

A Project Report

on

TRIP PLANNER

Submitted in partial fulfillment of the requirements

for the award of the degree of

BACHELOR OF TECHNOLOGY

in

Computer Science & Engineering

by

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

(B.Tech Program Accredited by NBA)

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY: ANANTAPURAMU
(Accredited by NAAC with 'A' Grade, Affiliated to JNTUA, Approved by AICTE, New Delhi)

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Certificate

This is to certify that the project report entitled **Trip Planner** is the bonafide work carried out by **B.Pallavi** bearing Roll Number **164G1A0563**, **A.Rohitha** bearing Roll Number **164G1A0583**, **G.KejiyaEstarRani** bearing Roll Number **154G1A0540** and **B.Pavani** bearing Roll Number **164G1A0564** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science & Engineering** during the academic year 2019-2020.

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DECLARATION

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The results embodied in this project have not been submitted to any other Universities or Institute for the award of Degree or Diploma.

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ABSTRACT

Travelling is a great experience. People travel across the world to gain knowledge and experience different situations. Now-a-days travelling has become a profession also.

The existing system is that the travel agencies plan the trips and they will take a group of people to the specific tourist places as per the preplanned schedule. In this we might not explore the places of our interest or plan the trip according to our taste.

So as a solution to the existing problem this application is designed for the travelers who are passionate towards travelling to various corners of this beautiful world. It acts as a platform for the travelers who plan to travel as a group by interacting with the other travelers.

This proposed system enables the registered travelers to find the other travelers of same interest. In this the trip planner feature allows the travelers to plan the trip with the time, locations and form a group to interact among themselves. The travelers who are interested can collaborate and make their trip successful. On completion of the trip they can share their experiences by adding photos in different layouts of portrait and landscape with picture description and title. Travelers can do like, comment and share the pictures posted. The chat box feature allows the travelers to communicate in a better manner. The registered travelers can also suggest places for the other travelers to travel. The traveler can add buddies and share locations through the app.

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LIST OF ABBREVIATIONS

UI	User Interface.
OS	Operating System.
ARM	Advanced RISC Machine.
GPS	Global Positioning System.
XP	eXPerience
W2A	Welcome to Android
Http	Hyper Text Transfer protocol.
Https	Hyper Text Transfer Protocol Security.
UML	Unified Modeling Language.
DFD	Data Flow Diagram.
OO tools	Object Oriented tools.
JSON	Java Script Object Notation.
iOS	iPhone Operating System
JDK	Java Development kit
SDK	Software Development kit.
NoSQL	Non-relational database.
API	Application Programming Interface.
RDBMS	Relational Database Management System.
URL	Uniform Resource Locator.
dir	Directory.
Libs	Libraries.
Internet	Interconnected network.
ADT	Android Developer Tools.
IDES	Integrated Development Environment
APK	Android Package.
BIN	Binary files

CHAPTER 1

INTRODUCTION

1.1 Motivation

In current scenario, many people are interested to travel all over the world and some of them are passionate towards travelling.

The application acts as a platform where the interested group of travelers can communicate and coordinate while planning the trip and also during the trip. It is able to provide information about tourism for travelling users conveniently.

1.2 Problem Definition

People can collect the information about the tourist places according to their plans what they are going to visit but it is difficult to know the real time experiences. A tourist needs modern technologies which can serves to them, so this android application should be easy to use and efficient to manage the travelling activities. This android application enables the registered traveler to find the other travelers of same interest. The trip people plan the trip and posts pictures. Interested travelers can collaborate and complete the trip.

1.3 Objective

The main objective of this project is to provide information related to tourism. In this application trip planner will provide the source and destination places, number of stops during the trip, cost and also the time to complete the trip with start and end date.

By this app user need not go for searching information in different websites and apps. In this android application, if user select a particular place to travel it's better to go with this application as the needed information can be provided.

1.4 Limitations of Project

- Travelling can lead to fall ill and maybe then to expensive treatment or in case of fatal accident like for instance car and aerial one to death of many people.
- The next disadvantage is fatigue that occur while travelling. Most journeys last very long and it can make us feel tired.

- We can't provide preventing measures or services when people met with accidents while travelling...
people can't predict accidents right!

1.5 Organization of Project

This project is organized into six chapters, chapter 1 through chapter 6 and a brief description of each of the chapters is as given below:

Chapter 1: Covers motivation, objectives and problem formulation for the current project. The chapter introduces the relevant tasks carried out for the project work and also discusses about the limitations of the project.

Chapter 2: Covers about the Introduction, Existing, Proposed systems and software development tools.

Chapter 3: Focuses on the user requirements, hardware requirements and software requirements required for the current project.

Chapter 4: Details on the design part i.e., UML diagrams of the project.

Chapter 5: Covers the implementation and results of the project. The key functions and implementation of the project is explained in detail. The implementation includes the output screens and results.

Chapter 6: Consists of all the test cases performed on the task. If any problem occurs while testing the result of the project that will be noted and solved. Validation of the project will be checked.

CHAPTER 2

LITERATURE SURVEY

2.1 Introduction

The main idea behind the project is to develop an android application which will help tourists to find the better place at one instant. The long-time which tourists waste on searching for the better tourist spots like hill station, waterfall, beaches, etc. for their enjoyment in the new city which is totally unknown to them will get reduced, if they use this application. Hence this idea was very new and useful for all those who love to travel in a new city on a regular basis. The project is about tourist guide system how the tourist will get best use of the application according to his/her point of interest. The front of the application is Android. The android is the most powerful mobile operating system. Mostly 80% of the people are using android as their mobile operating system. So, this application is more useful for the majority people of the world. Travelling is one of the few activities that most would answer to be a hobby of theirs. It is something that exposes you to explore the different traditions, culture, and experience. Travelling is commonly done on various occasions. While some travel for vacation, there are others who do it for business, adventure and event.

Travelling is something that commonly leads to a discovery and a new experience for a greater knowledge of things or actions. By writing down your experience, you will get to understand your surroundings better, reflect and remember the discoveries that you have made during the trip.

2.2 Existing System

2.2.1 Desi Traveller App

Desi Traveler is an Blog, which is used to provide the information about the travelling details and users can post the travelling details in the Blog, and also users can post the travelling information in Social media like Facebook, twitter and Google plus etc., The main theme of this application will provide only UI (User Interface) page about traveling information of this application.

2.3 Drawbacks of Existing System

- Desi Traveler, it is just blog so users or admins can't interact with the application directly.
- Suppose if the user is having any issue they will not contact directly with this application, they will contact through Facebook, twitter and google plus etc....
- The admin is having the rights to interact with the different applications which he is having access for the different systems.
- If the user wants to register with Desi Traveler, user needs to coordinate with admin and admin will provide the necessary travelling information to the user.

2.4 Proposed System

The proposed system is used to improve the application as good and smart product. This proposed system overcomes the entire drawbacks of the existing system.

The following details are explaining the proposed system:

- The Proposed system is an Android application which is used to interact with the user and the application.
- The User is able to sign in and sign up through our application and also user can provide the trip planning according to user requirement.
- Suppose if the user wants to travel some particular location users should post the location in our application, so the people who are interested that place they can follow the trip and communicate with the user accordingly.
- If the user like this place he can capture the snaps and post it on our application about the trip. So based on this trip experience it is useful for the next visiting people.

2.5 Summary

Literature survey helps us to know the functionality about the existing system and provides to create a mobile application Travel Planner with new features.

CHAPTER 3

ANALYSIS

3.1 Introduction

Android is a Linux based Operating System is designed primarily for touch screen mobile devices such as smart phones and tablet computers. The operating system has been developed a lot in last 15 years starting from black and white phones to recent smart phones or mini computers. One of the most widely used mobile OS these days is android.

The android is a powerful operating system and it supports large number of applications in Smartphones. These applications are more comfortable and advanced for the users. The hardware that supports android software is based on ARM architecture platform.

Android devices incorporate many optional hardware components, including video cameras, GPS, orientation sensors, dedicated gaming controls, accelerometers, gyroscopes, barometers, magnetometers, proximity sensors, thermometers and touch screens. Some hardware components are not required, but became standard in certain classes of devices, such as smart phones, and additional requirements apply if they are present. Some other hardware was initially required, but those requirements have been relaxed or eliminated altogether. For example, as Android was developed initially as a phone OS, hardware such as microphones were required, while over time the phone function became optional. Android used to require an autofocus camera, which was relaxed to a fixed-focus camera if present at all, since the camera was dropped as a requirement entirely when Android started to be used on set-top boxes.

Android's source code is released by Google under an open source license, and its open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which deliver updates to older devices, add new features for advanced users or bring Android to devices originally shipped with other operating systems. These community developed releases often bring new features and updates to devices faster than through the official manufacturer/carrier channels, with a comparable level of quality, provide continued support for older devices that no longer receive official updates; or bring Android to

devices that were officially released running other operating systems, such as the HP Touchpad.

3.2 Software Requirements Specifications

Software Requirement Specification (SRS) is the starting point of the software development activity. It is a complete description of the behavior of a system which is to be developed. The SRS document enlists all necessary requirements for project development. To derive the requirements, we need to develop. This is prepared after detailed communication with project team and the customer.

A good SRS defines the how Software System will interact with all internal modules, hardware, communication with other programs and human user interactions with wide range of real-life scenarios

An SRS is a comprehensive description of the intended purpose and environment for software under development. The SRS fully describes what the software will do and how it will be expected to perform.

An SRS minimizes the time and effort required by developers to achieve desired goals and also minimizes the development cost. A good SRS defines how an application will interact with system hardware, other programs and human users in a wide variety of real-world situations.

3.2.1 User Requirements

Requirements for user are:

User can sign up and login by using E-mail address. For Sign up user requires E-mail address, User name and password. Mobile Internet connectivity is required to use and access the application.

3.2.2 Software Requirements:

- Operating System: Windows 10
- Database: Firebase

- Programming Languages: Core Java
- Tools: Android Studio 3.5.3

3.2.3 Hardware Requirements:

- Ram size: 4 GB
- Smartphone
- i3 Processor

3.3 Android Installation Procedure

Setting up Android development environment takes some time at first. It helps to make sure you don't do anything wrong to save yourself from the agony of doing the whole process again.

You're required to have Windows XP or later, or Mac OS X 10.5.8 or a later version to start Android application development process. Then, there are four tools that you will need and they are available on the Internet for free:

1. Java JDK 8
2. Android SDK

Step 1: Setup Java Development Kit (JDK)

You can download the JDK and install it, which is pretty easy. After that, you just have to set PATH and JAVA_HOME variables to the folder where you have **java** and **javac**.

Note for Windows Users: If you installed the JDK in C:\jdk1.0.8_15 then you will have to add the following two lines in your command prompt

```
C:\autoexec.bat file.  
set PATH=C:\jdk1.0.8_15\bin; %PATH%  
set JAVA_HOME=C:\jdk11.0.2_15
```

Step 2: Downloading and setting up Android Studio

Google provides Android Studio for the Windows, Mac OS X, and Linux platforms. You can download this software from the Android Studio homepage. (You'll also find the traditional SDKs, with Android Studio's command-line tools, available from the Downloads page.)

Installing Android Studio

I launched `android-studio-bundle-143.2821654-windows.exe` to start the installation process. The installer responded by presenting the Android Studio Setup dialog box shown below.



Figure 3.1 Set up Android Studio

Clicking Next took me to the following dialog box, which gives you the option to decline installing the Android SDK (included with the installer) and an Android Virtual Device.

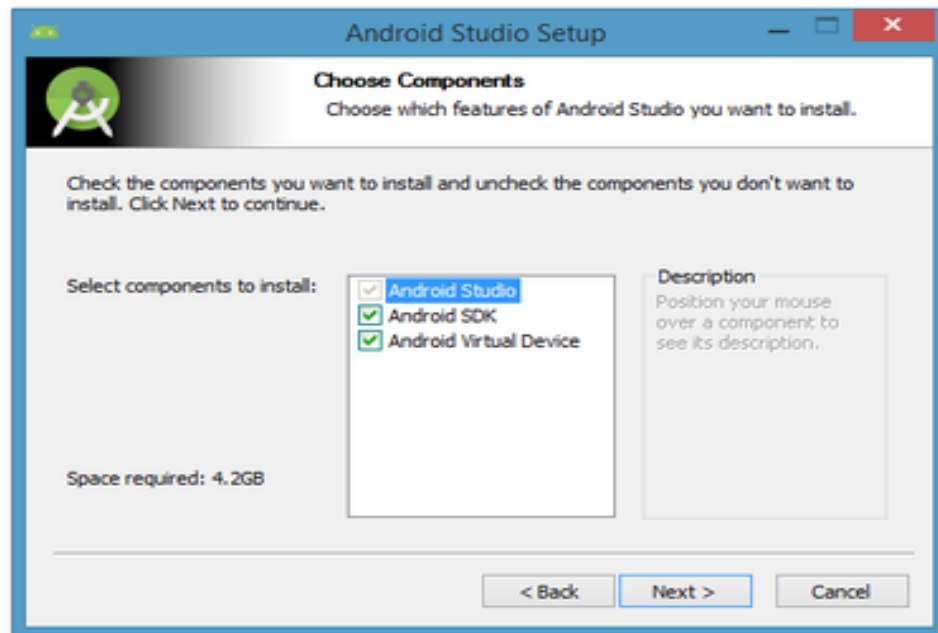


Figure 3.2 Do you want to install the Android SDK and AVD

I choose to keep the default settings. After clicking Next, you'll be taken to the license agreement dialog box. Accept the license to continue the installation.

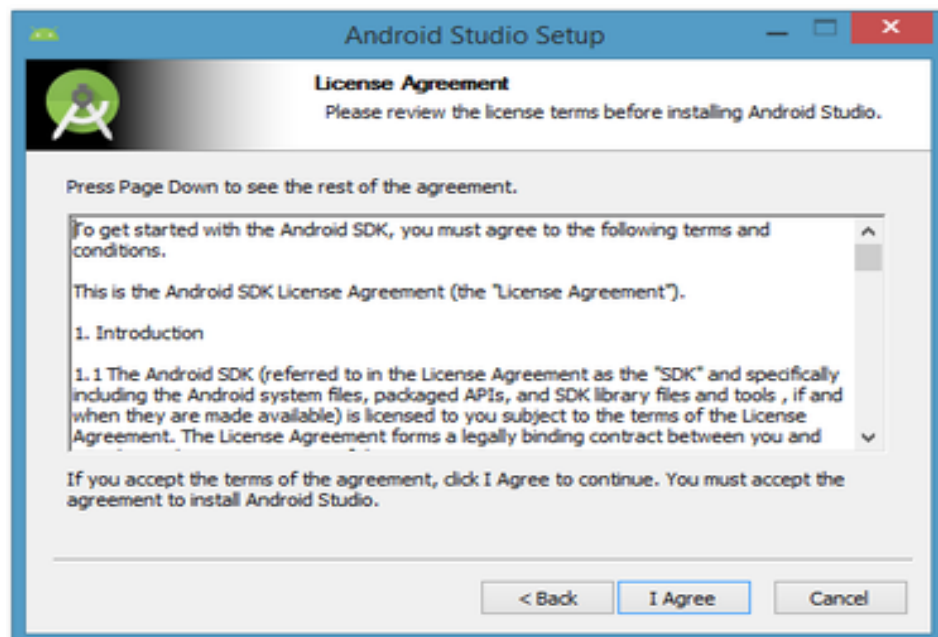


Figure 3.3 Accept the license agreement to continue installation

The next dialog box invites you to change the installation locations for Android Studio and the Android SDK.

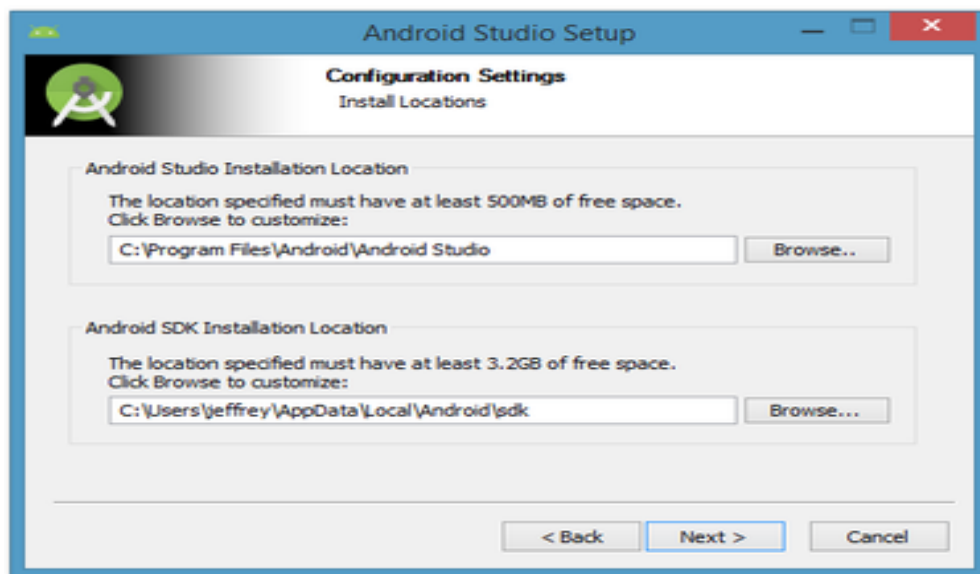


Figure 3.4 Set the Android Studio and Android SDK installation locations

Change the location or accept the default locations and click Next. The installer defaults to creating a shortcut for launching this program, or you can choose to decline. I recommend that you create the shortcut, and then click the Install button to begin installation.

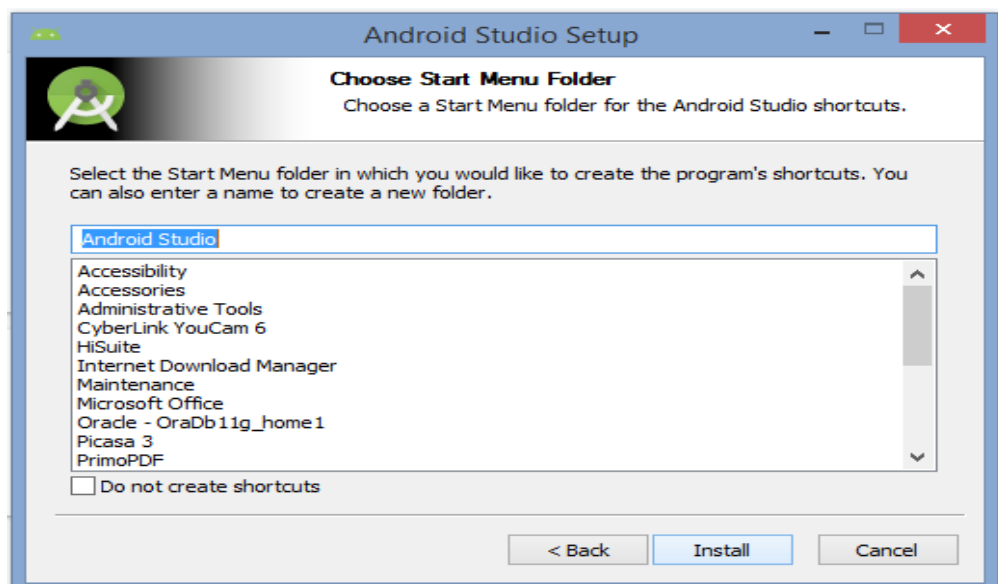


Figure 3.5 Create a new shortcut for Android Studio

The resulting dialog box shows the progress of installing Android Studio and the Android SDK. Clicking the Show Details button will let you view detailed information about the installation progress.

The dialog box will inform you when installation has finished. When you click Next, you should see the following:



Figure 3.6 Leave the Start Android Studio check box checked to run this software.

To complete your installation, leave the Start Android Studio box checked and click Finish.

Running Android Studio

Android Studio presents a splash screen when it starts running:



Figure 3.7 Android Studio's start screen

On your first run, you'll be asked to respond to several configuration-oriented dialog boxes. The first dialog box focuses on importing settings from any previously installed version of Android Studio.

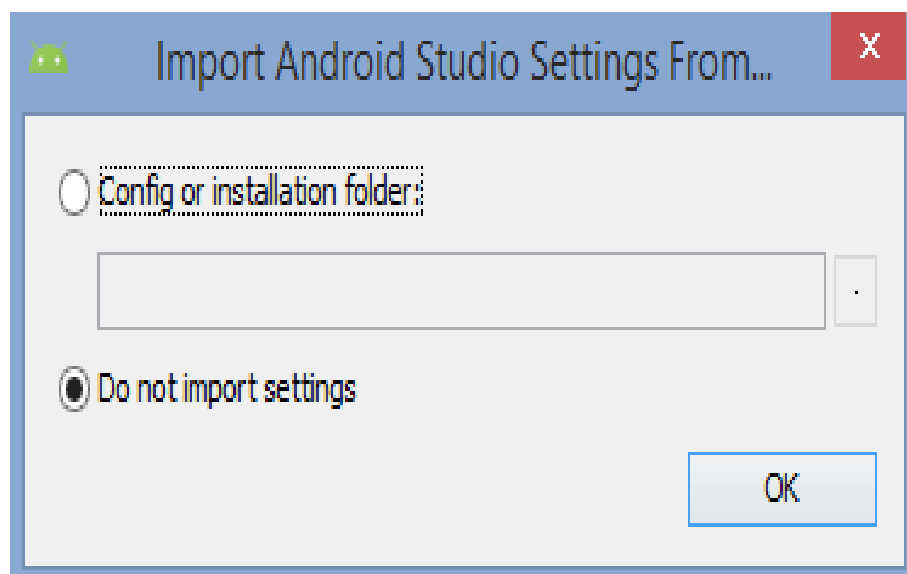


Figure 3.8 Import settings

If you're like me, and don't have a previously installed version, you can just keep the default setting and click OK. Android Studio will respond with a slightly enhanced version of the splash screen, followed by the Android Studio Setup Wizard dialog box.

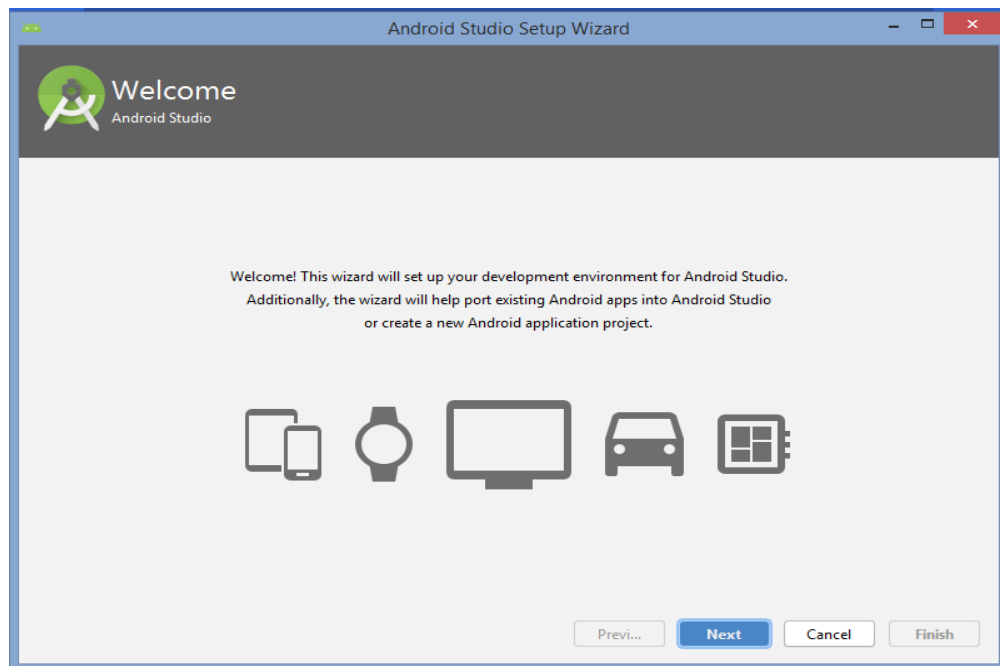


Figure 3.9 Validate your Android SDK and development environment setup

When you click Next, the setup wizard invites you to select an installation type for your SDK components. For now, I recommend you keep the default standard setting.

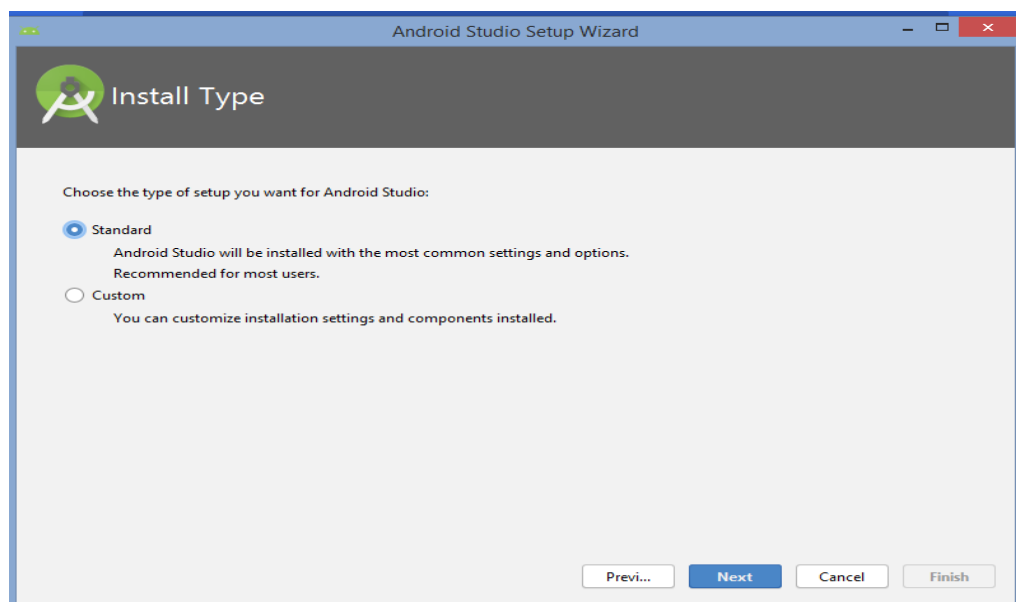


Figure 3.10 Choose an installation type

Click Next and verify your settings, then click Finish to continue.

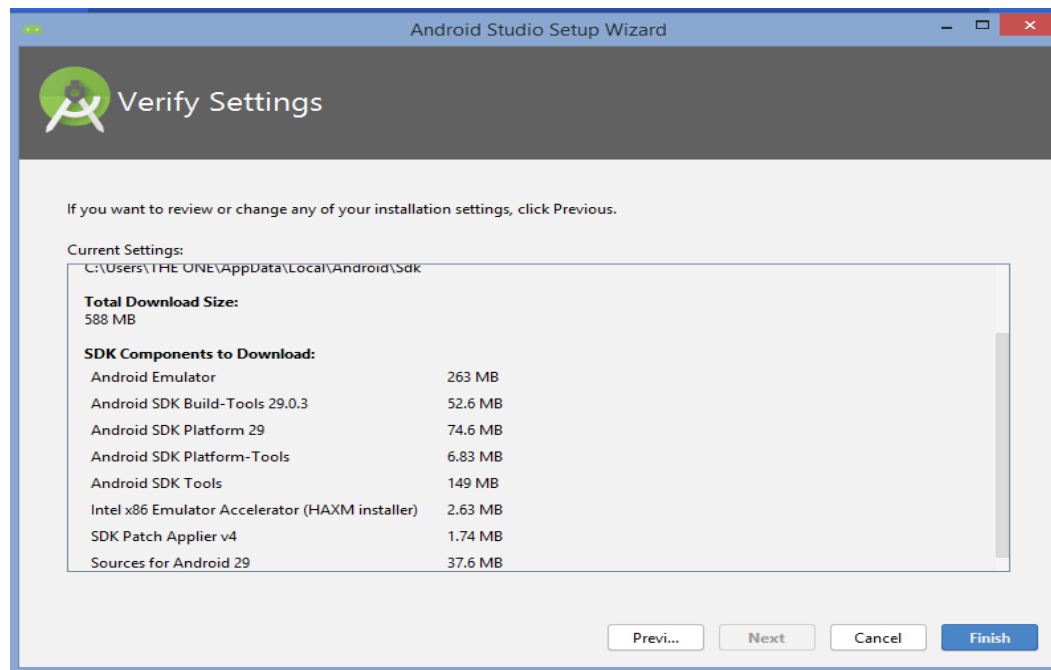


Figure 3.11 Review settings

The wizard will download and unzip various components. Click Show Details if you want to see more information about the archives being downloaded and their contents.

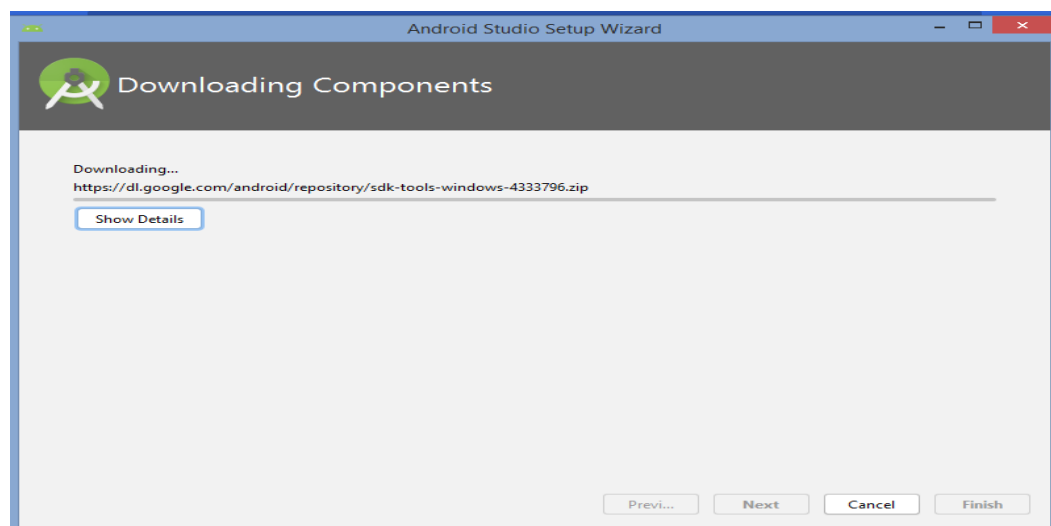


Figure 3.12 The wizard downloads and unzips Android Studio components

Finally, click Finish to complete the wizard. You should see the Welcome to Android Studio dialog box:

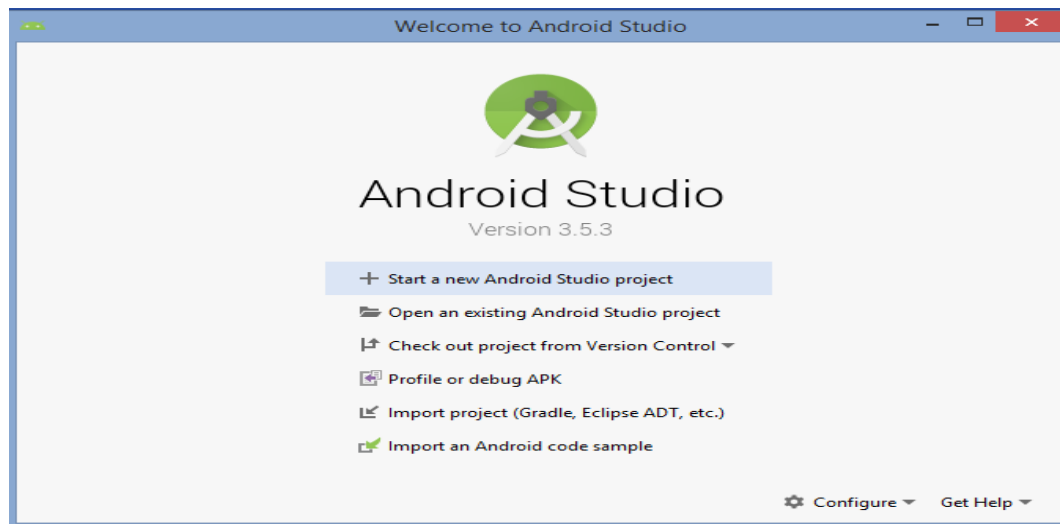


Figure 3.13 Welcome to Android Studio

You'll use this dialog to start up a new Android Studio project, work with an existing project, and more. You can access it anytime by double-clicking the Android Studio shortcut on your desktop.

Starting a new project

From our setup so far, you should still have Android Studio running with the Welcome to Android Studio dialog box. From here, click Start a new Android Studio project. Android Studio will respond with the Create New Project dialog box as shown below.

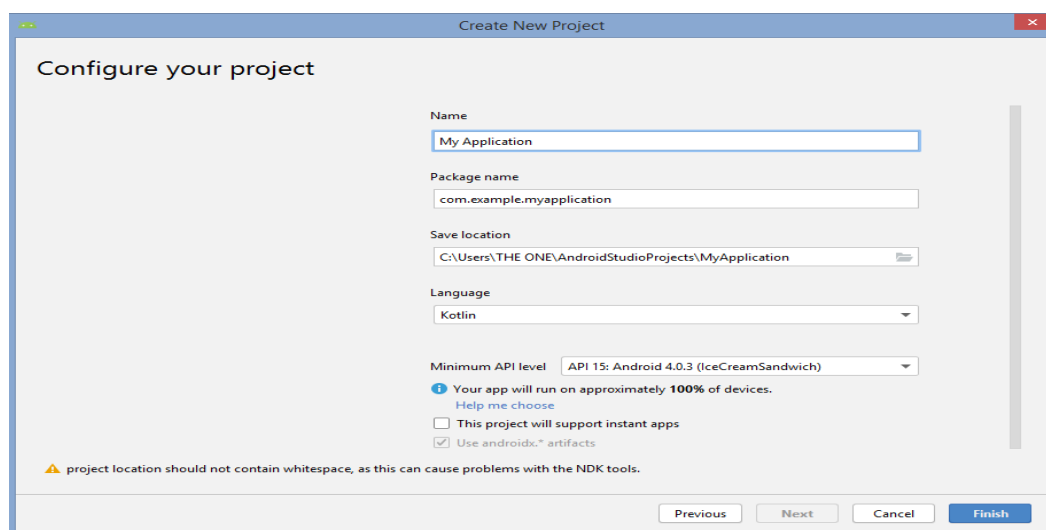


Figure 3.14 Create a new project.

Enter W2A (Welcome to Android) as the application name and javajeff.ca as the company domain name. You should then see
C:\Users\jeffrey\AndroidStudioProjects\W2A as the project location.

Click Next to select your target devices.

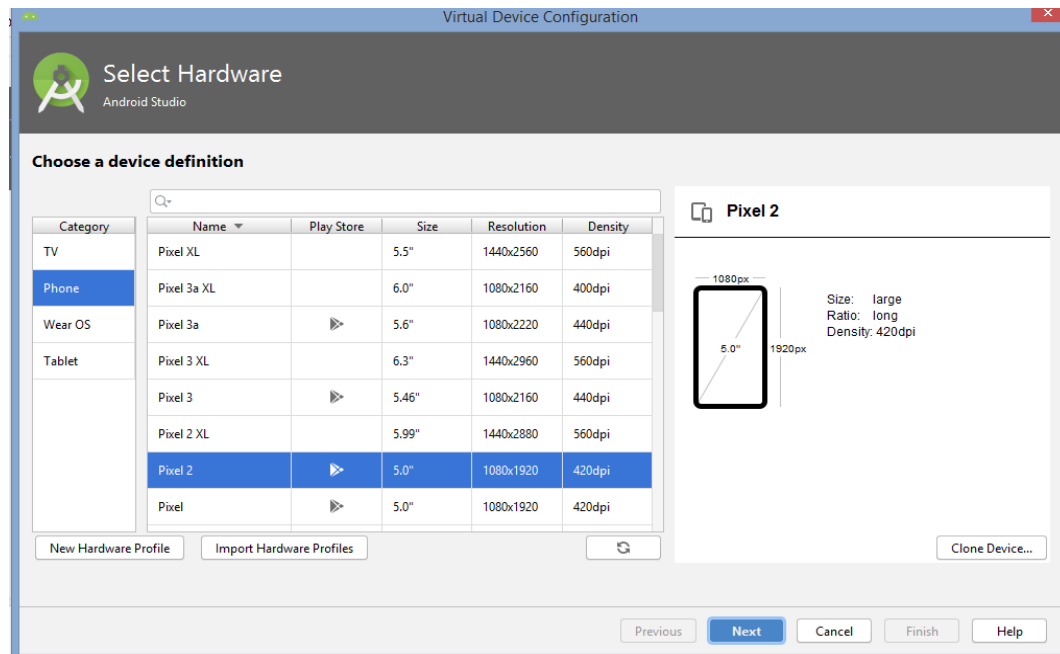


Figure 3.15 Select your target device categories.

Android Studio lets you select form factors, or categories of target devices, for every app you create. I would have preferred to keep the default API 15: Android 4.0.3 (IceCreamSandwich) minimum SDK setting (under Phone and Tablet), which is supported by my Amazon Kindle Fire HD tablet. Because Android Studio doesn't currently support this API level (even when you add the 4.0.3 system image via the SDK Manager), I changed this setting to API 14: Android 4.0 (IceCreamSandwich), which is also supported by my tablet.

Click Next, and you will be given the opportunity to choose a template for your app's main activity. For now, we'll stick with Empty Activity. Select this template and click Next.

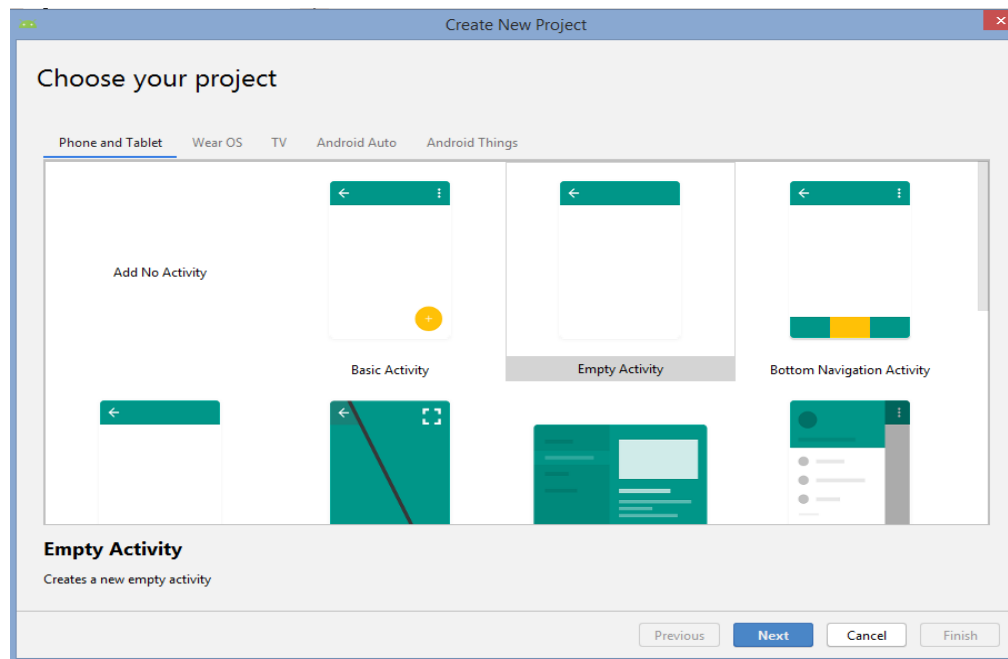


Figure 3.16 Specify an activity template.

Next, you'll customize the activity:

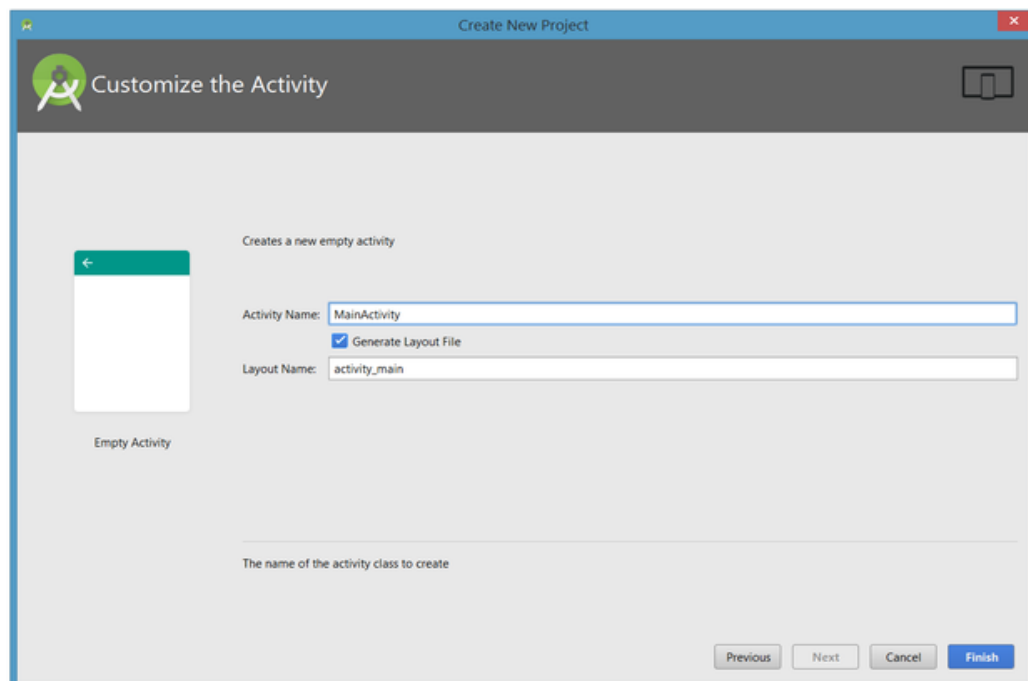


Figure 3.17 Customize your activity.

Enter Travel Planner as the activity name and main as the layout name, and click Finish to complete this step. Android Studio will respond that it is creating the project, and then take you to the project workspace.

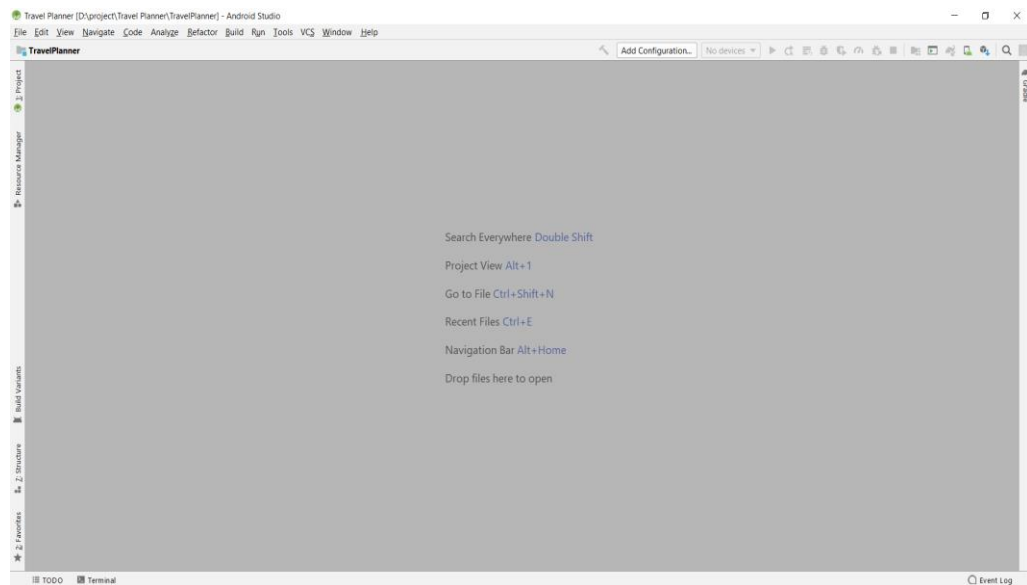


Figure 3.18 Android Studio workspace

The project workspace is organized around a menu bar, a tool bar, a work area, additional components that lead to more windows (such as a Gradle Console window), and a status bar. Also note the Tip of the Day dialog box, which you can disable if you like. These details will be appearing in two new windows

The project and editor window

When you enter the project workspace, Travel Planner is identified as the current project, but you won't immediately see the project details. After a few moments.

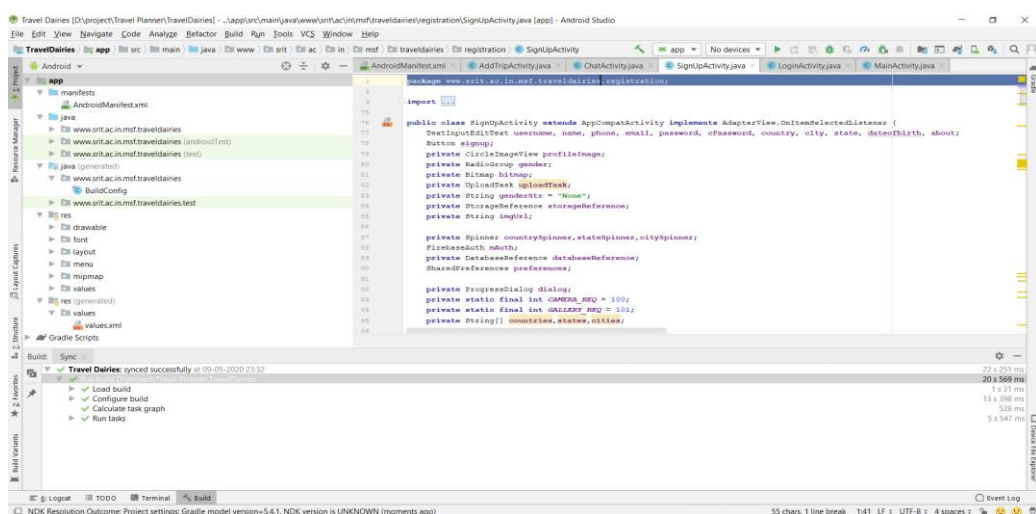


Figure 3.19 The project and editor windows

3.4 Summary

In this chapter we have given introduction about android os and had explained the software requirements specifications and in that user requirement, software and hardware requirements are mentioned.

CHAPTER 4

DESIGN

4.1 Introduction

The project design is the central component in the project life cycle and its preparation is a complex task. This phase focuses on the detailed implementation of app design. Travel seeker get information about the place they need to travel and post their pictures as a memory and get complements and likes from others.

Every operating system or platform has guidelines for design. Consistent design helps to create a distinct look and feel for the operating system or platform. When you're working on an application that will target Android, for example, you'll learn that there are a number of subtle and not so subtle differences regarding the vision that underlies the design. These are some examples of aspects which are emphasized differently than other mobile operating systems.

Personalization: The Android guidelines recommend that you include a level of personalization within an application as it helps make users feel at home. Giving the user the ability to theme an application is a good example of this concept.

Icons over Words: If you can communicate something through visuals, such as icons or images, then that should be the preferred method of communication. If you come across a scenario in which words are absolutely necessary, then make sure to keep it concise and actionable.

Every User Is an Expert: Mobile applications should always be easy to use. At the same time, you should give the user the impression that they're a power user. This can be accomplished by providing shortcuts or by implementing a powerful on boarding process.

4.2 UML Diagrams

The UML stands for Unified modeling language, is a standardized general-purpose visual modeling language in the field of Software Engineering. It is used for specifying, visualizing, constructing, and documenting the primary artifacts of the software system. It helps in designing and characterizing, especially those software systems that incorporate the concept of Object orientation. It describes the working of both the software and hardware systems

The Object Management Group is an association of several companies that controls the open standard UML. The Object Management Group was established to build an open standard that mainly supports the interoperability of object-oriented systems. It is not restricted within the boundaries, but it can also be utilized for modeling the non-software systems.

The goal is for UML to become a common language for creating models of object-oriented computer software. In its current form UML is comprised of two major components: a Meta model and a notation. In the future, some form of method or process may also be added to; or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modelling and other non-software systems.

The Unified Modeling Language represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

The Unified Modeling Language is a very important part of developing objects-oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

GOALS

The Primary goals in the design of the UML are as follows:

- Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
- Provide extendibility and specialization mechanisms to extend the core concepts.
- Be independent of particular programming languages and development process.
- Provide a formal basis for understanding the modeling language.
- Encourage the growth of OO tools market.
- Support higher level development concepts such as collaborations, frameworks, patterns and components.

4.2.1 Use Case Diagram

A use case diagram is a dynamic or behavior diagram in UML. Use case diagrams model the functionality of a system using actors and use cases. Use cases are a set of actions, services, and functions that the system needs to perform. In this context, a "system" is something being developed or operated. The "actors" are people or entities operating under defined roles within the system. Use case diagrams specify how the system interacts with actors without worrying about the details of how that functionality is implemented.

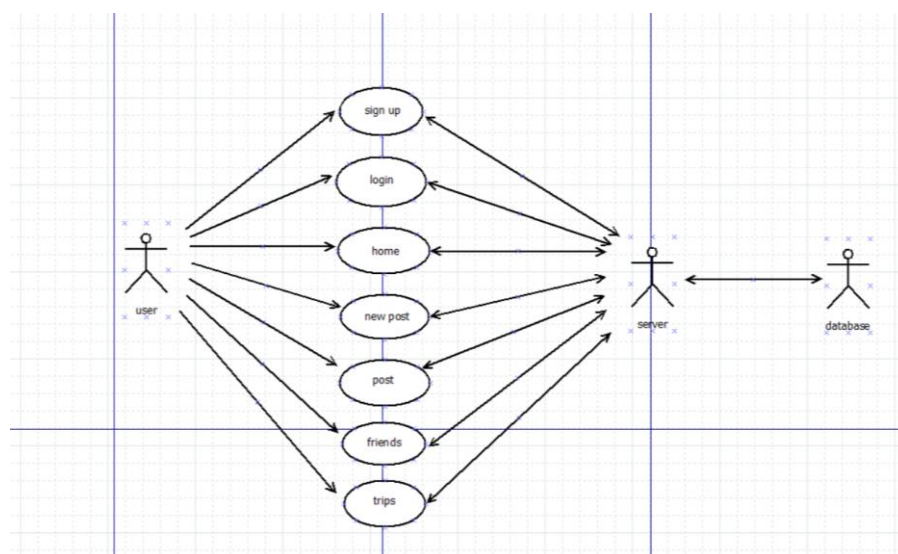


Figure 4.1 Use Case Diagram

4.2.2 Activity Diagram

An activity diagram visually presents a series of actions or flow of control in a system similar to a flowchart or a data flow diagram. Activity diagrams are often used in business process modeling. The basic purpose of activity diagram is, it captures the dynamic behavior of the system.

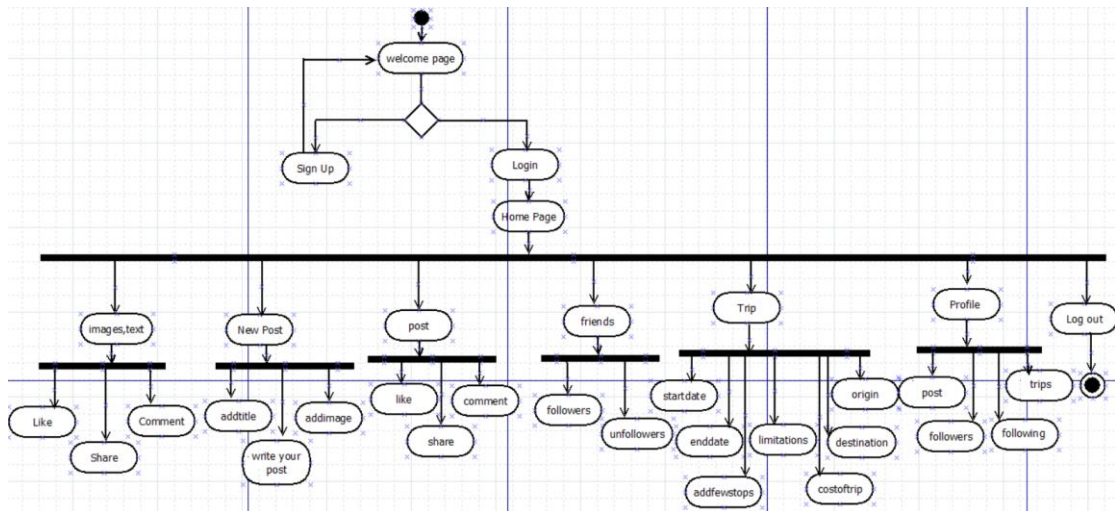


Figure 4.2 Activity Diagram

4.2.3 Sequence Diagram

A sequence diagram simply depicts interaction between objects in a sequential order i.e. the order in which these interactions take place. We can also use the terms event diagrams or event scenarios to refer to a sequence diagram. Sequence diagrams describe how and in what order the objects in a system function. These diagrams are widely used by businessmen and software developers to document and understand requirements for new and existing systems.

Benefits of sequence diagram:

Sequence diagrams can be useful references for businesses and other organizations. Try drawing a sequence diagram to:

- Represent the details of a UML use case.
- Model the logic of a sophisticated procedure, function, or operation.
- See how objects and components interact with each other to complete a process.
- Plan and understand the detailed functionality of an existing or future scenario.

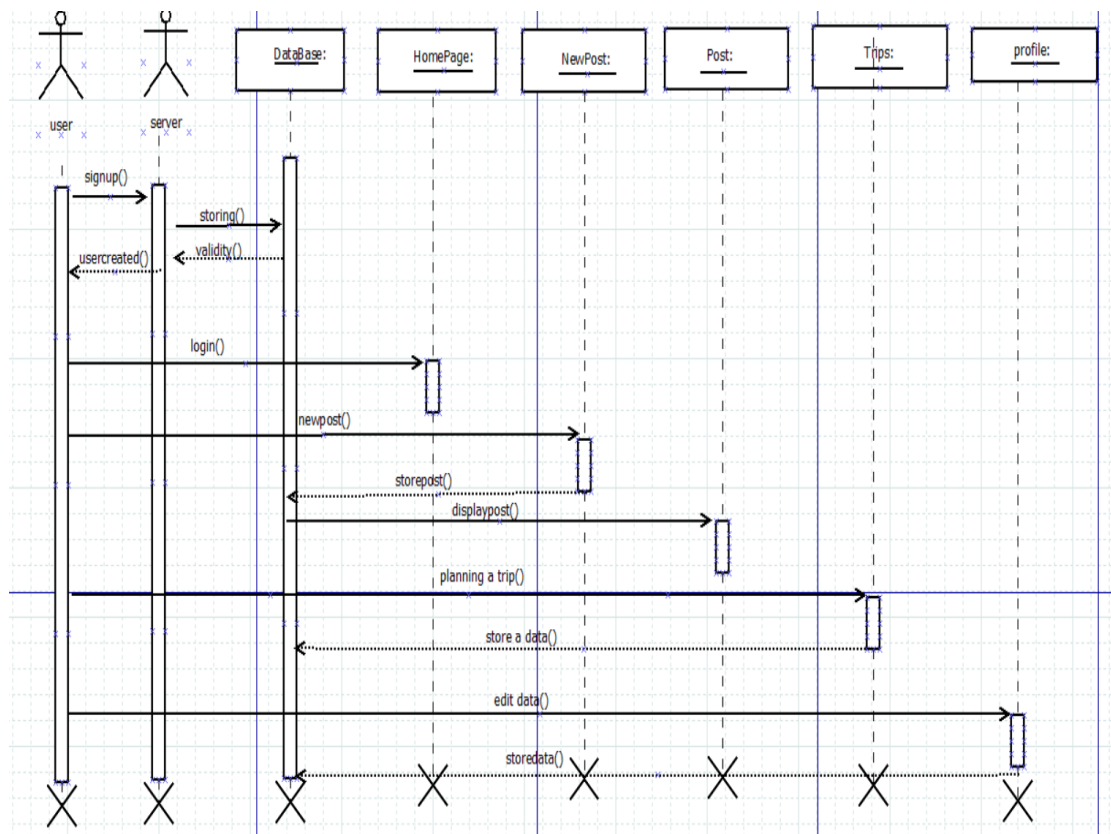


Figure 4.3 Sequence Diagram

4.2.4 Class Diagram

Class diagram represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.

Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of object-oriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages.

- The upper part holds the name of the class.
- The middle part contains the attributes of the class.
- The bottom part gives the methods or operations the class can take or undertake.

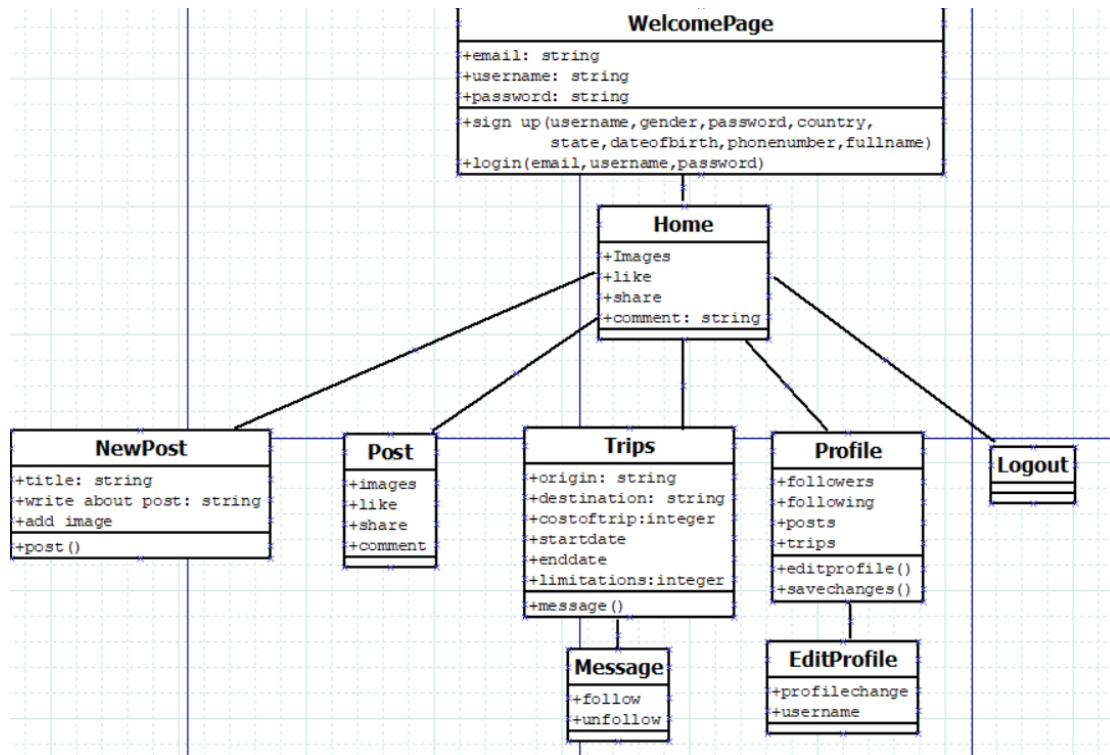


Figure 4.4 Class Diagram

4.2.5 Data Flow Diagram

A DFD is the graphical representation of the flow of data from one component to another component in any information system. Through DFD, we can give the overview of the system without going into deep detail of the system. The symbols used to flow data from one component to another component in DFD are Process, Data stores, External entities, data Flows.

General rules to be followed:

- No internal logics should be shown like loops, if-else, this is not a flow chart.
- In order to keep the diagram uncluttered, you can repeat data stores and external entities.
- No process can have only output data flows (a miracle).
- No process can have only input data flows (black hole).
- Data cannot be moved directly from one store to another without a process, and from an external entity to a data store without a process.
- Data stores cannot be sink (only input data flows) or a source (only output data flows).

In a way of representing data through levels like level 0, level 1, level2 in the Data Flow Diagram. Every Data flow diagram consisting of only one level 0, level 1 diagram but may contain more than 1 level 2 context level diagrams.

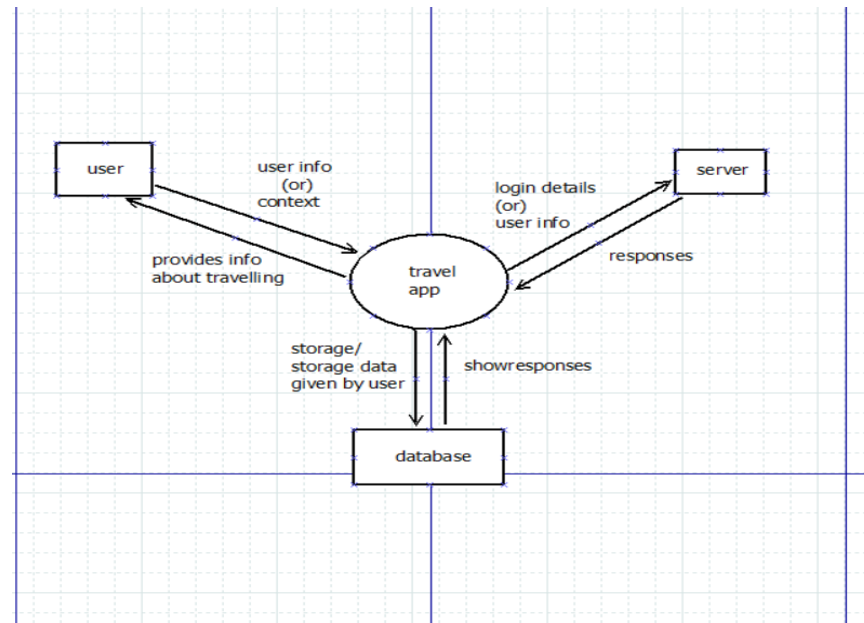


Figure 4.5 Data Flow Diagram

4.3 Module Description

4.3.1 User Module

Citizens will have mobile application. The user has to create the account or sign in the account. If we have already created the account you can just sign in. While creating the account the user has to enter the username, mail id and password. After entering all credentials click on the create account button or just simply a login button. After login a home page will appear for the user. The user can be having followers, Trips option, following and post options with in their individual profile. User can post pictures regarding their travelling experiences and they can make others to travel by posting pictures with the description and this gives a real time experience to the people and they can like, comment and share for the posted pictures and they can also edit their profiles.

4.3.2 Server Module

The user has to create an account or sign in the account. Server gives the response to the user with their login information by providing authentication to the user and the data base given by user can be stored in server.

4.4 Summary

Design of this application provides clear explanation of all modules and their functionalities with their UML diagram.

CHAPTER 5

IMPLEMENTATION & RESULTS

5.1 Introduction

After designing the new system, the whole system is required to be converted into computer understanding language. Coding the new system into computer programming language does this.

It is an important stage where the defined procedures are transformed into control specifications by the help of a computer language. This is also called the programming phase in which the programmer converts the program specifications into computer instructions, which we refer as programs. The programs coordinate the data movements and control the entire process in a system.

It is generally felt that the programs must be modular in nature. This helps in fast development, maintenance and future change, if required.

The validity and proper functionality of all the modules of the developed application is assured during the process of implementation. Implementation is the process of assuring that the information system is operational and then allowing user to take over its operation for use and evaluation.

Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operated the new system. The most crucial stage in achieving a new successful system is that it works effectively and efficiently.

5.2 Explanation of Key Functions

5.2.1 Firebase

Firebase is a mobile platform that helps you quickly develop high-quality apps, grow your user base, and earn more money. Firebase is made up of complementary features that you can mix-and-match to fit your needs, with Google Analytics for Firebase at the core. You can explore and integrate Firebase services in your app directly from Android Studio using the Assistant window of firebase.

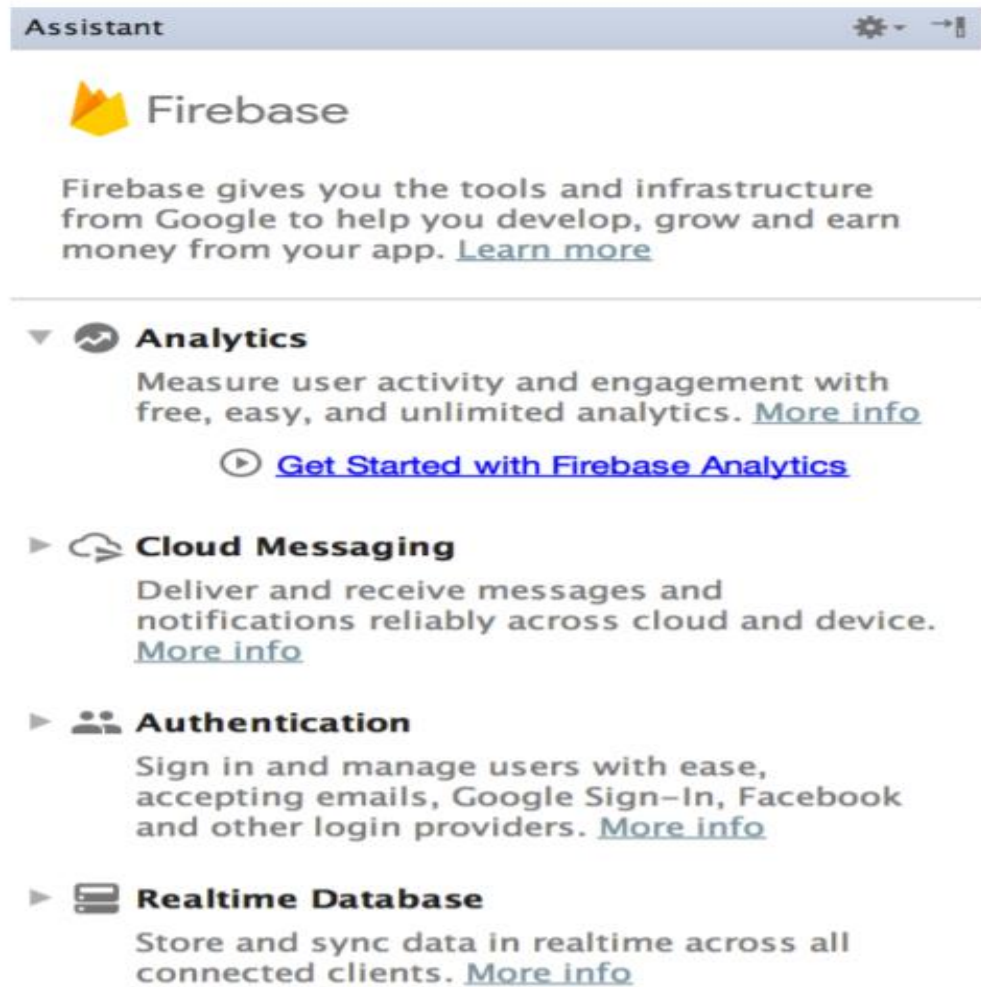


Figure 5.1 Assistant window of Firebase

5.3 Services of Firebase

5.3.1 Firebase Analytics

Google Analytics for Firebase is a free app measurement solution that provides insight on app usage and user engagement. Analytics reports help you understand clearly how your users behave, which enables you to make informed decisions regarding app.

5.3.2 Firebase Authentication

Firebase Authentication provides backend services, easy-to-use SDKs, and ready-made UI libraries to authenticate users to your app. It supports authentication using passwords, phone numbers, popular federated identity providers like Google, Facebook and Twitter, and more. Additionally, it includes a user management system

whereby developers can enable user authentication with email and password login stored with Firebase.

5.3.3 Realtime Database

The Firebase Realtime Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client. When you build cross platform apps with our iOS, Android, and JavaScript SDKs, all of your clients share one Realtime Database instance and automatically receive updates with the newest data. Realtime Database is a NoSQL database and as such has different optimizations and functionality compared to a relational database. The Realtime Database API is designed to only allow operations that can be executed quickly. This enables you to build a great real-time experience that can serve millions of users without compromising on responsiveness.

Dependencies fetched from firebase



Figure 5.2 JSON Parsing

Non-Relational Database

A non-relational database is any database that does not follow the relational model provided by traditional relational database management systems. This category of databases, also referred to as NoSQL databases, has seen steady adoption growth in recent years with the rise of Big Data applications.

Non-relational databases have grown in popularity because they were designed to overcome the limitations of relational databases in dealing with Big Data demands. Big Data refers to data that is growing and moving too fast, and is too diverse in structure for conventional technologies to handle.

Permissions for internet

I am planning to develop an Android app that communicates with a server that I operate. Answers to android, [httpurlconnectionerror](#) state that classes such as `URLConnection` and `HttpsURLConnection` require granting the "full network access" permission (`android.permission.INTERNET`) to the app. Someone on a forum told me that for the vast majority of apps, `android.permission.INTERNET` is unacceptably intrusive on the user's privacy, and that there exist other ways for an app to communicate with a server operated by its developer that do not require such an intrusive permission.

And the same app will ask for full network access, even though if you look at the traffic, almost all of them are using HTTP to talk to their services, and they have no legit need for full network access. However, it lets them look at what all your network connections are.

```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
```

Figure 5.3 Android Permission

Permissions on camera

Got permission for the camera purpose

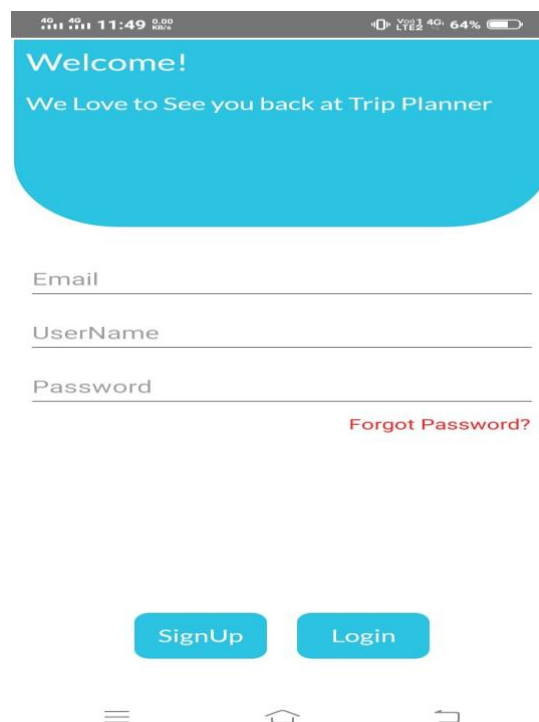
```
<uses-permission
    android:name="android.permission.READ_EXTERNAL_STORAGE" />
<uses-permission
    android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<uses-permission
    android:name="android.permission.CAMERA" />
```

Figure 5.4 Camera Permission

5.4 Methods of Implementation & result Analysis

Output screens

Screen 1: Welcome Page for Travel Planner application.



Screen 5.5 Welcome Page

Screen 2:

Signup page for registration.

The image displays two side-by-side screenshots of the Trip Planner app's signup page. The left screenshot shows the top half of the form with fields for User Name, About, Full Name, Phone, Gender (Male/Female), Email, Password (Min. of 8 characters), Confirm Password, and Country. The right screenshot shows the bottom half of the form with fields for Full Name, Phone, Gender (Male/Female), Email, Password, Confirm Password, Country, State, City, and Date of Birth (DD/MM/YYYY). A 'CREATE ACCOUNT' button is visible at the bottom right of the right screenshot.

Screen 5.6 Signup Page

Screen 3:

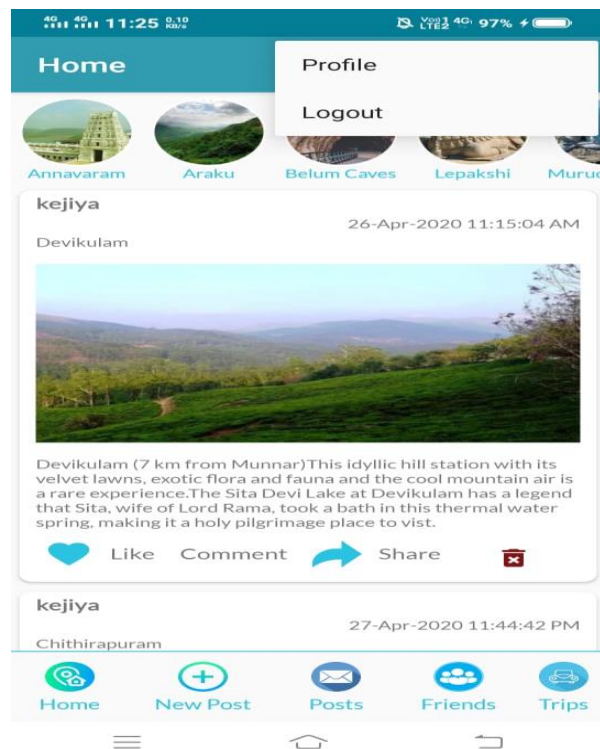
Login screen where user can login in to the app

The image shows the login screen of the Trip Planner app. It features a blue header with the text "Welcome! We Love to See you back at Trip Planner". Below this are input fields for Email (kejiyaestar1997@gmail.com), UserName (kejiyarani), and Password (masked with dots). A "Forgot Password?" link is visible next to the password field. At the bottom are "SignUp" and "Login" buttons.

Screen 5.7 Login Page

Screen 4:

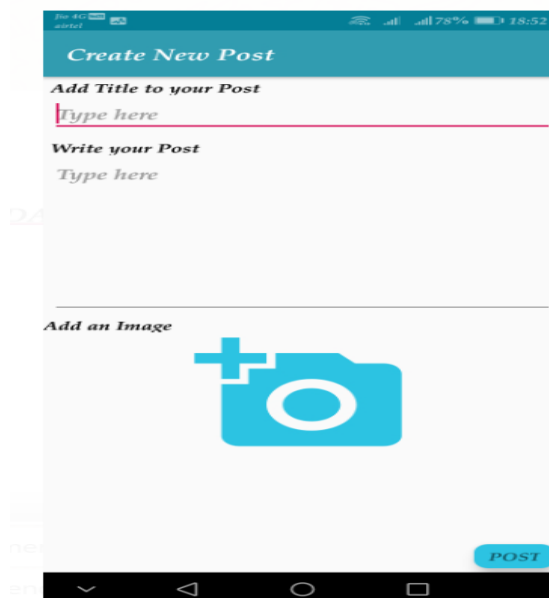
Home page of app showing posts.



Screen 5.8 Home Page

Screen 5:

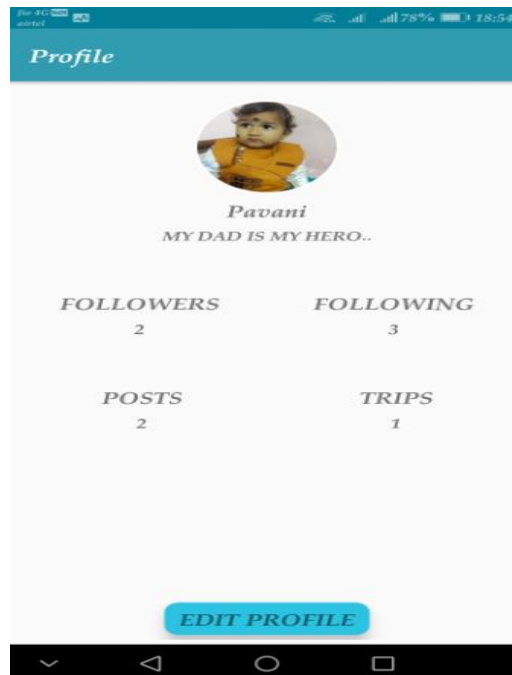
New post page, here we can post the pictures.



Screen 5.9 New Post Page

Screen 6:

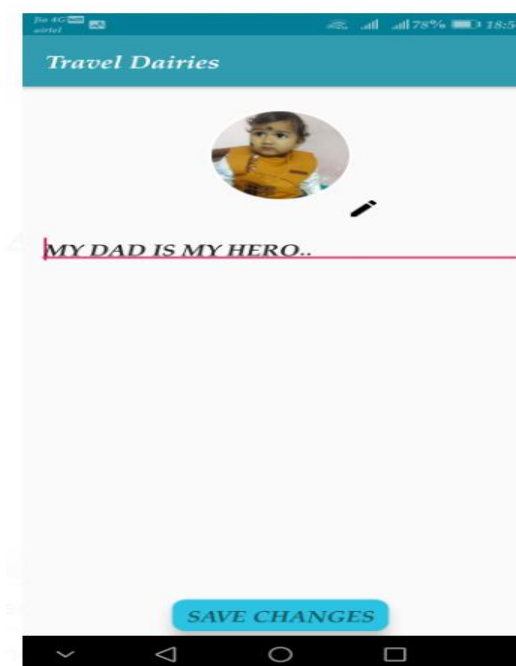
Profile page of user and edit options that a user can change his profile picture and bio and count about followers, following, posts, trip.



Screen 5.10 Profile Page

Screen 7:

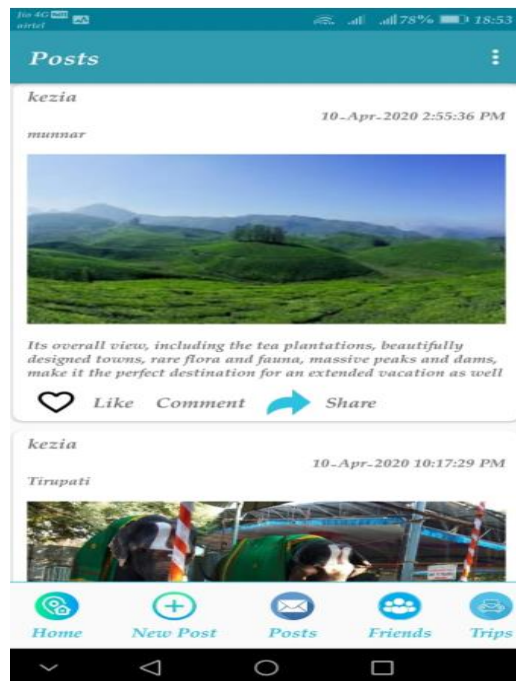
Profile edit Page, here we can edit the profile and bio of the user.



Screen 5.11 Editing a Profile

Screen 8:

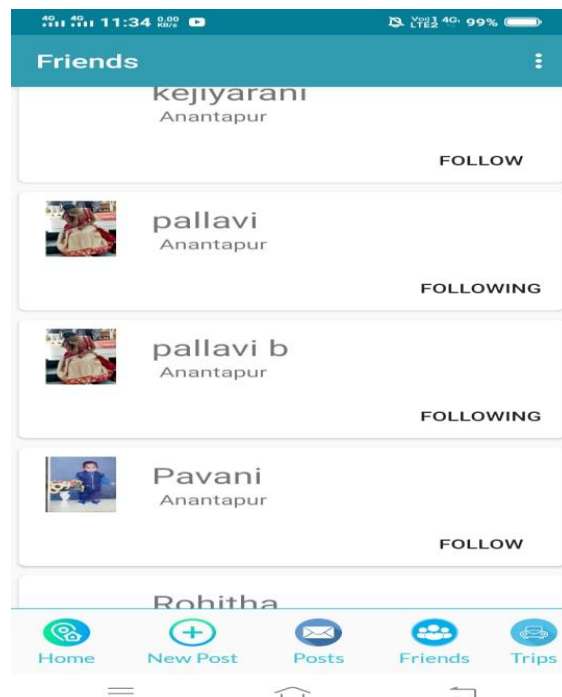
This is a posts page where all other posted pictures can also be seen.



Screen 5.12 Posts Page

Screen 9:

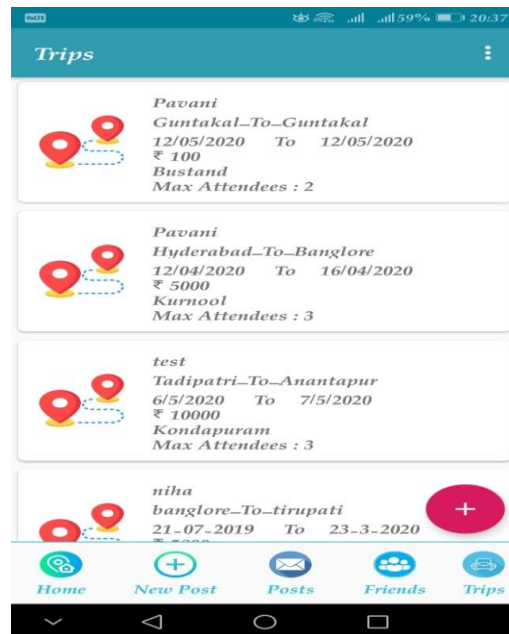
Friends page where user can follow others.



Screen 5.13 Friends Page

Screen 10:

Trip page, in this page it will show the planed trips by the users and others.If the user follow the trip he chat with the trip planner about the trip.



Screen 5.14 Trips Page

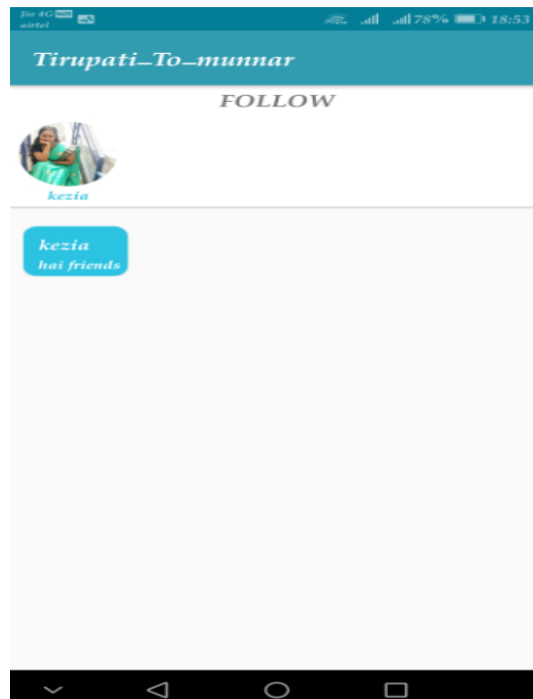
Screen 11:

Add Trip,here the user can add a trip.

Screen 5.15 Add a Trip

Screen 11:

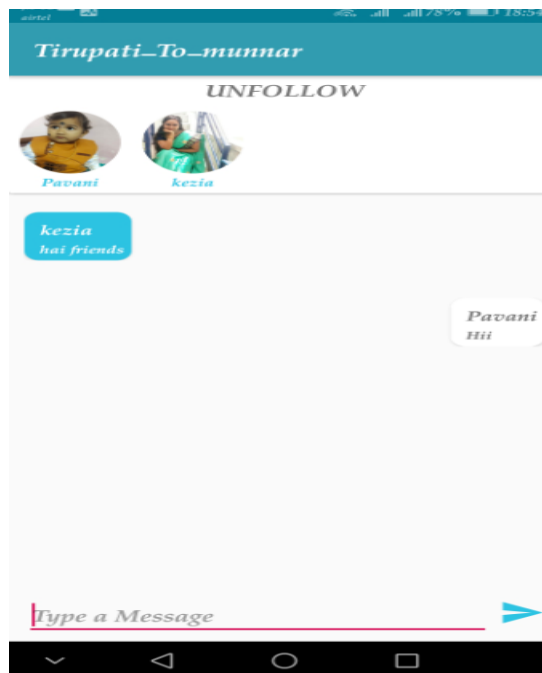
If user does not follow the trip he can't chat with the trip planner.



Screen 5.16 Unfollow Trip

Screen 12:

If the user follows a trip he can chat with the trip planner about the trip.



Screen 5.17 Follow Trip

5.5 Summary

Implementation and results give the explanation of key functions in Travel Planner with output screens and databases used to design this app.

CHAPTER 6

TESTING AND VALIDATION

6.1 Introduction

6.1.1 Testing Fundamentals

The Android testing framework, an integral part of the development environment, provides architecture and powerful tools that help us test every aspect of our application at every level from unit to framework.

Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design and coding. In fact, testing is the one step in the software engineering process that could be viewed as destructive rather than constructive.

A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software. Testing is the set of activities that can be planned in advance and conducted systematically. The underlying motivation of program testing is to affirm software quality with methods that can economically and effectively apply to both strategic to both large and small-scale systems.

The SDK tools for building the code and testing it are available in Eclipse with ADT, and also in command-line form for use with other IDEs. These tools get information from the project of the application under test and use this information to automatically create the build files, manifest file and the directory structure for the test package.

6.1.2 How to run the application on an android phone

- After running the application on the system once, an **.apk** file is generated automatically in the workplace.
- We now copy the **.apk** file from /bin on the computer to the phone and install it.
- After installing we run the application in the same way as we run it on a virtual machine.

6.2 Design of Test Cases and Scenarios

The chapter which is presented below deals with the various tests that have been made to the developed software so as to detect the failures it may have. Along this chapter there will be carried out of test: **Unit Tests, Integration Tests and Espresso Testing.**

6.2.1 Unit Testing

Unit testing, a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. It is concerned with functional correctness of the standalone modules. The main aim is to isolate each unit of the system to identify, analyze and fix the defects.

Sometimes software developers attempt to save time by doing minimal unit testing. This is a myth because skipping on unit testing leads to higher defect fixing costs during System Testing, Integration Testing and even Beta Testing after the application is completed. Proper unit testing done during the development stage saves both time and money in the end.

Here, are key reasons to perform unit testing:

- Unit Tests fix bug early in development cycle and save costs.
- It helps understand the developers the code base and enable them to make changes quickly.
- Good unit tests serve as project documentation.
- Unit tests help with code re-use.

SL NO	SCENARIOS	EXPECTED RESULT	ACTUAL RESULT	STATUS
1	InstallDroidLoactor.apk File on android phone.	Installation successful	Installation successful	Success
2	Check whether UI is Display on screen.	Installation successful	Installation successful	Success
3	Register/login to the application.	Login successful	Login successful	Success
4	Navigating to home page and Showing posts, profile, maps for important places and trips.	Navigation to the module is successful	Navigation to the module is successful	Success
5	Selecting the options in trips about source and destination and create the group for the trip those who follow only allowed to display the messages.	Display of messages is created successful	Display of messages is created successful	Success
6	Logout from the app.	Logout is successful	Logout is successful	success

Table 6.1 Unit Testing Modules

6.2.2 Integration Testing

Integration Testing is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units. Test drivers and test stubs are used to assist in Integration Testing.

Integration testing ensures that software and subsystems work together a whole. It tests the interface of all the modules to make sure that the modules have properly when integrated together

6.2.3 Espresso Testing

The Espresso Test Recorder tool create UI tests for the app without writing any test code. By recording a test scenario, it can record user interactions with a device and add assertions to verify UI elements in particular snapshots to the app. Espresso Test Recorder then takes the saved recording and automatically generates a corresponding UI test that can run to test the app.

Go to your app/build.gradle:

1.Add dependencies

```
androidTestCompile 'com.android.support.test.espresso:espresso-  
core:3.0.1' androidTestCompile 'com.android.support.test:runner:1.0.1'
```

2.Add to the same build.gradle file the following line in android.defaultConfig{

```
testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"  
  
}
```

This sets up the Android Instrumentation Runner in our app.

AndroidJUnitRunner is the instrumentation runner. This is essentially the entry point into running your entire suite of tests. It controls the test environment, the test apk, and launches all of the tests defined in your test package.

Getting Started

In order to test a UI create a new test class in the

Location `module-name/src/androidTest/java/`

The instrumentation runner will process each test class and inspect its annotations. It will determine which class runner is set with `@RunWith`, initialize it, and use it to run the tests in that class. In Android's case, the `AndroidJUnitRunner` explicitly checks if the `AndroidJUnit4` class runner is set to allow passing configuration parameters to it.

There are 6 types of annotations that can be applied to the methods used inside the test class, which are `@Test`, `@Before`, `@BeforeClass`, `@After`, `@AfterClass`, `@Rule`.

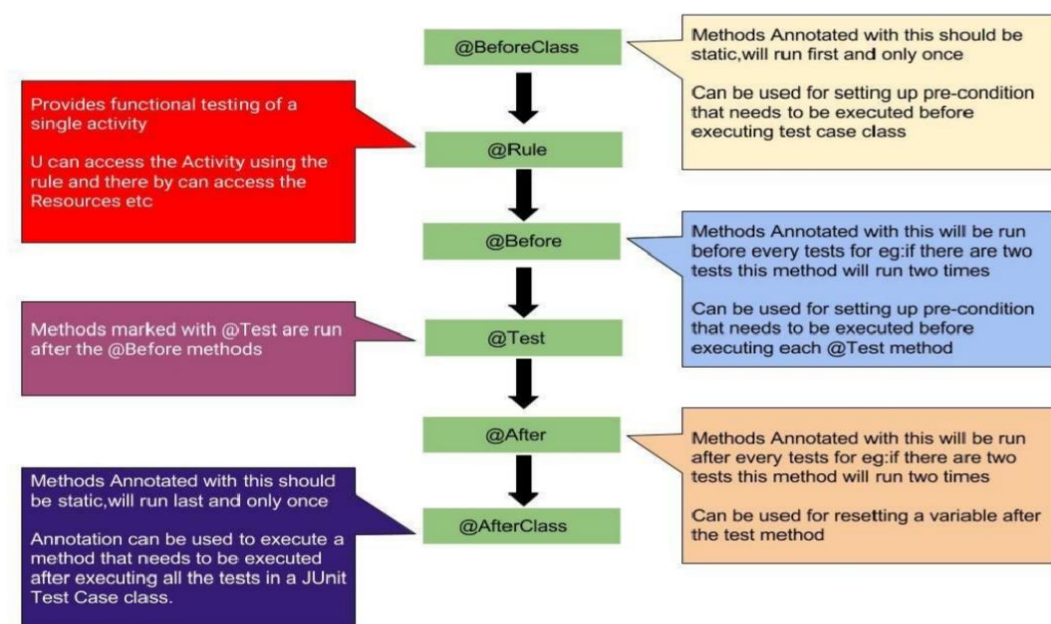


Figure 6.2 Annotations used in Testing Classes

Important things to note is that:

- The activity will be launched using the `@Rule` before test code begins.
- By default, the rule will be initialized and the activity will be launched (`onCreate`, `onStart`, `onResume`) before running every `@Before` method.

- Activity will be Destroyed (onPause, onStop, onDestroy) after running the @After method which in turn is called after every @Test Method
- The activity's launch can be postponed by setting the launchActivity to false in the constructor of ActivityTestRule in that case you will have to manually launch the activity before the tests.

The espresso test of a view contains:

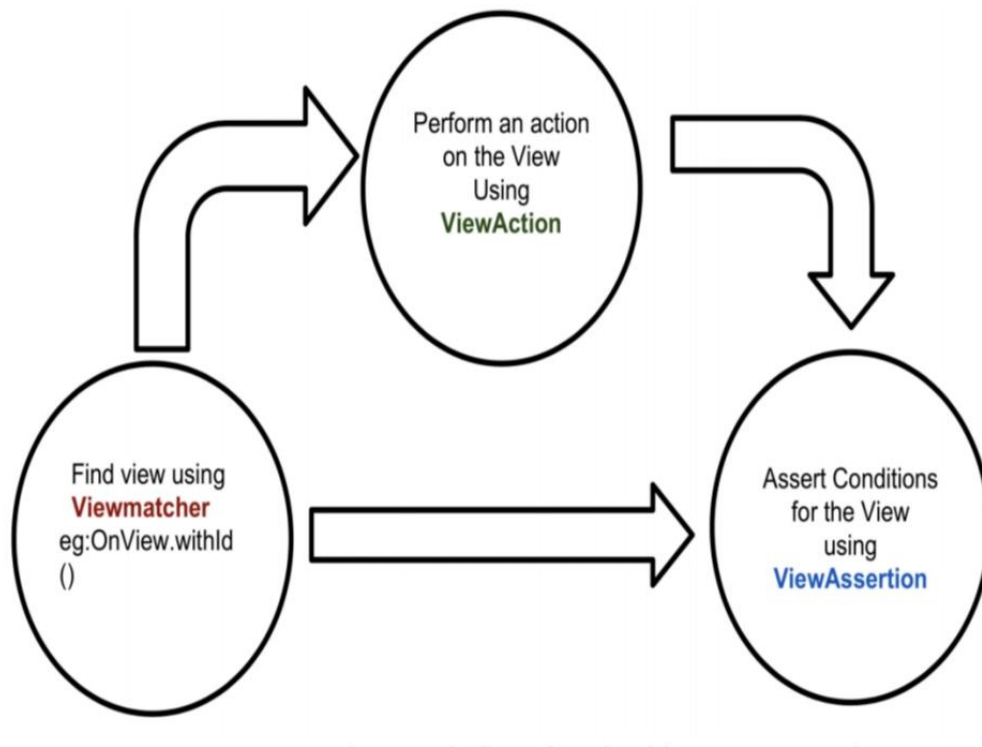


Figure 6.3 Steps involved in espresso testing

Setup Espresso

Before building your UI test with Espresso, make sure to set a dependency reference to the Espresso library:

```
dependencies {  
    androidTestImplementation 'androidx.test.espresso:espresso-  
core:3.1.0'  
}
```

Figure 6.4 Espresso Testing Implementation

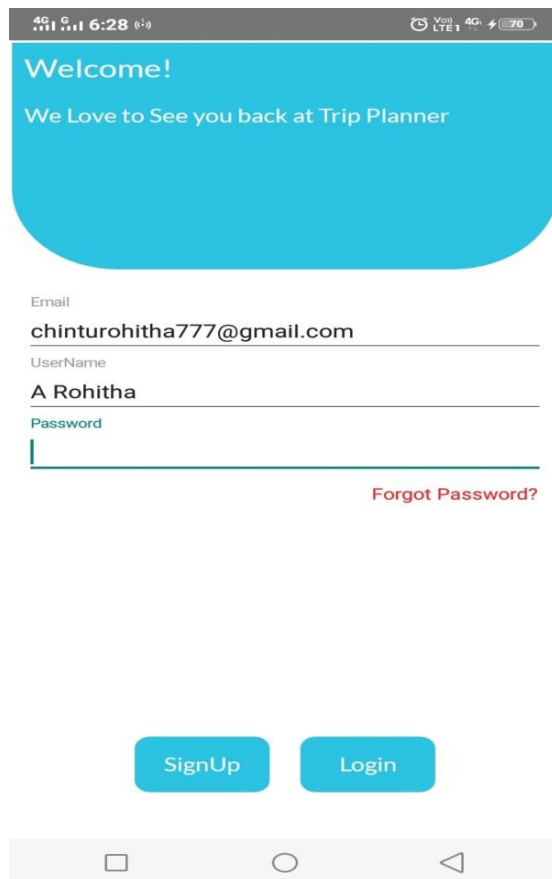
6.3 Validation of Test Cases

Validated test cases and systems are essential in ensuring that products – undergoing tests – conform to their respective test specifications. This is especially important during conformity assessment procedures.

At the culmination of integration testing the software is complete as a package and the interfacing errors have been uncovered and fixed, final tests-validation testing may begin. Validation tests succeed when the software performs exactly in the manner as expected by the user.

Following are the test cases we are validating:

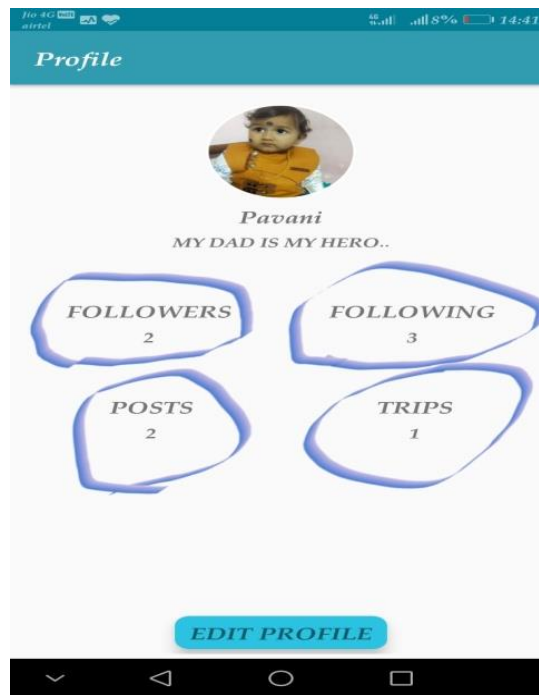
Case 1: Validating whether the password is entered or not.



Screen 6.5 Validating password

Case 2:

In Profile Checking whether the count of followers, following, posts and trips is correct or not.



Screen 6.6: Profile checking count of (followers, following, posts and trips)

6.4 Summary

Testing and validation give the correctness of the output of the application by using some testing techniques.

CONCLUSION

Travel Planner is helpful for users to know the travelers who are passionate towards travelling to various corners of this beautiful world a single application. This application is portable and can be easily installed and used on any mobile phones supporting Android OS. The use of this system can result in providing information of the travelers who are interested can collaborate and make their trip successful. Travelers can do like, comment and share the pictures posted. The chat box feature allows the travelers to communicate in a better manner. The registered travelers can also suggest places for the other travelers to travel and also provides an interface which is easy to understand by the users and greatly helps in adapting to the use of this system.

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