

**DESIGN AND DEVELOPMENT OF AN ANDROID APPLICATIONS FOR
TECHNICIAN HUNTER**

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of
Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project/internship titled “**Technician Hunter**”, submitted by Mohammad Mahbub Alam ID No: 152-15-5991 and Dedarul Alam ID No: 152-15-6000 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 2 May 2019.

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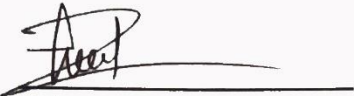
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DECLARATION

We agreed that we Should complete our project work under our supervisor Sir Md. Jueal Mia, Lecturer, Department of CSE, Daffodil International University. We also Agreed that not only this project but also any part of this project has not been posted anywhere forward of any degree or diploma.

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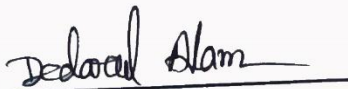


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From the heart of ours, special thanks to our honorable supervisor sir Md. Jueal Mia, lecturer of CSE department also a lot of thanks to our honorable professor and Head Dr. Sayed Akhter Hossain (CSE) and. It is our big opportunity to take a project under our supervisor sir. Our Supervisor sir is very helpful and kind hearted. For that we should complete our project successfully. Also we should get a lots of help from our group members and classmates for completing this projects that’s why we are very much thankful to them. We also thanks ours parents to inspire us for completing this beautiful project under our honorable supervisor sir. This project is a mobile apps that’s Helps to find technicians where need.

Thanks to Daffodil International University for entire course mate.

Finally once again thanks to all of those people who helps us directly and indirectly for completing this wonderful project

ABSTRACT

In this modern era, most of the people are knowing about technician sector. In city areas, technician available but it's not sufficient for all people. All people does not get technical service easily. For any technical service people need to go the shop of service provider. Urban areas have this facilities but that facilities are quite lengthy process with some hassle and also have some practical issues. Technical problem happens in Electrically, Computers, Bike and mobile, Water and gas sectors. Many people haven't enough knowledge where and how to solve this type of technical problems. In considering those problems, we proposed an android application "**Technician Hunter**" which can be reduced the hassle of the people and resolve this problem. In this application contains two things happen. Problems and the solution of those problems. This apps can give the Service of those problems. In this application service holder can communicate with service provider directly through this apps. There customer can see the expertness of his technical problems. That can help peoples technical problems easily.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Technician Hunting system is an android based mobile application. This application provides an interactive user interface to find Computer, Electrical, Water and Gas, Bike and Car & IT related Information & service expert. The system will help the customers by providing a simple user interactive interface for taking technical support sitting at home. It also gives the Service providers ease by helping them make the servicing process faster and easier to maintain. In this Application, we try to deal with the customer to provider or supplier directly through online. If any user needs help for emergency water and Gas line problems, the system will provide the nearest Service providers with Service details. The user can Find his/her needed expert (Computer, water, and Gas, Bike and Car, Electrical, IT Information) can directly communicate with the provider via phone or online communication. We also solve the complaints of customer that can pay online such as Bkash or Rocket (DBBL), So that they don't have to stand in.

1.2 Motivation

To build an application where a user can be satisfied with their basic need of Technical problem. The number of population in Bangladesh increased day by day. At this moment of the population of Dhaka city according to the report of World country meters population report in 2018, the population is 167 million [1]. Thus the amount of population needs a huge amount of technical problems. Our app is an alternative way to reduce the problem of Technical in Bangladesh. But Technicians are not available in every area, even most of the people don't know about where and how to solve this type of technical problems. If we become an intermediate medium to communicate between customer and Service provider, it will reduce that hassle. Although smartphone users in Bangladesh have increased by 3.1 million to 8.2 million in 2015, according to a recent report published by Counterpoint Technology Market Research [2]. Basically, we target that amount of people who are connected to a smartphone through the internet. If we are able to engage those people, it will be a huge achievement for us.

1.3 Objectives

- To provide interactive user interface
- To reduce hassle of Expert Technician problem
- To make easier to find service expert by google map
- To make easier to find any expert via online
- To keep all users and service providers records and maintains
- To provides simple payment method

1.4 Expected Outcomes

- Provides the nearest service expert & service information
- Easy UI design & user friendly UX
- Gives different service that user can choose which one need
- User can directly communicate the service providers through mobile call & online chat
- Customers can see service provider's information & current location by google map

1.5 Report Layout

Firstly, In the Introduction chapter, we have to discuss the objective of the project, motivation to work with an expected outcome. Secondly, we talk about the background details of our android project. And also discuss the related work with the scope and challenges of this system in Background parts. Thirdly, kinds of requirements like BPM, the requirement collection and analysis, use case model, relational database and design requirements defined in Requirement Specification chapter. Fourthly, Design chapter describes the design of our project visual view. It can be front-end-design or back-end design. In fifth, Implementation and testing parts we discuss the implementation of the database, interaction and test result of this project. Finally, in the sixth, the conclusion and future scope will discuss in the Conclusion chapter.

CHAPTER 2

BACKGROUND

2.1 Introduction

We designed an interactive, attractive and well-organized application which can be operated all over through the internet. In our application user interact with username, phone number, current location, and address which is required to registered user as a customer and as a provider registration required to provides name, phone number, shop name, and shop address. For this purpose, we design some specific user interface and user-friendly. In our application, we also used a feedback system for provides better services that the user can be satisfied.

2.2 Relative Works

Some of the applications are available in the Google play store related to Pathao. Most of the applications are mainly developed for concern about food, transport. But for Bangladesh service providers are not available online. We are the fastest service prover in around Dhaka city. More secure & reliable technical service system.

2.3 Comparative Studies

Our completed android application is quite different from another existing application. Some of the applications are available in Google play store but we want to develop an application where every kind of Information such as user details and provider detail with their location. And also we will provide the nearest available service provider. Using this application customer can get service from nearest areas provider with a simple payment method. So we think, our application will be more user-friendly, popular and also more effective in city life.

2.4 Scope of the Problem

- It is an open platform where all user can access easily.
- We provide android apps so that we can cover as much as people we can.
- Provider address with service details help user to find required service.
- Heavy traffic area it will be tough to purchase manually but it be helpful for this purpose.
- Friendly user interface and Updated information.

2.5 Challenges

- Collection of accurate data provider with their locations.
- Payment method form banking service.
- Checking or describing the condition of service.
- Enrolled the all provider with Information Technology.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling (BPM)

BPM is a graphical representation of a company or industries business process. Business process model tries to enterprised the system process engineering and managerial sector. So that all the running process should be developed and worked clearly. BPM mainly works in the business sector. BPM model checks all the discipline by subject matter expert, Who has a vast knowledge about the modeling has been processed

3.1.1 Business Process Model (Agile Method)

We are using agile method as a business process model of our project [5]. Below the causes-

- Working application is delivered frequently.
- Face-to-face conversation is the best form of communication.
- Close, daily cooperation between business people and developers.
- Continues attention to technical circumstances.
- Regular adaption to changing circumstances.

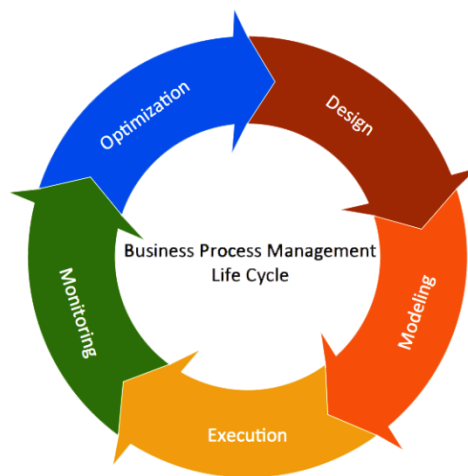


Figure 3.1 BPM Life Cycle

Business Process Model

At first, when the user enter the system, the system will provide some option as an interface. A user has to make the decision to get service form this application. In this system two parts as a user or provider. Then the system checks the required information than have to select the current location then system will able to provides services.

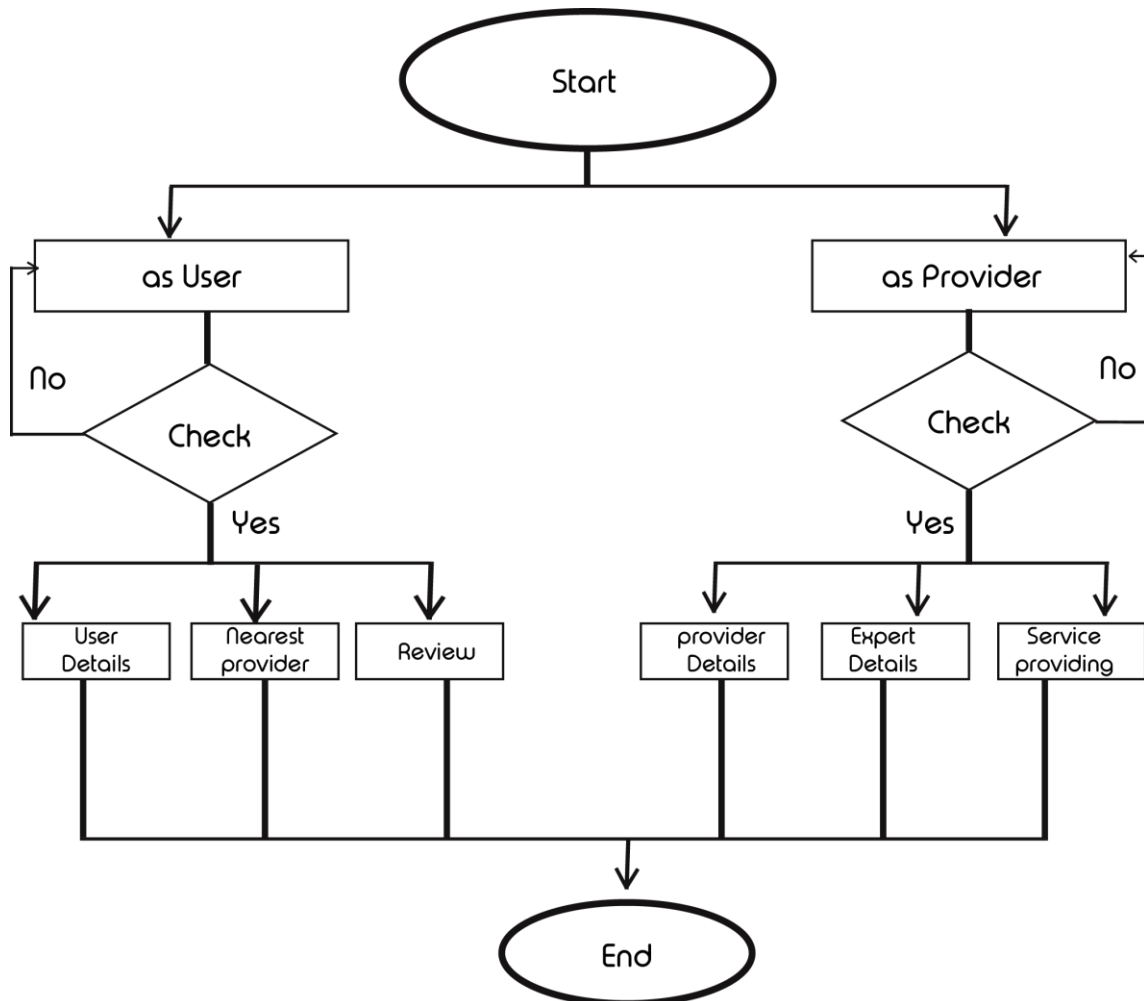


Figure 3.2 BPM (Business Process Model)

3.2 Requirement Collection and Analysis

3.2.1 Software Requirements:

- Android Studio IDE
- Android Virtual Device
- Database – Firebase
- Adobe Photoshop
- Adobe Illustrator

3.2.2 Hardware Requirements:

- Operating System – Windows
- Android Supported Device
- Computer Configuration:
 - RAM – 4GB (min)
 - Hard Disk – 100GB (min)
 - Processor 1.5 GHz (min)

3.2.3 Requirements for User:

- Android Supported Device
- Internet Connection
- Install this Application
- Active sim to allow call service

3.3 Use Case Modeling and Design

Use case modeling is an important requirement for software implementation. Use case model used to clarify the system procedure all the organize requirement. use case diagram gathers system requirement and actors. we should try to give an index for our use case diagram. In our use case diagram, we should work with three actors. Our actors are customer, system & provider that helps to complete a diagram. All, the information includes through this case diagram. the use case should contain all system activities that have useful to user and provider. All working process will be defined in this sector.in a use case diagram throughs, all the possible goals and the working process should be given spontaneously. A use case diagram has four component that should give important information.

- The actors, usually individuals involved with the system defined according to their roles.
- The use cases, which the specific roles are played by the actors within and around the system.
- The requirement, which defines the system of interest in relation to the world around it
- The relationships between and among the actors and the use cases [7].

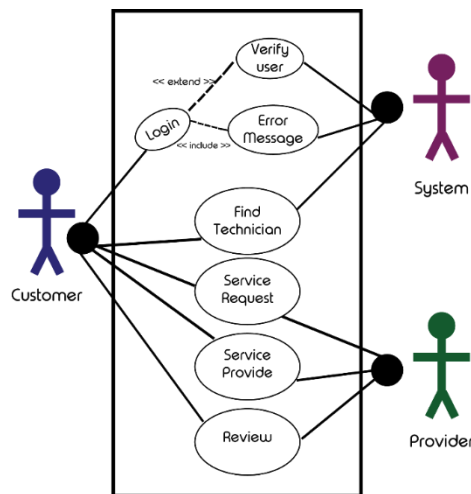


Figure 3.3 Use Case Diagram

3.4 Design Requirements

To develop this Application we have to use some tools to design and implements it. At first, we use Android Studio IDE to design basic UI and build the project. We use OOP (Java Programming language) to develop an application. For tracking or keeping customers and distributor location, we use Google map service and make calls we use Google API for phone calls. For database implementation, we bought a domain and hosting to publish database. For the database we use My Firebase database and XAMP server to host data. We implemented our basic logo and icon using Adobe Photoshop, which is necessary to provide better, attractive and user-friendly interface. The business process model, use case diagram and others diagram are designed using Gliffy (extension of Google Chrome) which is more user-friendly and reduced time to design a complex diagram.

3.5 ER Diagram

Entity relationship diagram shows how an object relates to each other and it's working process.

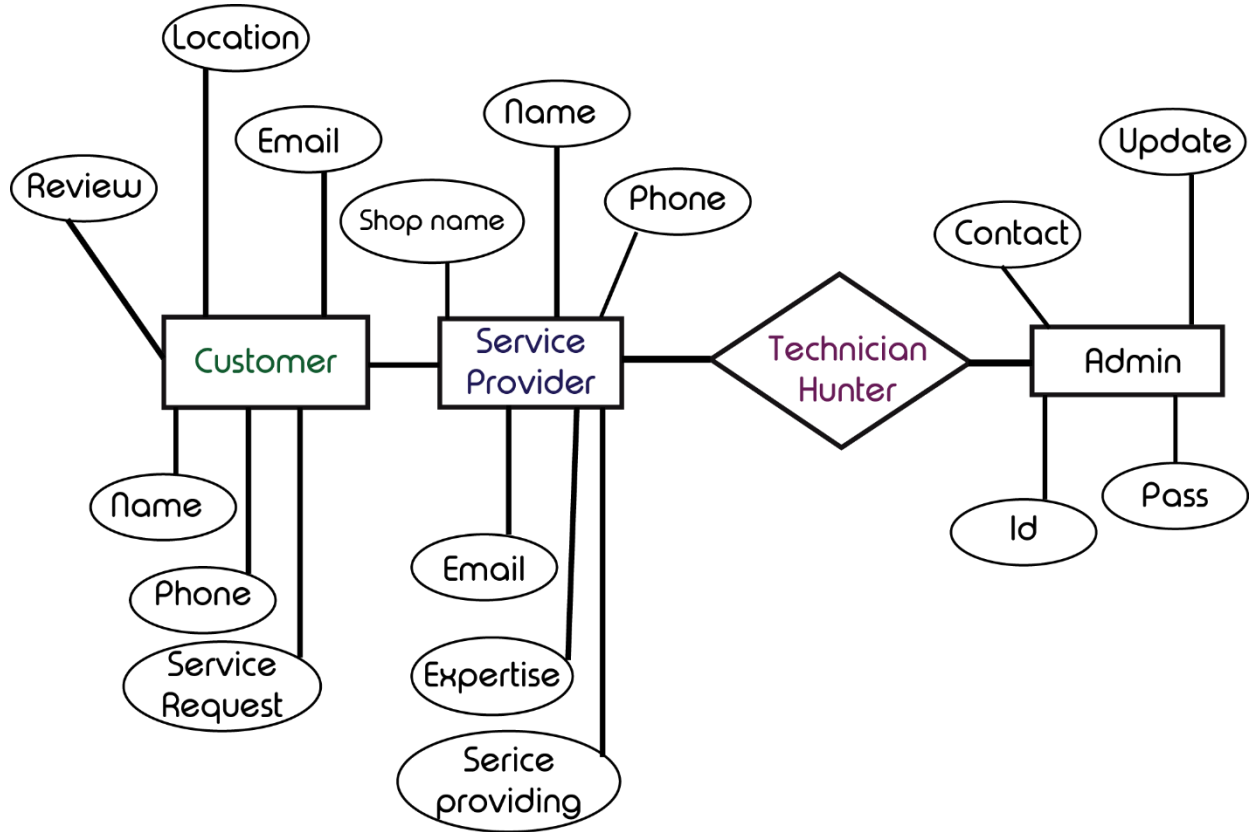


Figure 3.4 ER Diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Introduction

In this chapter we will discuss about front-end & back-end design of this app. For any application design part is very important, because most of the user becomes attracted by watching the front-end design of app. Back-end design is also important for data storing. Here we used firebase database for real time storing information of user & service provider.

It's the starting animation of our completed application. First a logo of ours app.



Figure 4.1 Shows Starting Page

4.2 Front-end Design

In this section we are going to discuss about the user interface which is developed in front end design. And also the outlook of this features. **4.2.1 Home Page.** Home page contains two options which is our main interface. In section user can login as a customer or service provider. If any user register as a customer, system will keep the data such as phone number, address and current location which are describe in latter section.

4.2.1 Home Page

This is our sign in page. For this page Customer and Provider both need to open an account .For that a option have that is create option .After creating account Customer and Provider Can Enter our system. Here we added a Email verification System.

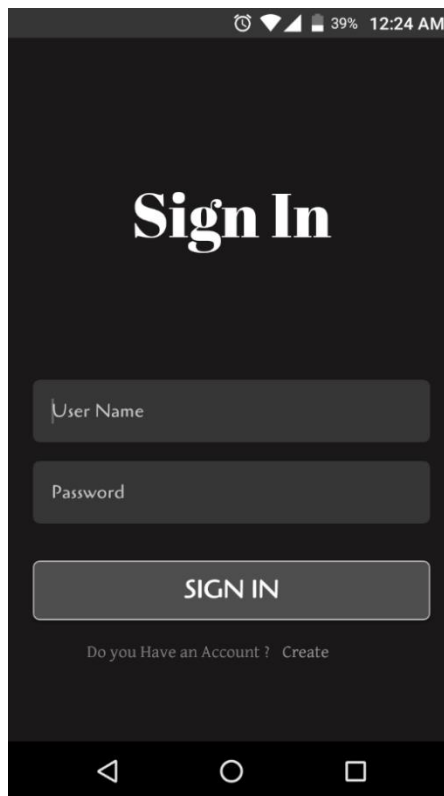


Figure 4.2 Home page

4.2.2 Login as a Customer

In this figure, describes the login panel as customer or service provider. Here hunter used for customer. User can easily choose the category of application user. If user as a customer, system provides some required information such as user name, phone number, address with location. In this section system will take the valid email address then it will be verified from email verification. When you click ok then you have to check valid email address. After clicking link you can access in this app.

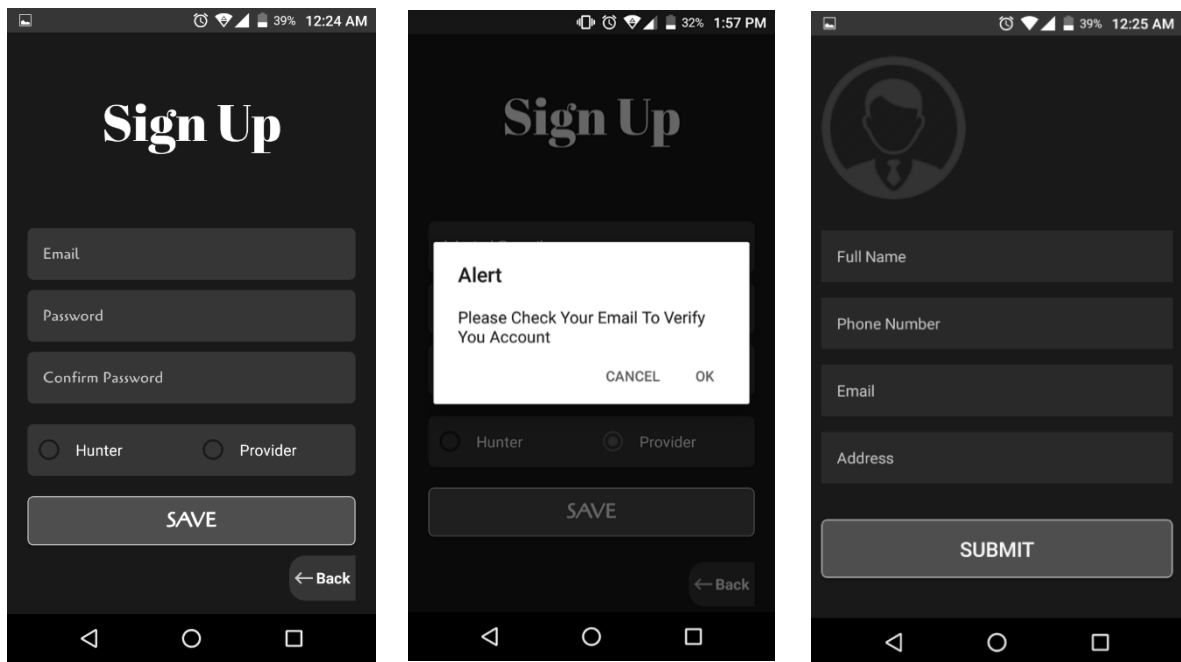


Figure 4.3 Login Page

4.2.2 Login as a Customer (Continue)

After successfully complete the registration of a customer this data will be saved in online database. Customer can see the profile details and also modify the data if any of the data has been changed. Then customer can click find option for taking his/her needed service showing in the map.

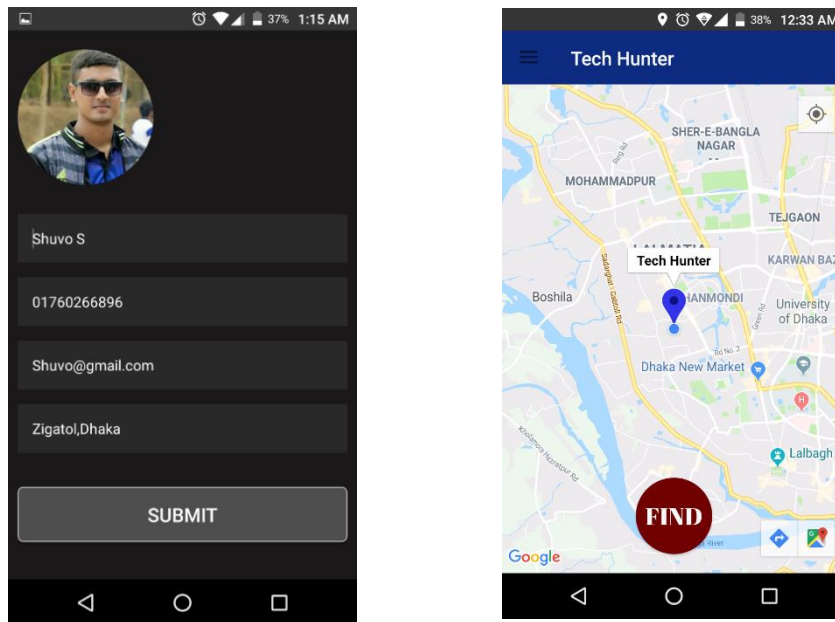


Figure 4.4 Mapping for Customer

4.2.3 Login as a Service Provider

In this section user will find the available technician expert and contact information which is shown in figure 4.5 User select the find button, user will find expert technician. Service provider have to provide some basic information which is store in the database and further needs, this data will help to find this user.

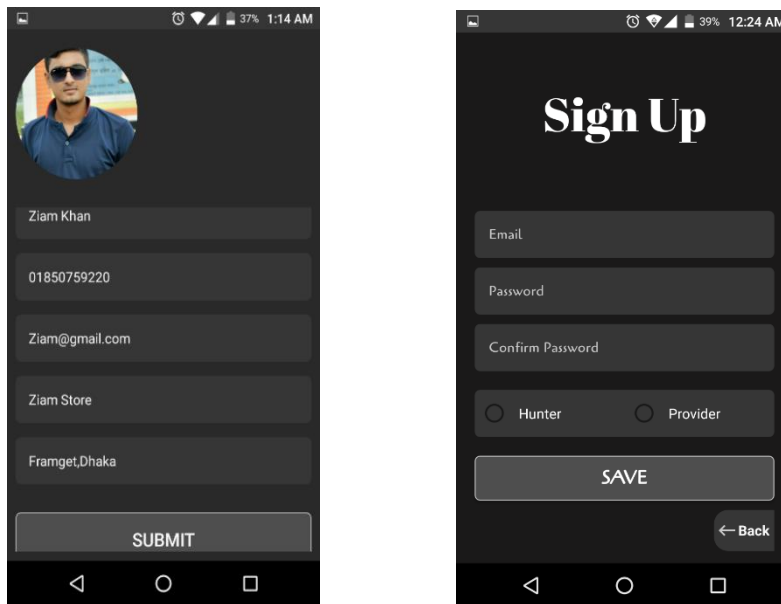


Figure 4.5 Login Page for provider

4.2.3 Login as a Service Provider (Continue)

Here this is the profile of service provider. one option that one service provider can give his/her expertise after clicking Expert button. After that Customer can find their needed technician by clicking on the map and communicate each other.

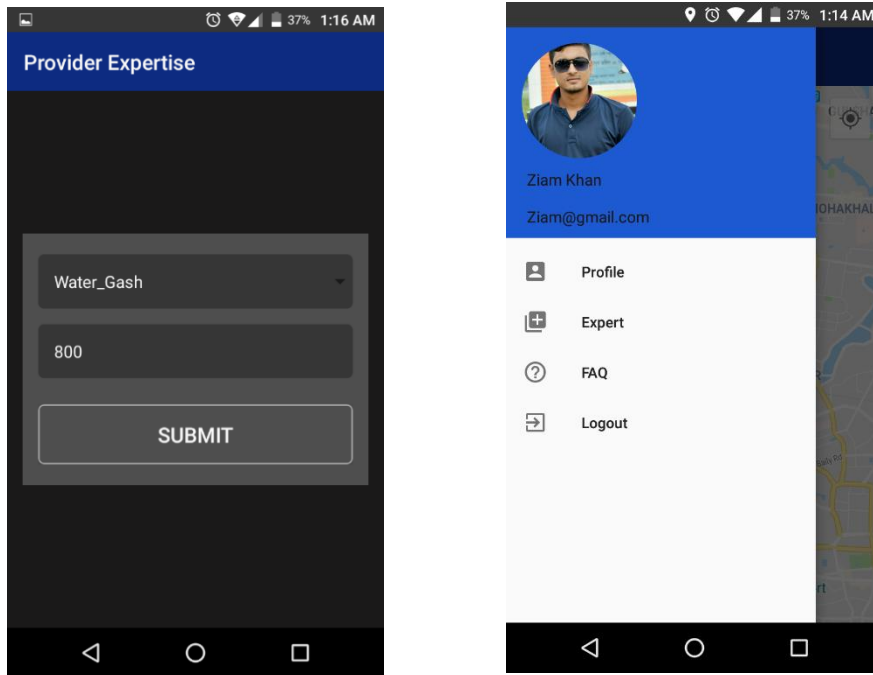


Figure 4.6 Login for Provider

4.3 Communication Between Customer & Provider

When tech hunter needs any service he/she must be click on find button. After getting required service he/she must be confirm by these way. Given in the figure 4.7. Here provider can give his location and communicate each other within messaging or calling option.

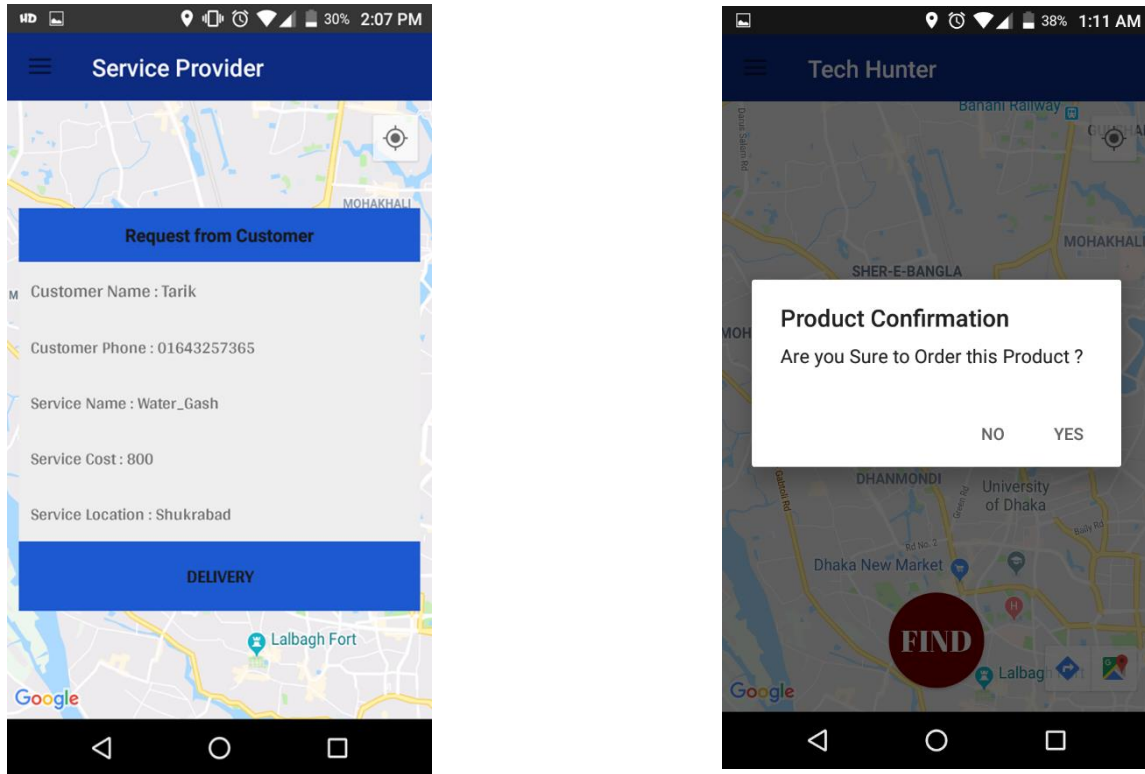


Figure 4.7 Communication Design

4.3 Communication Between Customer & Provider (Continue)

When service provider got request from customer. He/She must be accept/cancel request as per requirement. These are the steps figure 4.8

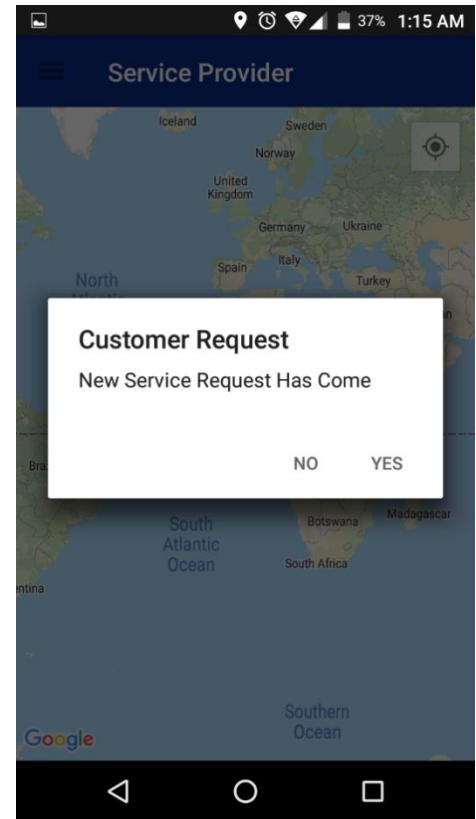


Figure 4.8 Customer Request

4.4 Back-end Design

Some back-end designs of the project are given here.

4.4.1 Home Page

Home page shows the total project overview. Here project name, project ID, cloud firebase location, web API key are available in figure 4.9

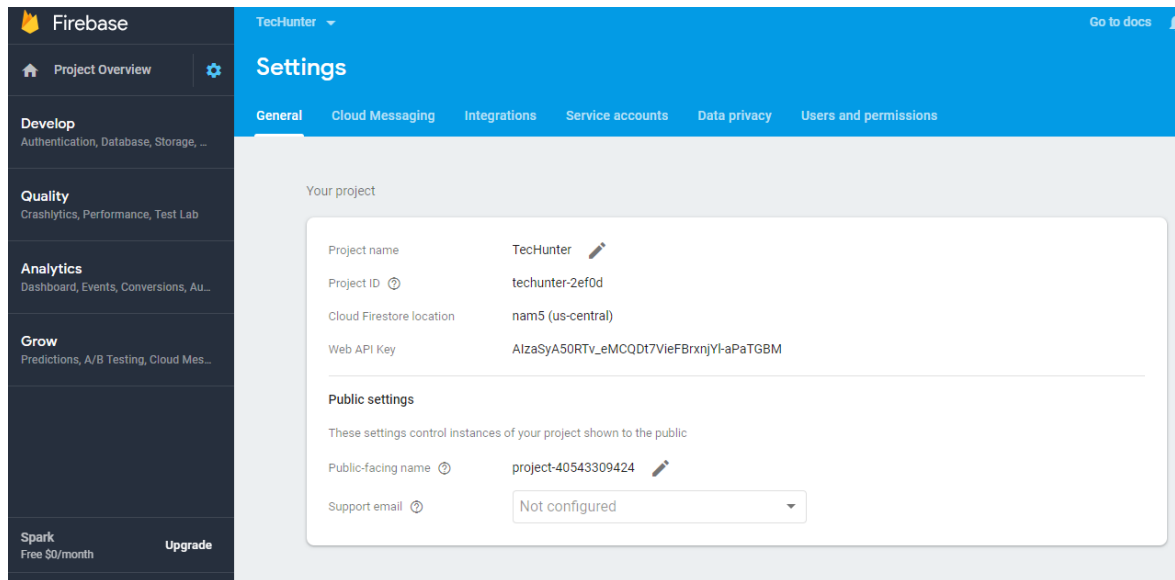


Figure 4.9 Home Page

They are Database, Authentication. We can easily find out how many users are active.

4.4.2 Authentication

Here used email authentication. All information of customer & service provider's are available here in figure 4.10

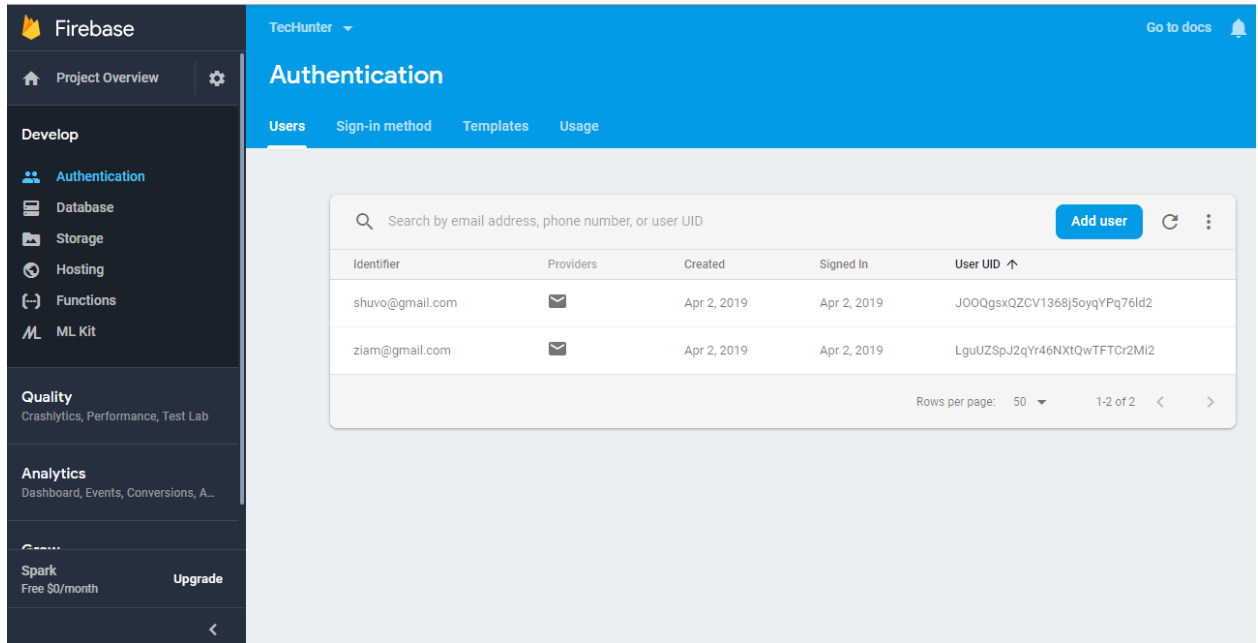


Figure 4.10 Authentication

It's mainly stores valid user. But they are not eligible in this page.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Firestore real time database is very important for creating an app. Database is part by part separate user, service provider, location, hunter request. When we click any part it will shows the details. Here TechHunter separated by Hunter & Provider, also others information are available here.

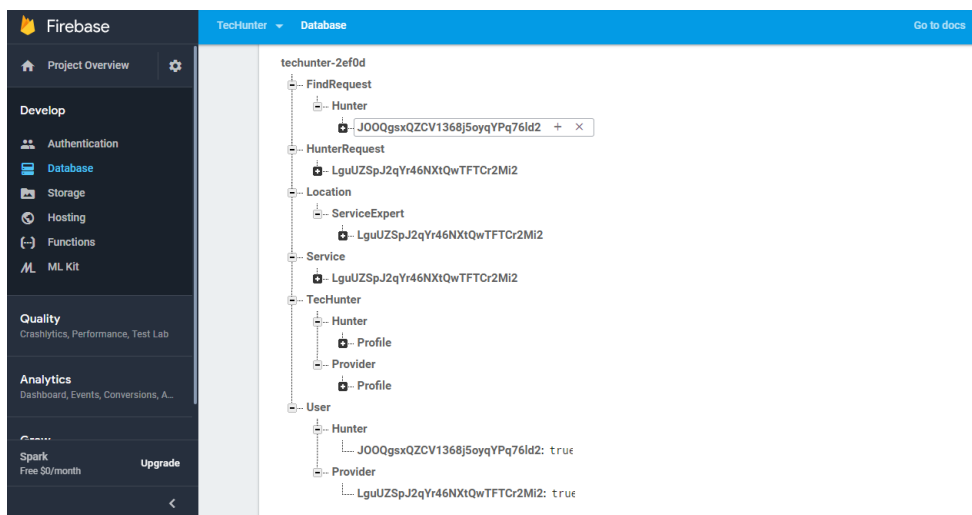


Figure 5.1 Shows the Database Part.

5.1 Implementation of Database (Continue)

For Hunter address, email, name, phone, profile image will be store.

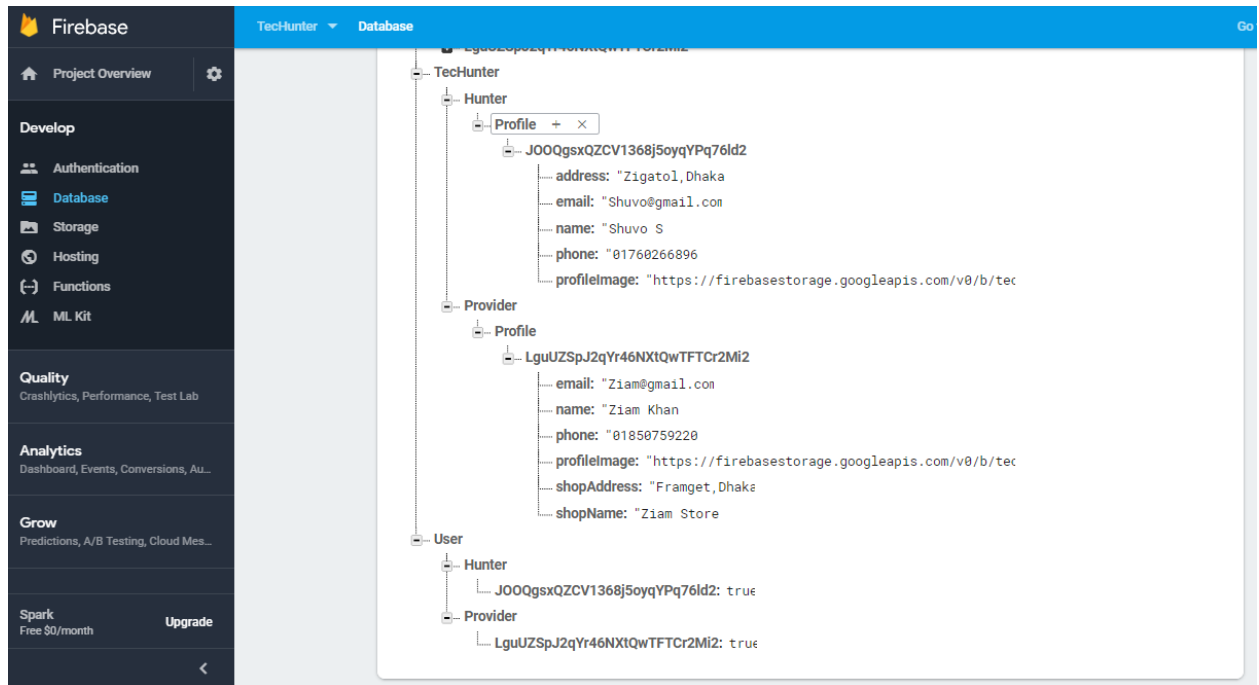


Figure 5.2 Database

For provider email, phone, profile image, shop address, shop name will be store in database.

5.2 Implementation of Front-end Design

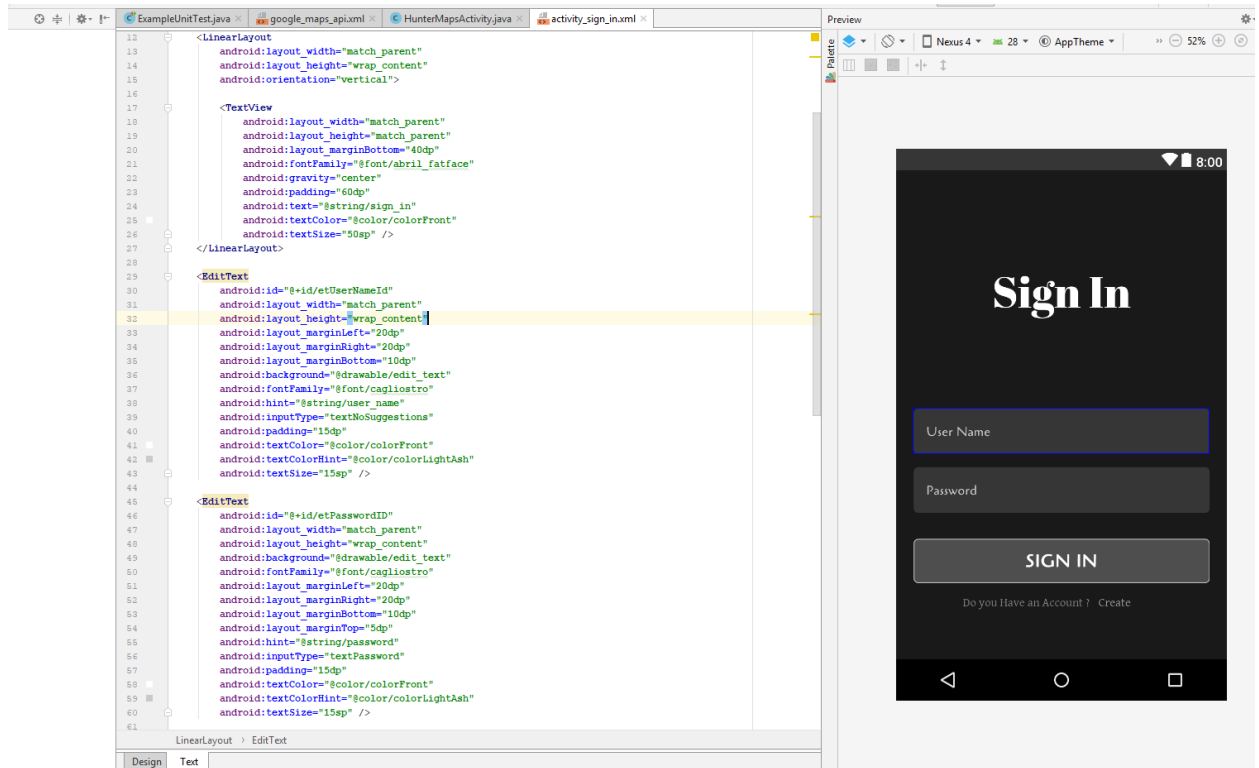


Figure 5.3 Front end Design

5.3 Implementation of Interactions

Application should be interactive. Material design is useful with user-friendly ui design. For making a system it is the best design. It have to be a good looking with nice font, good looking button with overall attractive design.

5.4 Storage

In this application storage mainly store picture of user & provider. In future we will add identity verification for more security purpose.

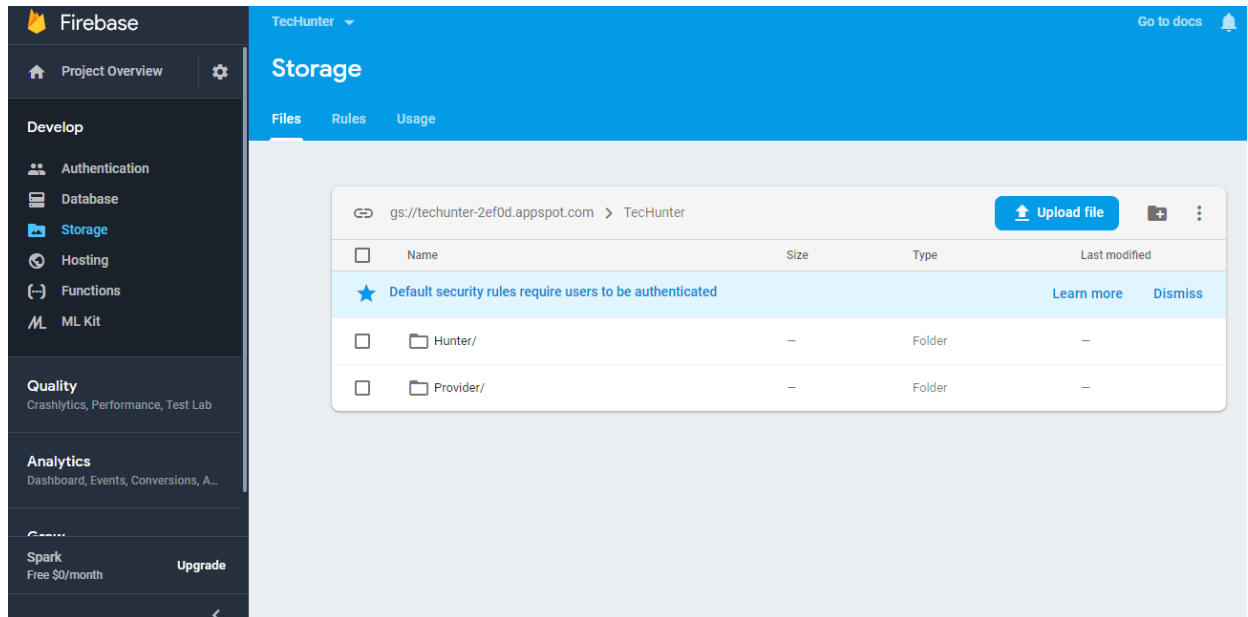


Figure 5.4 Storage

5.5 Testing Implementation

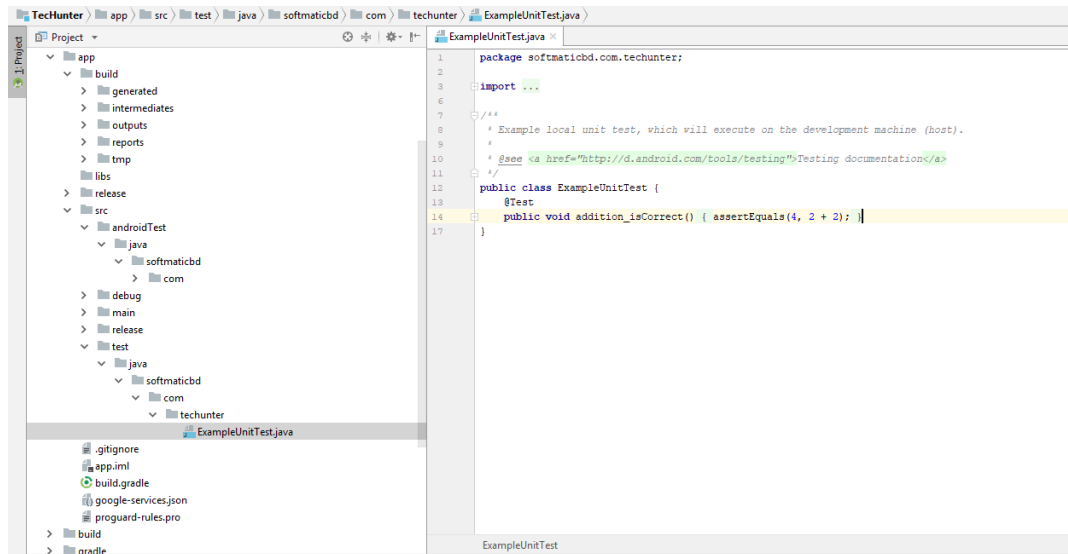


Figure 5.5 Testing

5.6 Test Results and Reports

For every application needs to test properly that how it works. It will be very important to decrease bug. This application is working well. For making this application we have tested all step. It's a successful project. It's working perfectly on every device.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Summary

Technician Hunter system is an android application which is successfully developed from a developer point of view. But we try to concern as possible as we can as a user. There is a chance of upgrading the system further more. In this chapter we will like to discuss about the goal of the project development, project limitation and further improvement ideas of the project. Outcomes of this project which one we have gain to,

- Learned, how to architect a project
- Learned how to develop a complete android app
- Learned real time database firebase
- Team work
- Using Google API implementation

6.2 Limitations

- There might be some bugs and need more testing before implements in real life
- There might be some limitations to engage the provider in Systematic way
- Enrolled banking system for payment in this application.
- We have Specify some service

6.3 Scope for Further Developments

The application has been developed with future development possibilities in consideration. We wish we could improve the application and reduce the limitations of the system. The developers of this project wishes to continue their involvement contribution to this system for further developments.

- Develop on IOS version & Engage all Provider in online
- Update both English and Bangla version & Wish to develop for Industry purpose
- Wish to add more service system in future
- Wish to complete market demand for expert technician

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PLAGIARISM REPORT

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Figure A.1 Plagiarism Report