



**GROUP-23**

**Software Engineering - COL740**

**Design Document**

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## **1. Introduction:**

vSewa is an android app. It provides a platform to connect volunteers to needy people.

### **1.1 Purpose:**

Our purpose is to provide help locally to old age people, PWD, needy by connecting with people who want to volunteer, through the app and NGOs, and increase awareness in people by motivating them with incentives like discount coupons and goodies.

### **1.2 Scope:**

Initially, we release this in the local area to test the app and expand it further after fixing bugs (if any). This can be extended for the NGOs and other social service camps where people nearby can sign up to volunteer for organizations or even join them. This can be extended for helping people in emergency situations (accidents, travel needs, etc) if they are stuck in remote areas. A reward system helps in the active participation of volunteers and increases users by ensuring motivation in terms of rewards. It can be used to search for blood donors. Social media apps notification via a linked account can be used to alert the volunteer. Further, a web portal can be made to volunteer. The use cases can be increased in various directions, but the core of the platform is to connect volunteers and needy individuals, NGOs.

### **1.3 Overview**

We are making an android app that helps people to find volunteers to help them. It has a messaging service, Map navigation, rating system, point system, and many more features. We are using android studio IDE (It offers tools custom-tailored for Android developers, including rich code editing, debugging, testing, and profiling tools) for developing the app. Java language

used as a backend. For database and authentication, we are using Firebase (as it gives free 1 GB real-time data storage).

We are using firebase to store the user's data, image, profile pic, and to authenticate users while login and signup. Firebase provides easy management of databases as it uses NoSql, and easily provides authentication methods(Google, Facebook, email, phone number). Firebase easily creates a database table and it's easy to use in an android studio, no need to host any server for the database. Firebase notifies the data updating/deletion in real-time.

## 1.4 References

Firebase - [Documentation](#)

Firebase DBMS - [Firebase Realtime Database](#)

Firebase Authentication - [Firebase Authentication](#)

Firebase ml-kit Face Recognition - [Face Detection](#)

Android Studio - [Documentation](#)

Maps SDK for Android - [Overview | Maps SDK for Android](#)

## 1.5 Definitions and Acronyms

API	Application Programming Interface
SDK	Software Development Kit
DBMS	Database Management System
ML	Machine Learning

## **2.System Overview**

### **2.1 Architectural Design**

As we are using firebase. Firebase maintains almost everything. It gives the database storage, file storage, authentication. So we don't have to maintain anything

### **2.2 Module Definitions**

### **2.3 Technology/ Tools Used**

Machine Learning is used to detect the face of the person, and identity proof. All this technology comes with firebase.

## **3.Detailed Design**

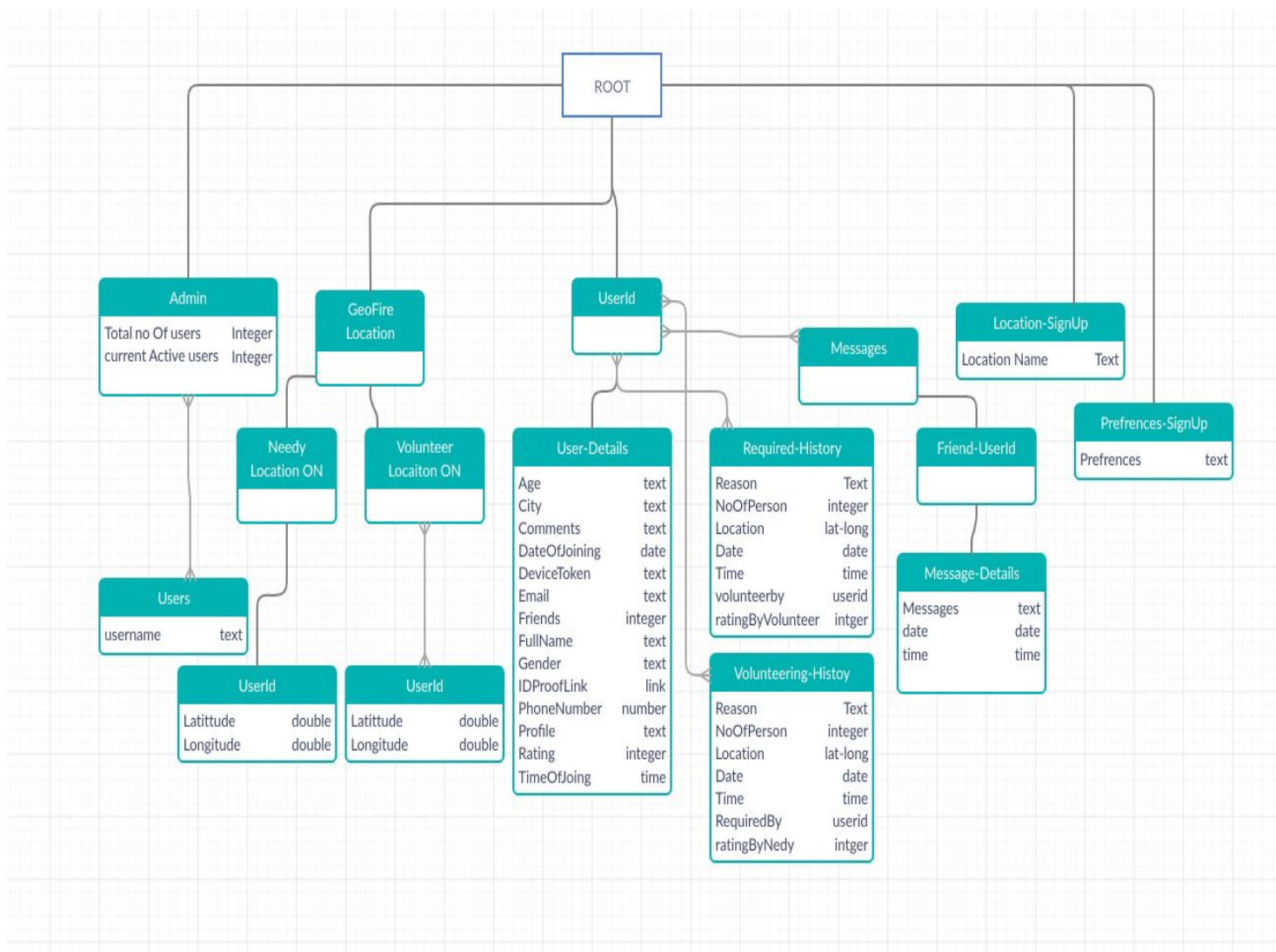
### **3.1 Module APIs**

We are using Google-Maps-API for using maps in-app to show the location. As firebase handles most of the APIs, so we don't need to use APIs that much.

## 3.2 Data Base Design



Database Image from Firebase Database



Database RelationDesign

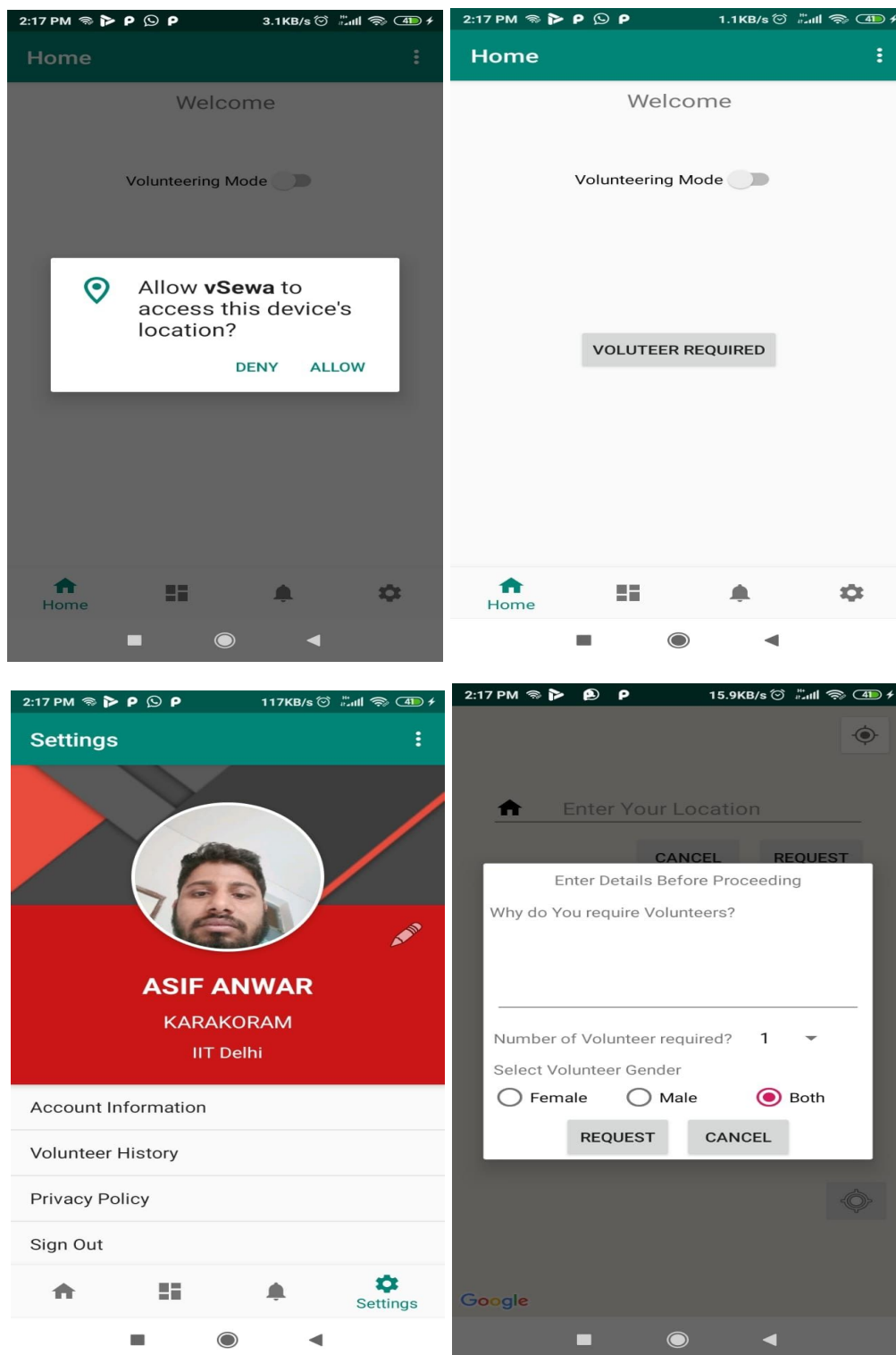
## 3.3 Screen Layouts

The top-left screen is the 'Welcome' page. It features a green header with 'vSewa'. The main content area is white with the word 'Welcome' in large green font. Below it, there's a link 'New User? SignUp' and another link 'Already have an account? Login'. The top-right screen is the 'SignUp' page. It has a green header with 'vSewa'. Below the header, there's a link 'Already Have an account? Login Here'. The main content area is white with the title 'SignUp' in bold. It contains several input fields: 'First Name', 'Last Name', 'Email Id', 'Password', and 'Phone Number'. There are also radio buttons for 'Female', 'Male', and 'Other', and a dropdown for 'Age'. Below these, there's a section for 'Id Proof (ICard, PAN, etc)' with a 'Click Here to Upload' button and a 'Please Take a selfie' button. At the bottom, there's a checkbox 'I have read and agree to the Privacy Policy' and a 'REGISTER' button.

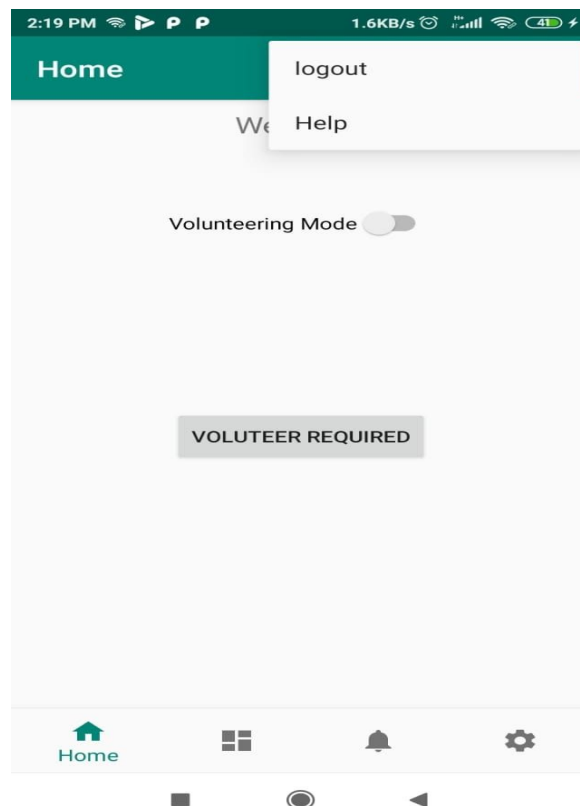
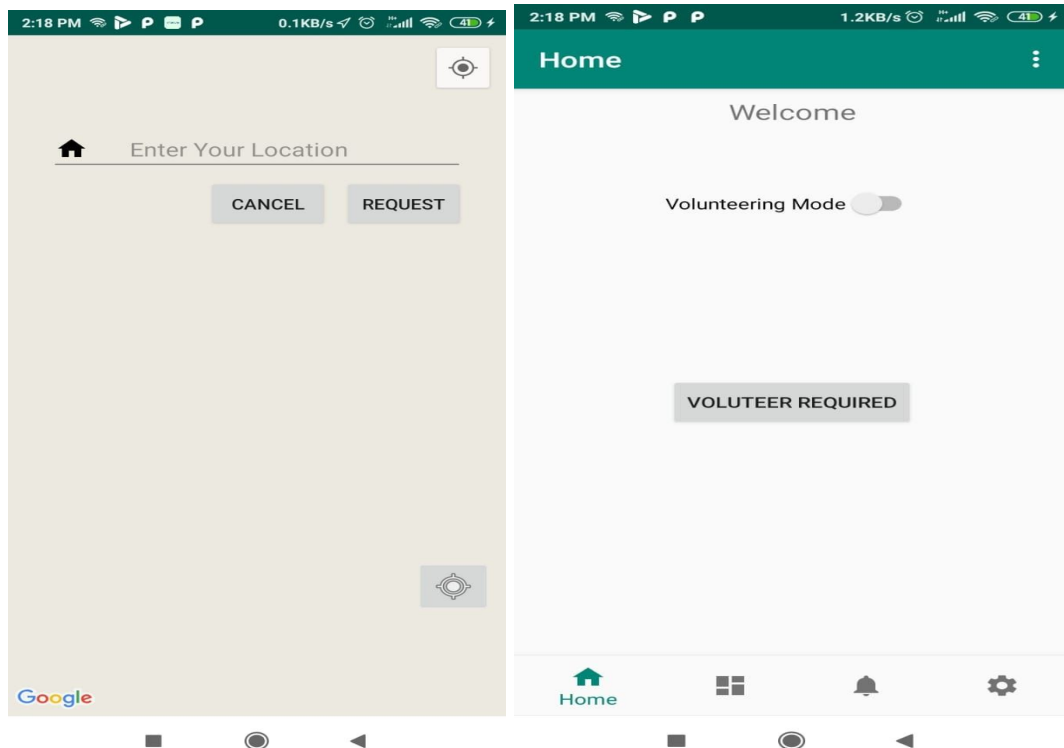
The bottom-left screen is the 'Login' page. It has a green header with 'vSewa'. The main content area is white with the title 'Login vsewa' in bold. It contains input fields for 'Email' and 'Password'. Below the password field, there's a link 'Frogot Password?'. At the bottom, there's a 'LOGIN' button and a link 'New User? Sign Up'. The bottom-right screen is a loading screen. It has a green header with 'vSewa'. The main content area is dark gray with the title 'Login vsewa' in bold. It contains a white box with a red circular loading indicator and the text 'Please wait, Logging in.....'. Below this, there's a keyboard with a numeric keypad and a QWERTY keyboard. The keyboard is in 'English (India)' mode.



## Design Document-vSewa



## Design Document-vSewa



### **3.4 Use Cases**

**High-level Code (using module APIs)**

**Sequence Diagrams**

### **4. Deployment Design**