

KAJKORMOBD : DISCOVER JOBS AND WORKERS
(AN ANDROID APPLICATION)

BY

ABDUR RAHAMAN
ID: 161-15-7592

AND

MEHEDI HASAN SHOHAG
ID: 161-15-7552

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

Supervised By

A S M Farhan Al Haque
Lecturer
Department of CSE
Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “**Kajkormobd: Discover Jobs & Workers (An Android Application)**”, submitted by **Abdur Rahaman, ID: 161-15-7592** and **Mehedi Hasan Shohag, ID: 161-15-7552** 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 07 December 2019.

BOARD OF EXAMINERS



Dr. Syed Akhter Hossain
Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Chairman



Abdus Sattar
Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

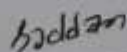
Internal Examiner



Farah Sharmin
Senior Lecturer

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Md. Saddam Hossain
Assistant Professor

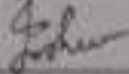
Department of Computer Science and Engineering
United International University

External Examiner

DECLARATION


We hereby declare that, this project has been done by us under the supervision of **A S M Farhan Al Haque**, Lecturer, Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



A S M Farhan Al Haque
Lecturer
Department of CSE
Daffodil International University

Submitted by:



Abdur Rahaman
ID: 161-15-7592
Department of CSE
Daffodil International University



Mehedi Hossain Shohag
ID: 161-15-7552
Department of CSE
Daffodil International University

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ABSTRACT

Demand for work is increasing day by day. On the other hand, people's unemployment is also increasing. the unemployment rate in Bangladesh is at approximately 4.4 percent[1]. where unemployment is to be reduced. Our applications will reduce unemployment to some extent through creating a useful bond between work and worker. In our application for any kind of work can be applied. The person who will work should be someone who is skilled in the work or is not skilled in any work, but he wants to work in a home, shop or institution. Those who need a worker, can hire him or her from a position near to the workplace or from anywhere as per his requirement. In this, anyone who needs his work to be done will get the worker very fast. In this, anyone who needs to work will get a very fast working person. On the other hand, those who want to work or lose unemployment will be able to earn a good living in exchange for work.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Our Application is an online work and worker finding android application project that serves the functionality of a work advertisement panel. There are different kinds of working categories, such as Household related servicing work, Shop related work and Freelance type work. The system allows registered users to log in and post as hirer or worker also new users are allowed to register with a verification system (phone) on the application. Moreover, unregistered users will be able as visitors browse workers posts and can hire them. This is proposed to be an android application.

1.2 Motivation

In our daily life, we need to complete different types of work in different places including our houses, shops and etc. But we suffer to get a suitable worker to do this work. There is no enough online-based option for small-scale workers. They can't select a suitable worker to do the job and also those who need emergency workers can't able to find nearby workers easily. On the other side, it is very much tough to get a small-scale or independent job at home. For small-scale job, people can't afford money for advertisement. At this time, we saw the opportunity to help them by making an android application so they can easily find workers and works easily.

1.3 Objective

There are several reasons to develop this android application. Some of the reasons are below-

- To develop an ideal application for job seekers and the job provider according to their demands.
- To make an online-based network between the job provider and the job seeker.
- To create a user-friendly interface where users can easily access to do the task as needed.
- To fulfill the desirable task at home in a minimum time.

1.4 Expected Outcome

- By using this Application we can able to find workers in various fields and hire them.
- We will find our nearby locations' worker for getting the service very fast.
- By using this Application skilled people or unskilled can get their desired work.
- It will make the communication system of job providers and job seekers easier.
- Will lessen the cost of advertisement.

1.5 Report Layout

We have sorted out our report below

In Chapter 2, we discuss the background part. We also talk about the related work, comparative studies, scope of the problem and challenges of the project. Chapter 3: Requirement Specification, This chapter is all about requirements like the use case model of the project and their description and the design requirements. Chapter 4: Design Specification, In this chapter, we discussed all the designs of the project. Chapter 5: Implementation and Testing, This chapter contains an implementation of requirements, testing implementation and test results of the project. Chapter 6: Conclusion and Future Scope, We discussed the conclusion and the scope for further developments.

CHAPTER 2

BACKGROUND

2.1 Introduction

This is an Android application, which is designed for creating a working platform. Where users easily get their work as well as they can solve their expected work. In this project, we will make the task of finding work and workers easier. Like- household work, shop related work, freelancing work, etc. This application verified by the user's phone number and they can create a profile. If they need job then they can post for work which contains closable work, working experience, working description, location, CV and contact info. Then the job provider can see the worker's post. If the worker is suitable for his work he will be able to hire him through calling or chatting virtually. That's how any user can get the desired task in our application.

2.2 Related Work

When we pulling out an idea for our Application, we seek through Google and discover some application which is related between works and workers. We found many platforms and applications which is related to the govt. job, private job, big-scale works, etc. But there is no specific platform or application for the small-scale job. There are few platform or application that has a little highlight of the small-scale job. So we can say there is no such application as our own.

2.3 Comparative Studies

We have build up our venture for utilizing as a totally android based application. Basically, We tried to increase the possibility of getting engage with small-scale or independent job for job seekers. Those who wants a job they can advertise themselves and their skills but who needs worker they won't be able to post. So, there is no opportunity for workers to select the hirer. If the job provider has no account in our application though he can contact the worker over the phone call. As there is no account of the guest user, workers can't see the profile of the job provider. But if he has an account in our application worker can able to see the profile. They can chat also in our application for the desired task to be done.

2.4 Scope of the Problem

In our application, worker's job-seeking advertising is too much important for job providers and job seekers. We tried to import the job seeker's post in some boundaries. But around users also can write their post by providing his/her own self through the description. In this app, there are around 50 types of works. Also, it will be for any location of Bangladesh. We divided the work into some categories like Household work, Shops related work, Freelance type work and etc. It will be capable of 64 districts 492 sub-district We especially focused in Dhaka and Chittagong city and categorized these cities on the basis of the police station so that people can easily find their location. We will give a standard warning for providing information in posts. Lastly, we think the users will provide their valuable posts in the right way.

2.5 Feasibility Study

From this application, we think we can contribute a big role in our real life. Nowadays unemployment is a big problem in our society. By using our application unemployed people easily get their work. It is the main focus of our project. Also, People will be beneficial with earn extra income.

2.6 Challenge

When we will gather information from various region we discover some problems. At first, we used email to register the application but after some time we realized that in this process we could not connect all types of people because everyone may not have an email account. So we added the phone number to register the account of our application. After adding the phone number we found that people can make fake accounts by using other phone numbers so that we fixed the problem by adding phone verification system. After completing the primary stage we realize that when the user gets the service from the worker, he/she can't get the same worker easily for the next service. That's why we created to keep the worker on the job provider's favorite list. There were no rating options for job providers to access the workers. So that we also added a rating option for job provider to rate workers performance.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Requirement Collection & Analysis

Our framework is gathered user's information as posts. When any user writes a post, we store it in the firebase database then we show it in our app's home page. Then other users or visitors can see these posts and can hire closeable workers.

For user

There are two types of user can exist here. One who has an account and he/she can able to do anything without limitation so that we called him/her user o

nly. Another who has no account here we called him/her visitors only. He/she can't access anything because there are some limitation

Main User

first, he/she need to create an account in our application. He/she can post any work and as well as can hire another worker by phone calling or chatting. He can also add favorite workers to his favorite list.

visitor

A visitor doesn't need to create an account in our application. He/she just sees the post list and can hire a desired worker by phone call. He/she also can search the post list by work name and location.

3.2 ER Diagram

An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities[2]. It can show how substances, for example, individuals, items or ideas identify with one another inside a framework.

Entity

An entity is any singular, identifiable and unique object. For example, a man, question, idea or occasion- that can have information put away about it. There are two kinds of entities – these are..weak entities and strong entity.



Figure 3.1 : Symbol of Entity

Relationship

We use a relationship to connect substance with one another or are related to one another. There are two kinds of relationship in ERD. These are strong relationships and a weak relationship.

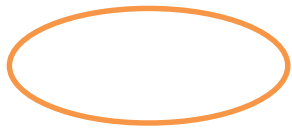
Strong relationship use for taking primary keys between two entities. Whereas weak relationship uses for taking partial discriminator key.



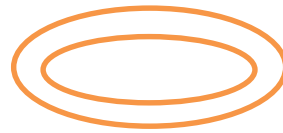
Figure 3.2: Symbol of relationship

Attribute

The attribute is defined as a quality or characteristic of a person, place or other things.



Attribute



Multivalued Attribute

Figure 3.3: Symbols of Attribute

3.2.1 Our application's ER outline given below

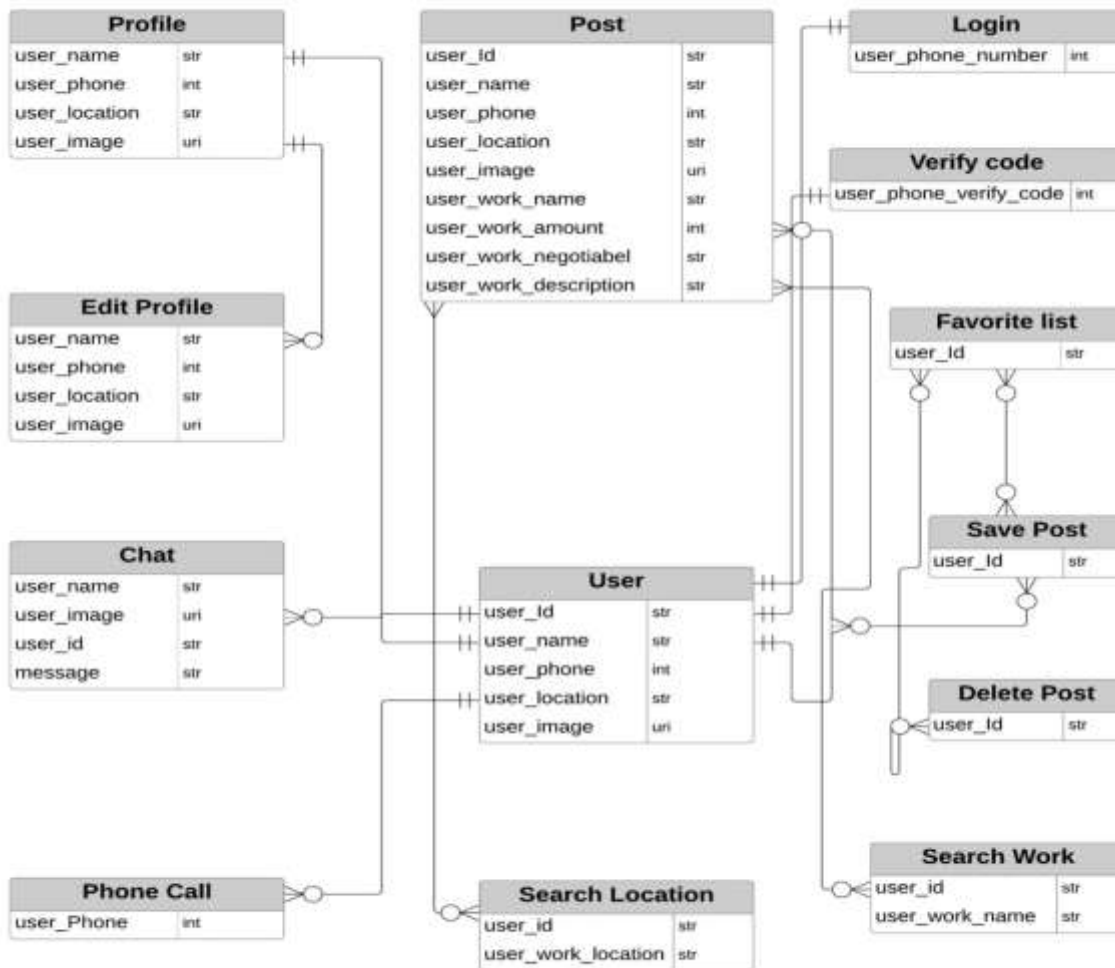


Figure 3.4: ER Diagram

3.3 UML Use Case Modeling and Description

Use case diagrams are valuable for visualizing the functional requirements of a system that will translate into design choices and development priorities. They also help identify any internal or external factors that may influence the system and should be taken into consideration[3]. Each use case can provide valuable results to the actor or stakeholders of the system. It is critical to note, but however, that UCDs are in general sense unique in relation to succession graphs or stream outlines since they don't make any endeavor to speak to the requestor number of times that the framework activities and sub-activities thought to be executed. Here is the figure for users and visitor's individual use case modeling diagrams.

3.3.1 Use Case (Visitor Part)

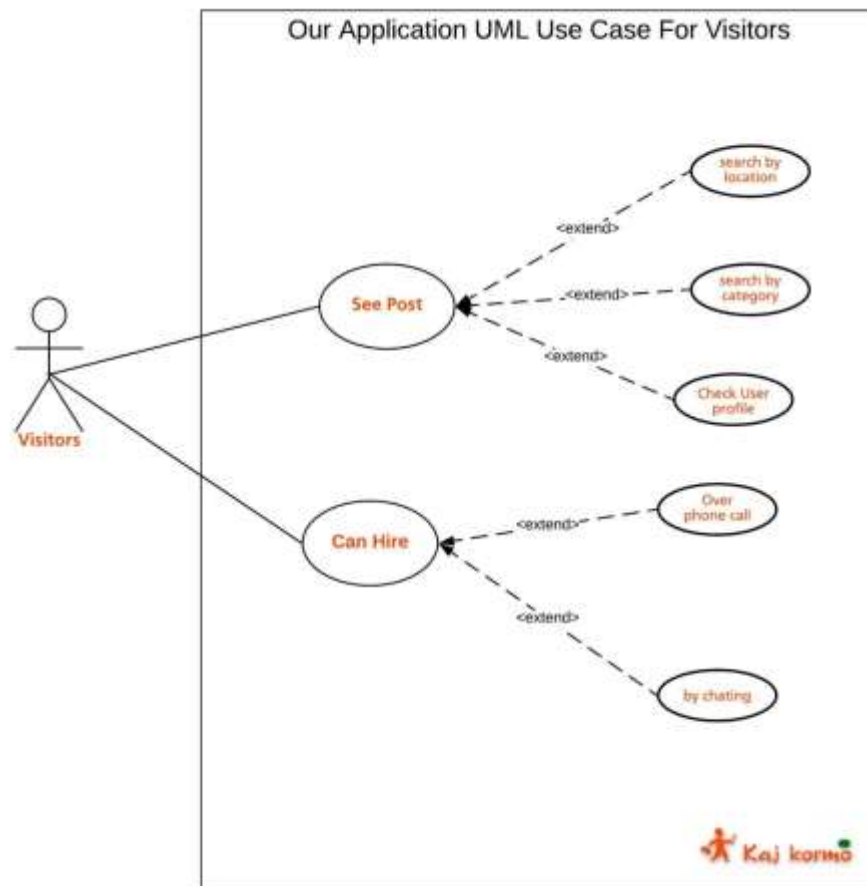


Figure 3.5: Use Case Model for Visitor

3.3.2: Use Case(User or Worker Part)

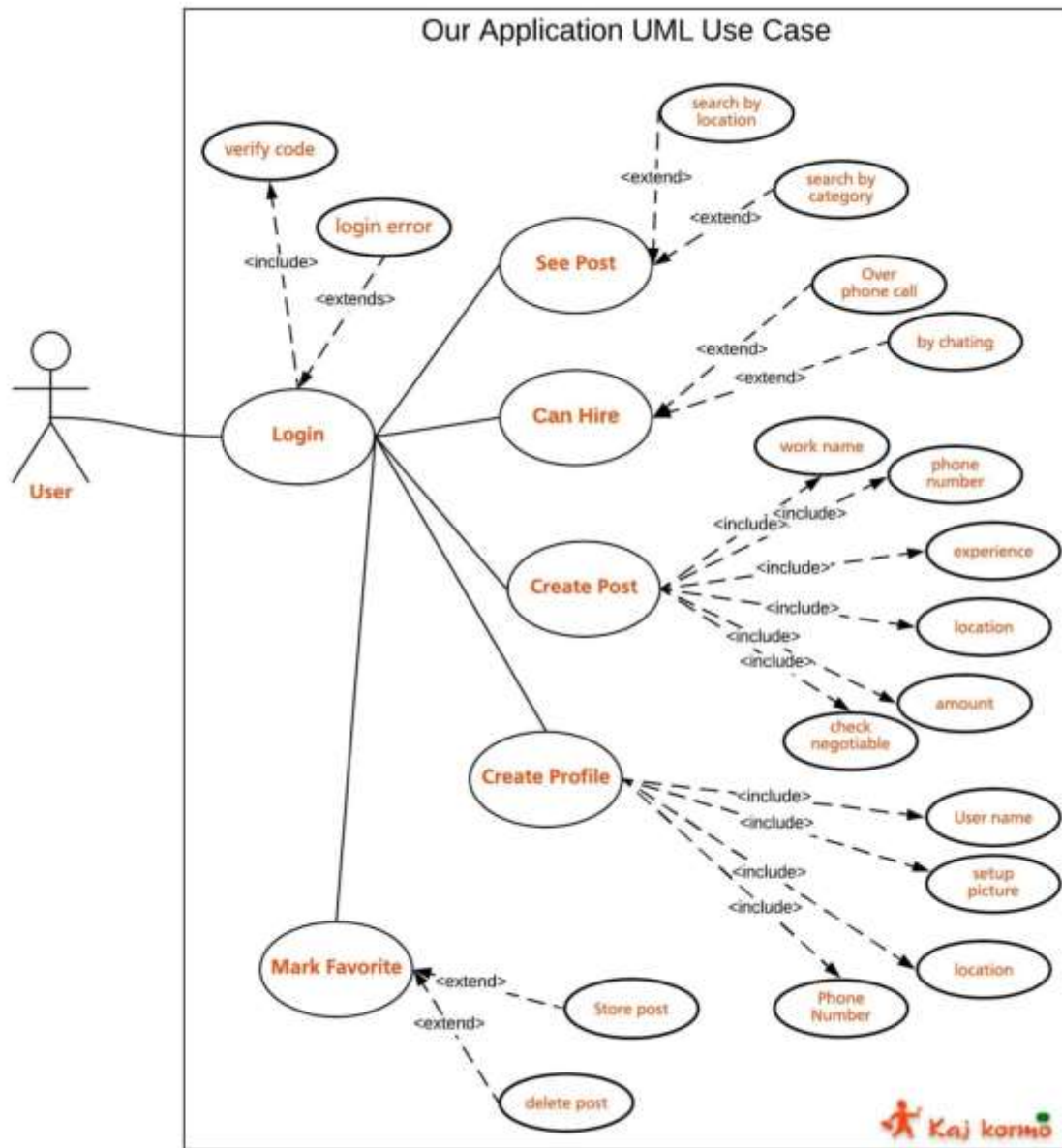


Figure 3.6: Use Case Model for User or Worker

3.4 Data Flow Diagram of our application

A Data Flow Diagram (DFD) is a graphical representation of the “flow” of data through an information system.

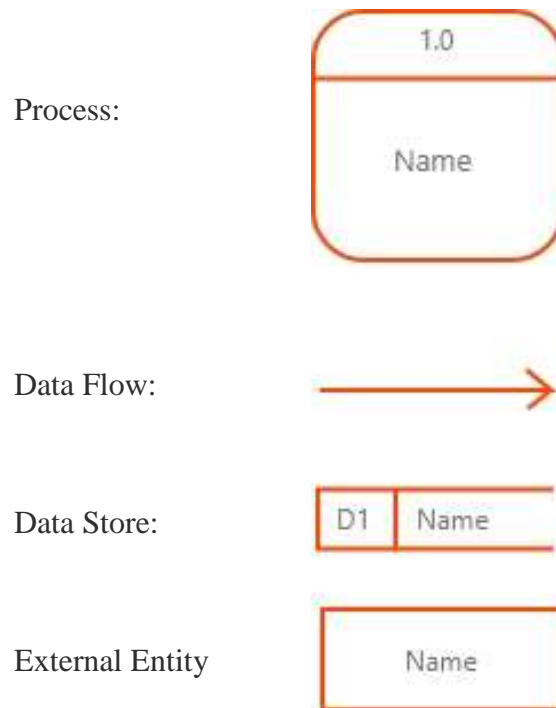


Figure 3.7: Symbol for DFD elements.

3.4.1 Our Application Data Flow Diagram

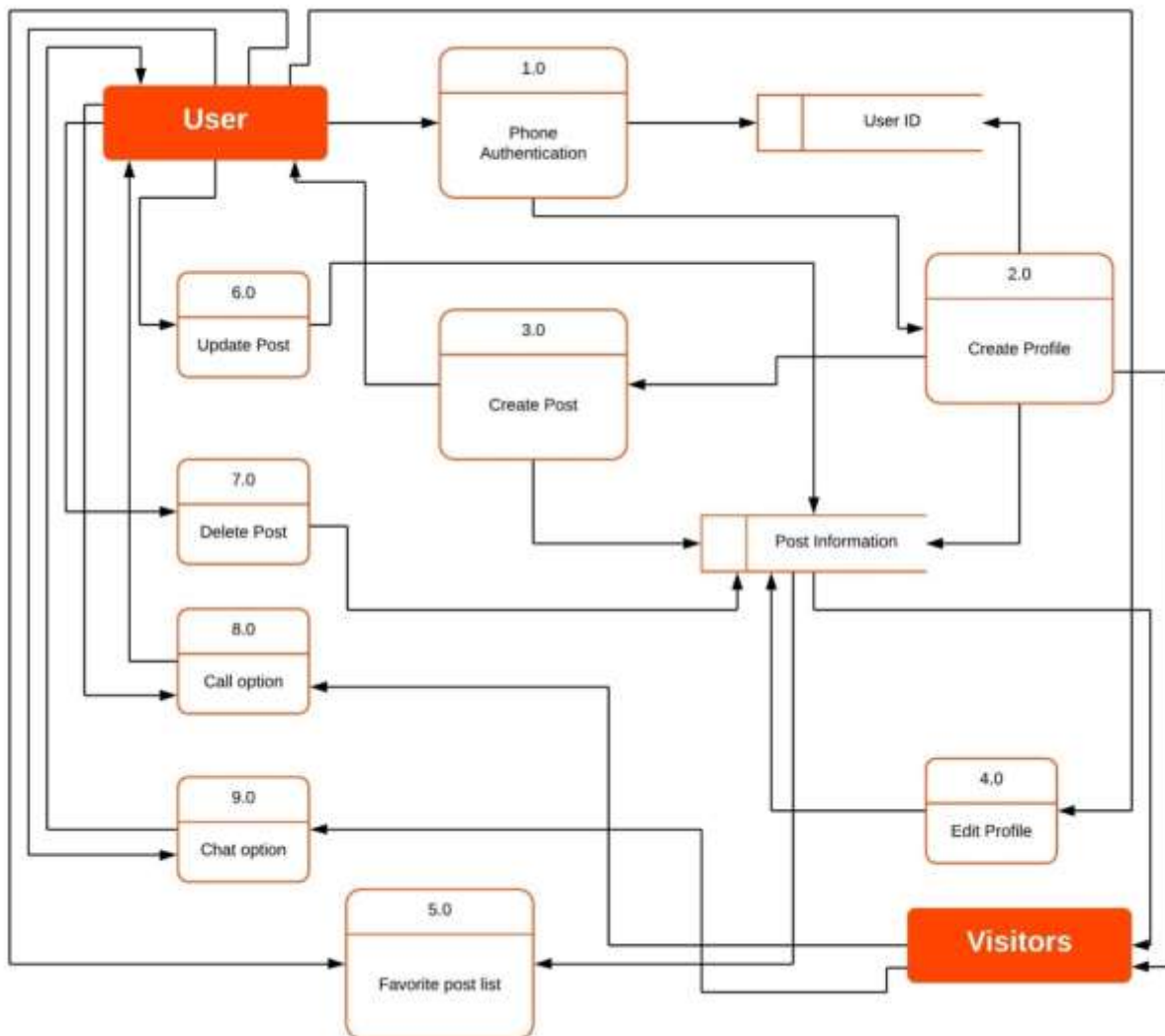


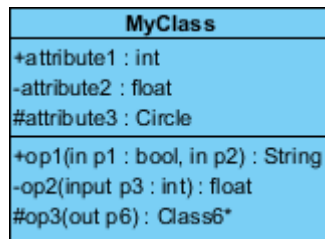
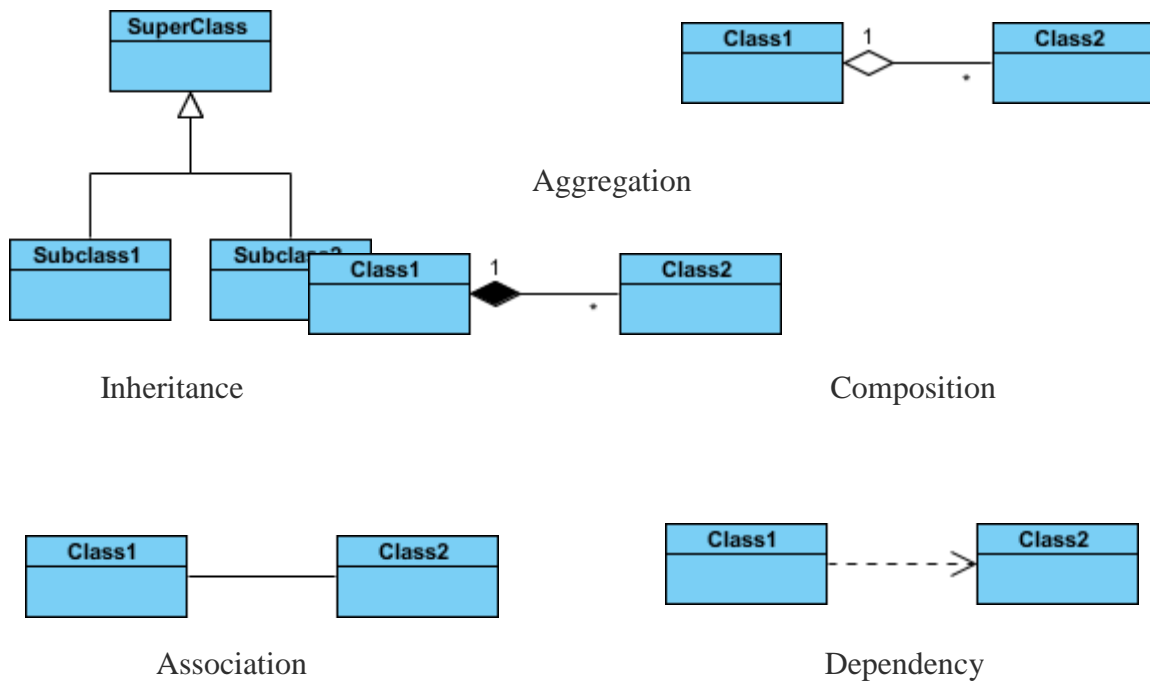
Figure 3.8 : Data Flow Diagram

3.5 Class Diagram of our application

- Shows static structure of Class in a System
- Diagram provides a notation for structure diagrams by UML

A UML class diagram is made up of:

- A set of classes and
- A set of relationships between classes



Class visibility example

3.5.1 Our Application Class Diagram

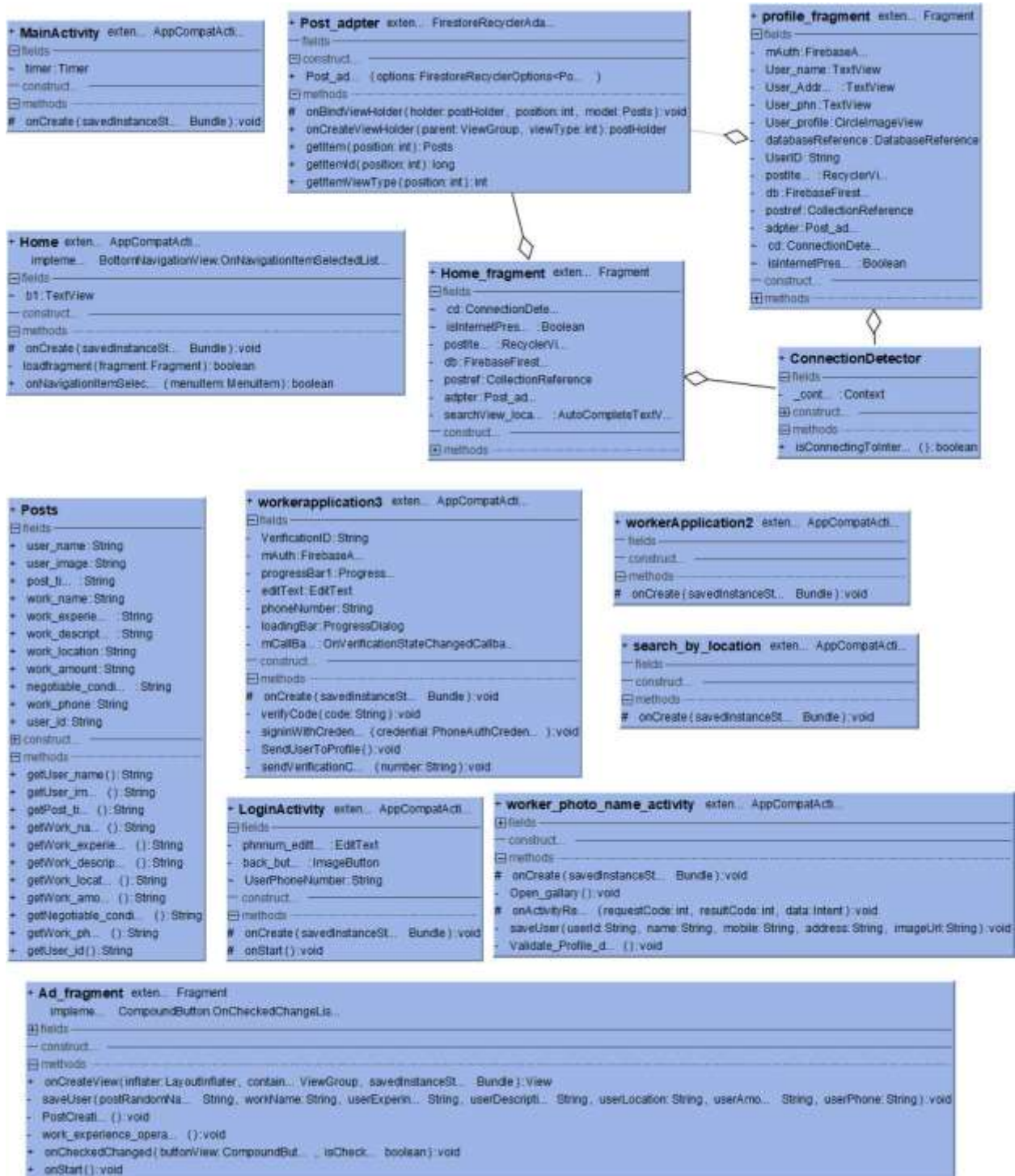


Figure 3.9: Class Diagram

3.6 Design Requirements

We design our application in Adobe XD. Then we implement it in Android Studio. We collect many designing tools from Android material design. We use xml for designing our application's layout

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front End Design

Users can see everything in that application as interface is known as front-end design. We have designed the whole app user interfaces. Basically, we designed our application with an easy user interface where job providers and workers do their tasks easily. All interfaces of our app have been given below-



Figure 4.1: The icon of our application



Figure 4.2: Starting screen

This icon (Fig 4.1) means the worker walking with working tools. this man is ready for any work. Starting screen (Fig 4.2) shows the logo and the name of our application also highlights the motto of our application 'Easy to find works and workers'.

4.1.1 Dashboard Page:

After launching the app it will show the dashboard page. It is the main part of our application. It contains all job seeker post or advertisement. Visitors or users can see the information from the post also have a feature of search option. They can search workers by work category with location-based. They can contact the worker over the phone call or chat (must need an account) for the task to be done.

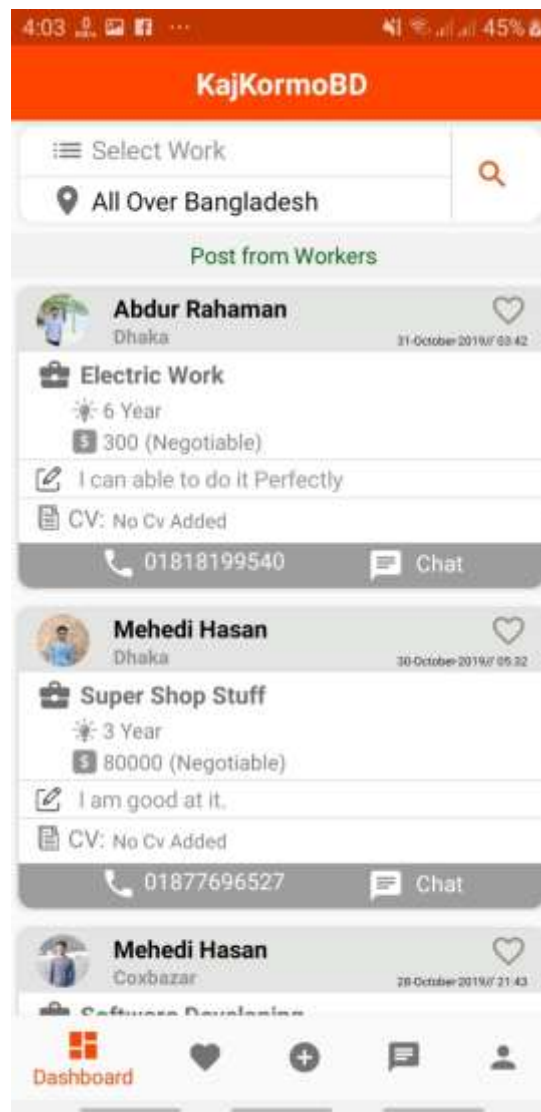


Figure 4.3: Dashboard Page

4.1.2 Register Page

Phone verification is the only method to register for creating an account in our app. While anyone wants to create an account he/she must provide his/her valid phone number. Then our system sends him/her a 6(six) digit code. After entering this code he/she complete the registration process easily.

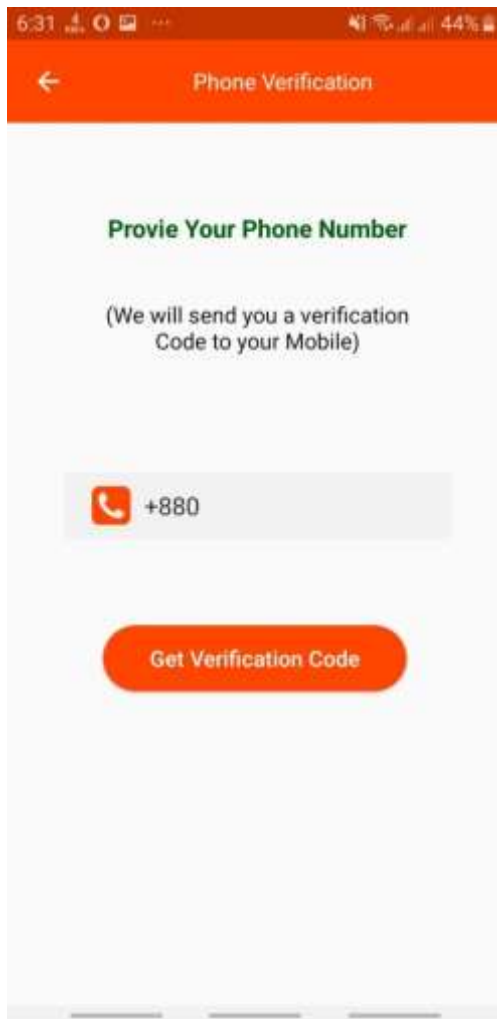


Figure 4.4: Provides phone number

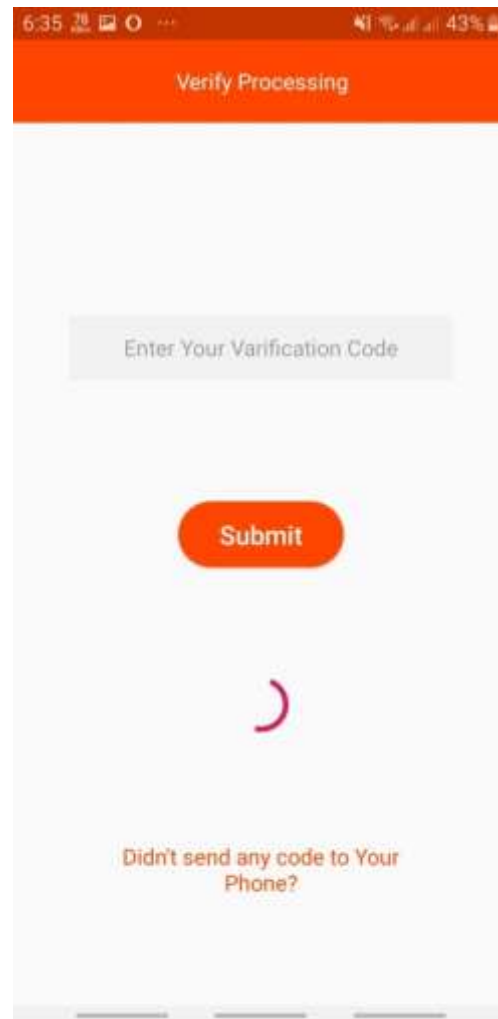


Figure 4.5: verifying the provided code

4.1.3 Create Profile

After the registration presses create a user profile interface will be shown. Here a user must provide a user photo, user name, and user address.

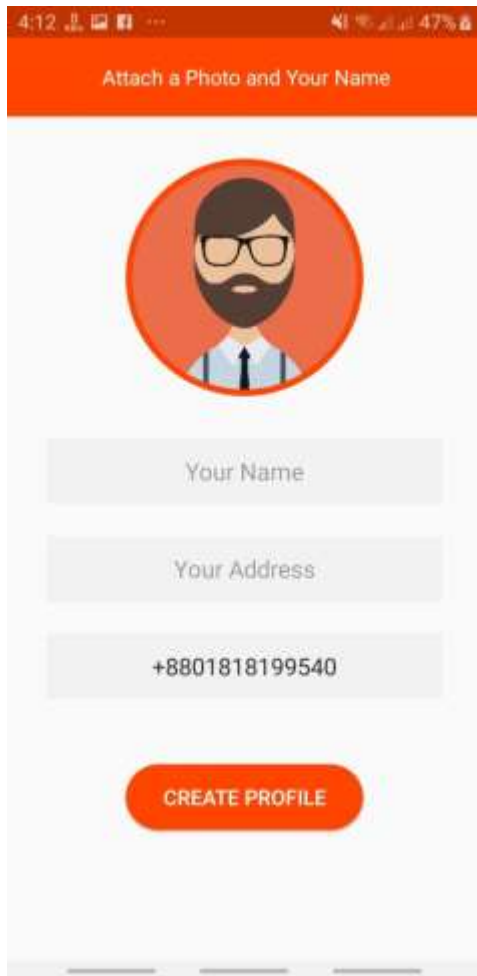


Figure 4.6: Before filling up users information

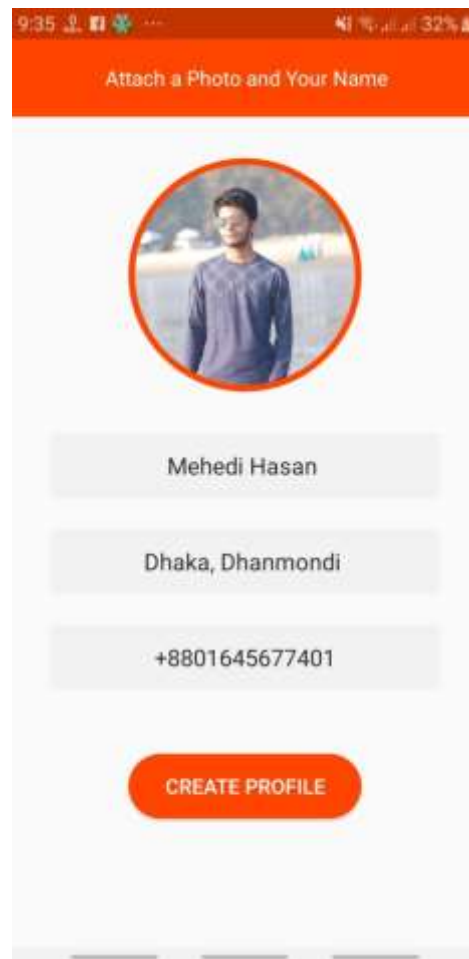


Figure 4.7: After filling up

4.1.4 User Profile

After finishing these steps the user has been created his/her own profile. Then he/she can allow all the features of our application. If the user made any post, he/she can able to see the post in the profile page.

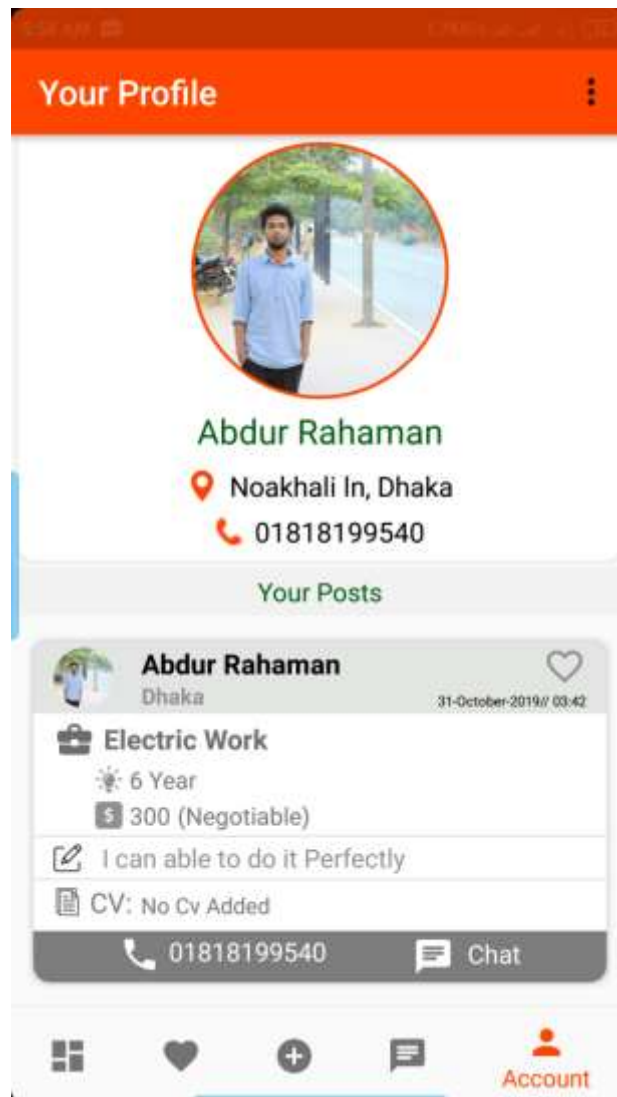


Figure 4.8: User profile

4.1.5 Create Posts

Creating posts is an important part in our application where users can post for the job. At first, the user must need to select the work categories for finding the appropriate job. After selecting the job user need to specify the experience of the job if he/she has. He/she can make short notes too. User must have a specific location so he/she has an opportunity to specify the location. He/she can write how much amount for the job. Lastly, he/she can provide another phone number for contact with the hirer.

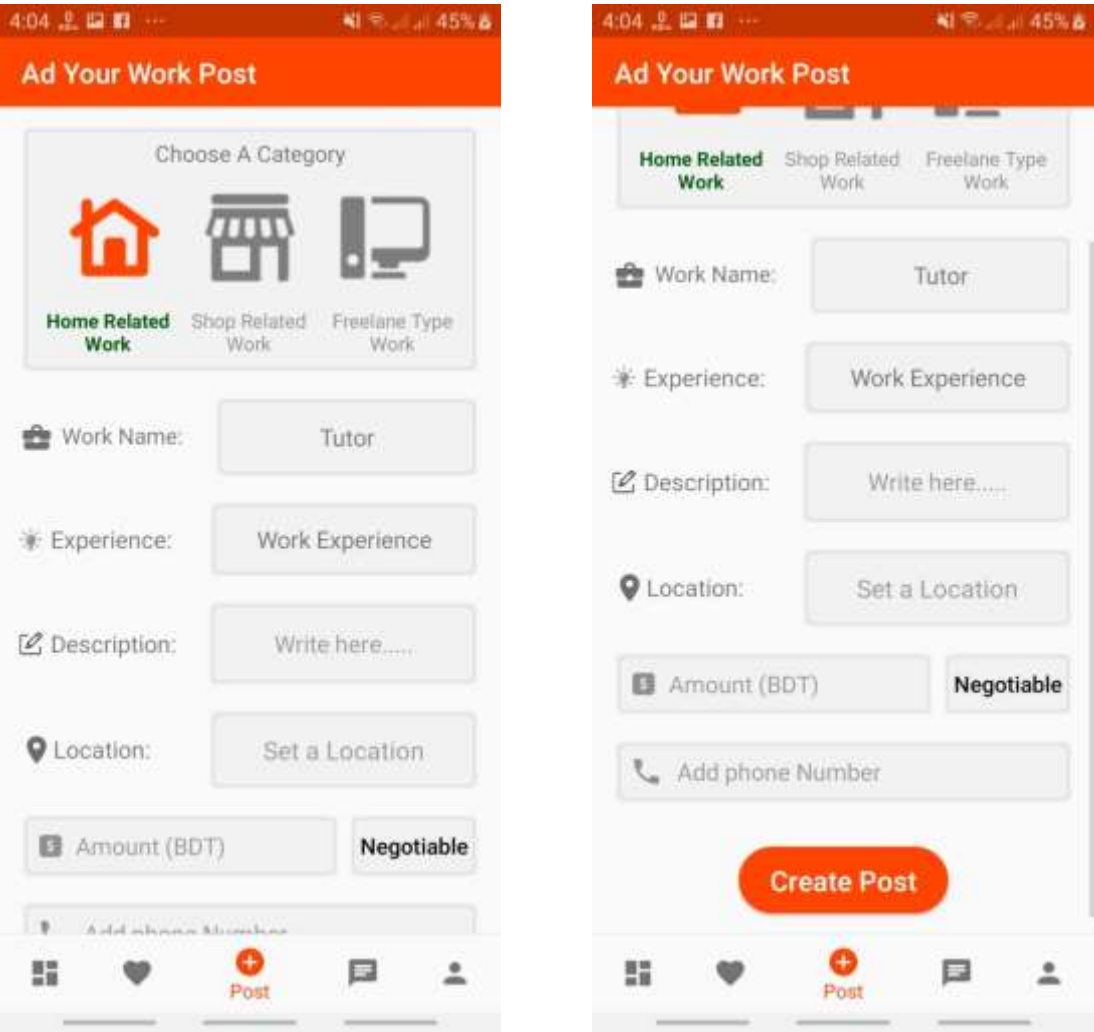


Figure 4.9: Posting page layout

4.1.6 Add Favorite and Chats

We created to keep the worker on the job provider’s favorite list. When the job provider needs the person again for the same work, he can able to hire him from the favorite list. Also, job provider can able to chat over online. So we also created an electronic communication system in our application, where the job provider and the job seeker can deal easily.



Figure 4.10: Favorite list layout

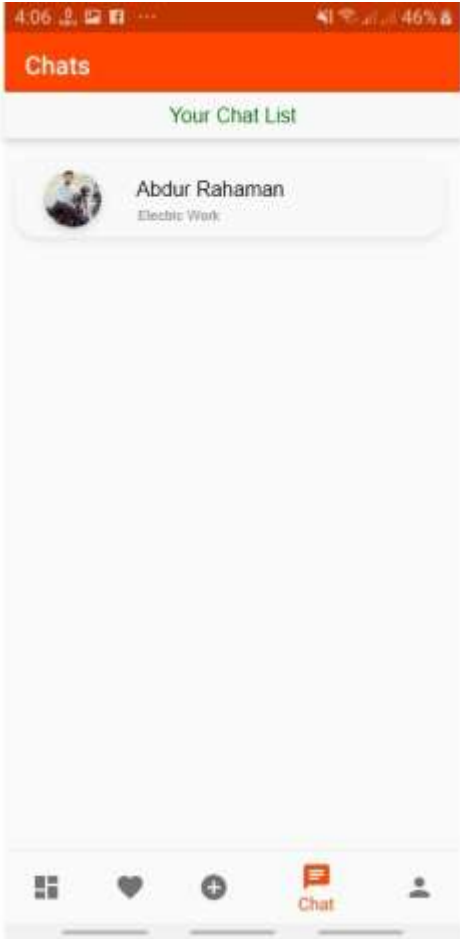


Figure 4.11: Chats layout

4.1.7 Edit Profile, Language and Log Out

In the Profile layout page, the user can see an icon for some changing or operation tools like edit profile, language and log out. He/she can able to change his/her user information as well as photo.

Users can choose Bangla or English language which is he/she preferred.

When a user needs to log out he/she can able to log out from our application.

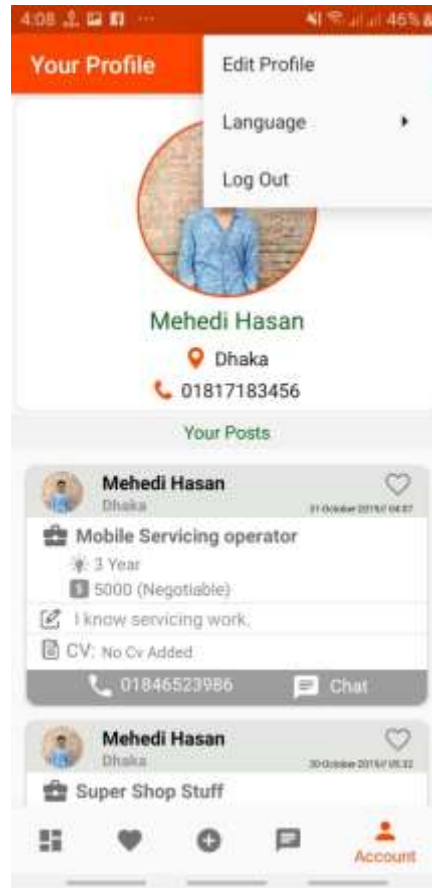


Figure 4.12: User setting tools

4.2 Implementation Requirements

To create our Application, we used many types of implementation tools, components, and attributes. This application easily accessible and useful to people has become possible with the help of these tools.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Database is essential for our project. We know various kinds of database administration framework are utilizing around the world. Among them, we decide to take firebase for our application, cause it is a popular platform in the present time. Google offering a number of different features that are all include in firebase and we easily implement these for our various uses. Another thing, firebase is an open-source social database administration platform. That's why we chose this platform for our application.

For authenticate in our application, we use firebase authentication by the user's mobile number. After verifying the number it creates a unique user id for the user.

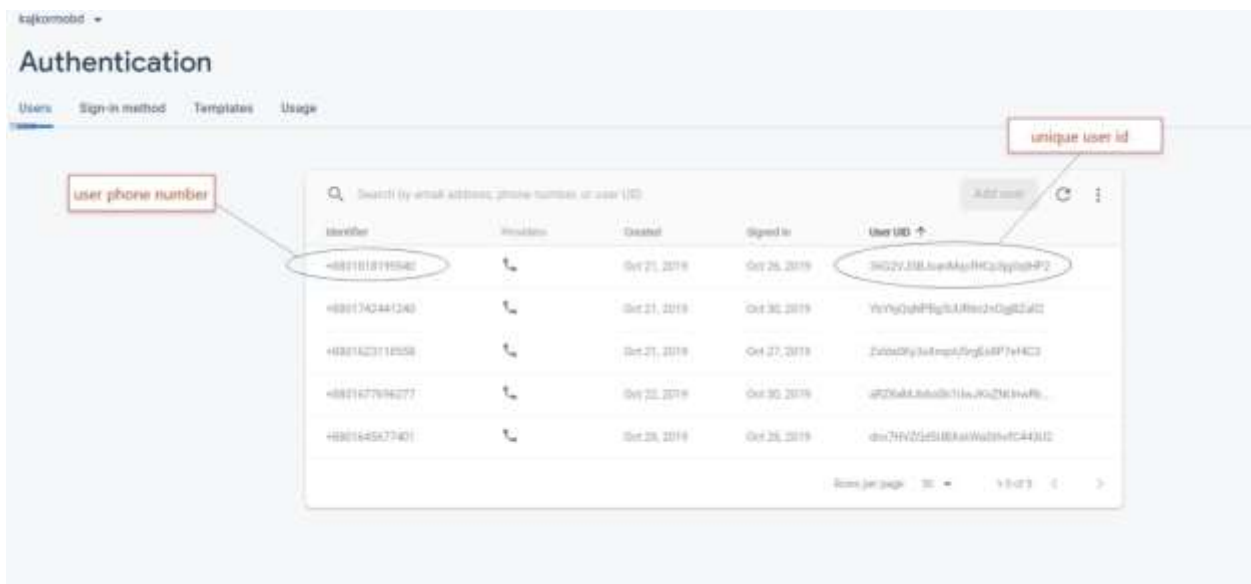


Figure 5.1: Authentication in firebase.

Then we take profile information in the cloud firestore and for the profile image, we use firebase storage[4].

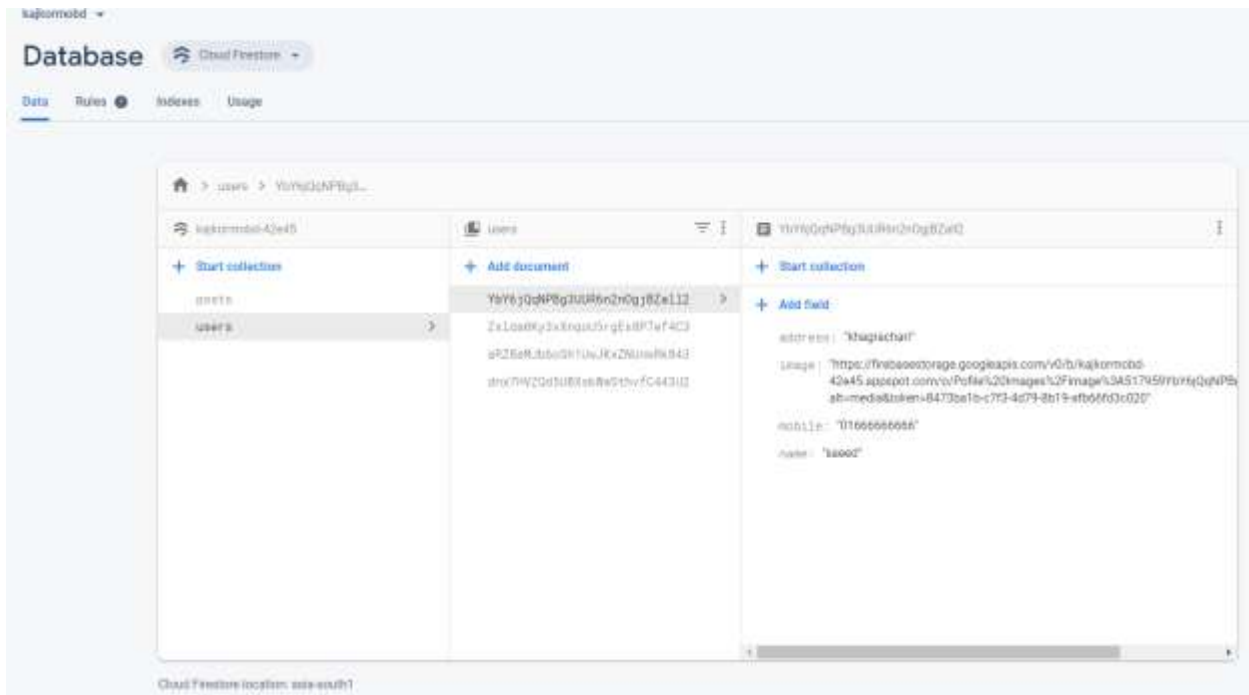


Figure 5.2: Firestore users profile data[5].

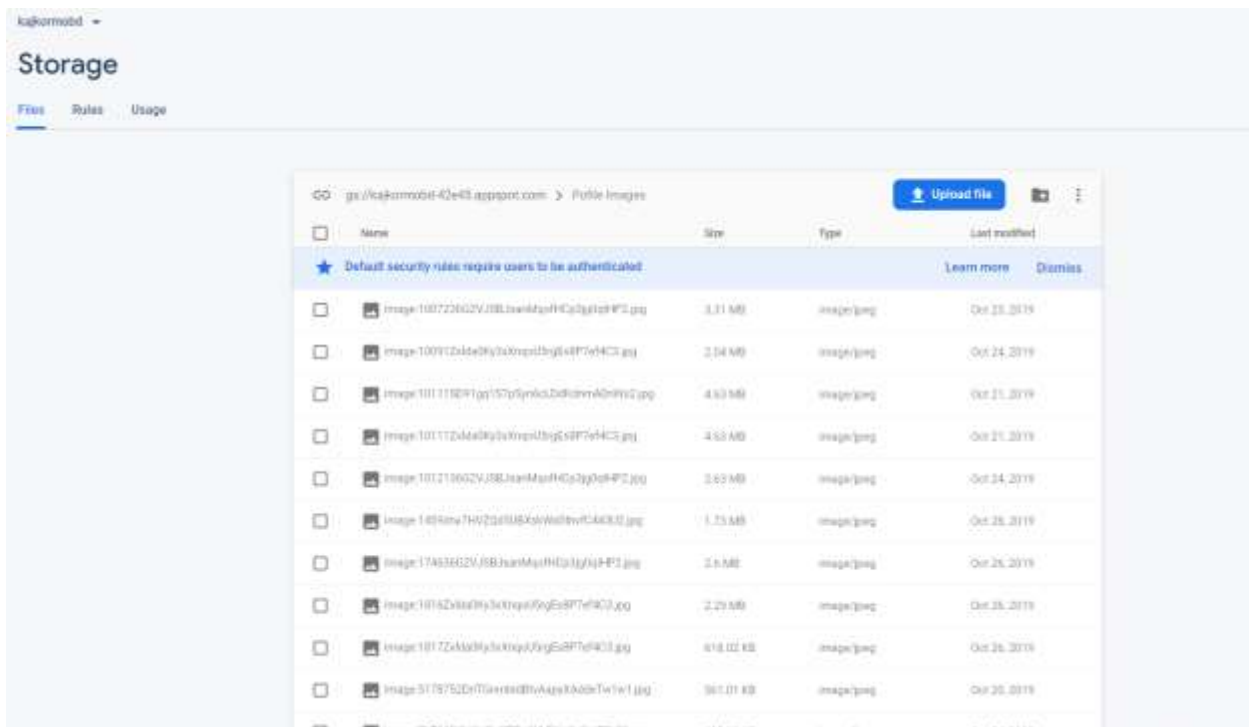


Figure 5.3: Storage image dataset[6].

In the database, we create a unique id for every post. And here also have users id inside the post elements[7].

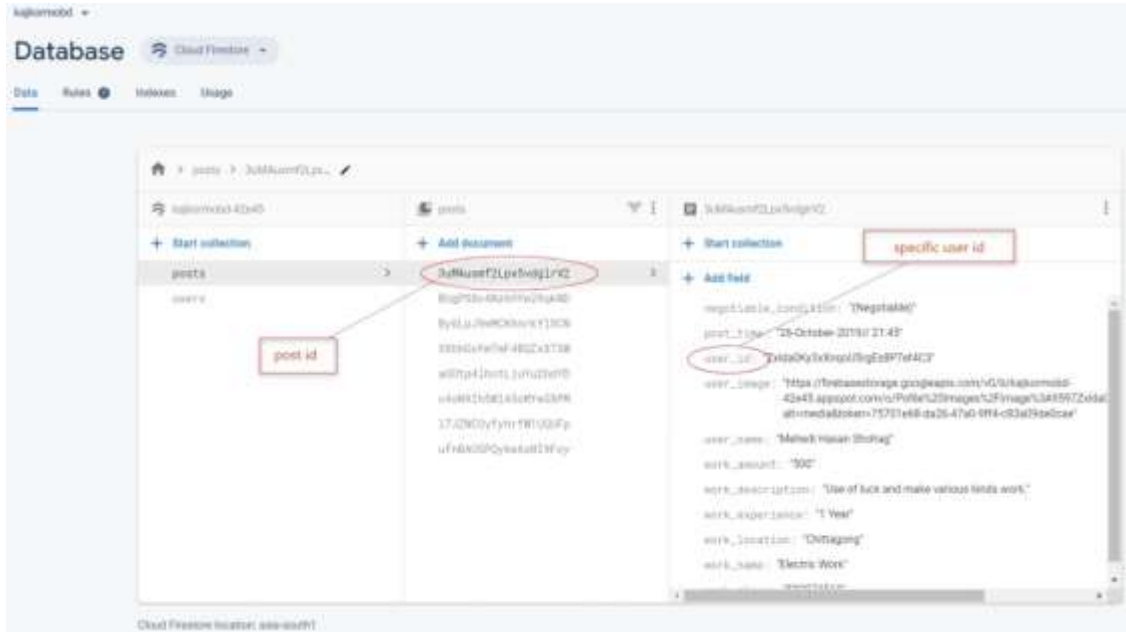


Figure 5.4: Firestore users posts data.

5.2 Test Result and Report

Test report is needed to reflect the result of testing the application in a formal way, which gives an opportunity to estimate the result of testing quickly. We show the test case, test input, expected output, actual output and finally we find our expected results for our application. The test result was quite successful. The user satisfies with using our application. Our expectation will be that the user can easily use and understand our application as a better user interface.

CHAPTER 6

CONCLUSION & FUTURE SCOPE

6.1 Discussion & Conclusion

We think our project will contribute a big role in our society. Through using our application, it will reduce the crisis of finding works and as well as works. It will create a strong communication between the job provider and the job seeker. It contributes to an income source for job seekers. We hope our application will be very demandable in the future.

6.2 Limitations of Our application

Our application also has some limitations. We will overcome those limitations in the near future. Here, we want to mention one of the main limitations of our application which is given below:

- Those who needs to hire worker means job providers are not able to create any post. But it would have been a better user interface.

6.3 Scope for Further Development

We tried our best for developing our application in the present time. If we find any scope for developing in the future, we would love to update and upgrade our application.

APPENDIX

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.kajkormobd">

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

<application
android:allowBackup="true"
android:icon="@drawable/logoooo"
android:label="@string/app_name"
android:roundIcon="@mipmap/ic_launcher_round"
android:supportsRtl="true"
android:theme="@style/AppTheme">
<activity android:name=".slection_for_work"></activity>
<activity android:name=".worker_photo_name_activity" />
<activity android:name=".worker_photo_name_activity_for_edit" />
<activity android:name=".search_by_location" />
<activity android:name=".workerapplication3" />
<activity android:name=".workerApplication2" />
<activity android:name=".LoginActivity" />
<activity
android:name=".Home"
android:label="@string/title_activity_home"
android:windowSoftInputMode="stateHidden|adjustPan" />
<activity android:name=".MainActivity">
<intent-filter>
<action android:name="android.intent.action.MAIN" />

<category android:name="android.intent.category.LAUNCHER" />
</intent-filter>
</activity>
<activity
android:name="com.theartofdev.edmodo.cropper.CropImageActivity"
android:theme="@style/Base.Theme.AppCompat" />
</application>

</manifest>
```

build.gradle(Module: app)

```
apply plugin: 'com.android.application'

android {
    compileSdkVersion 28
    defaultConfig {
        applicationId "com.example.kajkormobd"
        minSdkVersion 21
        targetSdkVersion 28
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
        vectorDrawables.useSupportLibrary = true
        multiDexEnabled true
    }
    buildTypes {
        release {
            minifyEnabled false
        }
    }
    proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-rules.pro'
}

dependencies {
    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation 'androidx.appcompat:appcompat:1.1.0'
    implementation 'androidx.constraintlayout:constraintlayout:1.1.3'
    implementation 'com.google.android.material:material:1.0.0'
    implementation 'androidx.vectordrawable:vectordrawable:1.1.0'
    implementation 'androidx.cardview:cardview:1.0.0'

    implementation 'androidx.recyclerview:recyclerview:1.0.0'
    implementation "androidx.constraintlayout:constraintlayout:1.1.3"
    implementation "com.android.support:design:28.0.0"
    implementation 'androidx.recyclerview:recyclerview:1.1.0-beta02'

    implementation 'androidx.annotation:annotation:1.1.0'
    implementation 'androidx.lifecycle:lifecycle-extensions:2.1.0'

    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'androidx.test:runner:1.2.0'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.2.0'
    androidTestImplementation 'androidx.test.uiautomator:uiautomator:2.2.0'

    implementation 'com.android.support:multidex:1.0.3'
    implementation 'de.hdodenhof:circleimageview:3.0.1'
    api 'com.theartofdev.edmodo:android-image-cropper:2.8.+
    androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
    implementation 'com.squareup.picasso:picasso:2.71828'

    implementation 'com.google.firebase:firebase-analytics:17.2.0'
    implementation 'com.google.firebase:firebase-firestore:21.2.0'
```

```
implementation 'com.google.firebase:firebase-auth:19.1.0'  
implementation 'com.google.firebase:firebase-database:19.2.0'  
implementation 'com.google.firebase:firebase-storage:19.1.0'  
implementation 'com.firebaseui:firebase-ui-storage:6.0.2'  
implementation 'com.android.support.constraint:constraint-layout:1.1.3'  
  
// FirebaseUI for Firebase Realtime Database  
implementation 'com.firebaseui:firebase-ui-database:6.0.2'  
  
// FirebaseUI for Cloud Firestore  
implementation 'com.firebaseui:firebase-ui-firestore:6.0.2'  
  
// FirebaseUI for Firebase Auth  
implementation 'com.firebaseui:firebase-ui-auth:6.0.2'  
  
// FirebaseUI for Cloud Storage  
implementation 'com.firebaseui:firebase-ui-storage:6.0.2'  
implementation 'com.android.support:recyclerview-v7:28.0.0'  
  
}  
apply plugin: 'com.google.gms.google-services'
```

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