**MINI PROJECT**

**(2020-21)**

**Build and Deploy an Application for Blood and Plasma Donation.**

**MID-TERM REPORT**

****

**Institute of Engineering & Technology**

**Submitted by:**

**Yashraj Verma**

**(**181500832**)**

**Kishori Tiwari**

**(**181500327**)**

**Stuti Kakar**

**(**181500729**)**

**Rajni Bhardwaj**

**(**181500549**)**

***Supervised By:***

**Akash Kumar Choudhary**

Assistant Professor

**Department of Computer Engineering & Applications**

**Contents**



**Abstract 3**

**1. Introduction -**

1.1 General Introduction to the topic  **-**

1.2 Area of Computer Science **-**

1.3 Hardware and Software Requirements **-**

**2. Problem definition 4**

**3. Objectives 4**

**4. Implementation Details 5**

**5. Progress till Date & The Remaining work 5-6**

**6. Some Screenshots 7-12**

**7. References 13**

**Abstract**

This project is aimed to developing an online Blood and Plasma Donation information application. The Blood Donation Agent is to create an e-Information about the person who wants to donate his/her blood or plasma voluntarily or needs someone else’s that are related to donating the blood and plasma. Through this application any person who is interested in donating the blood and plasma can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover if any general consumer wants to make request blood online he can also take the help of this application. This Blood and Plasma Donation System project is programmed in order to help the humans or patients who are seeking blood at a particular location. This project is designed in such a way that it keeps detailed information as well as separate information of all the locations where the blood is available and what kind of blood is available. The Blood and Plasma Donation System does not store blood but it stores the information about the blood or more precisely we can say it stores the information or database of the blood available in the particular location.

1. **Introduction:** 
   1. **General Introduction to the topic:**

The Blood Plasma donation system is the android based project that aims to provide a platform where the willing blood donors, who want to serve for the betterment of people, will be available. All the information regarding them i.e., their blood type, their place is provided. We all witness such situations in real life whether in our own family or others. Misfortunes can happen anytime to anyone, we see people searching for blood when we visit hospital. The need for the availability of the specific blood in less time is very important in accidents, sudden attacks and other types of critical situations. Therefore, our system will ensure that not only you rely on your closed ones but also on other people who are available and can provide help. The main reason for selection of this topic is to think about the welfare of the society as we carry the responsibility to serve our nation. In the situations where the country has shut down due to this pandemic situation, where hospitals only have patients who are infected by the virus, it’s a matter of concern. While staying indoors people can help others and the needy can get the benefit. Our intention is to motivate people to contribute their part in the tuff times and help the society. As our country is driving towards being digital, it’s important to use the digital platform for the wellness of the society. Thus our project manages to connect the blood donors to the patients so as to make the donation process easy.

* 1. **Area Computer Science:**

Using various technological assets of computer science field we have developed this application.

Areas of computer science that helped us to build our project are:

Cloud computing.

Android Development.

Device Virtualization.

NoSQL Database.

Client Server Connection.

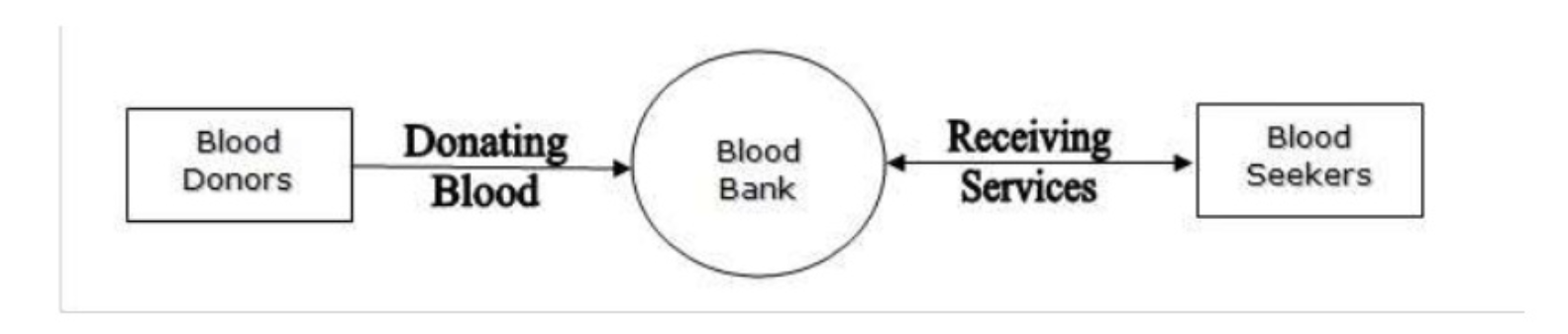
* 1. **Hardware and Software Requirements:**
* **Hardware Requirements:**
  + **For Development:** A personal computer for developing the project with a minimum i5 core processor or AMD’s Ryzen processor would be fine and 8 GB of RAM.
  + **For testing purposes:** Smartphones built on Android OS or Virtual Device like Android Emulator on IDE itself, JUnit is a unit testing framework for the Java programming language.
* **Software Requirements:**
  + An Integrated Development Environment (IDE) i.e., Android Studio to develop the project
  + Java Development kit (Jdk13)
  + Android SDK and NDK with minimum 21 of API level
  + Cloud Services like Google Cloud Platform (GCP) (Google’s Firebase to support the Backend services) and BAAS(Backend as a service).
  + Google Maps SDK .

**Problem Definition**

In the present scenario it is very important to provide people with a medium that aims to provide healthcare facilities. Searching for blood or plasma currently involves blood banks, but it is a time consuming process and also requires manual involvements of the hospital staff to search for the right blood group. In the times of sudden requirements, due to any accident or illness people often feel panic and in deep stress to find the blood of particular type for the patient. Sometimes due to lack of availability the patient might lose his or her life. Therefore, it is important to give a platform where this process could be done with ease. In this time, our country is also witnessing a global pandemic caused by covid19 virus, which is infecting people in good numbers. Therefore, it's very important to develop a platform that works for this purpose and helps the person in need.

**Objective**

The project is mainly centered towards the people of society who are willing to donate blood or plasma to the patients that are in need so as to help them recover . Through this system it will be easier to find a donor for the exact blood type and it's easy to build the connection between donor and the patient . The main intention behind this system is to formalize the procedure of blood donation and motivate other donors in order to play their role in the welfare of the society. At the situations when the sudden tragedy takes place and it's important to aid the patient in no time. Searching for blood in blood banks and other centers is a tedious task. As we all know our country is facing very challenges at present due to covid-19 and thus it's a need of the hour to think about all the possible ways to help the society. Not only the present conditions that are driving us to think rationally but every now and then thousands of people need blood due to accidents, severe illness etc. The system helps the needy to search for various donors available and request them to help by contacting them. Through this digital medium it is easy to connect different donors which lead to saving time and ultimately the lives of people. At this time social distancing and other precautions are taken seriously, therefore while staying indoors it's not easy to seek help. To find the specific blood type, availability of the donor at a nearby place to the patient is the motive of this application. We therefore tried our best to connect each thread together to provide better healthcare facilities and also to contribute our part in the wellness of the society.

****

**Implementation Details**

**Part-1:-** Identifying the Technologies Required in managing, making and accomplishing the goals of this Project.

Android Studio is used as an Integrated Development Environment to develop the android application for the project.

Java and XML language is used for making the application functionable and implementing the design of the android application.

Google Cloud Platform is used to provide the backend support to this application.

Google Map’s SDK to locate the nearby hospitals in the locality.

Firebase SDK is integrated in the application to provide the following Backend services:-

1. Firebase Authentication.
2. Firebase Realtime Database.
3. Firebase Storage.

**Part-2:-** Designing the User Interface plays an important role in shaping the final project. It defines the presentation and functionality of the application.

Figma , Photoshop and Adobe XD is used in designing the User Interface of the application.

**Part-3:-** After Design it’s time setup the development environment to implement the designed layout and to develop the logic of the app in the development environment.

XML scripting language forms the whole user interface part and Java helps in developing the functionality of the app.

**Part-4:-** After setting up the development environment we will integrate the Firebase SDK in the application.

Firebase Authentication is used to integrate the login module of the app.

When a user register on the app it becomes the part of the database which forms up the whole User database of the application on the Firebase console.

A network of the users/donors is created to connect them on an online platform to have ease of finding the required blood type.

All the database is managed on the Firebase console and fetched on the application to display the relevant data about the apps activities.

Data in the app is fetched in the JSON format which then is arranged and decoded to display in the app by the Firebase SDK in the application itself.

Firebase Storage service contains all the required media which will be used in the app to make it more user friendly. Media like icons, images, svg files.

**Part-5:-** Managing the Database to collect the data of the users, Covid-19 database and Request of the specific blood type.

User can post the Request for the bloodgroup on the app and the same data and activity will be uploaded on the firebase database.

**Progress**

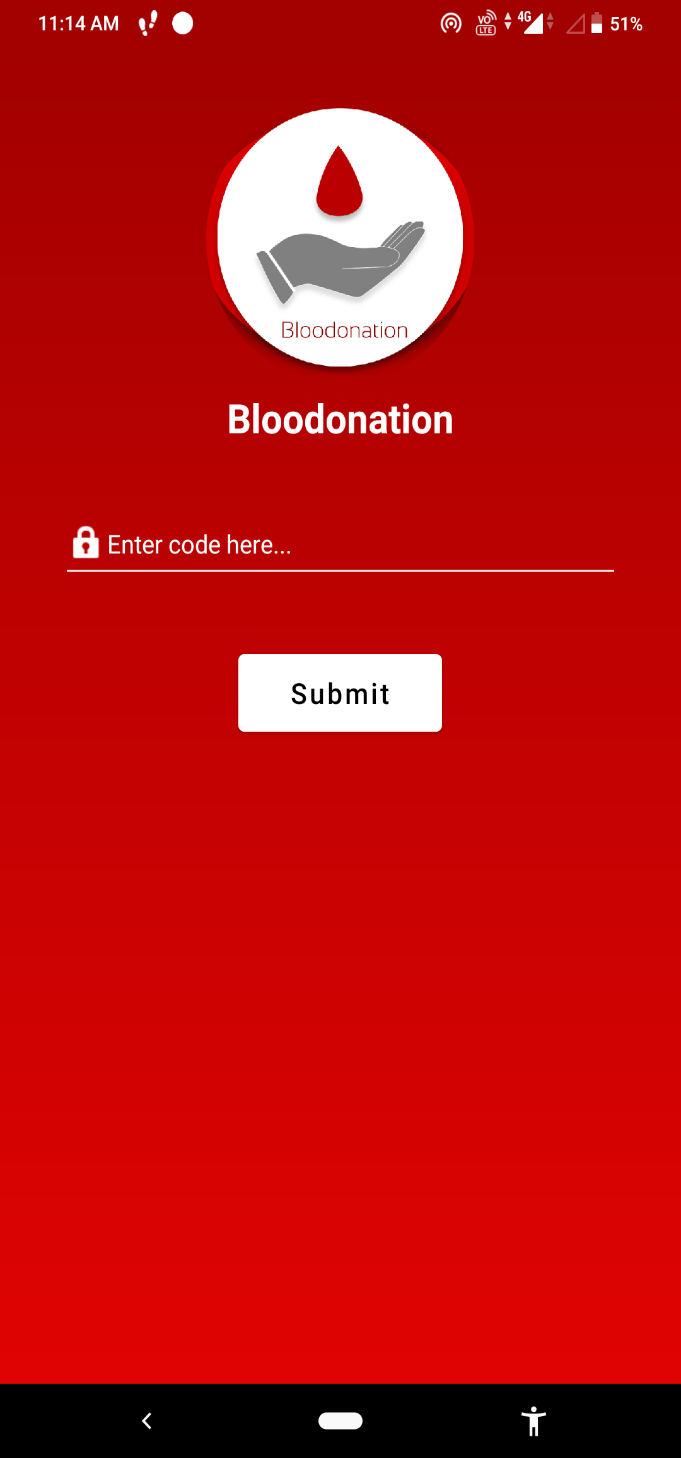
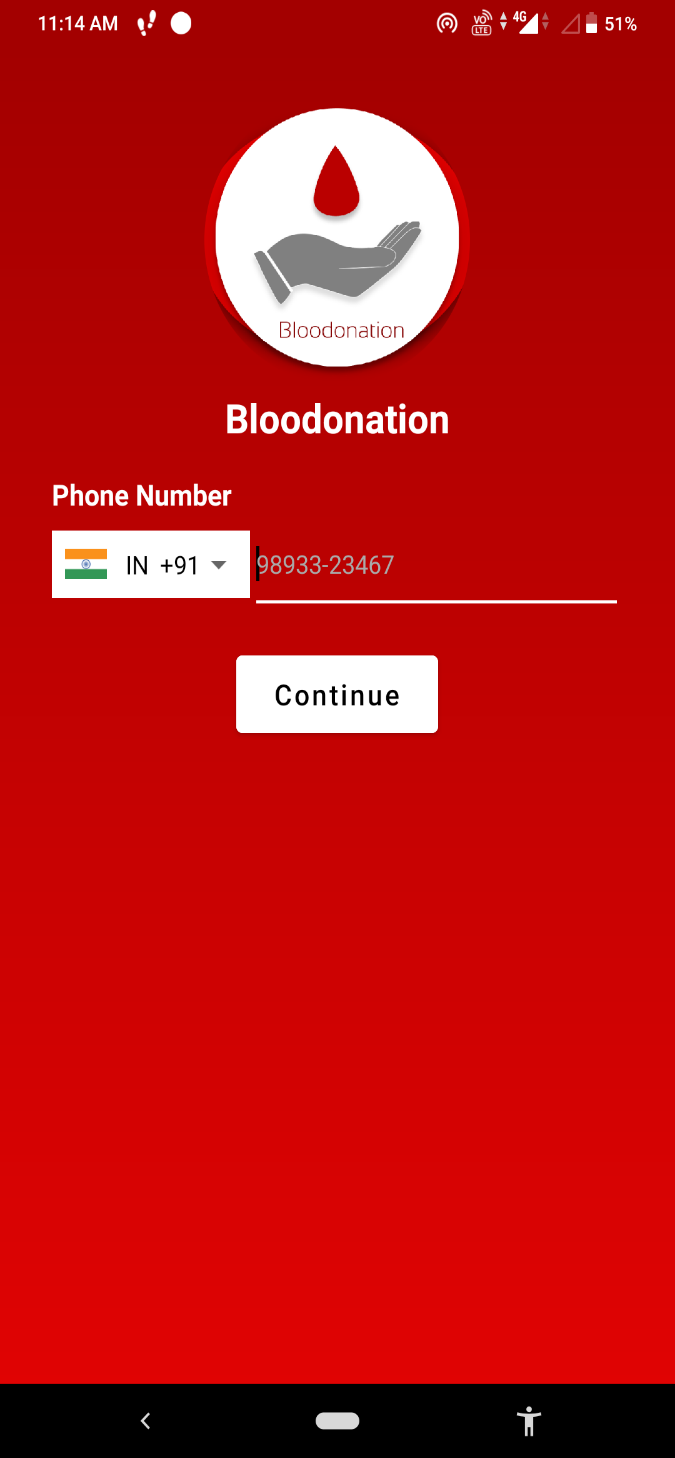
**Completed :**

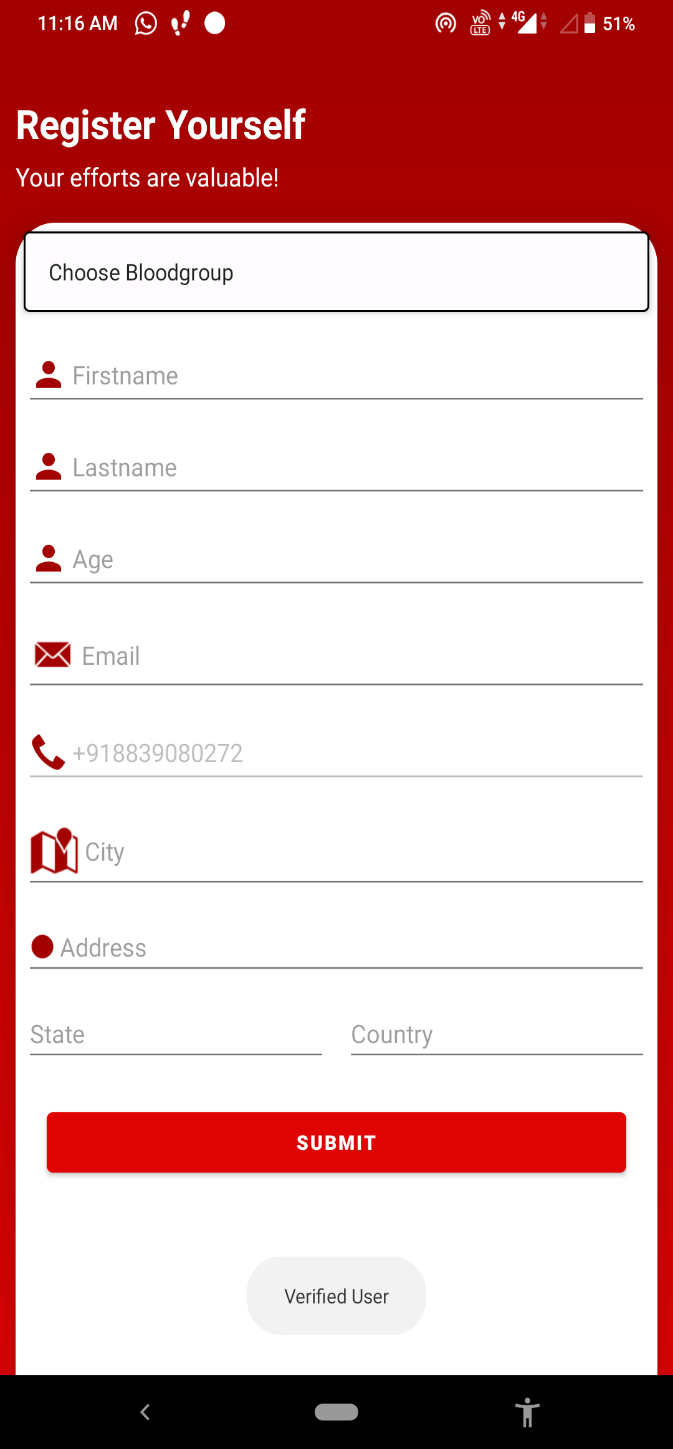
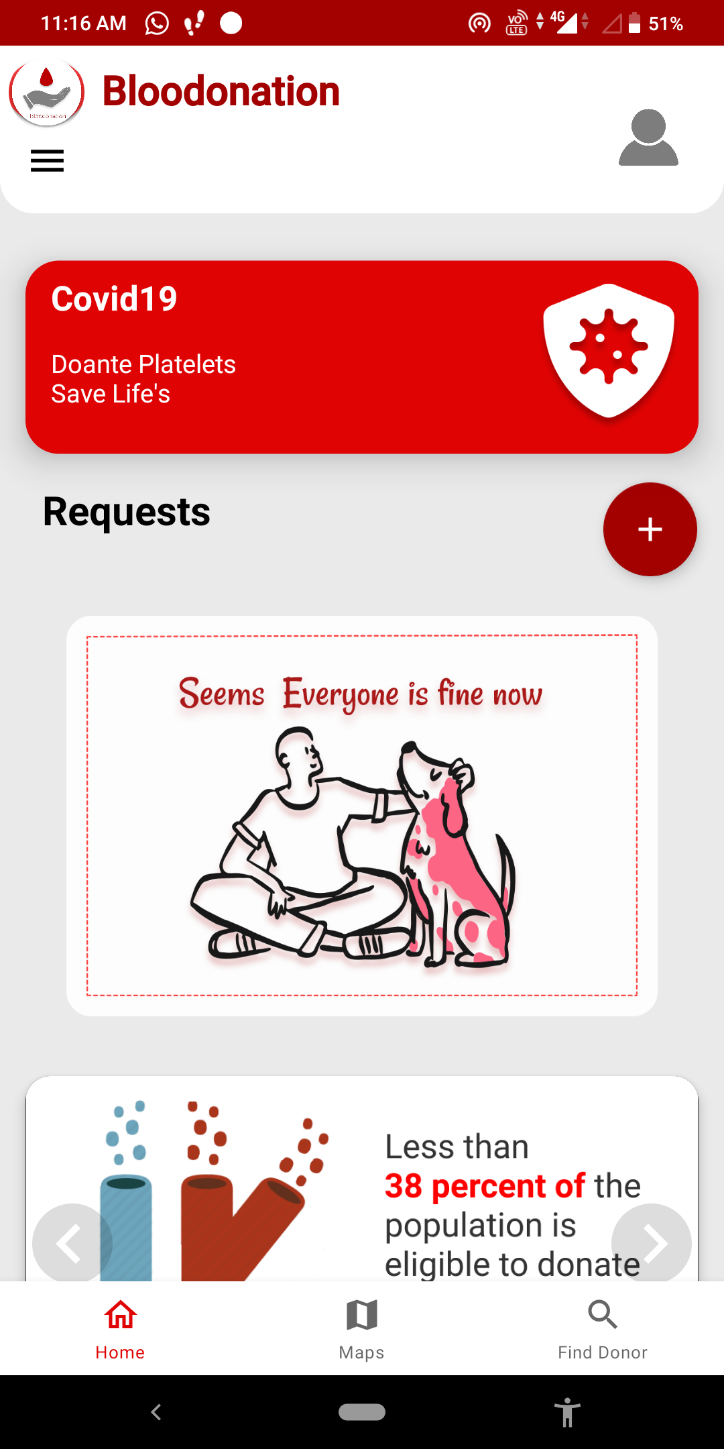
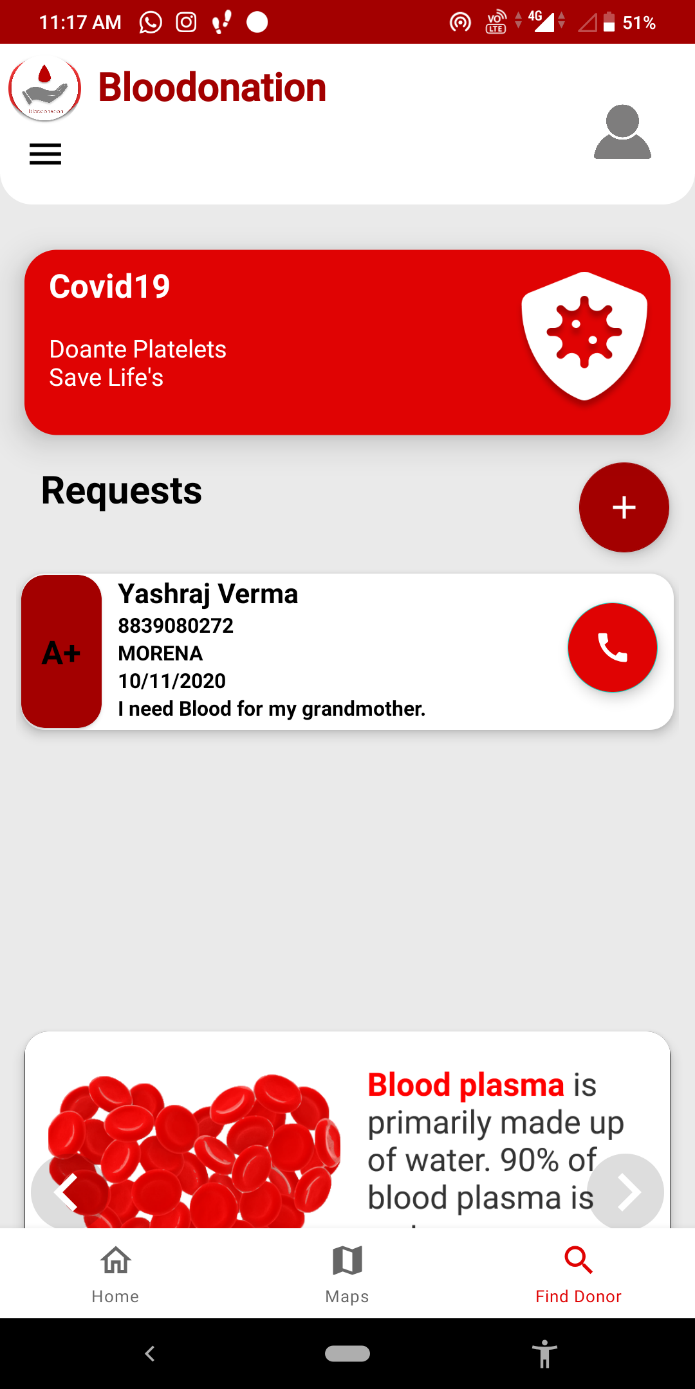
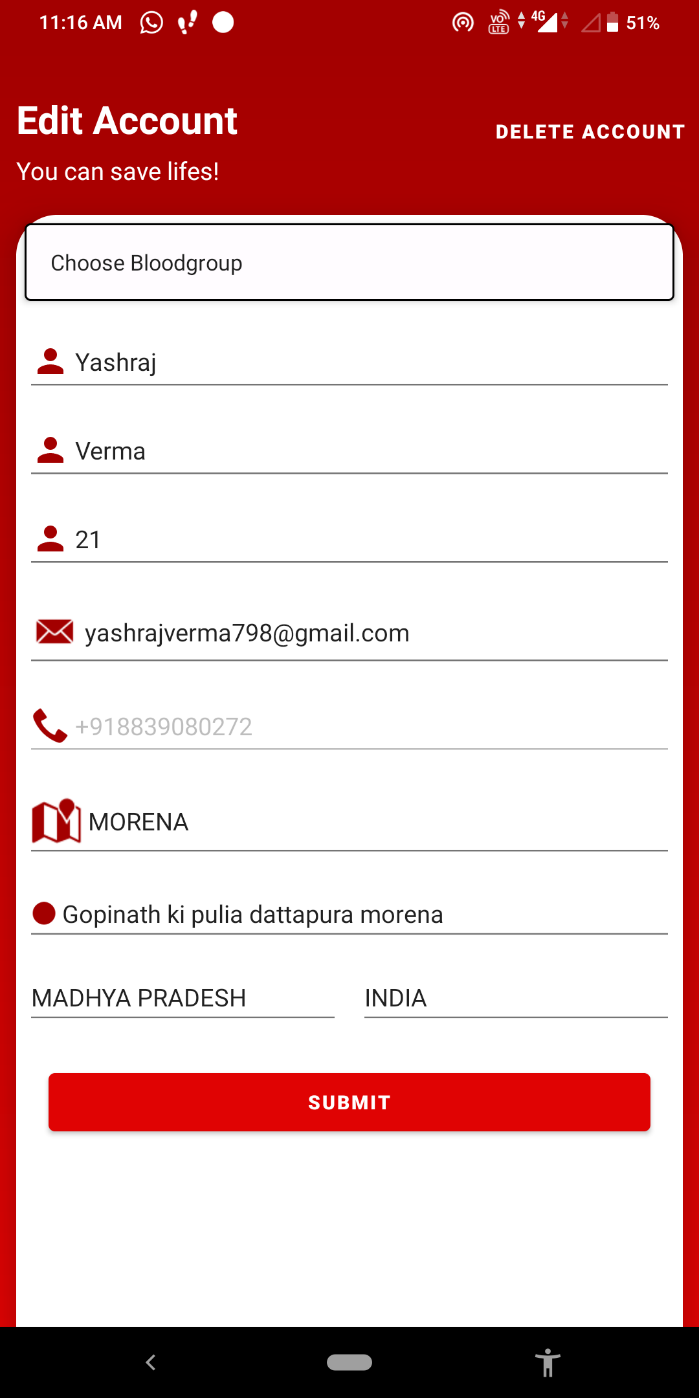
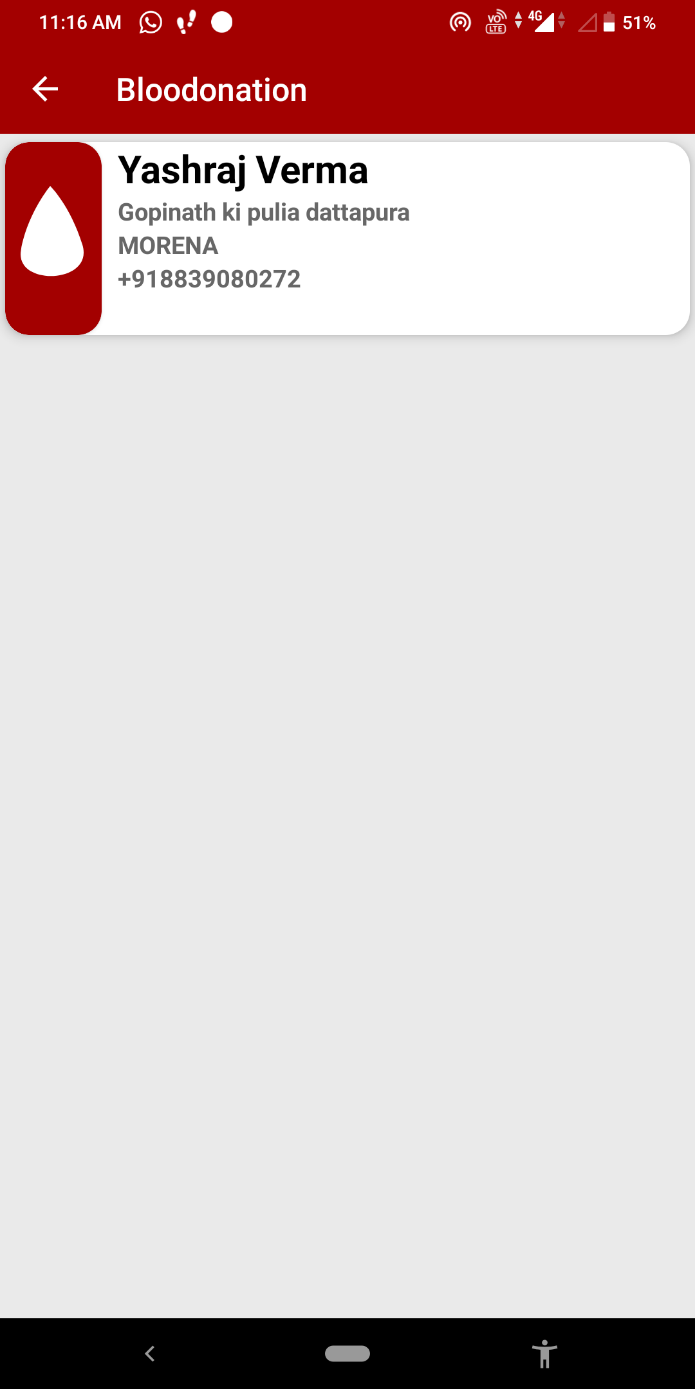
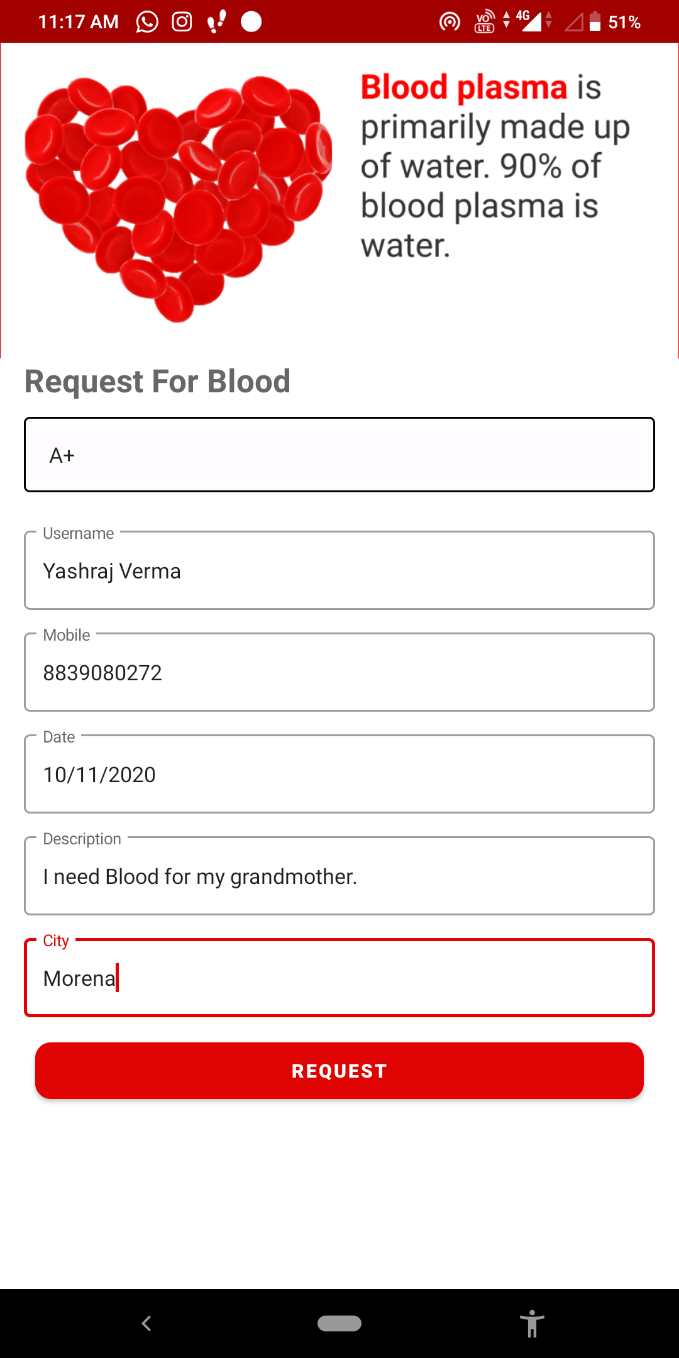
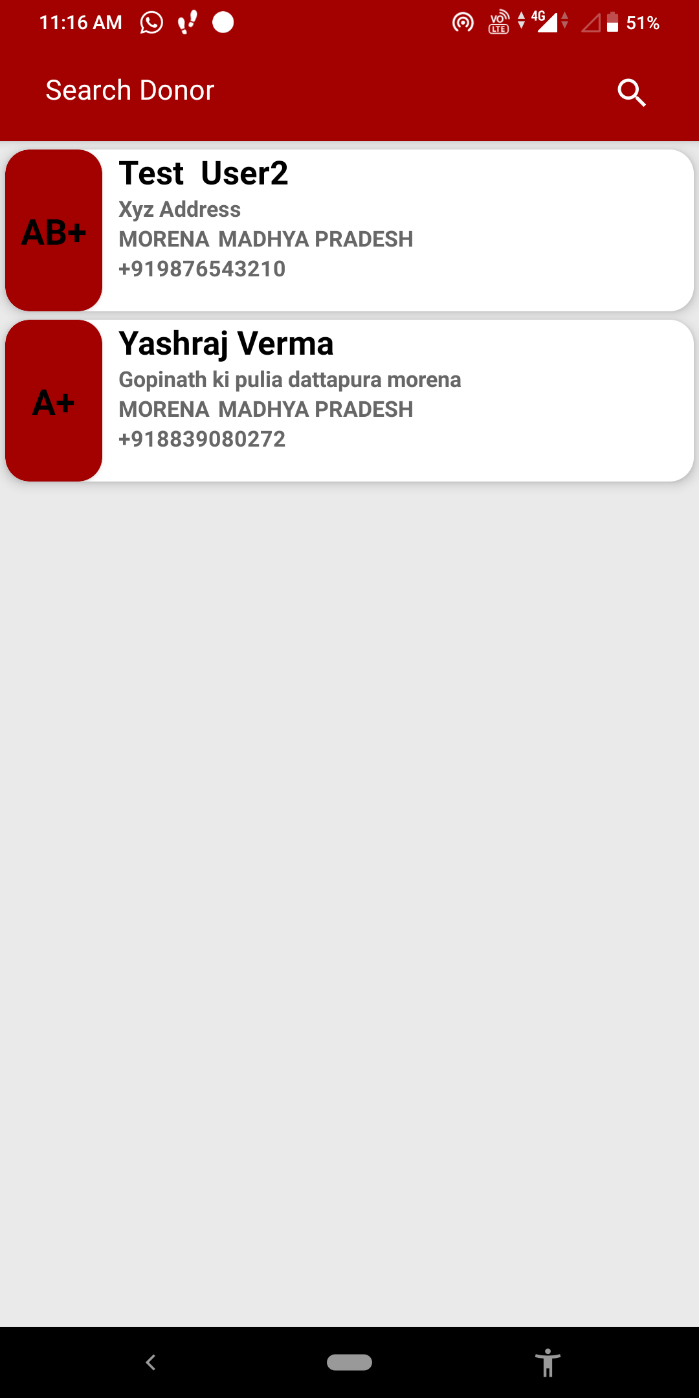
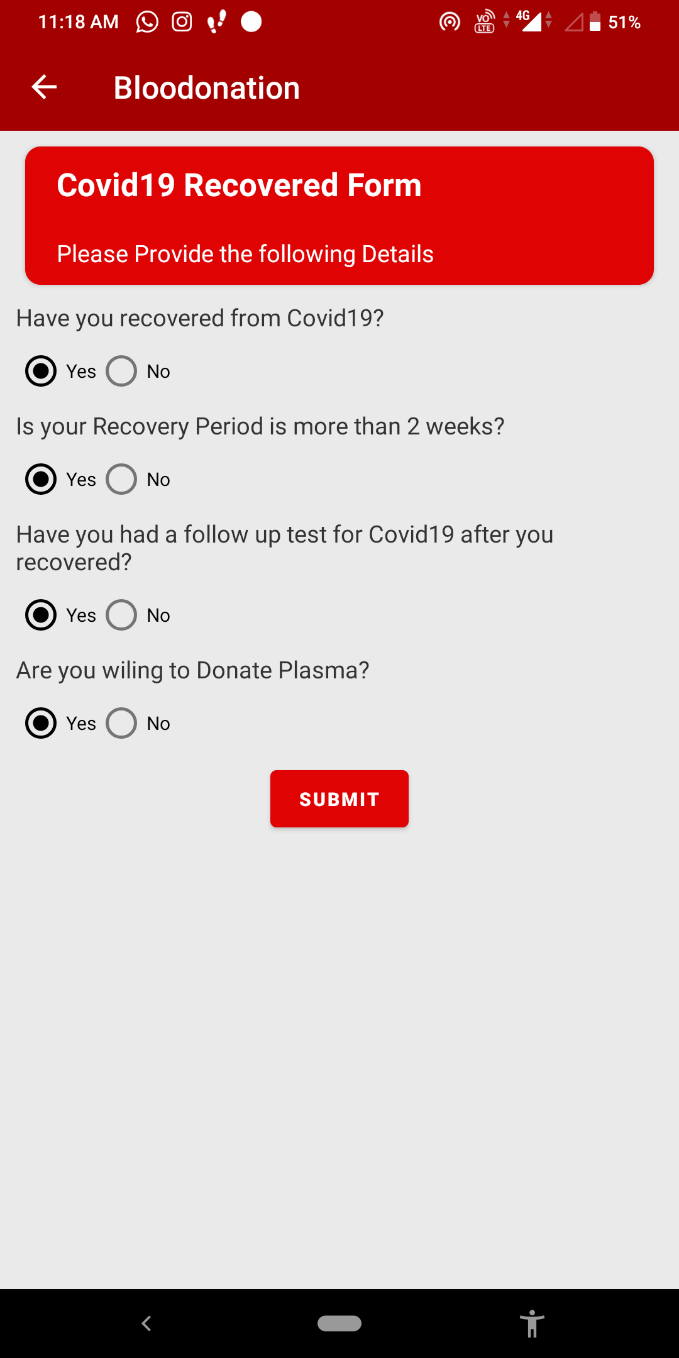
* Identifying the tech required to build the project.
* Designing of the User Interface.
* Implementing the Design layout.
* Integration of Firebase SDK.
* Login Module to Register user.
* Formation of database in Firebase Console.
* Details Module in app to take the details of the user to upload on database.
* Searching a particular donor in locality.
* Querying the app to show only the local region donor on the app.
* Added the Covid-19 Plasma Donation Module.

**Not Completed:-**

* Integration of Google Maps SDK in the app to locate the nearby hospitals.
* Fetching the post Request of particular blood group on the main screen.
* Posting Facts on the main screen to spread awareness and informative content about the human blood.

**Screenshots**

****

**      **

