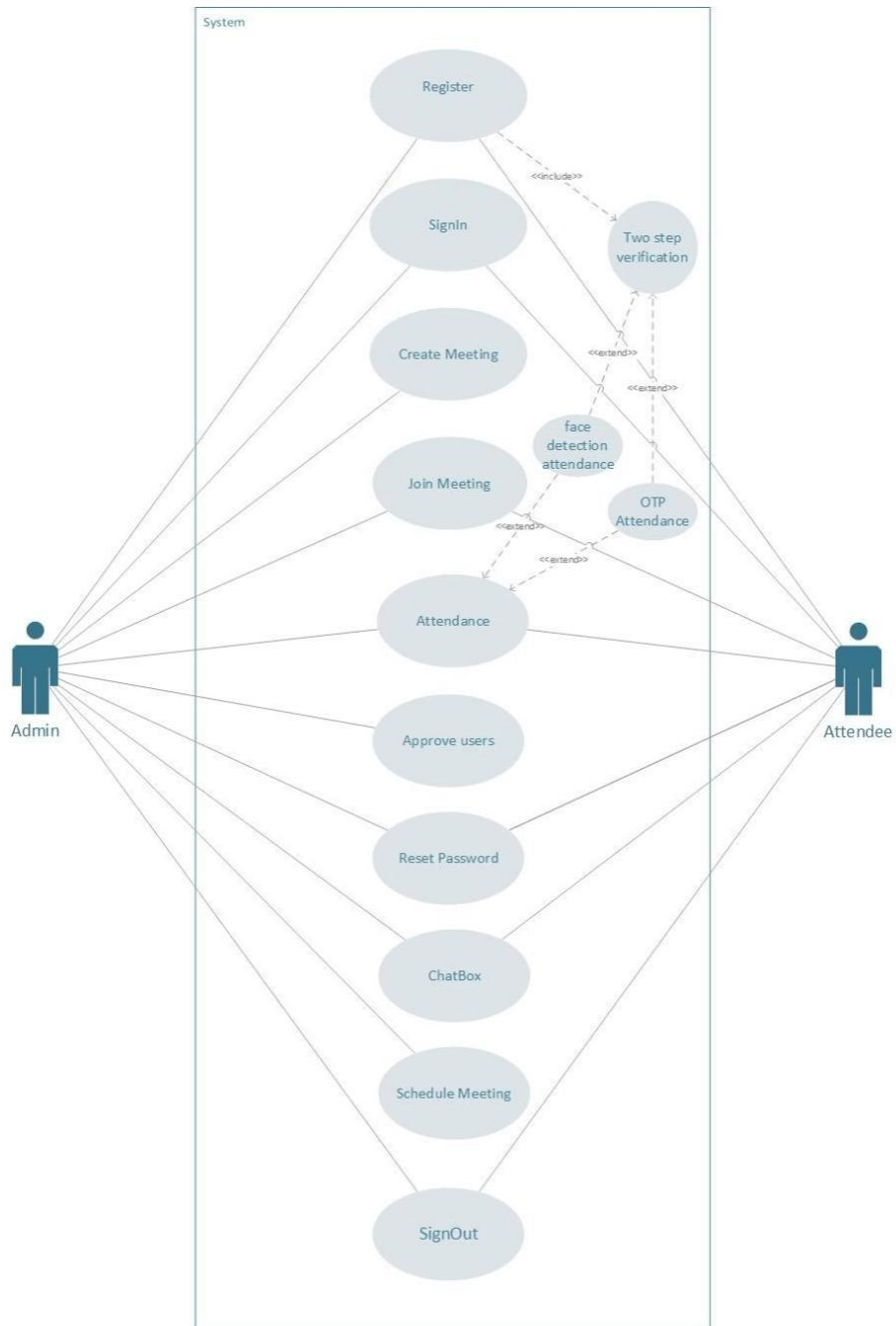


Figure 2.1: Use Case Diagram

Chapter 4: System Design Analysis

The process and procedure of essential meet app are referred to as system analysis and design. By creating an account, the system connects to the database and allows access to the app's functionalities. The system analyses the mobile app's modules and replaces them with new modules or components. In the event of a system outage, the system detects the problem and gives a warning.

4.1 Work Break Down Structure

A Work Breakdown Framework is a hierarchical structure of the items or results that the project will produce. It entails a number of stages to complete. The system took the information from the mobile layout and applied it to the applicable function, producing the desired outcomes

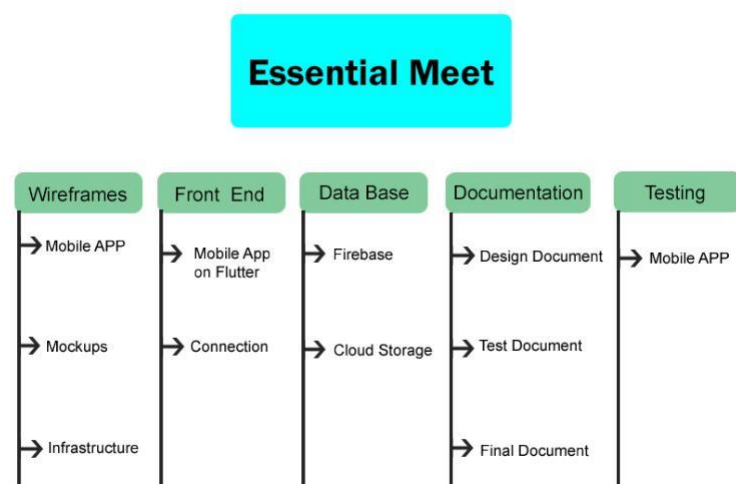


Figure 4.1: Work Break Down Structure

4.2 Activity Diagram

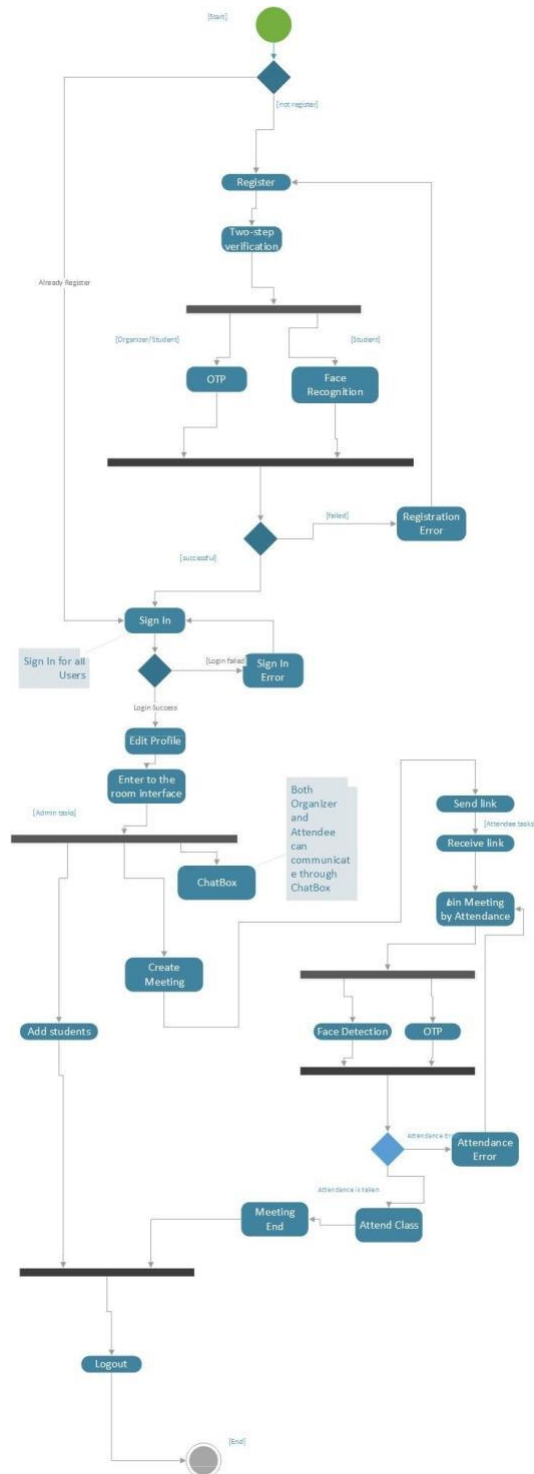


Figure 4.2: Activity Diagram

4.3 Sequence Diagram

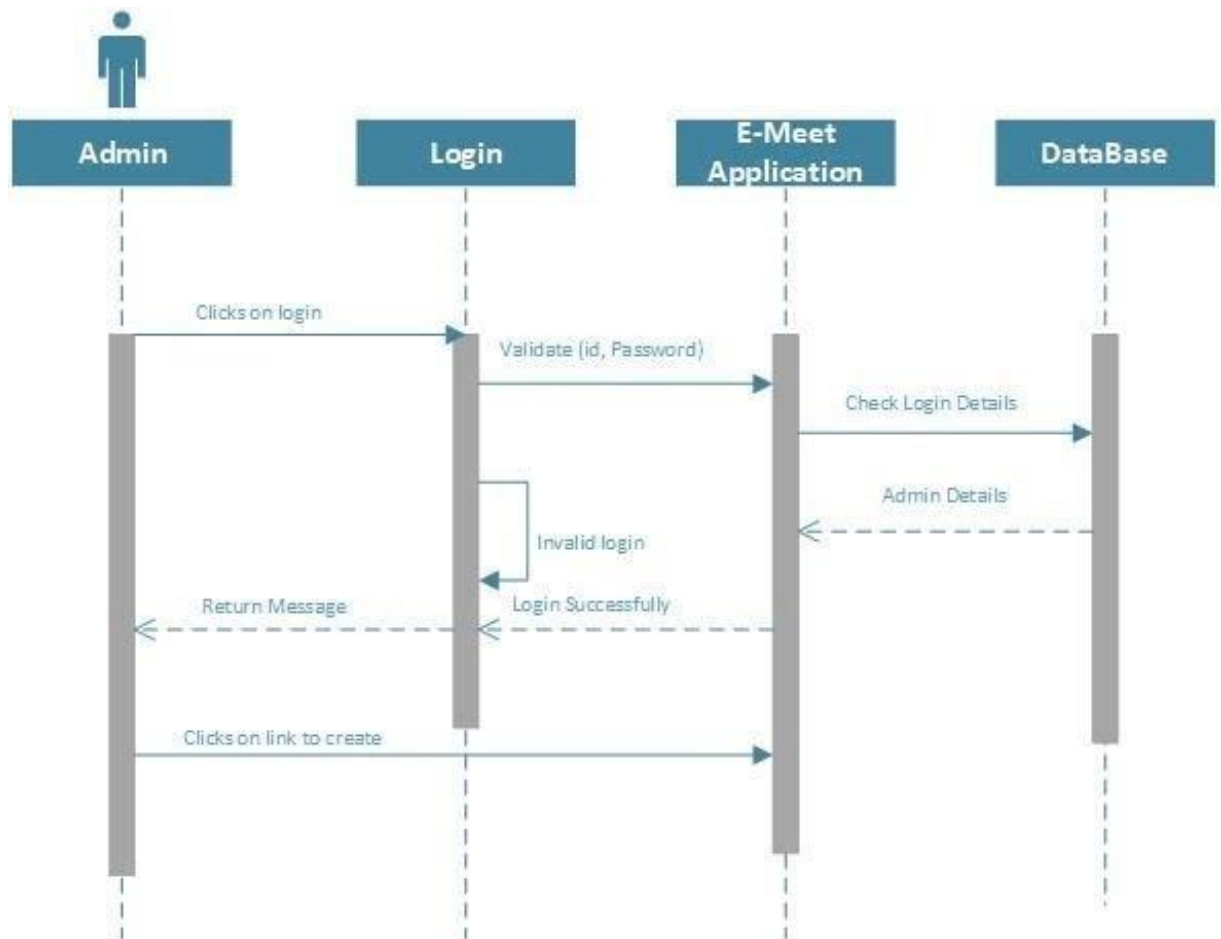


Figure 3.3: Sequence Diagram

4.4 Software Architecture

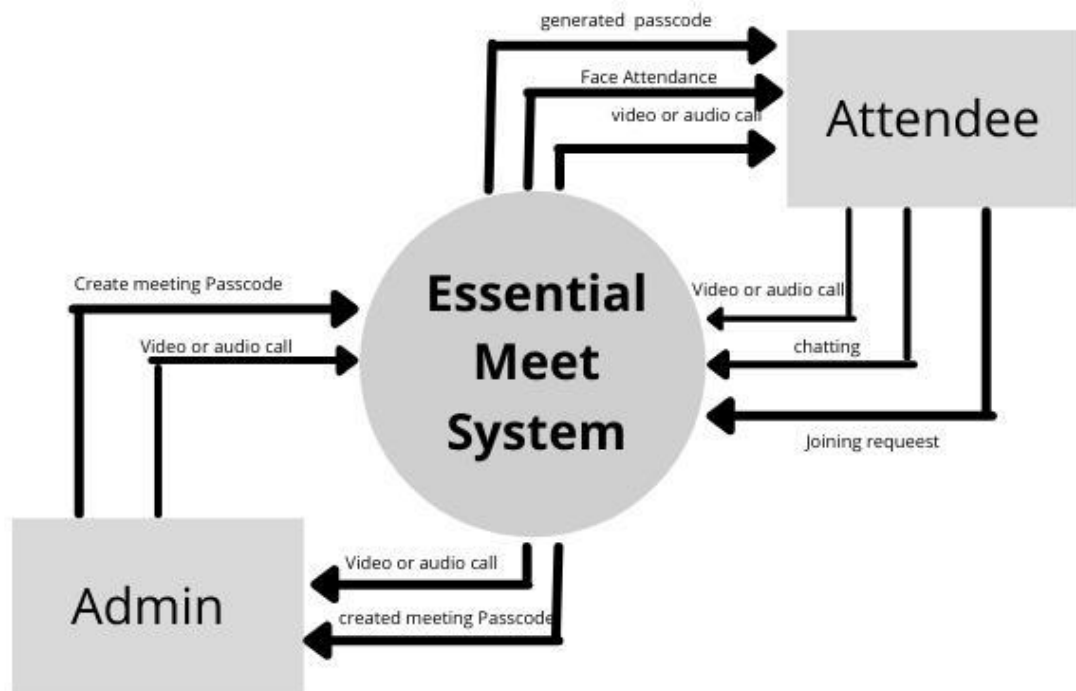


Figure 4.4: Software Architecture

4.5 Collaboration Diagram/Net-work Diagram

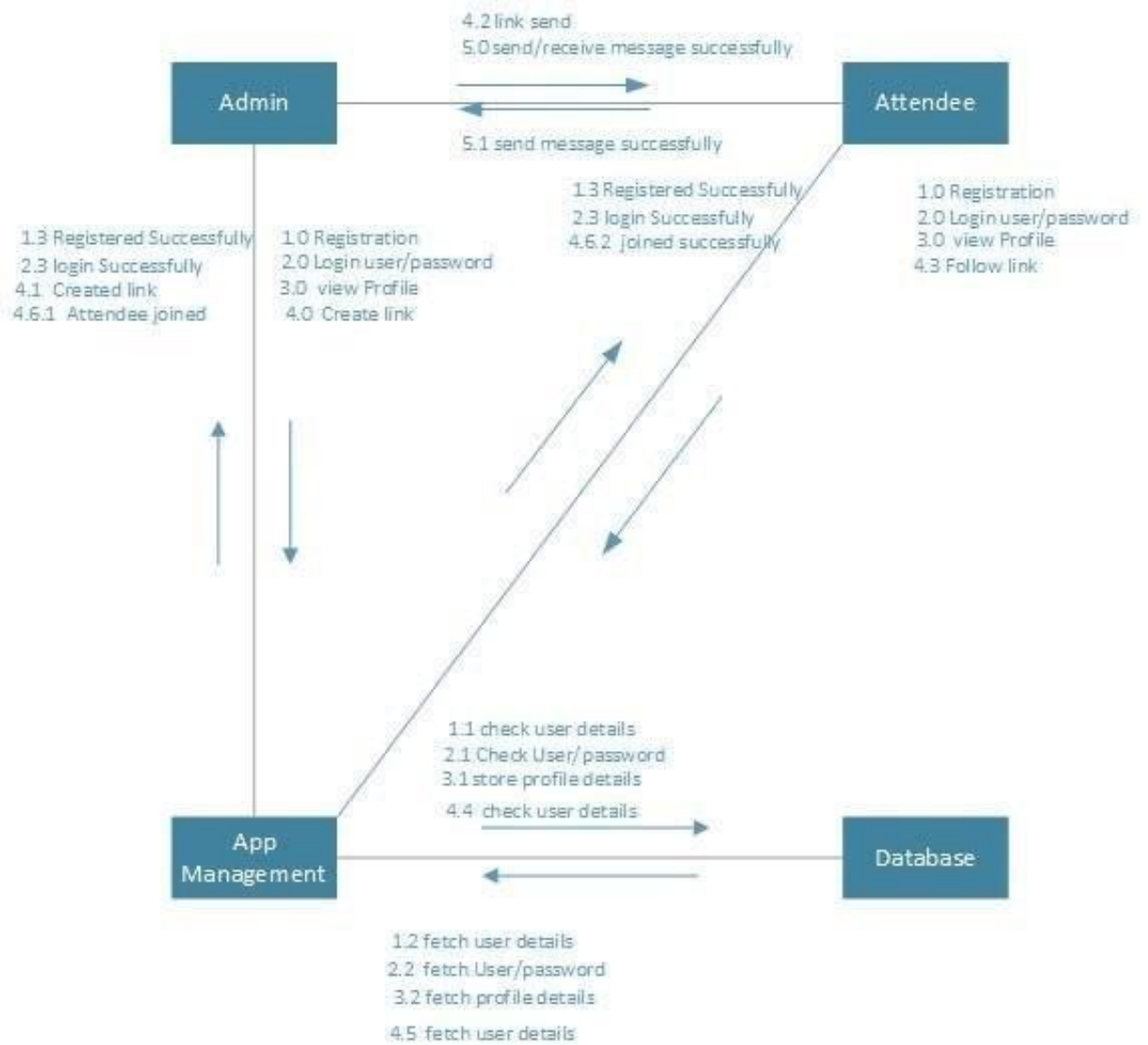


Figure 4.5: Collaboration Diagram

4.6 Class Diagram

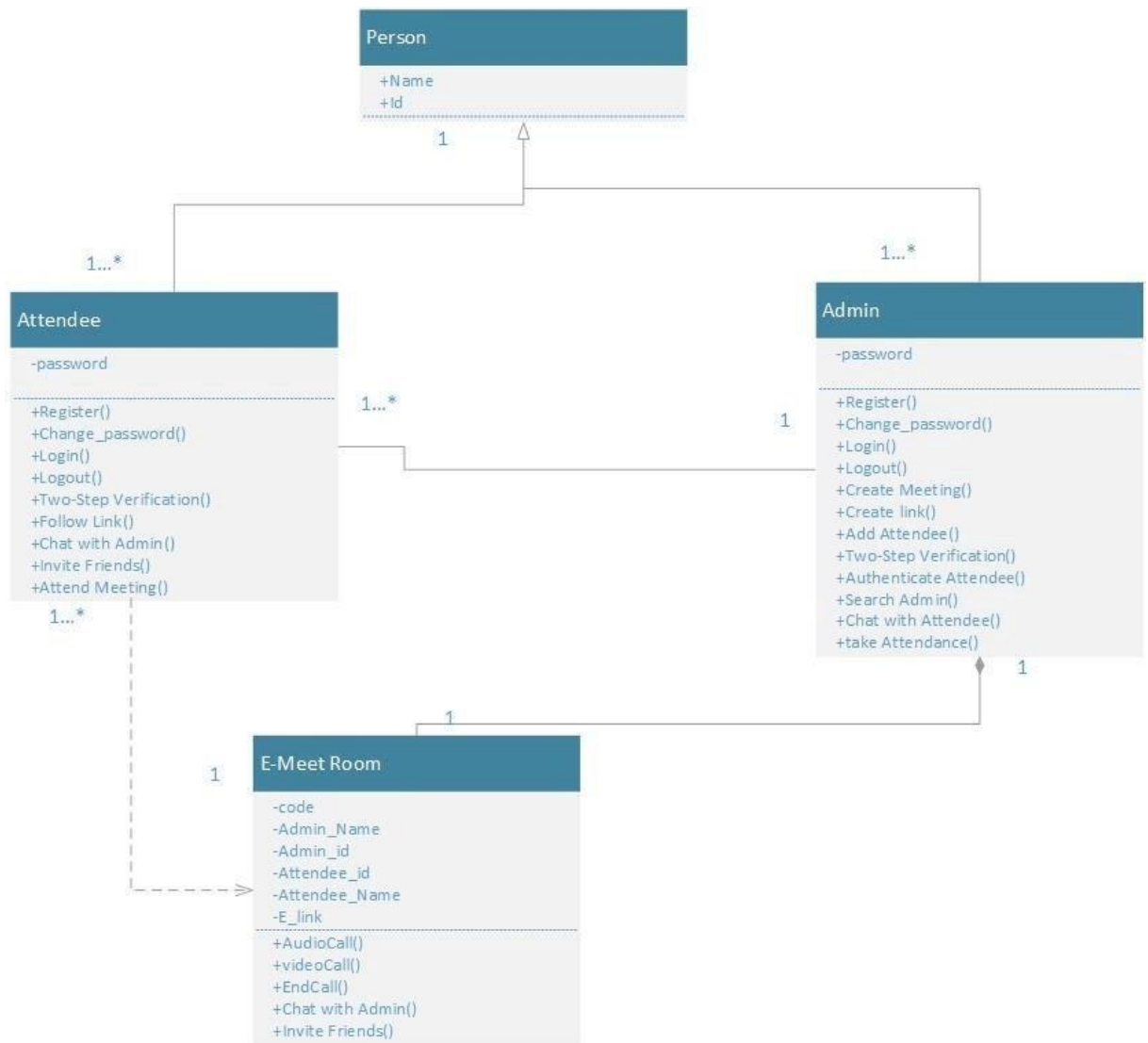


Figure 4.6: Class Diagram

4.7 ER Diagram

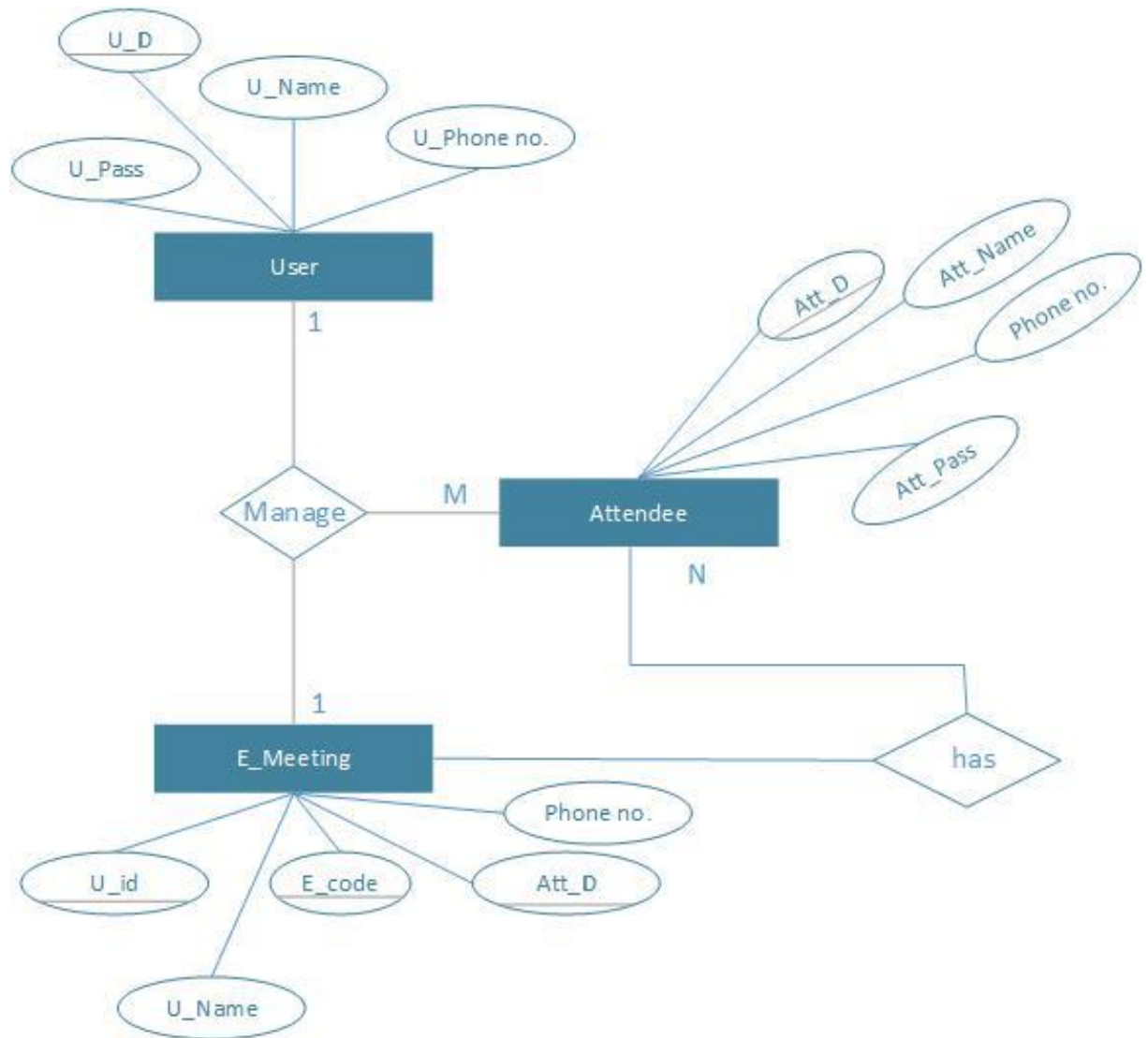


Figure 4.7: ER Diagram5

Chapter 5: Implementation and Interface

5.1 Mobile Application

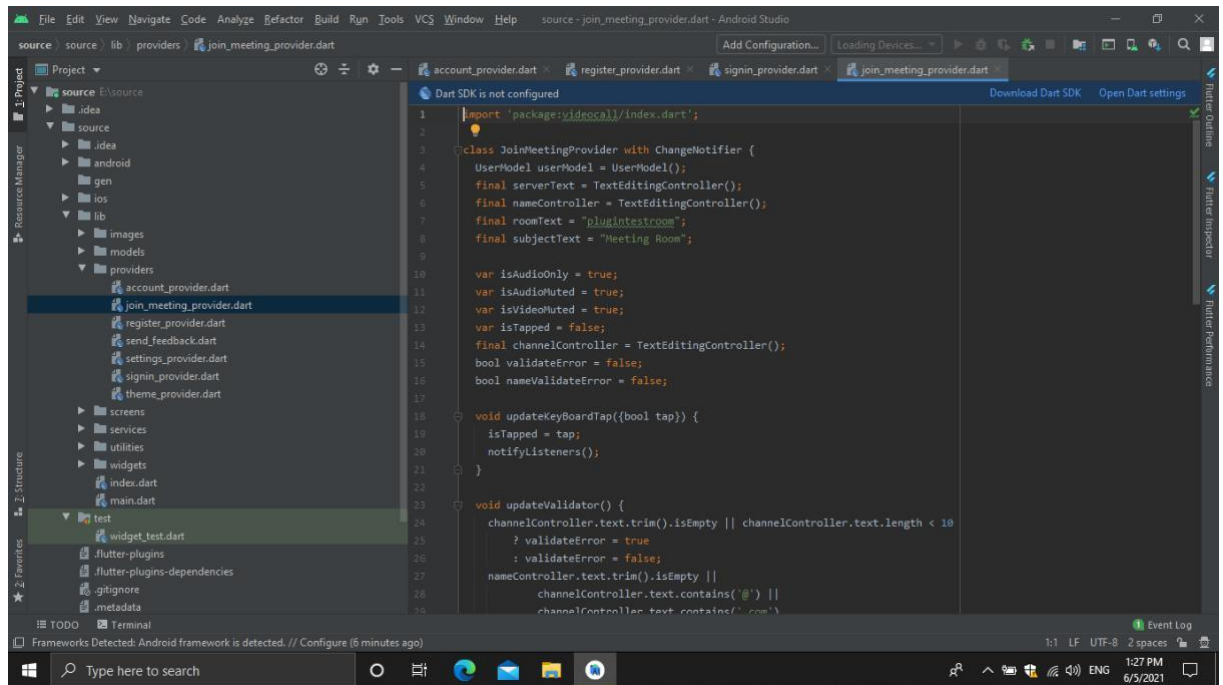


Figure 5.1: This screen shows the Join meeting Screen of Essential Meet

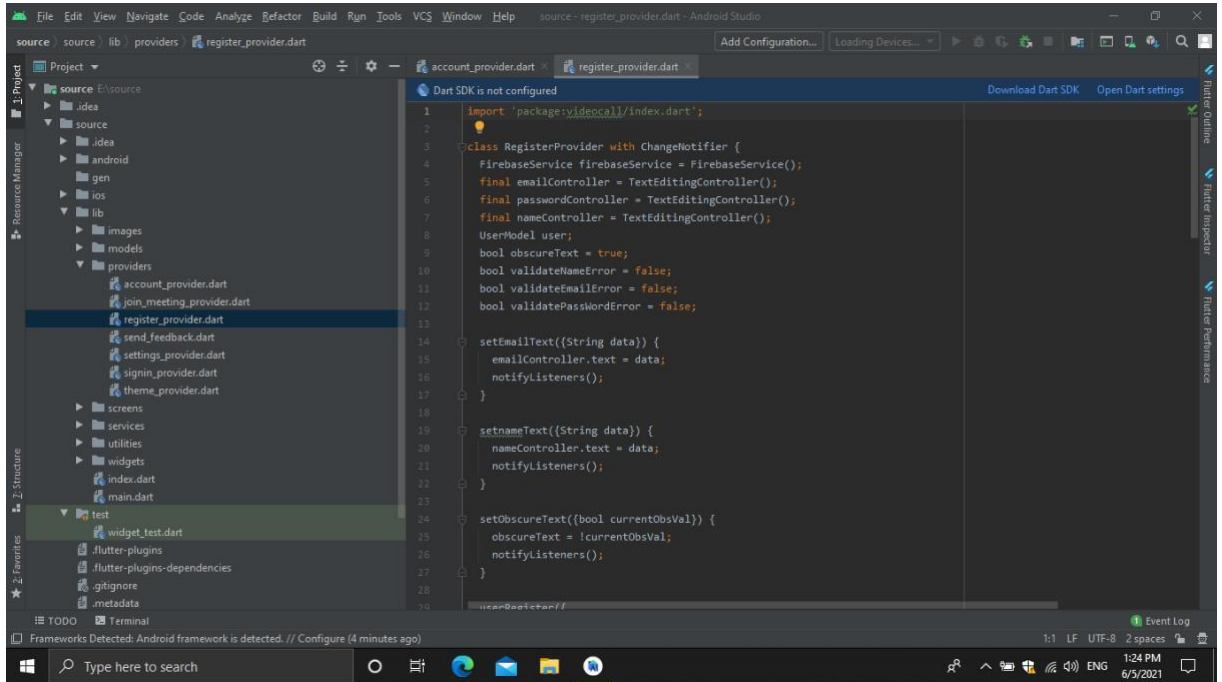


Figure 5.2: This screen shows the registration Screen of Essential Meet

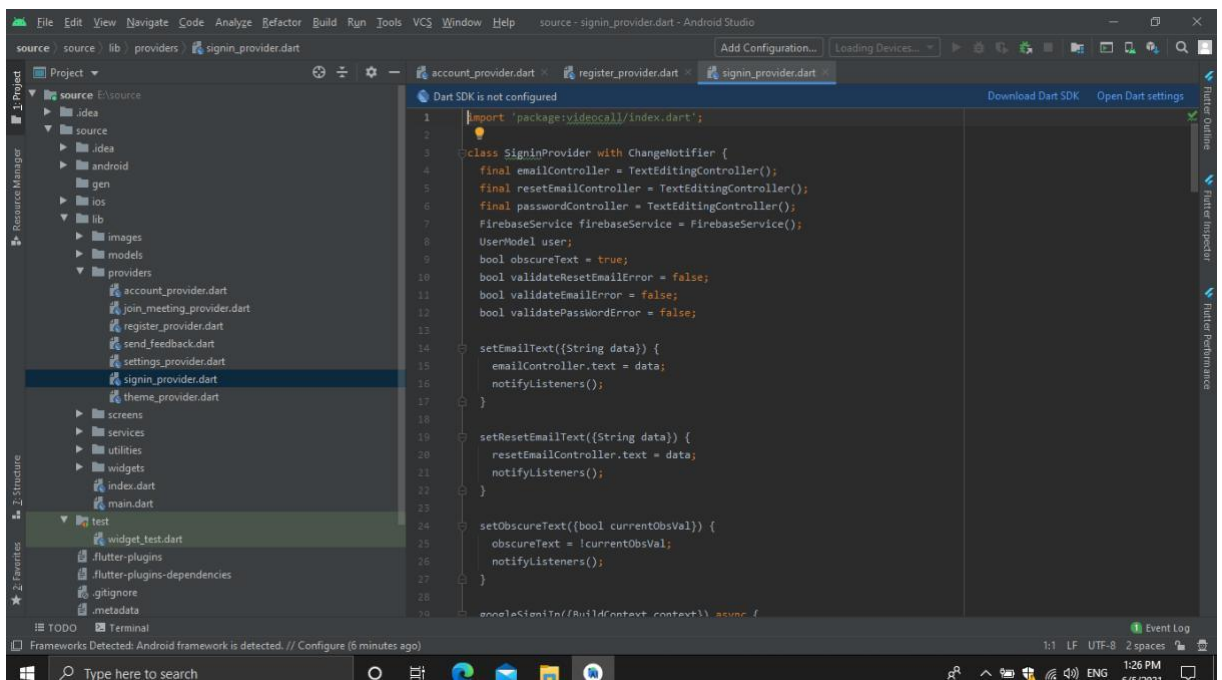


Figure 5.3: This screen shows the login screen of the Essential Meet

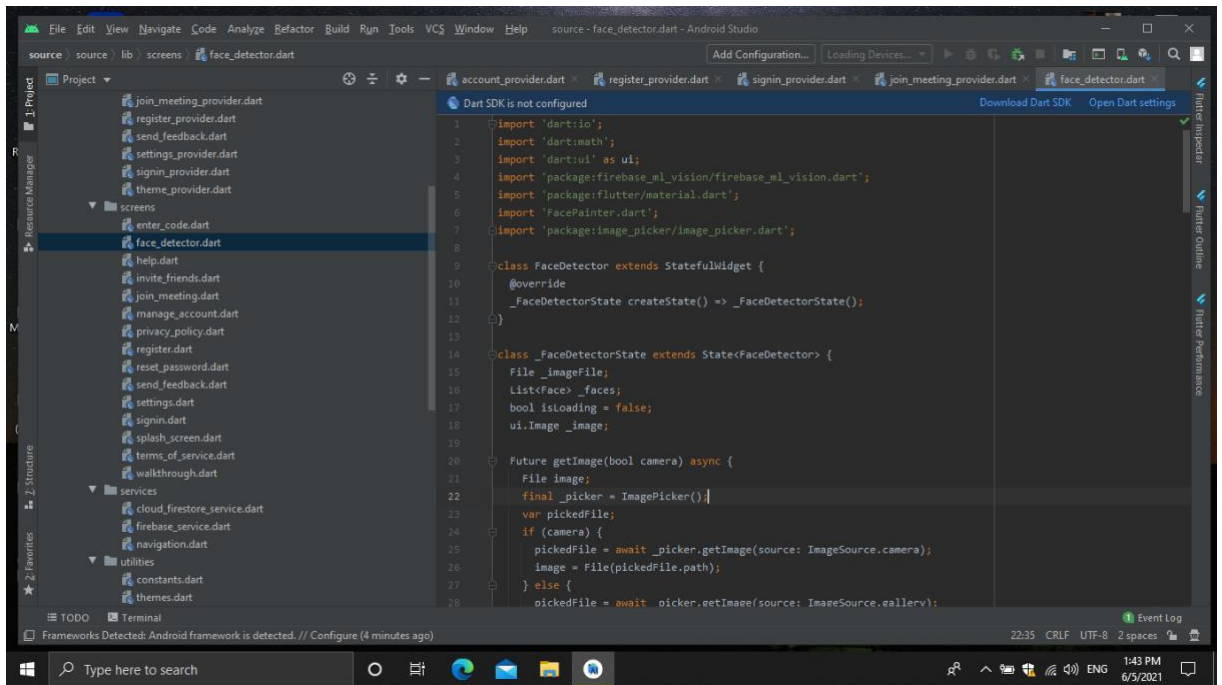


Figure 5.4: This screen shows the Face Attendance Screen of Essential Meet

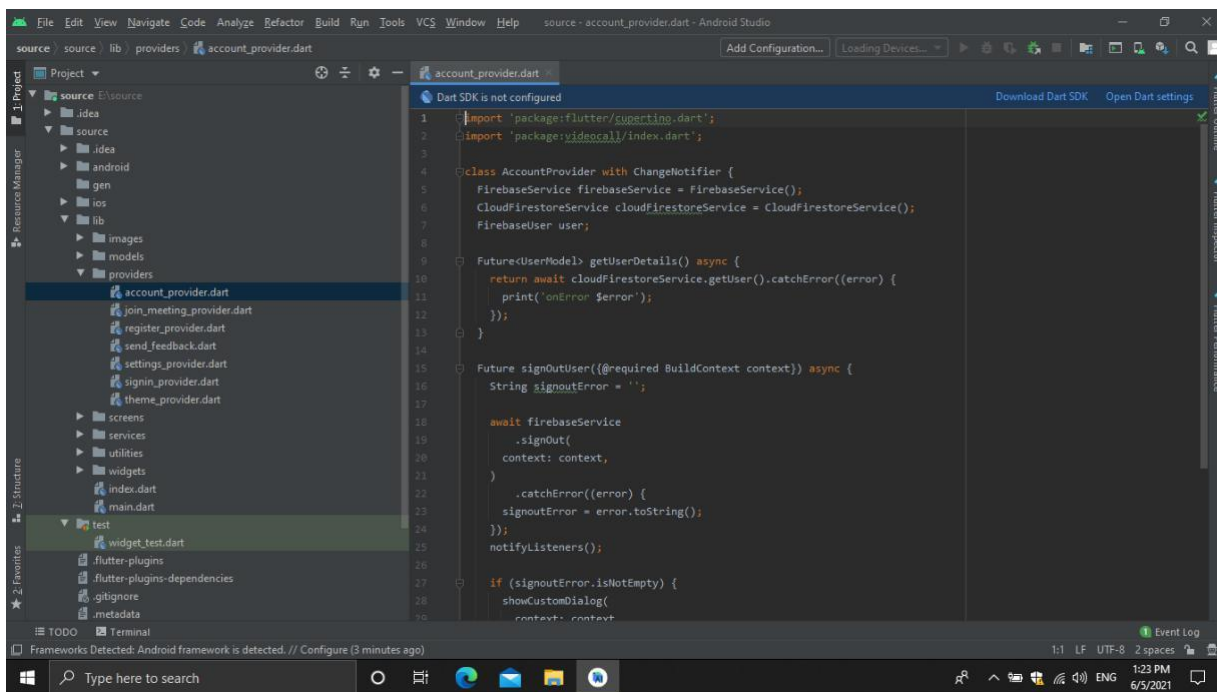


Figure 5.5: This screen shows the Account Settings Screen of Essential Meet

5.2 User Interface of Essential Meet Application

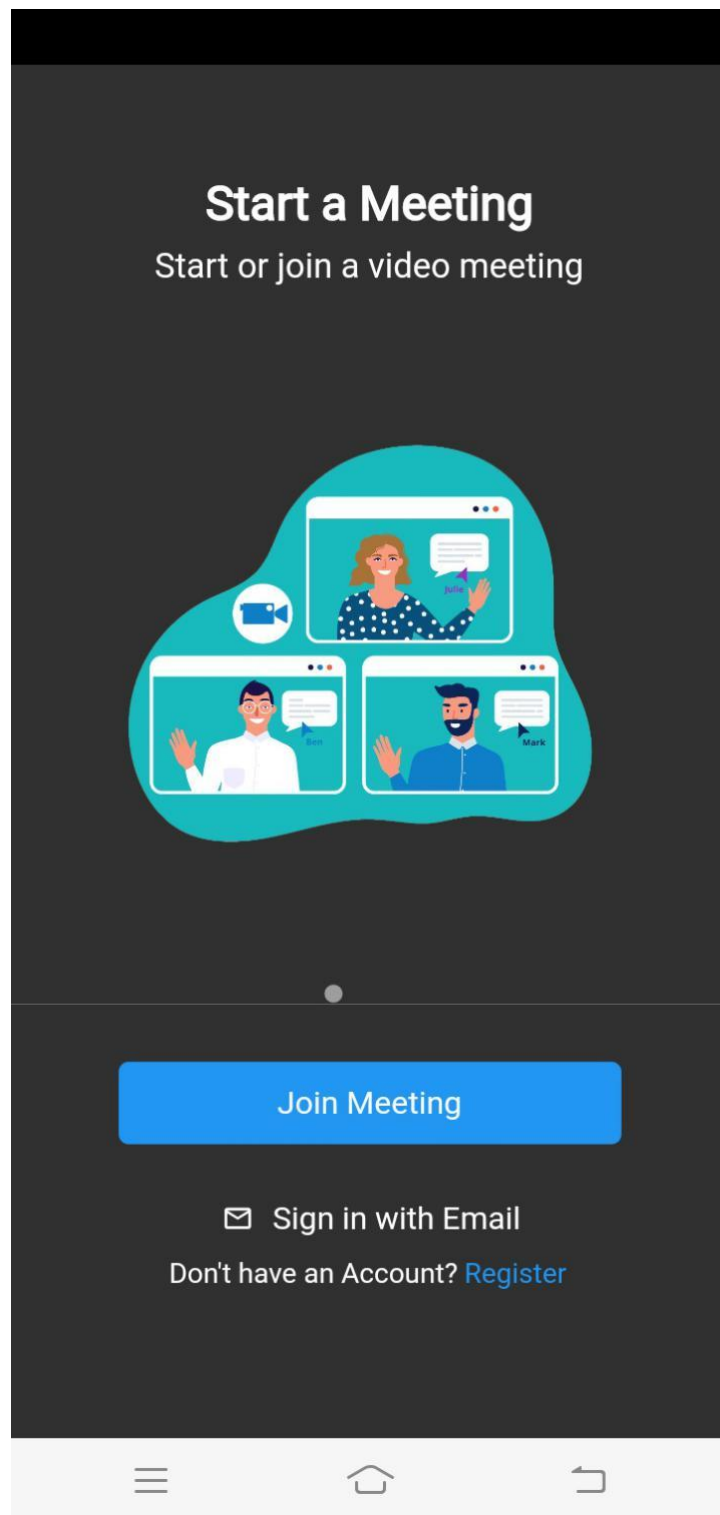


Figure 5.6: This screen shows the join meeting page.

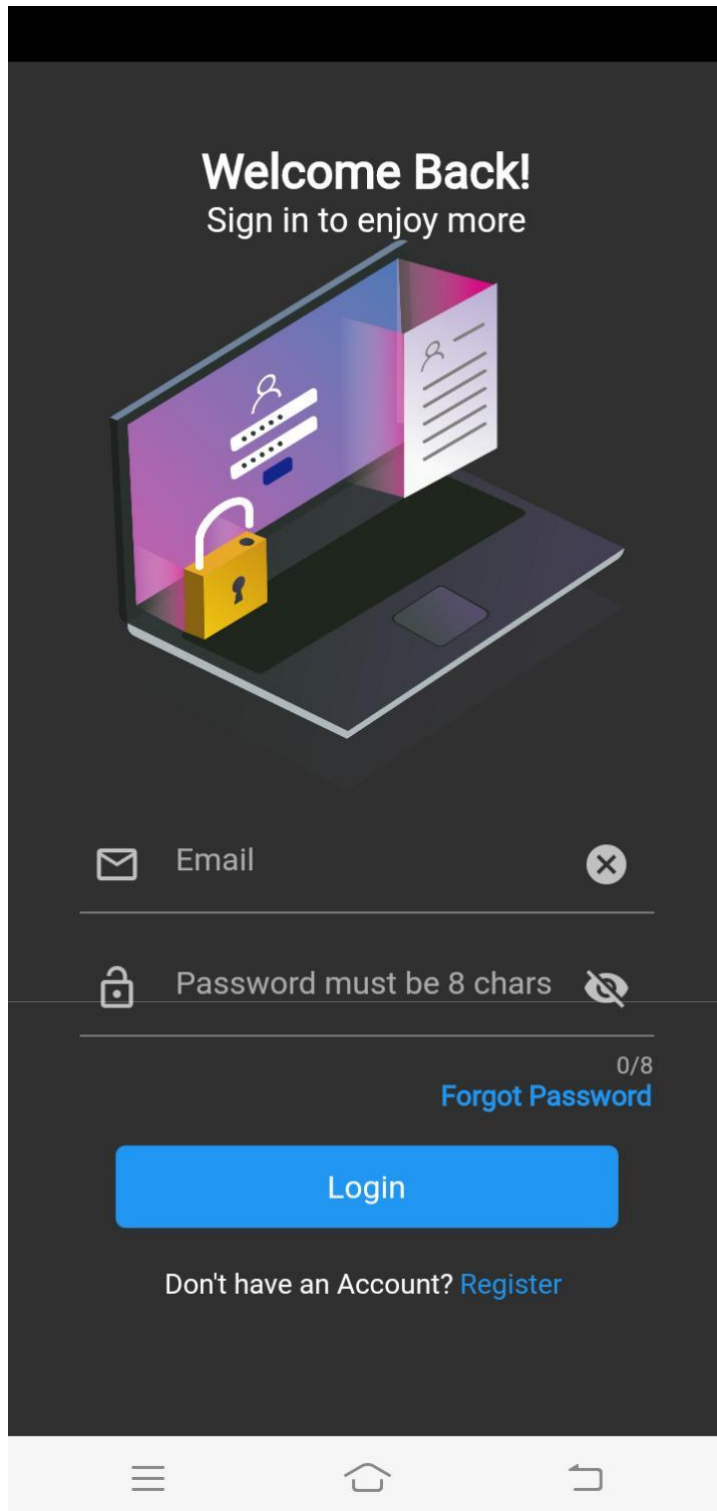


Figure 5.7: This screen shows the Login Screen of Essential Meet.

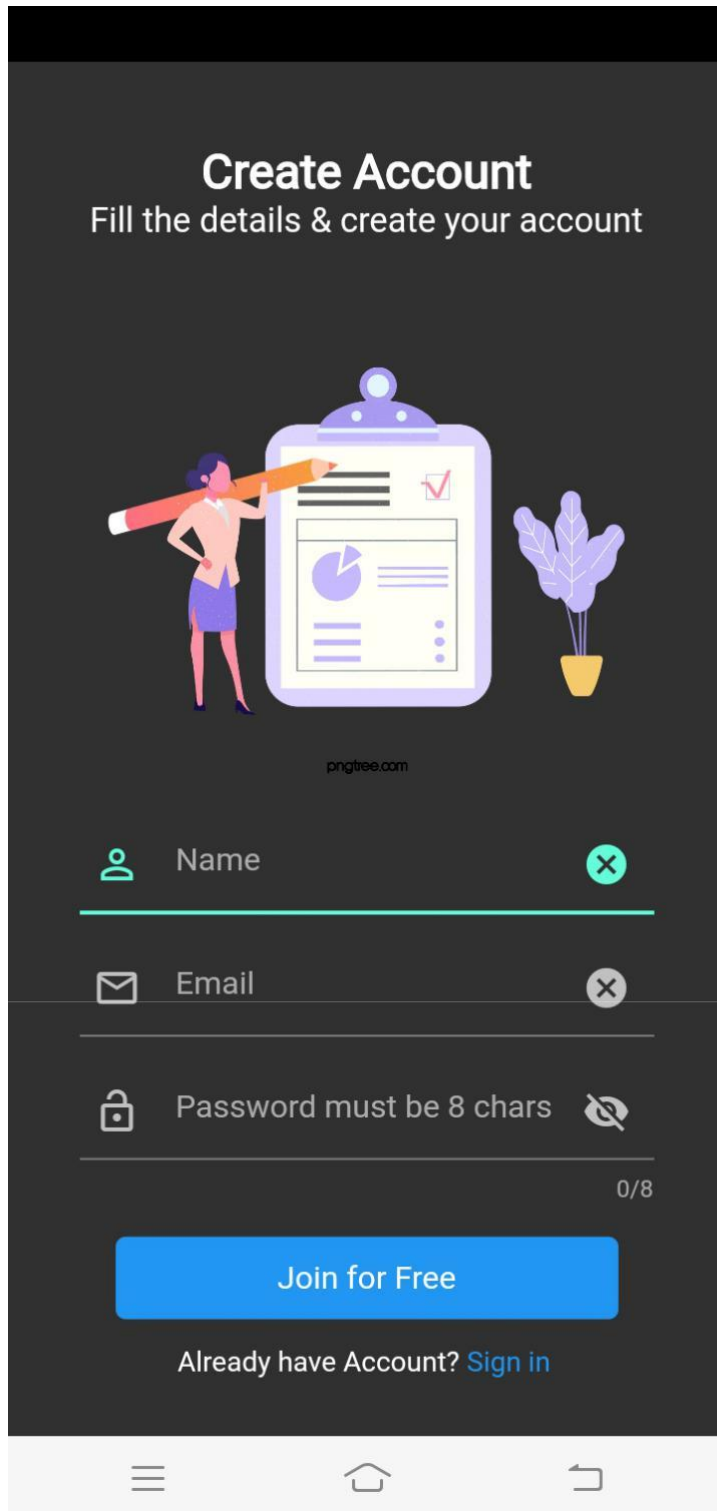


Figure 5.8: This screen shows the signup Screen of Essential meet.

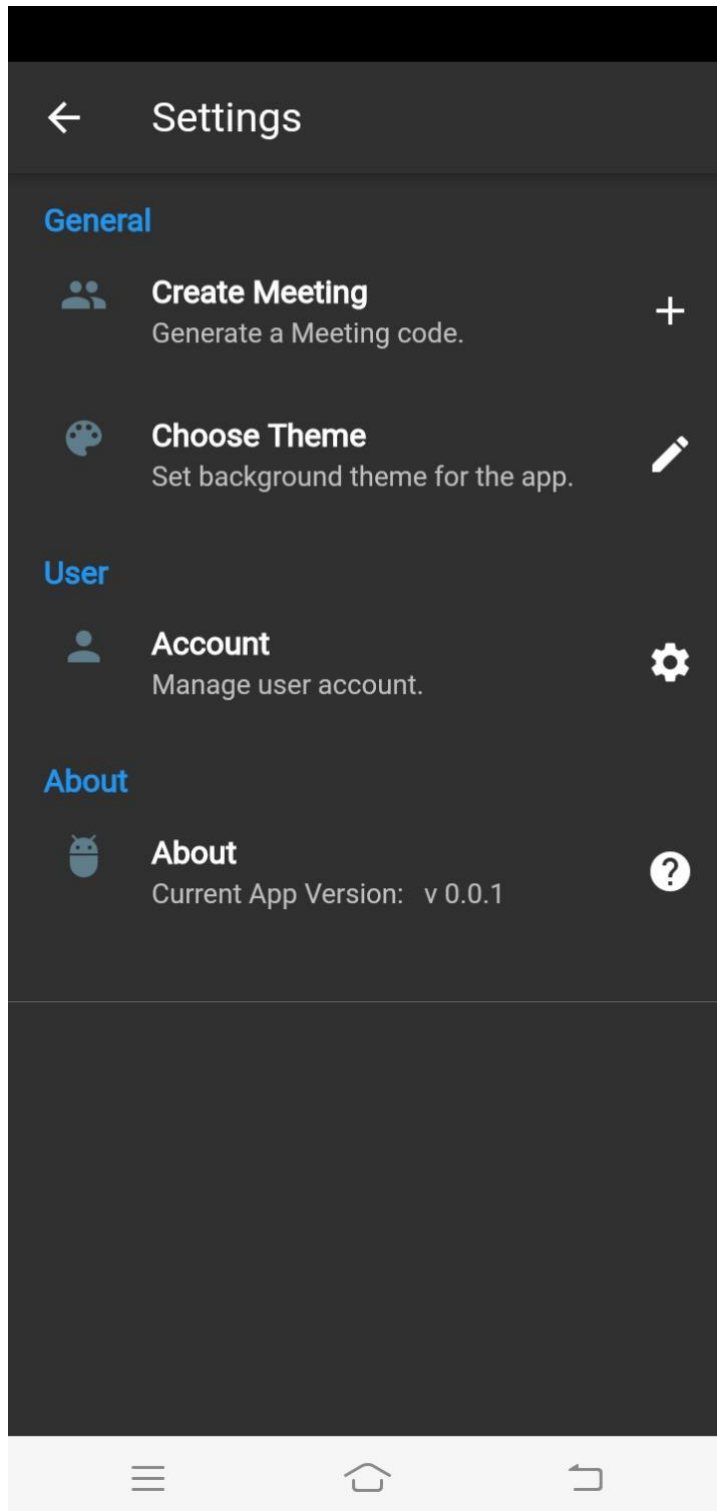


Figure 5.9: This screen shows the Account settings Screen of mobile application

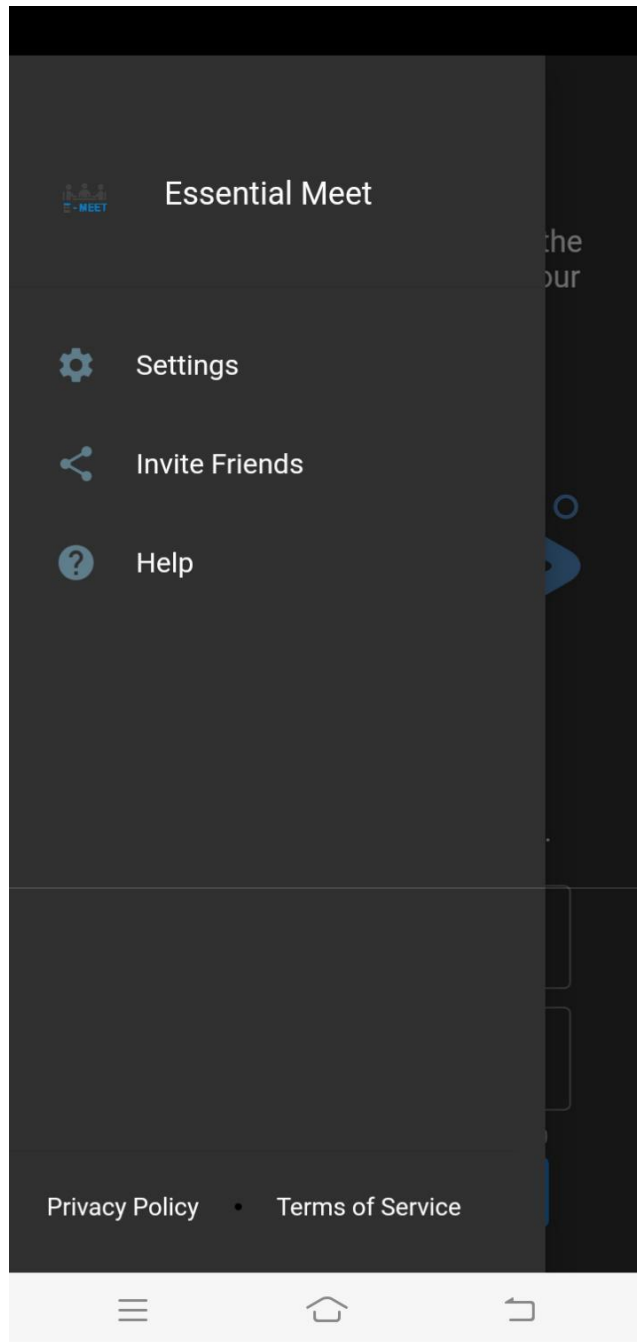


Figure 5.10: This screen shows the Navigation of mobile application.

Chapter 6: Experimentation and testing

6.1 Unit testing

Individual units or components of software are tested using this essential meet system. Each unit has its own set of test cases and outcomes. The goal is to ensure that each unit of software code works as intended. Each test case unit [8] showed the expected result and actual result to compared and produced the output.

6.1.1 Test Cases for Mobile Application

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
1	When a new user enters a valid email address, check the response.	abid786@gmail.com	Email Should be successfully Entered	Email was successfully entered	Pass
2	Check the response when new user entered valid Password	98765432	Password Should be successfully Entered	Password was successfully entered	Pass
3	Check the Response when clicking on the signup Button	Click on the Signup button	The registration process was completed successfully.	Signup was successful	Pass

Table 6.1: Test the signup/register page

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
4	Check the Response when user entered valid Email	abid786@gmail.com	You should have successfully entered your email address.	Email was successfully entered	Pass
5	Email was successfully Entered	98765432	Password should be successfully entered	Password was successfully entered	Pass
6	When you click the Login button, look at the response.	Login by using the Login button.	It should be possible to log in.	The login process was completed successfully	Pass

Table 6.2: Test the login page

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
7	Check if a User (Host) has the ability to create a meeting.	The user (Host) has the ability to create a meeting.	By clicking, you should be able to start a meeting and generate a ten-digit code that other users may use to log in.	Clicking Opened the meeting room	Pass

Table 6.3: Test the Generate meeting of mobile Application

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
8	When a Host successfully generates a meeting code, check the response.	For others to join, the host generates a 10-digit meeting code.	Successfully completing code generation	Ten digit is successfully produced	Pass

Table 6.4: Test the Generate meeting

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
9	When a user inputs a valid meeting code, Check the answer.	Join the meeting by clicking The Join Meeting button.	Clicking should successfully open the conference room.	Clicking The meeting room was successfully opened.	Pass

Table 6.5: Test the 10 digit meeting code to join meeting

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
10	Confirm that a Host has the ability to add or delete a participant	The host has the option of removing or adding the participant.	The host has successfully added a new user or deleted an existing one.	The host has successfully added a new user or deleted an existing one.	Pass

Table 6.6: Test the Add or remove participant by host

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
11	Check that users may form chat groups.	Create a group conversation by clicking the Create group chat button.	Clicking should successfully add the members to the chat group.	Clicking should successfully add the members to the group chat.	Pass

Table 6.7: Test the create chat group of mobile Application

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
12	Check that The name of one user is visible to The other user.	The name of one user is displayed to the other users.	Every user's name is correctly shown.	Every user's name is correctly shown.	Pass

Table 6.8: Test the displaying name of user to each other

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
13	Check the attendance system's facial detection.	Attendance system that detects faces	Click on face detection, face of each user identified successfully	Each user's face is effectively identified.	Pass

Table 6.9: Test the Face detection attendance of users

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
13	Check the attendance system's Facial detection.	Attendance system that detects faces	Click on face detection, face of each user identified successfully	Each user's face is effectively identified.	Pass

Table 6.10: Test the Face detection attendance of users

Test Case	Test Case Description	Test Data	Expected Result	Actual Result	Pass/Fail
14	Verify the OTP for users to authenticate	OTP authentication	OTP verified successfully	OTP verified successfully	Pass

Table 6.11: Test the OTP authentication of users

6.2 Integration Testing

Individual software modules are joined and assessed as a group during the integration testing phase of software testing. Integration testing is used to assess a system's or component's compliance with stated functional requirements.

Test Case	Test Case Description	Expected Result	Actual Result	Pass/Fail
1	A person can create an account by registering with Authentic Email address and password	A fresh user reported complete success. He may now log on and begin talking and calling.	A new user is registered successfully.	Pass

Table 6.12: Integration testing

6.3 System Testing

System testing is a type of testing that verifies a software product's completeness and integration. A system test is used to assess the end-to-end system requirements. Typically, software is just one part of a bigger computer system. This is a closed-loop test. This black box approach is used to assess the completed and integrated System as a whole in order to guarantee that it satisfies the required standards. The software's functioning is thoroughly tested from beginning to end. We Perform This Testing Technique on our project to check whether it meets all Functional Requirements or not. The system using the jitsi meet API to make a connection and generate the meeting room in the system. These are:

- Sign up
- Login
- Create Meeting
- Generate 10 digit code to join
- Create Meeting

- OTP Authentication
- Face Detection Attendance

These are successfully pass the test. Similarly We Perform Acceptance Testing on Our Project. We will authenticate user detail and give access to Login the App. All the System has been tested unit wise, integrated wise also on the basis of Acceptance. The System is Working Properly

5.4 Acceptance Testing

The main goal of this test is to determine whether the system complies with the business requirements and whether it is suitable for delivery.

Test Case	Test Case Description	Steps	Expected Result	Actual Result	Pass/Fail
1	As a user, I'd want to register for the mobile app so that I may establish a new account.	The person entered correct credentials and was able to access the login page. The user enters his username as well as password	Sign up should be successful..	Sign up was successful.	Pass
2	As a user, I'd want to register for the mobile application in order to create a new account.	The user enters wrong username and password	Sign up should not be successful and displayed message \Invalid User-name and password".	Sign up was not successful and displayed message \Invalid User-name and password".	Pass

Table 6.12: Acceptance testing of sign up page of mobile Application

Test Case	Test Case Description	Steps	Expected Result	Actual Result	Pass/Fail
3	As a user, I want to Login to the mobile Application so that I am able to access the same	The user has valid credentials and successfully opens the login page. The user enters his username and password	Login should be successful.	Login was successful.	Pass
4	As a user, I want to Login to the mobile Application so that I am able to access the same	The user enters wrong username and password	Login should not be successful and displayed message \Invalid User-name and password".	Login was not successful and displayed message \Invalid User-name and password".	Pass

Table 6.13: Acceptance testing of login page of mobile Application

Test Case	Test Case Description	Steps	Expected Result	Actual Result	Pass/Fail
5	As a User, I want to go to the meeting generate page to generate meeting	The user is logged in to the App successfully.	The System should display meeting page.	System Was displayed the meeting page successfully.	Pass

Table 6.14: Acceptance testing of mobile Application

6.5 Essential Meet App Accuracy

The essential meet has a high level of accuracy in terms of background and image clarity. Using the image acquired in real time, the system can recognise the face. The FaceNet module is used by the system to recognise the user.

Method	Training Data	Net	Model Size	Accuracy
MobileFaceNet	3.8M	1	4.0 MB	99.55%
MobileFaceNet (112 × 96)	3.8M	1	4.0 MB	99.53%
MobileFaceNet (95 × 96)	3.8M	1	4.0 MB	99.52%

Table 5.15: Mobile FaceNet

Method	Training Data	Net	Model Size	Accuracy
MobileFaceNet	120	1	2.4 MB	99.16%
MobileFaceNet (112 × 96)	120	1	2.4 MB	99.16%
MobileFaceNet (95 × 96)	120	1	2.4 MB	99.16%

Table 5.16: Essential Meet Accuracy

Chapter 7 :Results and Outputs

7.1 Percentage of Completion

The ProjectProject has been completed, and make sure that all the requirements are satisfied that have discussed during the proposal presentation.

7.2 Percentage of Accuracy

Accuracy of our Project is almost 99 percent. We have test all the test cases in our Project and all the test cases accurate and authentic. The aim is to make a universal mobile app to connect with students, teachers, and sta . Essential will provide more additional features like ngerprint authentication, screen recording, and cloud storage to store the di erent classes.

Chapter 8: Conclusion and Future Work

8.1 Conclusion

The system helps to growing the workforce, operates in various cities, or work with a group of professionals that travel frequently, there's a solution for you. Essential meet app helps you to bring people closer virtually and have a safe and authentic software structure. The System helps the teachers and students to manage online classes and assignments in the crucial time of COVID-19 situations. In this thesis we have discussed how we enhanced an existing solution and how we made it efficient , easy to use and be more reliable . these sort of applications are always in use and never lose their value as we all have seen that in times of difficulty we have discovered that many things can be done with help of technology not just in time of problem but in our daily life to improve our daily life standards

8.2 Future Directions

The system will helps the educational institutes to connect with students and teacher smoothly. The education sector manage classes and meetings with an authentic attendance system or fast video and audio calling and chat system helps to send messages during the meeting room. The system is capable of recognize the user and only allow user who registered the system. The essential meet app will add more additional features like screen recording and cloud storage to attend the recorded meetings. Another recognizable feature can be added which will be fingerprint to make sure that the integrity of the class cant be compromised , secondly we can also use iris recognition it will be difficult obviously because of lack of technology in regular smart phones but it will offer max level security can even high profile meeting can be conducted through it.

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