PROYOJON: Android Based Mobile Application

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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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APPROVAL

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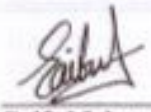

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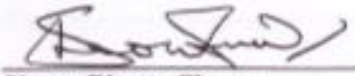

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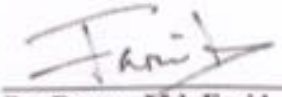

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We thus announce that, this project has been done by us under the supervision of **Mr. Md. Jueal Mia, Lecturer, Department of CSE** Daffodil International University. We likewise proclaim that neither this undertaking nor any piece of this venture has been submitted somewhere else for honor of any degree or diploma.

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ABSTRACT

Now a days It is difficult to find a maid, electrician, plumber and so on those who are related to home applicants type job. Specially it is more difficult when you are new at locality. On the other hand, Workers like maid, plumber etc. sometimes don't get job without their popularity of knowing. The purpose of this project to meet the needs of persons both the users and the workers. To solve this problem we made an android app for both user and worker where they can use this app independently. We hope this application can help user by giving workers as a helping hand and workers also get opportunity to do work independently.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

Nowadays we are living in a digital world. The way of living is upgrading day by day.But we can't use our modern technology properly. In Bangladesh, most of the official working or service procedures are based on online. Without these, there are many things which are mandatory for our daily life like electricians, plumber, home tutor, internet service provider, interior designer, emergency service to simplifying our daily life. Hence people always want a smooth and simple life. But we are facing many problems to arrange these types of services due to lack of proper information about them like location, cost, safety, etc. To solve this problem an Android-based software has been developed known as "PROYOJON" which has the ability to support and solve this problem. So that this software may have helped to fulfill their expectations. There are two sections in this software, these are worker and service holder. For the worker, registration is mandatory but not for the users. Service holder can easily find their desired service.

1.2 Motivation

Bangladesh is a developing country. It also developing day by day. Most of the development case is based on the internet. Without major problem, we need some small helping hand like electricians, plumber, home tutor, internet service provider, interior designer, emergency service, etc. In Dhaka city, this problem is huge because people are not getting proper information due to unavoidable reasons. In order to solve this problem, we have developed a software with the advancement of science and technology which is internet-based android software. It can be used from any place through the internet.

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1.3 Objectives

Objectives of this application are to help peoples those who are living in Dhaka city. Here workers can give their proper information and service holder can easily find their information and hire them to solve the given problem. So the main objectives are to ensure that simplify people's daily life.

- Service holders can easily get worker’s information so that they can hire them.
- The registration process is online based and in future payment will be online based also.
- There will no access to the third party.
- The hire cost is reasonable.
- Reliable access to the software.

1.4 Expected Outcome

The main outcome of this project is to help users to find their desired services without facing any problem. Because there is no third-party access so for this it is easy to use and time consuming also. The software can be used from any kind of android devices. This software reliable and secure and it can protect service providers' privacy properly as well as service holders. Those who are not able to understand English can choose the Bengali language.

1.5 Report Layout

This project contains six-chapter. In first chapter named Introduction, we will talk about Introduction, Motivation, Objectives, Expected Outcome and Report Layout. In second chapter named Background, we will write about project Introduction, Related works, Comparative Studies, Challenges of our project. In third chapter named Requirement specification we will discuss Business Process Modeling, Requirements Analysis and collection, Use Case Modeling and Description, Design Requirement of our project. In fourth chapter named Design Specification where we will talk about Front-end Design, Back-end Design, and Implementation Requirement. of our project. In the fifth chapter which name is Implementation and Testing. Here we will discuss Implementation of Database, Implementation of Interaction,

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and Testing Implementation. In our sixth chapter also final chapter which name is Conclusion and Future scope of our project. In this chapter, we will talk about Discussion and Conclusion and Scope for Further Development. In this report basically we talk about our Application and its various problem, solution and use of the application.

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CHAPTER 2

BACKGROUND

2.1 Introduction

Modern technologies has been improved day by day. This is the era of modern technology. Now a days people are so busy that they don't have enough time to manage their daily lives, let alone care for their homes. So they like to depend on technologies. If someone need to repair their television, he have to find someone who can fix it and there cannot be a less desirable way to spend time to look for technician. It would be nice if there is a online service market where people can easily hire local service provider. So we come up with the idea of building a application where people can easily find and hire their local service provider. On the other hand, service providers are being benefited by getting more customers.

2.2 Related Works

There are not so many popular applications from where people can easily find and hire service provider except 'sheba xyz'. To hire a service provider form 'sheba xyz', first you need to connect them (service holder of 'sheba xyz') through their app and then they will provide you service provider. But in our application people can get connected to the service provider directly which is less time consuming. In our application people can find not only electrician, plumber, beauty service but also home tutor, interior designer and many more and it is less time consuming and easy to use

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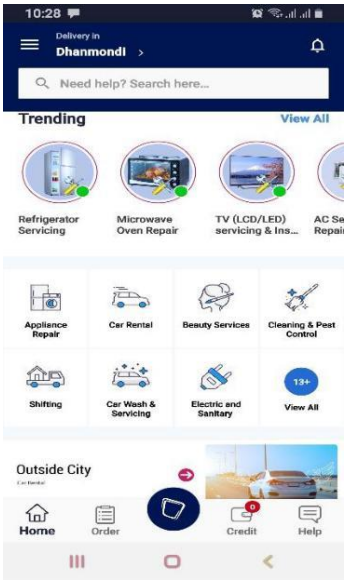

Figure 2: Homepage of Sheba xyz

2.3 Comparative Studies

Dhaka is a very busy city. There live a lot of different people with a lot of different demands. To fulfill their demands maximum time they like to relay on technologies. So we make an application where people can fulfill at least some of their demands.

If we explore the application named 'sheba xyz', we can see that it's an app where people find service provider. But to hire a service provider form 'sheba xyz' , first you need to connect them through their app and then they will provide you service provider which is time consuming. So in our application we tried to solve this problem. In our application people can get connected to the service provider directly which is less time consuming.

2.4 Challenges

To build an application developer faces many challenges. We are not so different from them. But the main challenge is marketing this application. In modern era marketing is very important for an android application. It will not be easy to bring users and workers in our application and make

them use it. Though there are lots of challenges, we tried our best to overcome those and build a user friendly application.

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CHAPTER 3
REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Our main target is the user can easily get worker's information & can hire them and worker are being benefited by getting more customers. Also, remove the third party between the user and worker. Business process model is the operation of show up processes of an enterprise, so that the present process may be resolved, improved, and automated. The term 'business model' is thus used for a spacious range of unceremonious and ceremonious descriptions to show up core perspective of including motive, operational processes, and policies [1].

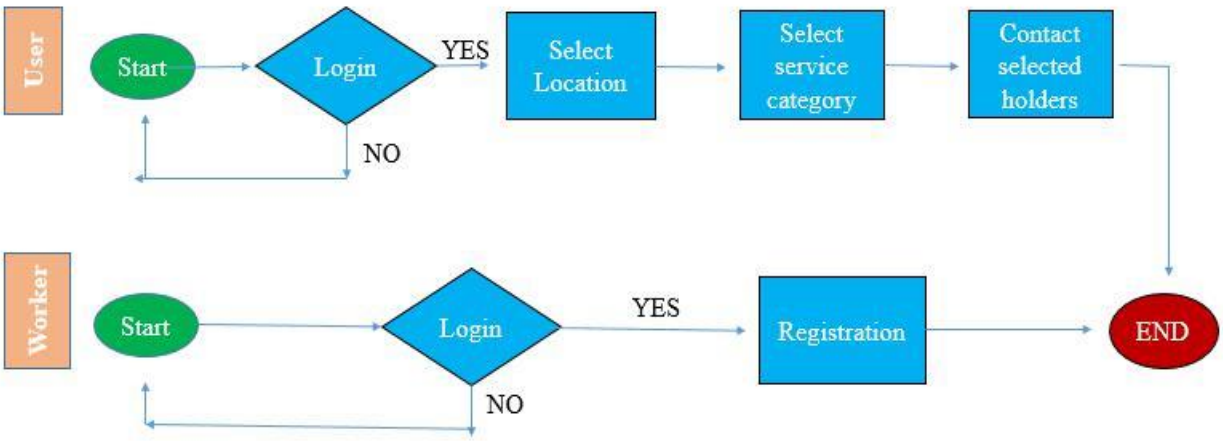

Figure 3.1: Business Process Model

3.2 Requirement Analysis and Collection

3.2.1 Software Requirements:

- Android Studio IDE
- Android Virtual Device
- Database: Firebase
- Adobe XD

3.2.2 Hardware Requirements:

- Operating system: Windows

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- Android supported device
- Computer configuration:

    - RAM-8GB (min)

    - Hard Disk- 150GB (min)

    - Processor- 1.5GHz (min)

3.3 Use Case Modeling and Description

A use case model is a graphic description of the interactions among the elements of a system. A use case is a methodology used in system analysis to identify, clarify and organizing system requirements. Figure 3.2 shows the use case modeling of the application.

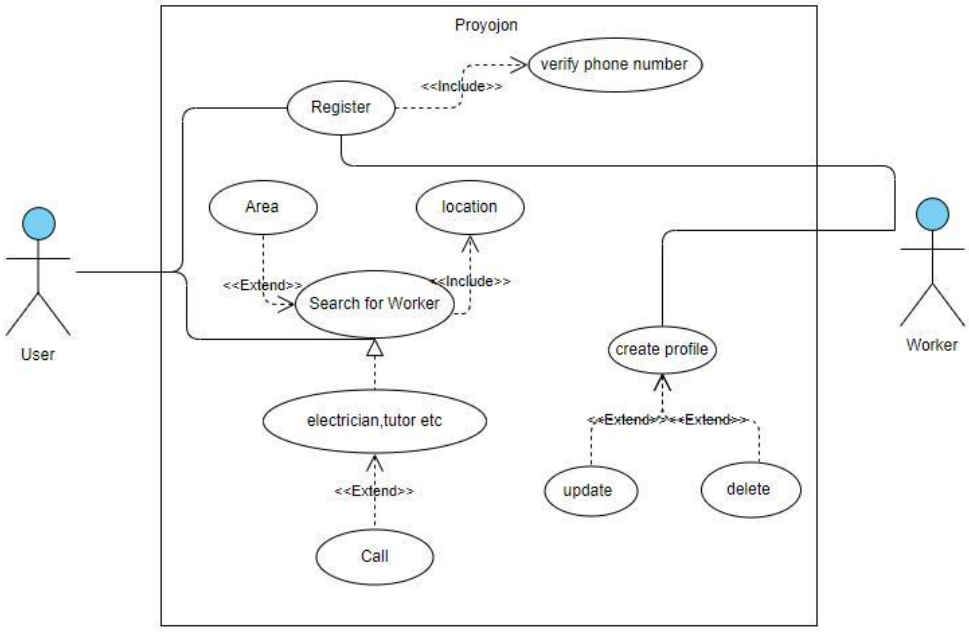

Figure 3.2: Use case Diagram

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Use case details:

Table 3.1:Use case for Registration:

Use case name	**Registration**
Use case details	Both worker and user have to register to use this application.
Pre-condition	Login with phone number.
Actor	User, Worker.
Post-condition	Registration successful or failed

Table 3.2:Use case of Search for Worker:

Use case name	**Search For Worker**
Use case details	To hire a nearest worker user need this section.
Pre-condition	Login, Location
Actor	User
Post-condition	View desire worker.

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Table 3.3: Use case of Create Profile:

Use case name	**Create Profile**
Use case details	Worker needs to create their profile so that user can hire them easily.
Pre-condition	Registration
Actor	Worker
Post-condition	View profile.

3.4 Design Requirement

- Application will be used by the user and workers.
- Application database will be controlled by admin.
- User will login with verified phone number.
- Then users can search the nearest worker by input their location.
- Users can contact desire workers from workers profile.
- Workers will login with a verified phone number.
- All mobile numbers will be stored in a database.
- Admin can edit or remove any data or account if it's needed.
- Secure authentication method is allowed into the system.
- Worker inter into the application by login with number and registration with proper information which is stored into a database.

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CHAPTER 4
DESIGN SPECIFICATION

4.1 Front-end Design

An Android app is made up of two parts: the front end (Xml) and the back end (Java & database). The front end is the visual part of the app that the user interacts with it and is written in using XML [2].

4.1.1 Home Page

After completing the installation of app first you get the splash screen where the App name was given. App will work only when you have an internet connection on your phone, otherwise it will not work.

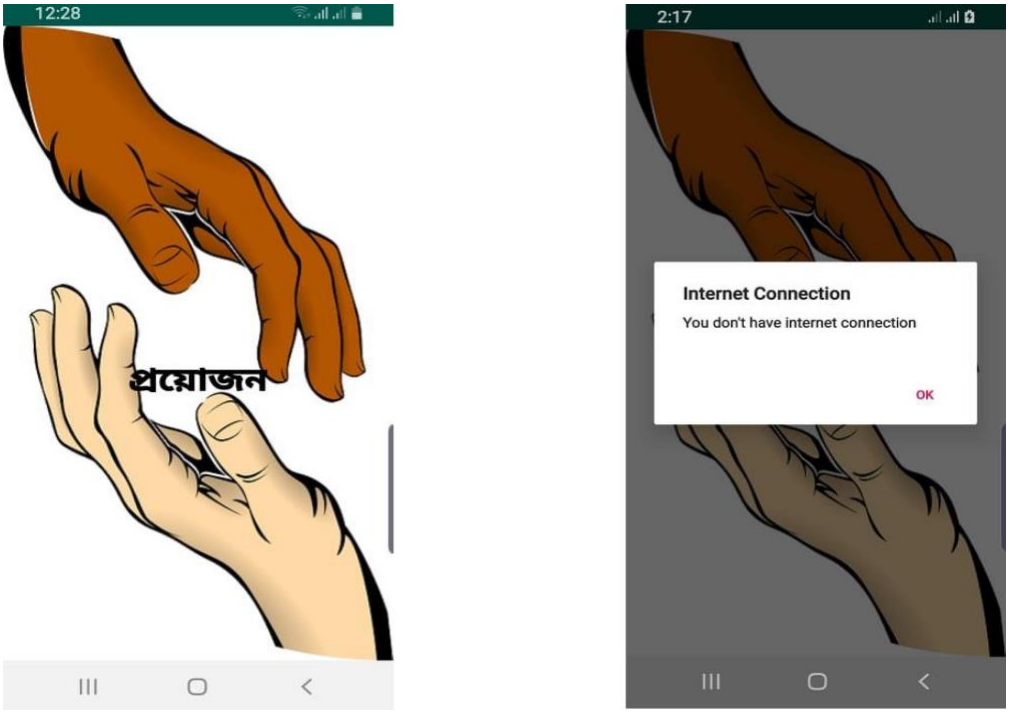

Figure 4.1: Splash Screen

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Here home page contains a Popup menu that has two options user and worker. If any user log in as a customer, system will keep the data like phone number, location, address which will be discussed in later. Also User and worker can choose language Bengali and English in which they feel comfortable.

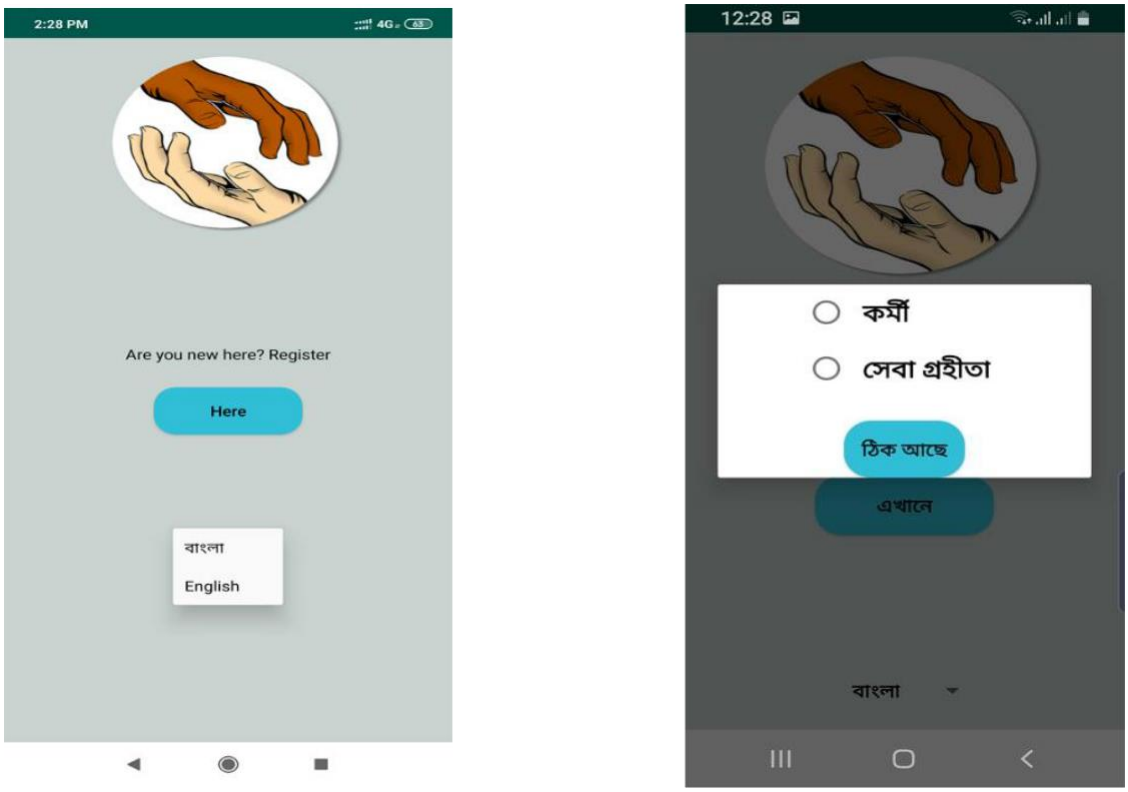

Figure 4.2: Home Page

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4.1.2 Login as a User

After entering the system User and Worker both have to give their phone number to verify the app. It takes max 60s to enter the verification code, then entering verification code user or worker will go in the next interface.

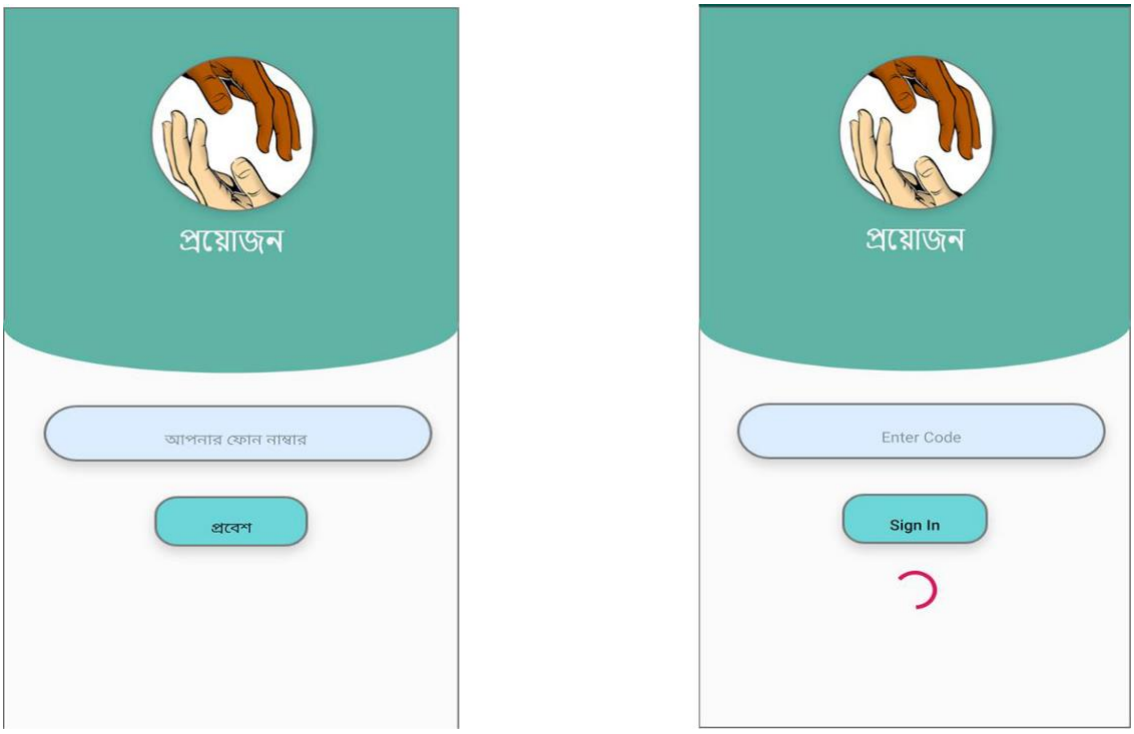

Figure 4.3: Phone Number Verification

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4.1.2 Login as a User (continue)

When verification process has an end then user will go through the main home page where he/she can select the desired worker and hire them through a phone call.

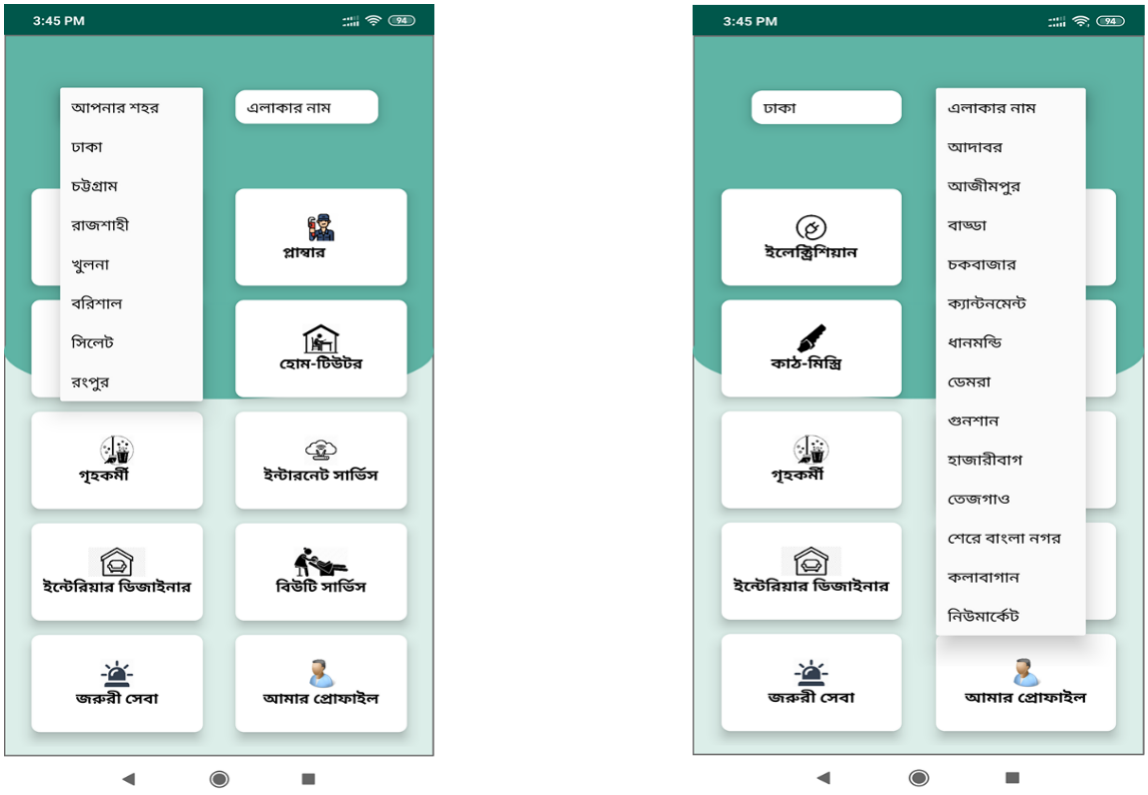

Figure 4.4: User Home Interface

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4.1.2 Login as a User (continue)

After choosing worker user can see the workers list who are active or inactive in that(chosen) areas. It will be much better to see the workers status so that user can know those who are now available to work.

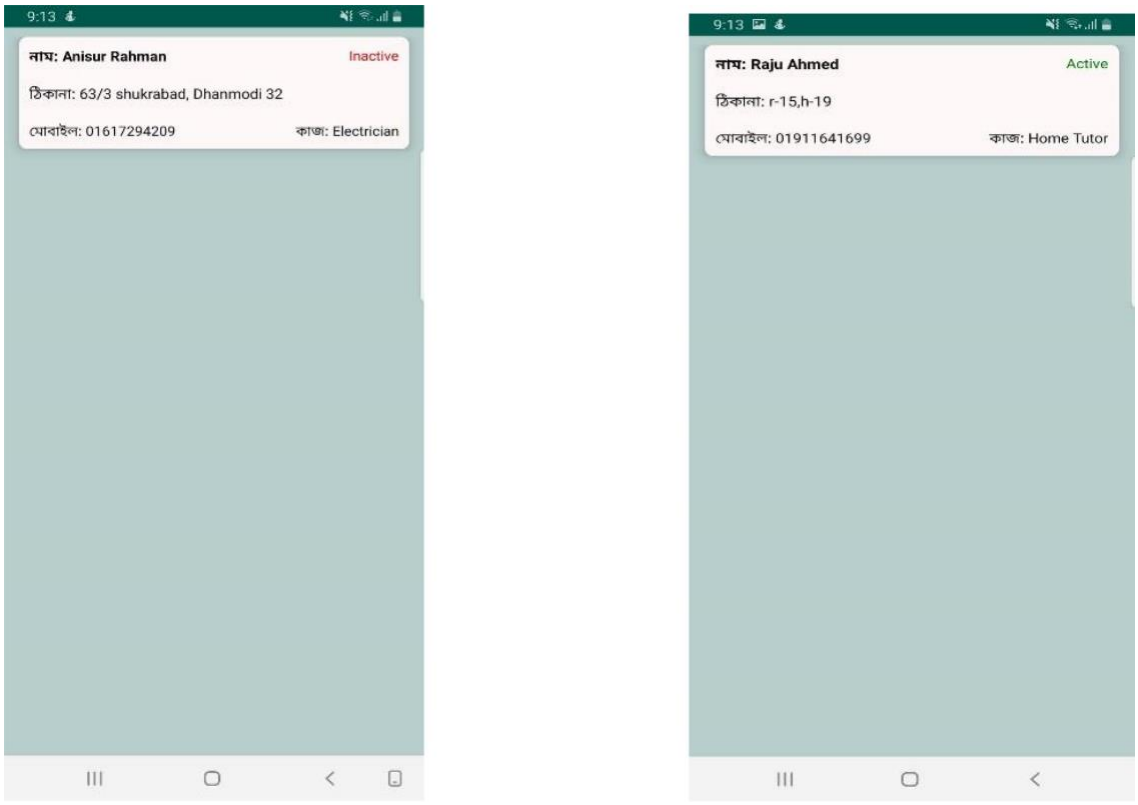

Figure 4.5: Worker's Activation Status

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4.1.3 Login as a Worker

After verifying phone number as a worker, he/she have to sign up a form to fill it. In this signup

form the have to give every details is in the form.

Figure 4.6: Worker's Signup Form

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4.1.3 Login as a worker (Continue)

After signing up worker have a home page and a navigation bar. In the navigation bar worker can

update, delete their profile also.

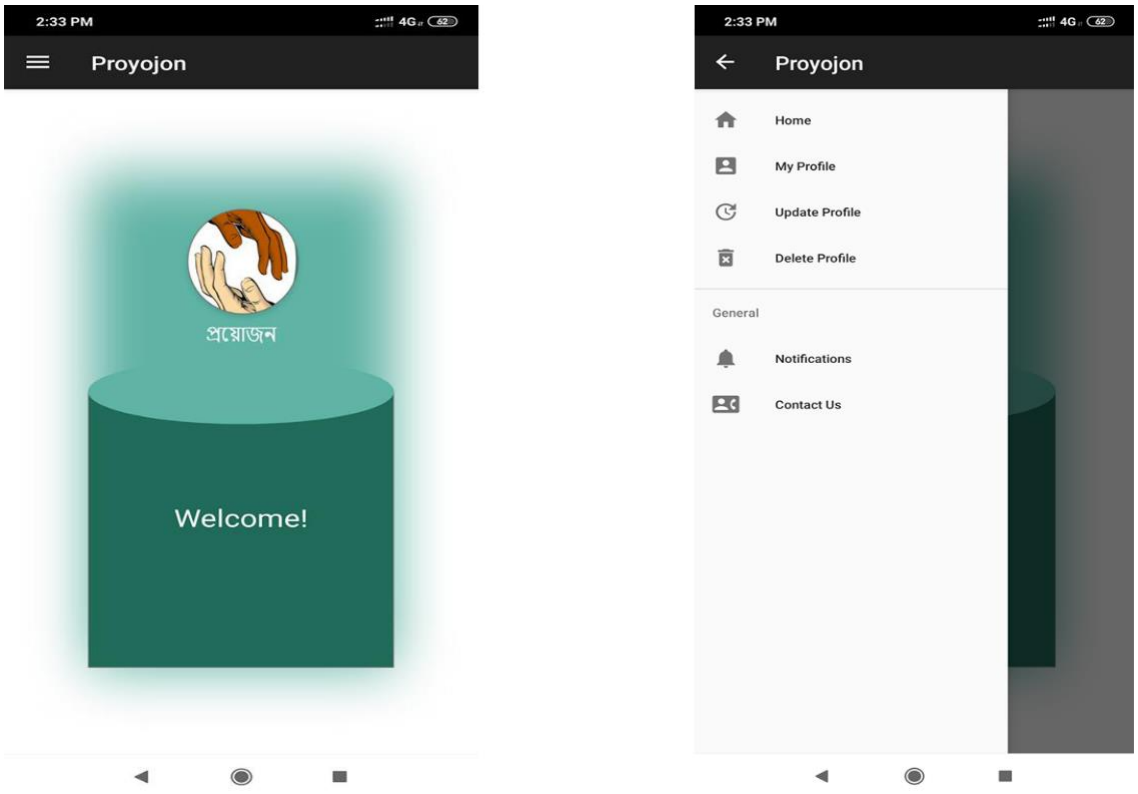

Figure 4.7: Worker Home Page

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4.2 Back-end Design

Behind the UI, backend works at here where user can't see that portion at all. Basically back-end allows to implement functionality such as backing up user data to the cloud, serving content to client apps, real-time interactions, sending push notifications through Google Cloud Messaging for Android (GCM), and more [1]. Here we are using firebase database which is based on cloud hosted database. People who are using our application or verifying it into our application are shown in the table.

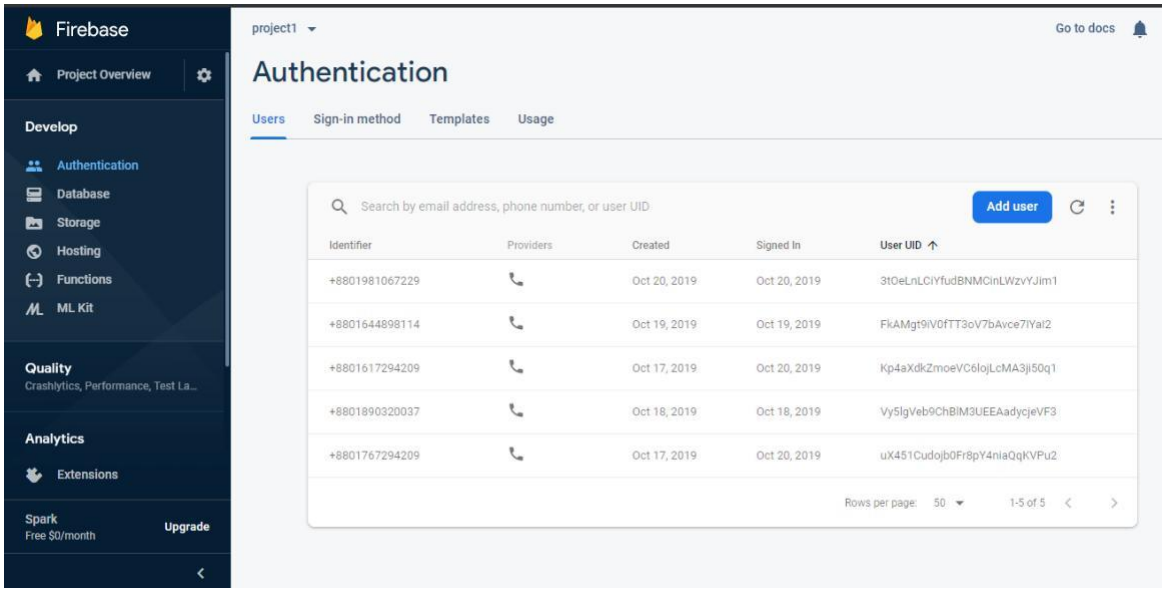

Figure 4.8: User Table

4.3 Implementation Requirements

Technology used as follows:

Programming Languages: JAVA, XML .

Database: Firebase

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CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation of Database

In this project we use firebase database to store, retrieve and so on in database. Here data is stored in JSON formats (as JSON objects) and any changes in data, reflects immediately by performing a sync across all the devices & platforms. We applied three system in database and they are storage, real time database, firebase authentication.

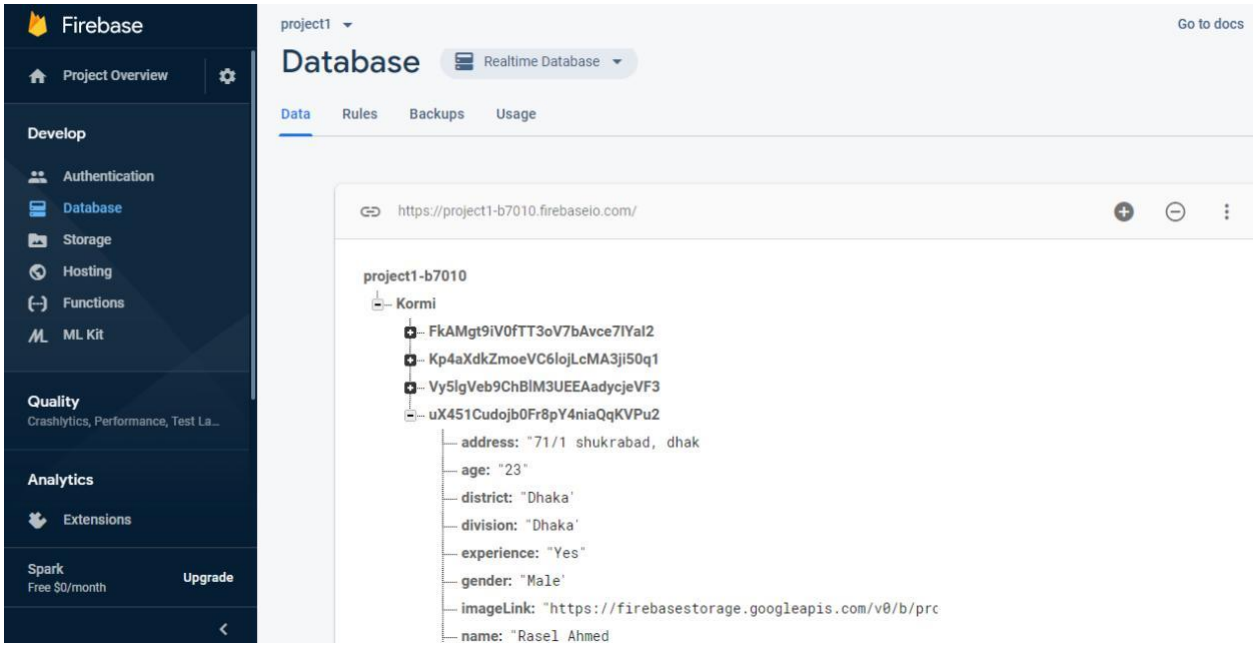

Figure 5.1: Collection of Database

5.2 Implementation of Interaction

Implementation of interaction means how easily user can interact with the app. We have implemented our app system with quickly reactive UI. It will make sure of better user experience. We used some familiar icons, text view, button, spinner etc. As it is understandable and beautiful UI so the users will be able to communicate with the app easily.

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5.3 Testing Implementation

In android there are three types of test. Local Unit test, Instrumentation test and Ui tests. Local unit test is run on your local computer on the machine that has android studio installed on it and they are using the JVM for short it's using Java on your computer they are very fast because you don't need an emulator or anything to do with. These are the type of test that used to test code logic (raw java code logic based test). To extend your test capabilities by integrating test frameworks such as Mockito to test Android API calls in your local unit tests.

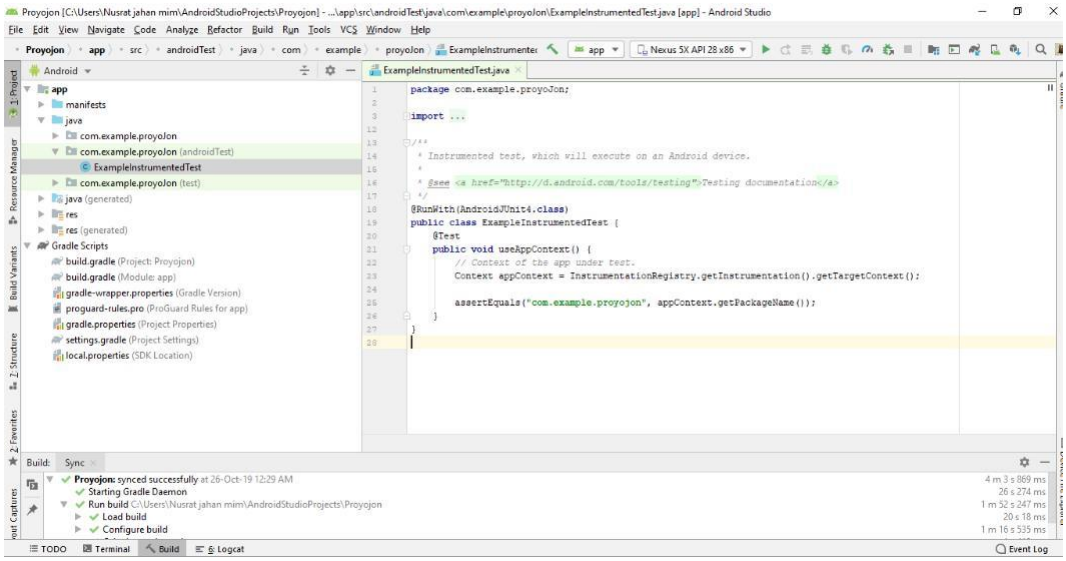

Figure 5.2: Unit Test

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CHAPTER 6
CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The project is finished with the help of Xml, Java and Firebase database. People can use it from anywhere by using a smart phone with the help of internet connection. Both user and worker have to register first to use this application. User can find their local service providers according to their needs and location. They can view workers profile and call to hire them. On the other hand worker can create, update and delete their own profile. It is a very user friendly application.

6.2 Scope for Further Developments

It is already an user friendly application but in future we are thinking about adding some more features to make this application more user friendly. There are some limitations in our application which we can come up with some betterment like

- chat box for communications
- user can make an appointment with worker.
- user can give ratings and reviews based on worker performance.
- the payment system will be online based.

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