

BLOOD BANK MANAGEMENT WITH CHATTING SYSTEM

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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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DHAKA, BANGLADESH

JULY 2020

APPROVAL

This Project titled “**BLOOD BANK MANAGEMENT WITH CHATTING SYSTEM**,” submitted by Sabbir Hossain, ID: 172-15-9889, Md. Arif Hossain, ID: 172-15-9784 and Rubel Sheikh, ID: 172-15-9956 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 09-07-2020

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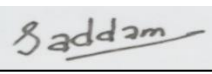
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We hereby declare that, this project has been done by us under the supervision of **Md. Firoj Hasan, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted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

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ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project/internship successfully.

We really grateful and wish our profound our indebtedness to **Md. Firoj Hasan, Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Computer Science*” to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to the Almighty Allah and gratitude to **Prof. Dr. Syed Akhter Hossain** Head, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

The goal of our project is to shield lives of individuals by providing blood to them whenever required. This can be an Android Application which navel mainly in managing blood. This project on Blood Donation Application using Android studio is developed so that users can view the data of bank, blood from various donors, hospitals, ambulance service and monitors are blood groups database. We've got provided security for authenticated users as new users should register consistent with their requirements and existing users should login. Our project we are developing a full of life connection internet. Our application new donor regularly update information and administrator access to the data on blood application system. This application is developed in three aspects and that they are hospital, patient/donor and bank. Our application anyone can find their available donor and simply post. A user can connect with one another by email, massaging and calling system. Users of them is given their rating. Various times we did mention that folks rummage around for blood though there are such a large amount of blood apps but they are doing not fathom the apps. This application, required information quicker and also helps to form faster decisions and treatment at the correct time.

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CHAPTER 1

Introduction

1.1 Introduction

Currently Smartphone for all generation is most popular. Maximum Smartphone are operated by Android operating system, which developed by Google, designed for touch screen mobile device such as Smartphone.

Our Blood Bank project is an android based project. Therefore, our project is the best option for online platform. The main purpose of Undertaking is to navel capially in managing blood. In this project, we will commit an easier task of invention blood donor. In the actual process a person has to approach various blood donation agencies to find details of blood donors anytime. As an arrogant member of discreet bank and a responsible person, you'll be able to facilitate somebody in want. So, blood gift in on-line. Once looking, a list of donors is going to be shown and the user will get temporary details concerning their email together, contact details with their location, in command that they will communicate.

1.2 Motivation

In our country, the number of blood searcher rise day by day. There are many cause for increasing blood demand. At times we give a look our friends and their family need blood for emergency operation, but this time it's very difficult to find a blood donor in a short time. Our country is a common issue are road accidents. Invention blood manually also very difficult. We are fond to expand this type of platform to saves people life. That's we wanted to develop a mobile application that performs all activities that our rival system have done. Our app, we can provide blood to blood seekers very fast and easily. By our applications, important we can helps humidity and patients. We hope our application easily accept people for unique features.

1.3 Objectives

This applications is capittaly on the part of persons who are willing to donate blood to the patients. Our motivation is our project objective. Continue to developing this project try to help Bangladeshi people to –

- Receive blood to way easy.
- Easily find anyone a blood donor.
- Donate blood in the way possible.

1.4 Scope

The Probability of this application is that pays in a very fast time it user several services. Our application award a hospital list, donors, stately blood management and blood banks online. This project aim of communicate all the available donor, hospitals and blood bank into network authentication, broth different knowledge of blood and fitness of all donor person. This application, user/patient are communicate chatting, calling system and email.

1.5 Expected outcome

- Service fester.
- User can directly see this information.
- Live chat free.
- Any group researching of blood in short time.
- Circulation blood maintain.
- Risk low.
- Collects all data and information.
- Use to easy.
- User can directly see this information.

1.6 Report Layout.

Chapter 1: Introduction

We have discuss about the objective, motivation and scope of project and discuss expected outcome of our project.

Chapter 2: Background

We have discuss about the background of related work, comparative studies, similarity the opposite Candidate system and therefore the challenges of the project.

Chapter 3: Requirement specification

Here we discuss about the all requirement specification our project.

Chapter 4: Design Specification

Here we discuss about all the planning of our project like front-end design, back-end design, Interaction design, UX and therefore the implementation of our requirement.

Chapter 5: Implementation and Testing

Here we discuss about the database and its implementation, front-end design and testing implementation, test results of that project.

Chapter 6: Conclusion and Future Scope

We have described is conclusion and future scope.

CHAPTER 2

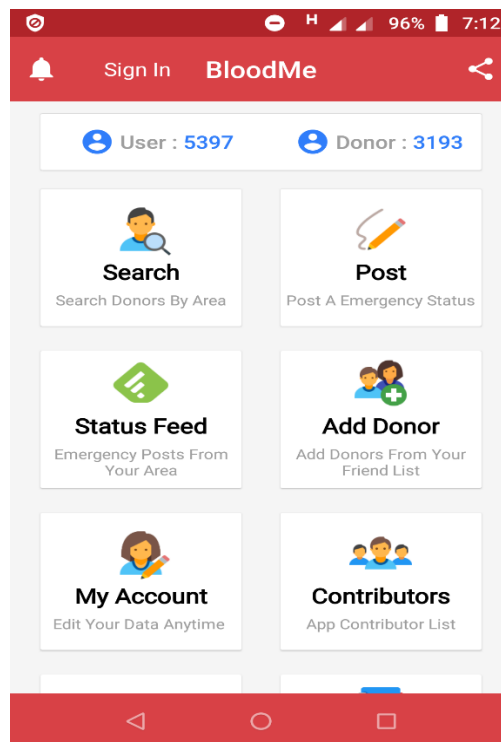
BACKGROUND

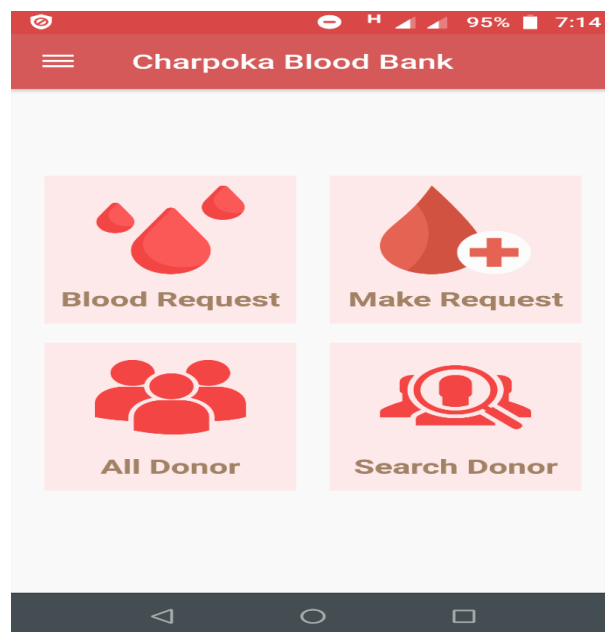
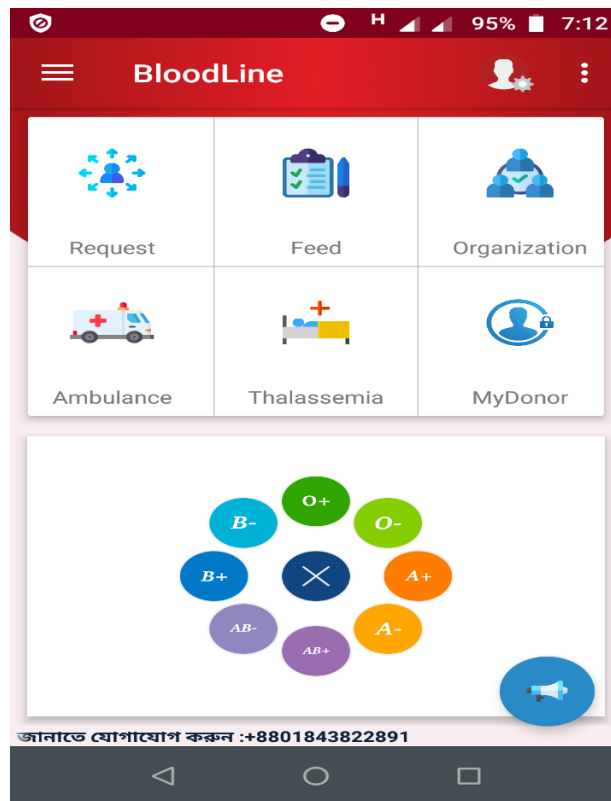
2.1 Introduction

Nowadays we spend most of our time on the internet or social media. In this situation, we need to create something that helps people. Then we decide we will create a blood bank application. We design our application in such a way that it also has blood bank and health-related features. We use our application to make it easier to find blood donors. To our application additional ambulance service is attached.

2.2 Related Work

At present we see many applications to blood bank related. But our application is very different from all other applications. That's what make our app unique. Those applications are our competitors. Below are some pictures of those applications:





2.3 Comparative Studies

There are many blood bank applications in our country but our application is designed in such a way that the patient finds the blood donor very quickly. In our application, there is a list of available donors. In this case, if the blood donor has donated blood, he will automatically leave the available list for 120 days from that and his name will appear in the list after 120 days. In this way that patient will find the donor quickly. In addition, you will find district based donors through search in our application. Finally our application is user- friendly and managed by admin.

2.4 Scope of problem

We faced some difficulties in doing our project. Some issues are very complex and some issues are very easy to solve. After solving each problem we finally get the right system. Here some drawback that we tend to area unit faced to boost this system:

- Database connection with our Application.
- To collect the information our Application.
- It was a big challenge for our us to verify our project.
- To make our application user friendly.

2.5 Challenges

In our application, the user interface is designed in such a way that it is easy to use and we have to face a challenge. Since our application blood bank so involves blood donors, patients, hospitals. So we have had to face some challenges. Here are some examples:

- The feature and also the UI style.
- Valid user security.
- Adding Database connection.
- Provide multi- Authentication System.
- Provide all helpful information.

CHAPTER 3

REQUERMENT SPACIFICATION

3.1 Business Process Modeling

Business process modeling concepts are necessary to developing the workflow. Business process modeling is a quality management tool, part of the latest Business process Management (BPM). Its technique for the improving the organizational product quality. Business process modeling basically work for analysis, who provide expert for the modeling discipline.

In our project we show the Business Process Modeling flow diagram in Fig 3.1 for project details. In this project can bring donor all necessary information, and this application bring all rural Blood Bank, ambulance information.

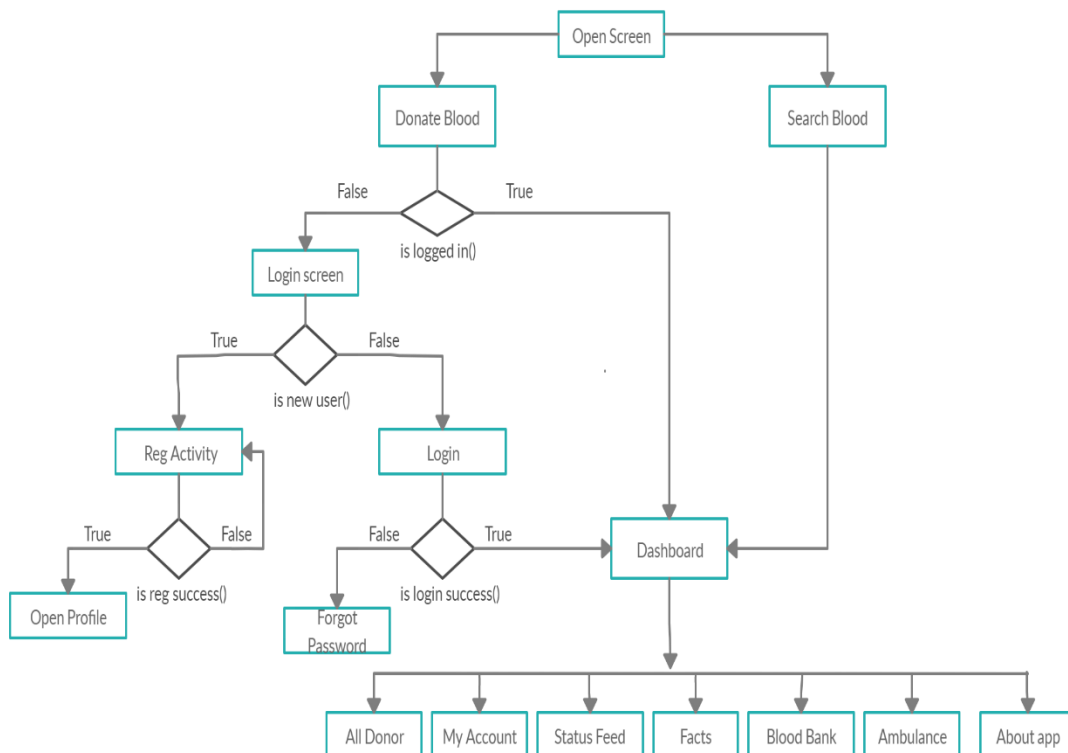


Figure 3.1- The Business Process Model of Blood Donation BD

3.2 Requirement Collection and Application

In all the real-life project, Requirement collection and test is one of the Application. Need clear knowledge about an application to clearly understand to solve the problem. It is therefore very important for the smooth behavior of handle for any application development .otherwise all the work can go in vein. So make a wonderful application, a requirement collection and analysis is a must need.

On our application, collection and analysis was a major part. They can be divided into two following requirements, one is Functional requirement and another is Non-Functional requirement. For useful design and development of this Application.

Non-Functional requirement defines the characteristics is smoother or not, performance benefit of the Application. In other requirement Functional requirement defines the Application functionality, software etc.

Our Application has many functional requirement perspective of this. Like our Application system has login and registration panel. This panel describe the different requirement to complete the Blood Bank Application.

3.3 Use Case Modeling and Description

A use case model represent the user instruction how to use the system to fulfill the business goals. It's show the graphical description, how to need the product framework's. In our project, use case and actor are the main component. Actor use the use case diagram and use case show the describe to the actor need.

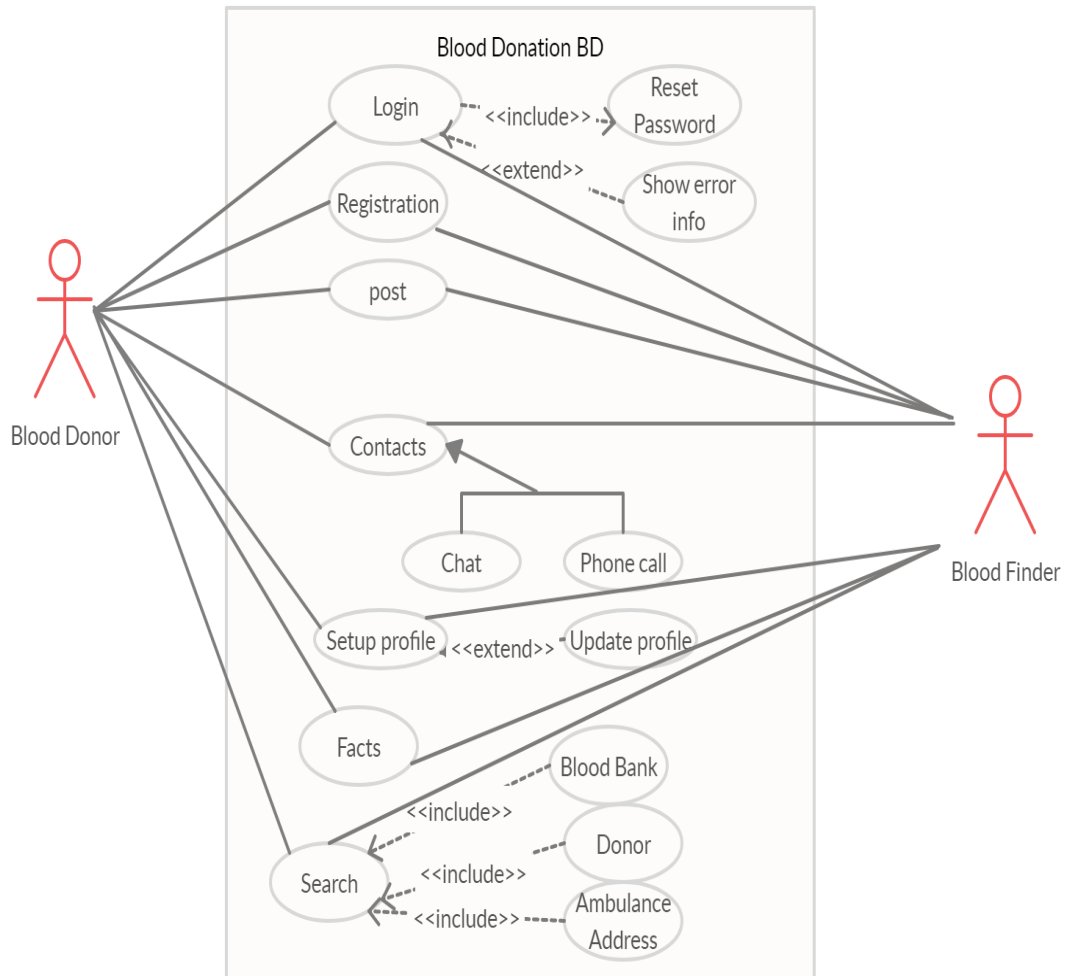


Figure 3.2- Use Case Modeling for User

Details of Use Case:

Table: 3.1 Login

Use Case Name	Login
Actors	Blood Donor, Blood Finder
Entry Condition	Actor will login the system by using E-mail and Password.
Exit	Unauthenticated user
Quality necessity	E-mail and Password must be satisfy

Table: 3.2 Registration

Use Case Name	Registration
Actors	Blood Donor, Blood Finder
Goal	Registration for user
Pre-Condition	User choose the registration form
Post-Condition	All requirement fill the valid information, save data in database. Else, Error message show.
Quality necessity	Technique of error handling. Check mandatory field.
Success Scenario	Show profile information
Exit	Successfully log out

3.4 E-R Diagram:

This system are describe the relation with many use in Blood Donation BD. Blood finder have attributes, name, blood group, phone, location etc. Blood finder can find available donor, blood bank etc. They also contacts by chat and phone call.

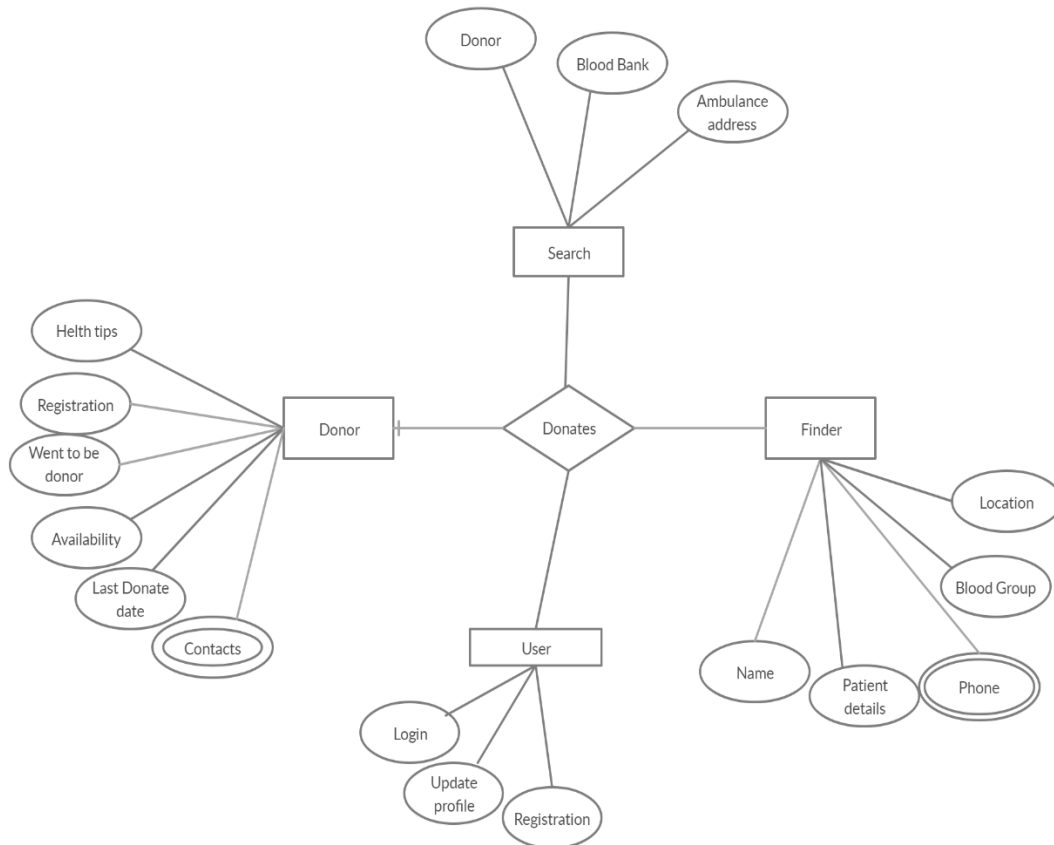


Figure 3.3-ER Diagram

Blood donor have attribute name, contacts information etc.so ,donor put data on registration save firebase with name, phone number, location, and blood finder find Donor by data search.

3.5 Logical Data Model

Logical data model is a technique to describe the data for an individual automation project. It includes all data entities attributes and key and relationship among them.

3.6 Design Requirements

- In our project, we have to implement an Email authentication for user.
So we have a design login and registration section.
- We design donor profile update option. Donor can update his/her all information.
- We design a phone call system for user.
- We design a chatting system for user.
- We also design as searching system.

Actually we are trying to design and develop our application as user friendly.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

Front end Design means, User can see direct display in that application is called front-end design. Front-end design is very important to develop and easy interface as an application.

Our Blood Donation BD app has been developed by android studio. In below we attach some screenshot from our application front end design:-

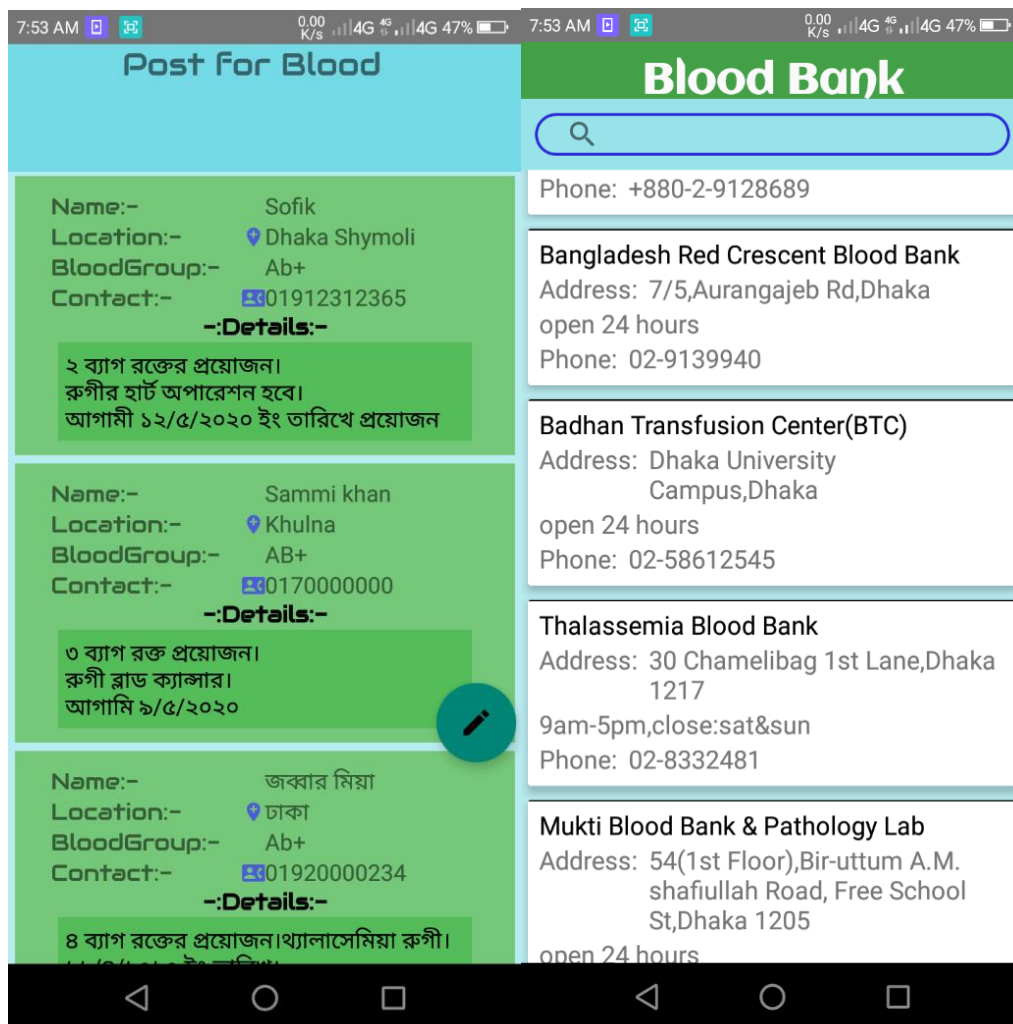


Figure 4.1- Some interface of Front-end design

User Interface:-

After launching the application, firstly show this screen

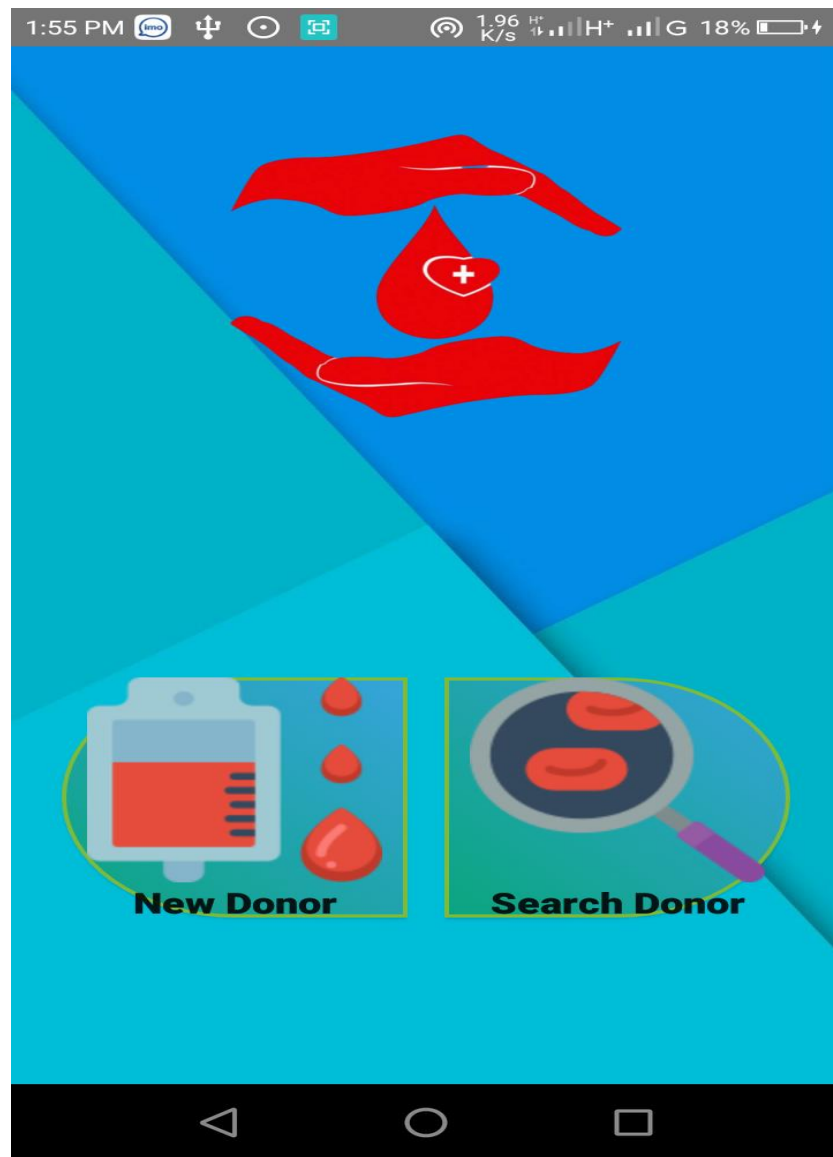


Figure 4.2- User Front Interface

If user donate blood, then the user must click new donor option and complete registration.
If the user finds blood, then registration is not compulsory for him.

Log in interface:-

If the registered user is logged out of this application. Then he/she can re-enter this application though it's registered E-mail and correct password. If enter wrong password or Email show error notice.

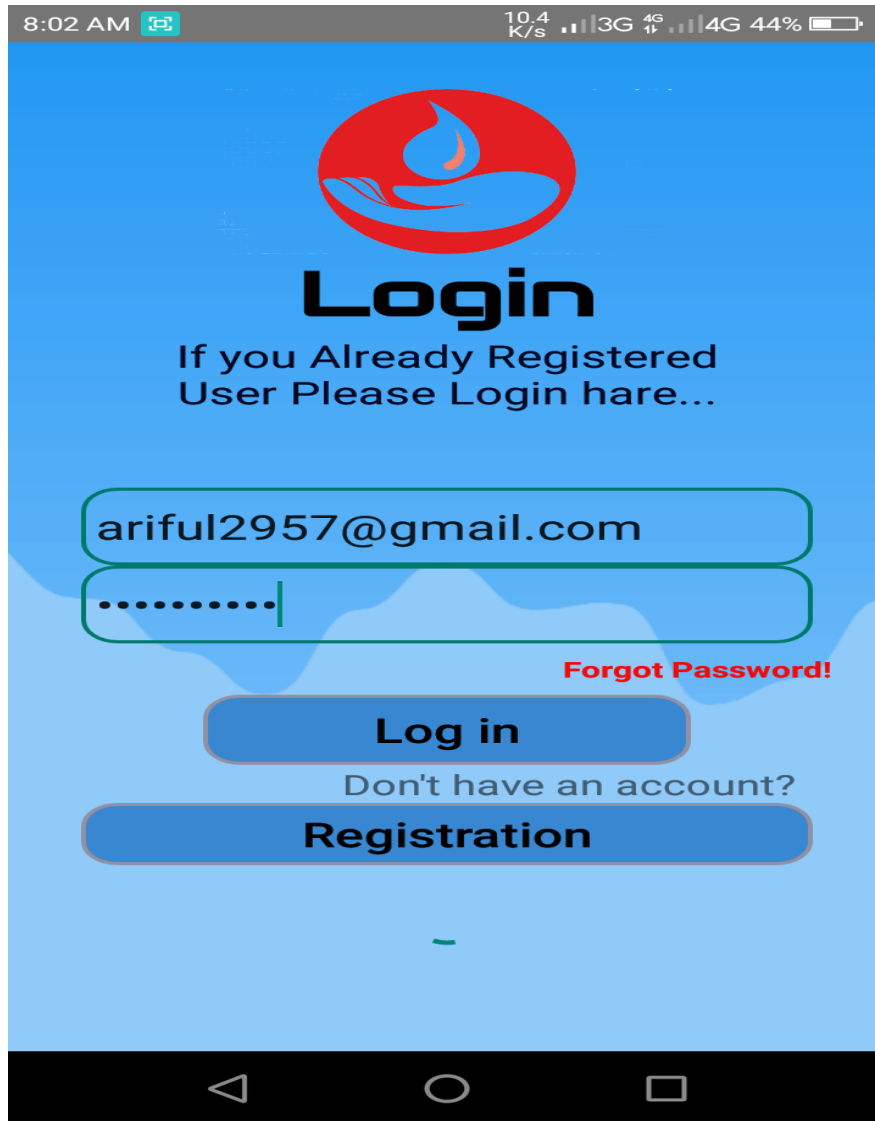


Figure 4.3- Log in screen

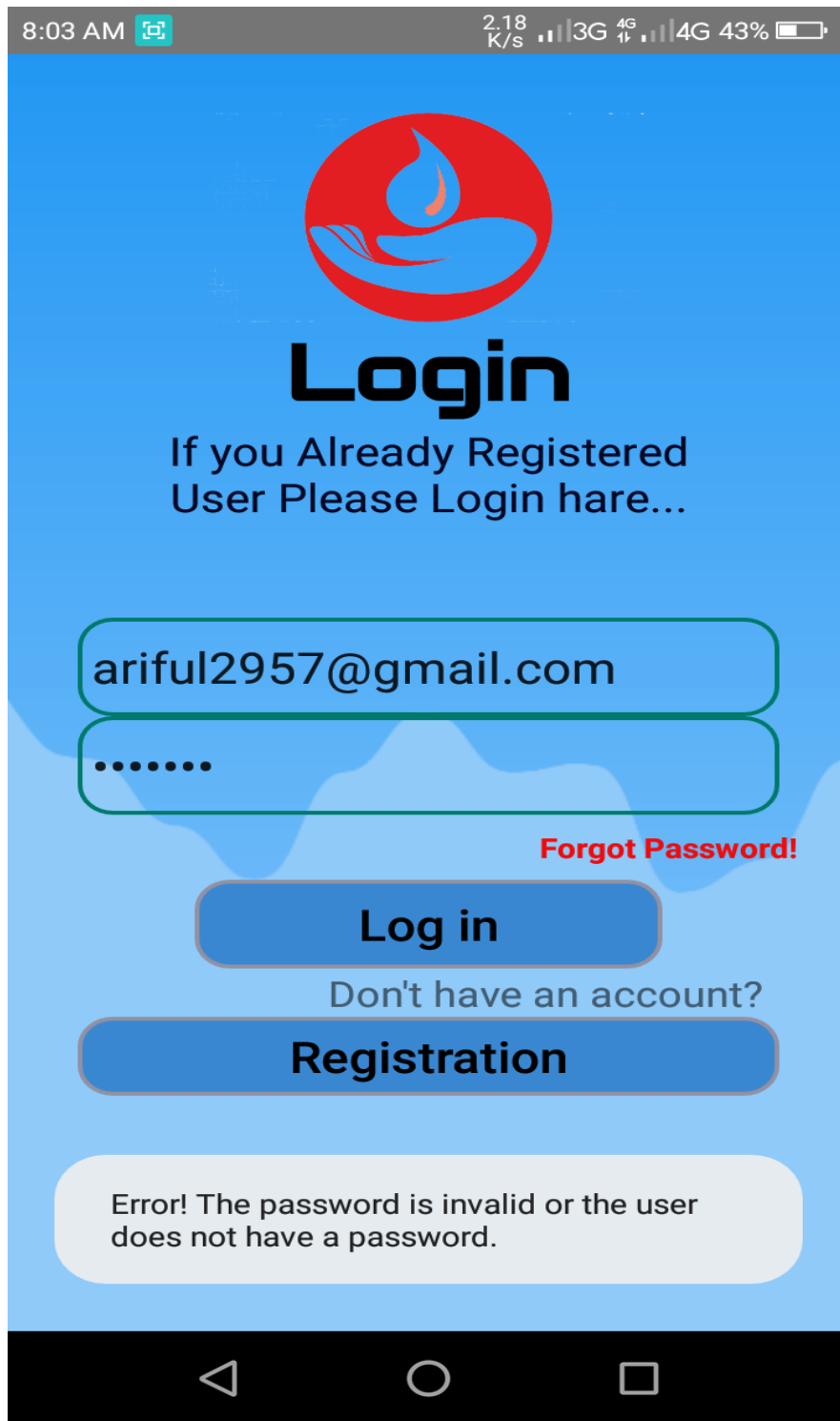


Figure 4.4- Log in screen with error notice

Forgot password:-

When the registered user forgets his password, he will be able to reset the new password by entering his registered email from the Forgot Password option.

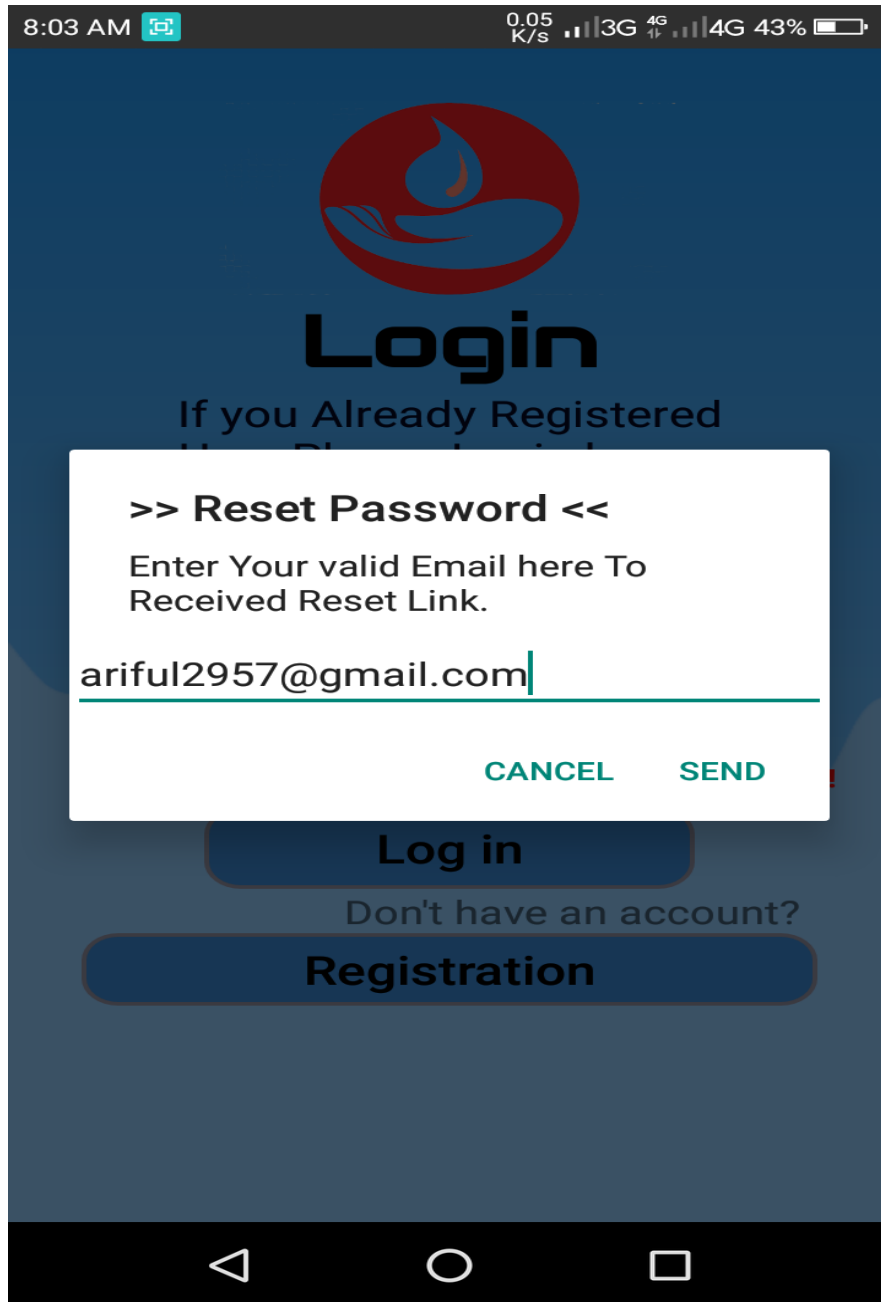


Figure 4.5-Screenshot of Reset Password

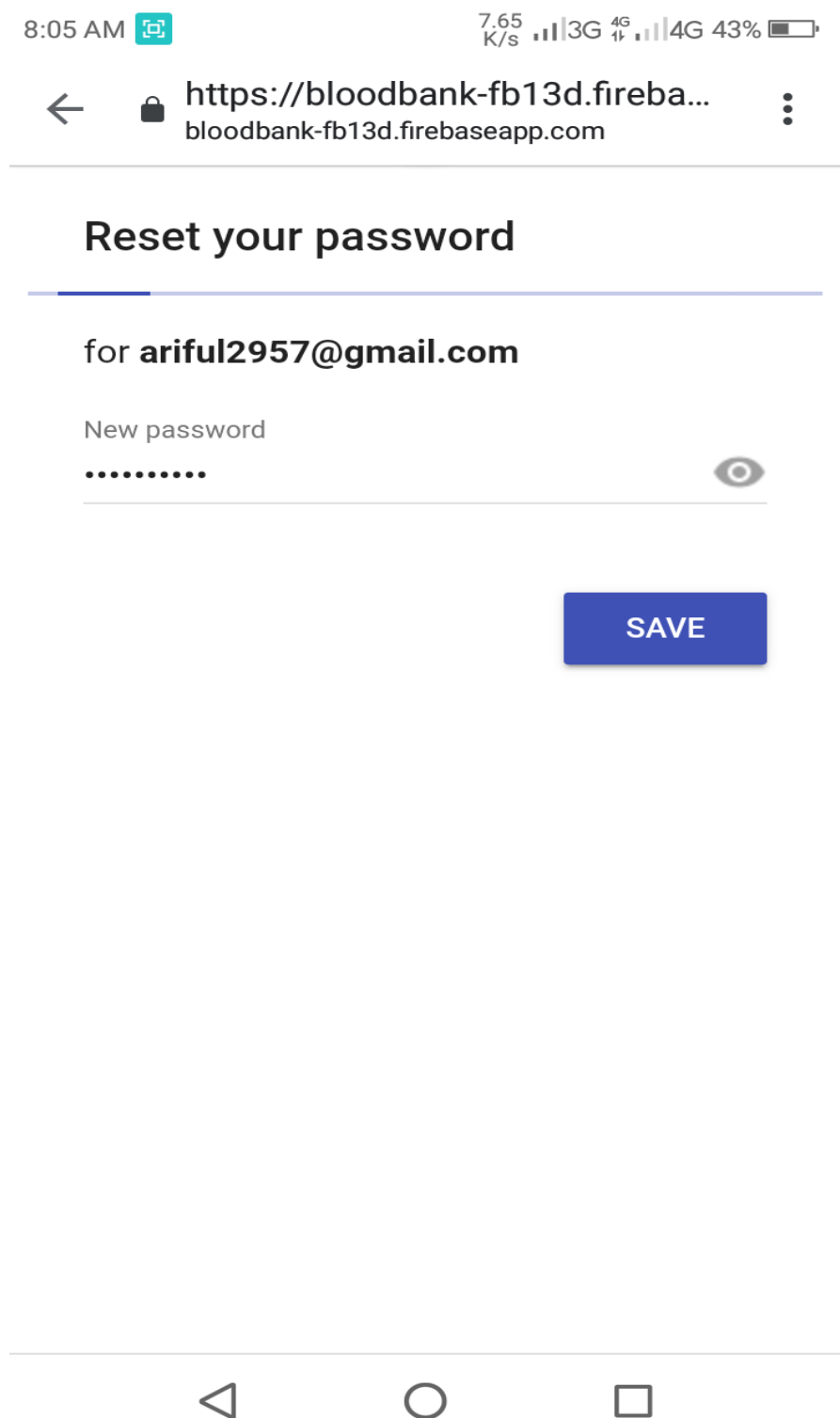


Figure 4.6-Reset password by Email

Registration interface:-

On this interface new user will a person as a donor to complete his/her registration. If the user provides the all requirements of registration, he will able to save a complete profile.

The screenshot shows a mobile application interface for registration. At the top, a status bar displays the time as 7:42 AM, signal strength, 4G connectivity, and a 53% battery level. Below the status bar, a warning message in bold italicized text reads: "Please enter valid information .Fake entry can cause someone's life." The registration form consists of several input fields: "Md Arif Hossain" (with a red underline on "Md"), "Enter Phone Number" (with a red exclamation mark icon), "Enter Email Add" (partially obscured), "Enter Password", "Location", "Blood Group", "Gender:" (with radio buttons for "Male" and "Female", where "Male" is selected), and "Available" (with radio buttons for "Ready" and "Not Ready", where "Ready" is selected). A black tooltip with the text "Pls Enter phoneNumber" points to the "Enter Phone Number" field. Below these fields is a "Last Donate" button, and at the bottom is a large "Submit" button. The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps icons.

Figure 4.7- Screenshot of registration screen 1

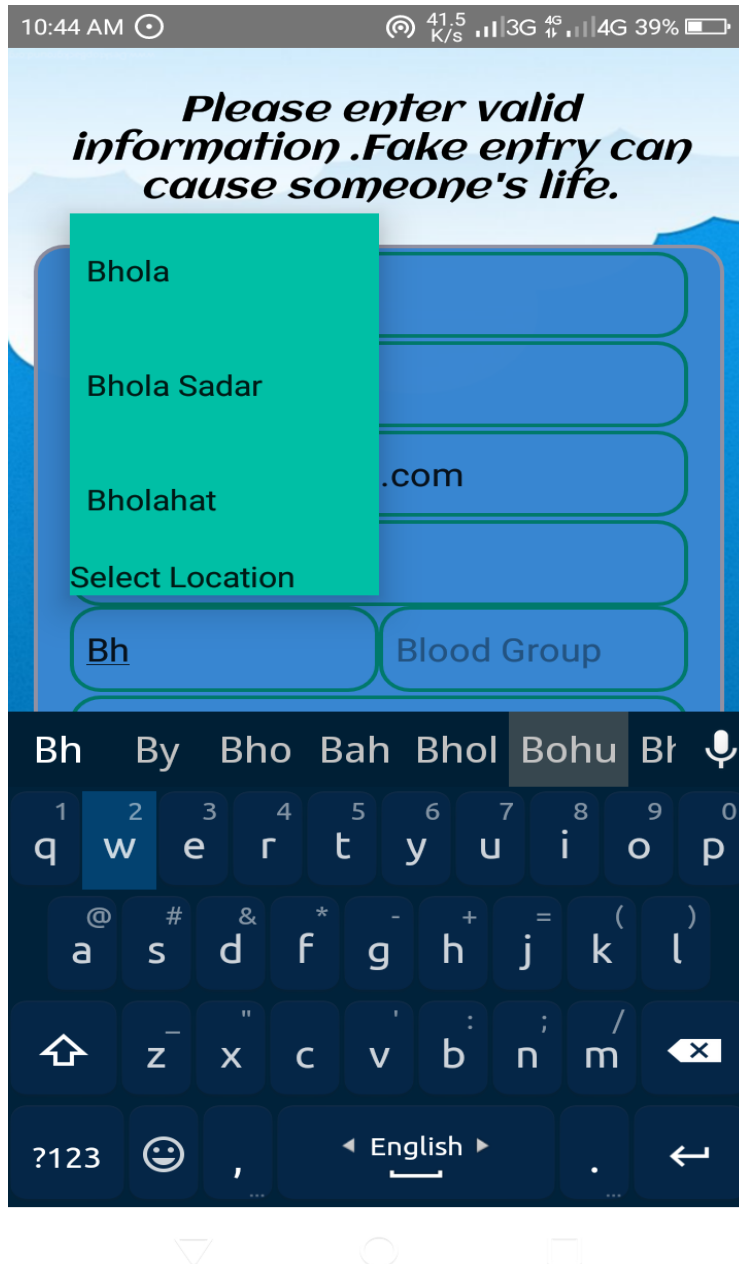


Figure 4.8- Screenshot of registration screen 2

8:01 AM 1.29 K/s 3G 4G 44%

Please enter valid information .Fake entry can cause someone's life.

Md Arif Hossain

01823762957

ariful2957@gmail.com

.....

Bhola Sadar B+

Gender: ☒ Male ☐ Female

Available ☐ Ready ☒ Not Ready

8-3-2020

Submit




Figure 4.9- Screenshot of registration all data submit

Dashboard:-

This is the dashboard of our application. From where the user can view his profile and find blood donors, blood banks, ambulance address etc.

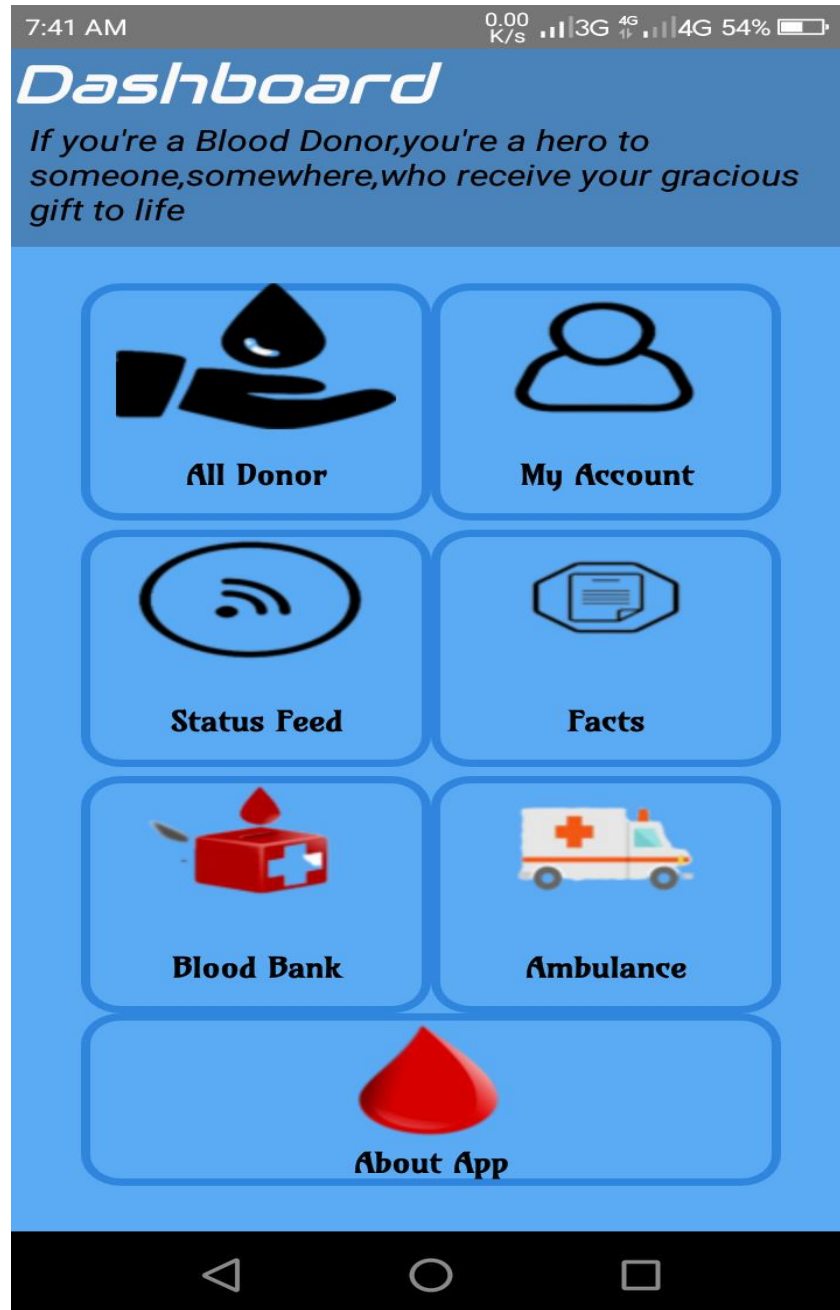


Figure 4.10-Dashboard screen

Donor interface:-

Through the donor interface, blood finder can be found in the blood donor. And blood finder can contact the blood donor through phone call and chat.

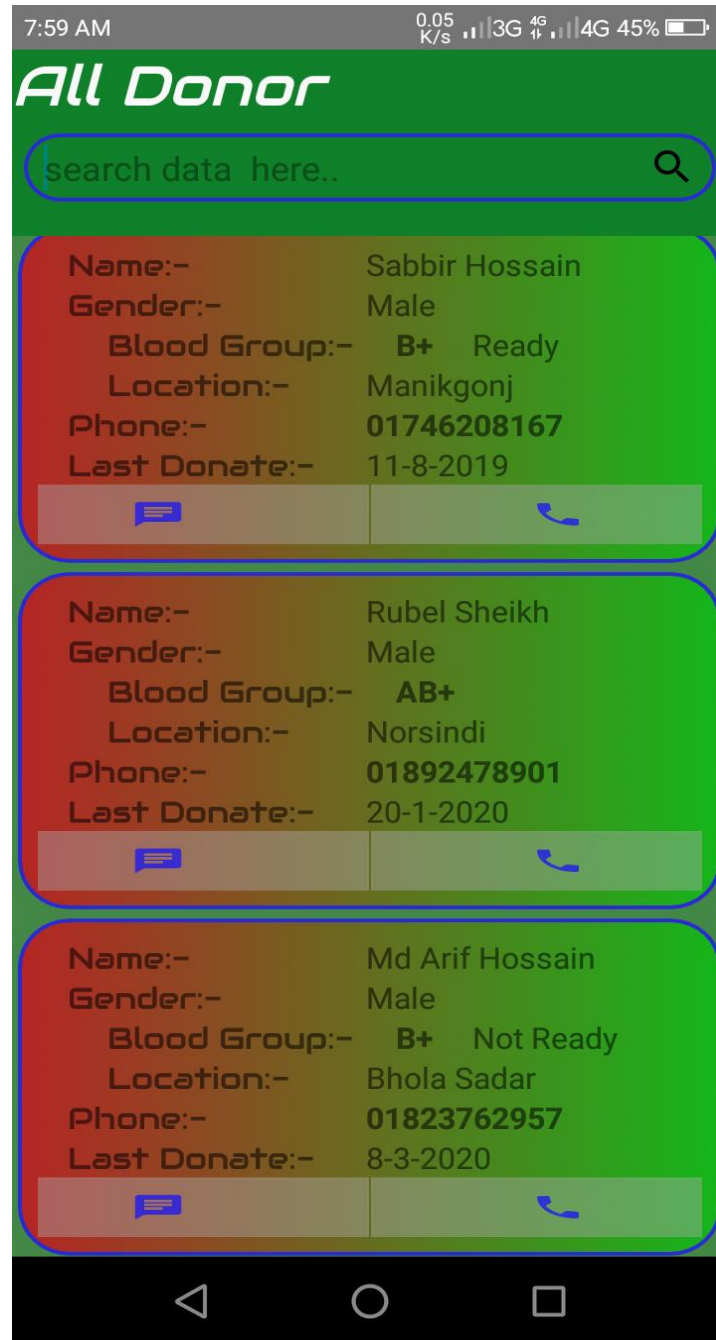


Figure 4.11- View Available Donor

Profile interface:-

If the user is in login, then all the information will show on this interface.

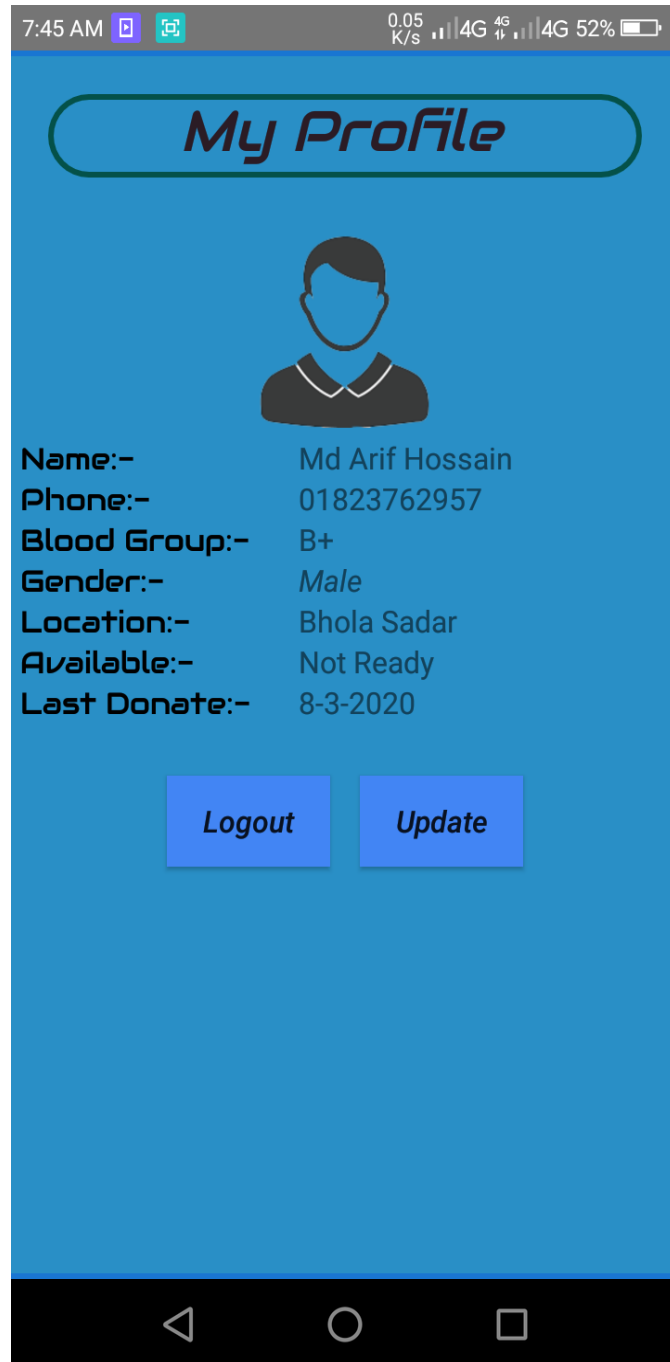


Figure 4.12- Donor Profile

4.2 Back-end Design

Back-end means, user can't see direct display. But all the workings that can be seen directly on the display are perform from the inside.

Server, an application and database are consider the back-end design. The language used, all the database, user authentication, apps security, and all setting are related to the back-end.

To develop our application, we used Android studio, XML, Java language and for database we used Firebase firestore. Now we show the some screenshot of back-end design.

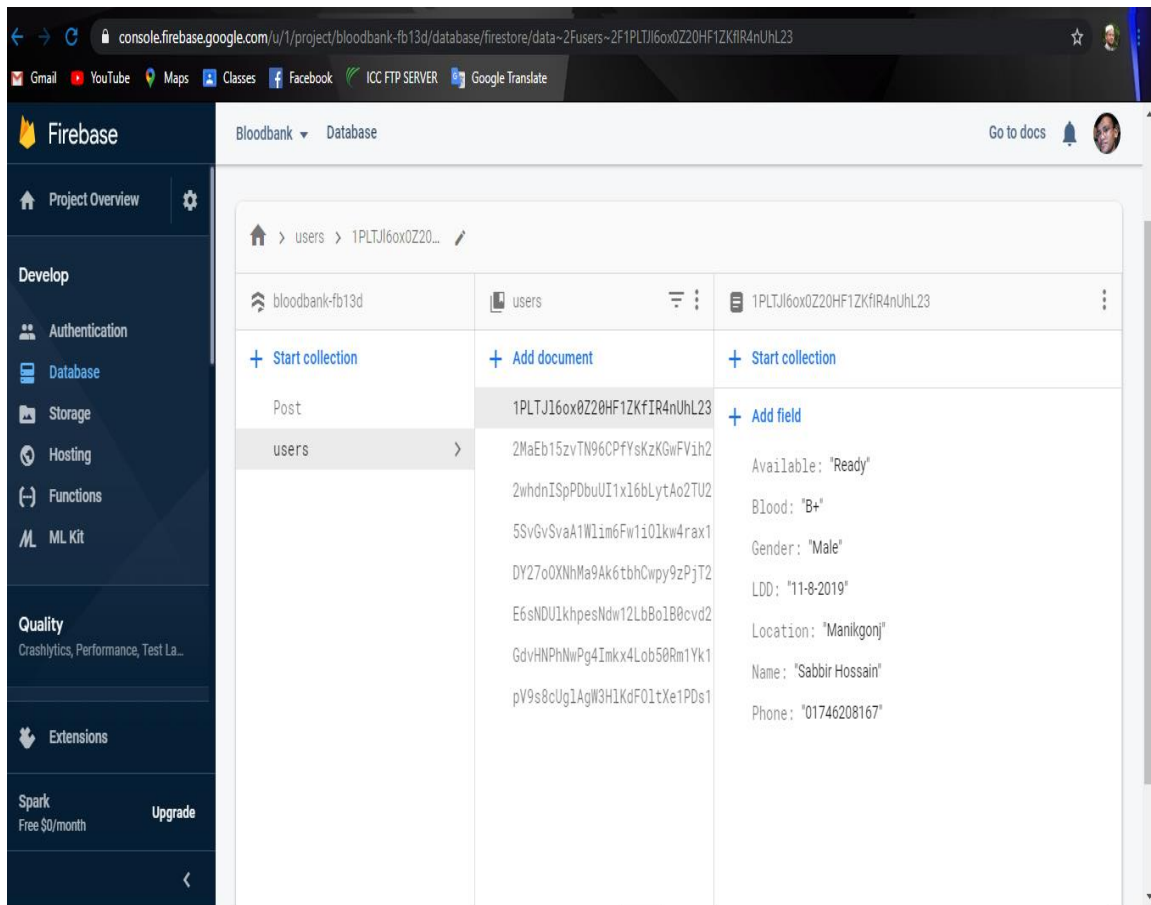


Figure 4.13- User Database

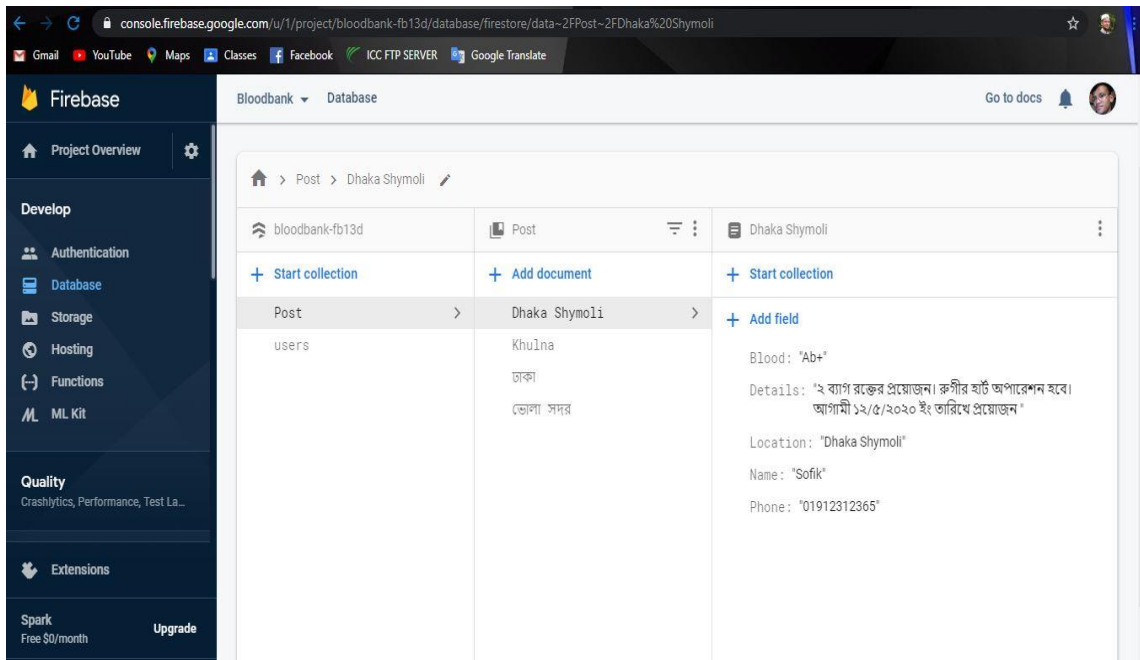


Figure 4.14- User Post Database

4.3 Interaction Design and UX

Interaction design repeatedly summarized name is IxD. It is the design of interactive products and services. A designer's mainly focus goes for to development products. How much consumer, the way client will together with it. Interaction layout regard the interaction in a client then an application.

For UX, on this application, we tried to give another experience. For UX, we have to request too many people. They are told, this interface is quite user friendly. Now we tried to best effort to make the system simple and easier.

4.4 Implementation Requirements

In our project, we used another types of tools, component and attributes. Firstly we use Android studio. But android studio along with Java and XML coding. We use UI/UX, Photoshop. Use this different type of tools, we tried to make this application easily accessible and useful to people.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Firebase

The database implementation is the process, where the developer's implement the database management system on the desired hardware, optimize the database to run on several hardware and software platform and make the database collection and store data. A collection of relative records create a table.

5.2 Implementation of Front end design

Post for donor:

From here Blood Requester will post to need blood and when post is complete then shows this windows.

7:52 AM 0.58 K/s 4G 4G 48%

Post your requerment Hare

Sofik

Dhaka Shymoli

Ab+

01912312365

২ ব্যাগ রক্তের প্রয়োজন।
রুগীর হার্ট অপারেশন হবে।
আগামী ১২/৫/২০২০ ইং তারিখে প্রয়োজন।

POST

Figure 5.1- Donor post interface

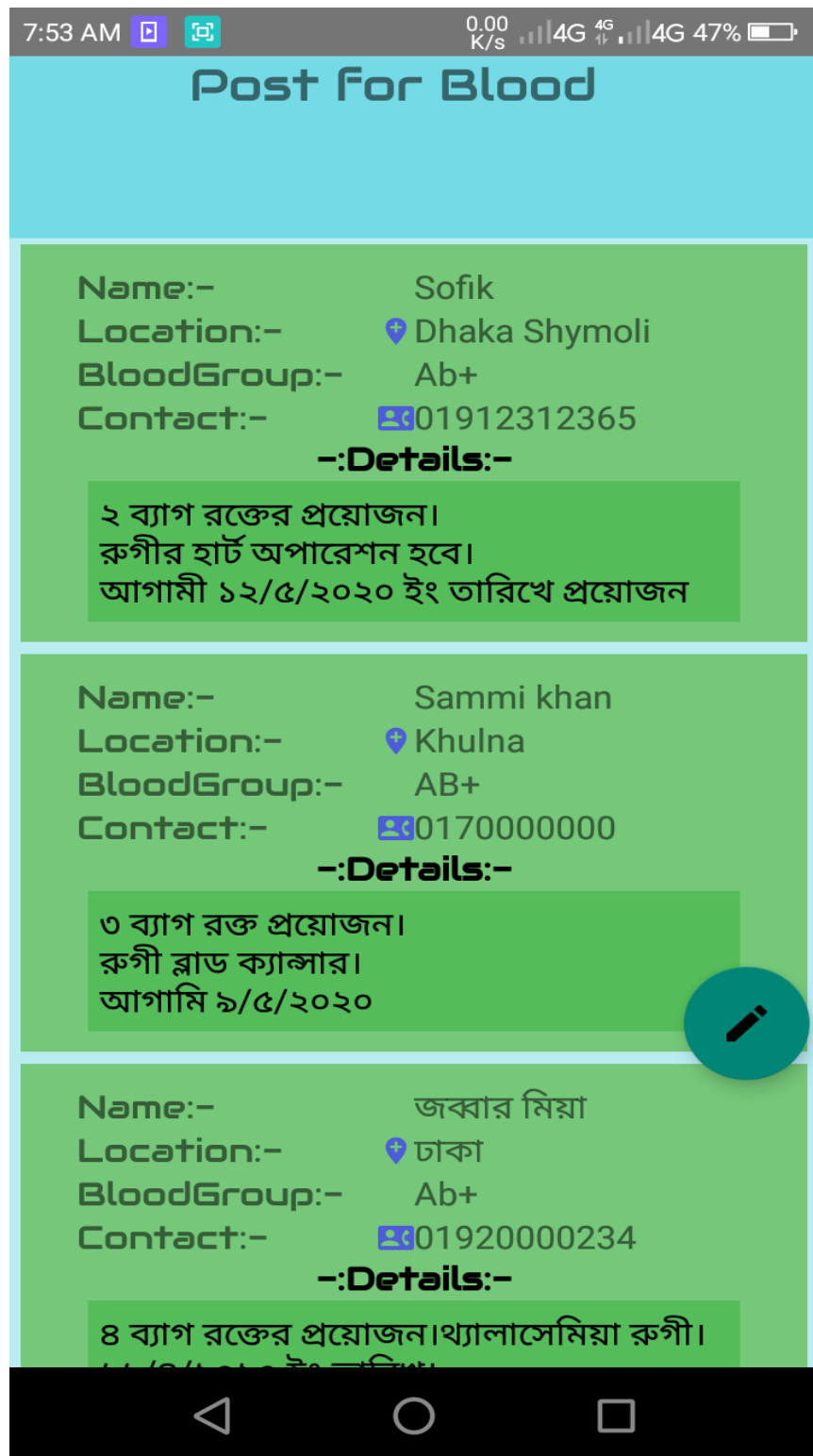


Figure 5.2- Donor Post View

5.3 Implementation of Interactions

We used a lot of interactive, response UI to this Application. Individual buttons make decision to action are over for the filling user instead of text data. Sheltered that quickly buttons have been added between the applications for decision-making and observing the web site original position.

5.4 Testing Implementation

System testing is a process of software development that identifies the accuracy and quality of the software. The purpose is to test the software's compliance with the requirements. System testing is mandatory in creating any application. Correct errors and bugs are found through System testing. Then the developer fixes the problem and fixes the application. Our application has been tested by different users.

5.5 Test Result and Report

Test report is very important an application to reflect the result of testing in a general way. Which gives scope to calculate of quick testing result. For this application we show the test case, test input, expected output, actual output and then we choose our final result. Use this application user satisfies when any test result was successful. Our expectation will be the user use this application easily access.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

Our project is implementation an excellent journey for us. We've created this application so it's easy to search out blood donors and such is useful for those that need blood. There's no substitute for human blood. Our application provide donor details and be able to find the correct donor. It's very easy to use and can help the user. Our application are very useful and effective for all people. I believe this application will help people and convey success. All due to our almighty to bless and concern to develop our project and complete. We also thank our supervisor for assisting us in developing our application.

6.2 Scope for Further Developments

In future, we'll attempt to add more new features. With this we'll attempt to bring more health-related services. Also update bank and user. Here are some features:

- Developed for iOS and web platform.
- The database is added more information.
- We will attempt to connect Google map to work out the situation of donor and recipient.
- We will make arrangements to search out blood donors within the sub-district.
- Can be developed with widely to world.
- More features is added like Chatting, Rating, Hospital location etc.

APPENDIX

```
//registration user in firebase
fAuth.createUserWithEmailAndPassword(email,password).addOnCompleteListener(new OnCompleteListener<AuthResult>() {
    @Override
    public void onComplete(@NonNull Task<AuthResult> task) {
        if (task.isSuccessful()){
            Toast.makeText( context, RegistrationActivity.this, text: "Registration Successfully",Toast.LENGTH_SHORT).show();
            //for firestore
            userID= fAuth.getCurrentUser().getUid();
            DocumentReference documentReference = fStore.collection( collectionPath: "users").document(userID);
            Map<String,Object> user = new HashMap<>();
            user.put( k: "Name",name);
            user.put( k: "Phone",phone);
            user.put( k: "Location",location);
            user.put( k: "Blood",blood);
            user.put( k: "Gender",gender);
            user.put( k: "Available",available);
            user.put( k: "LDD",LDD);
            documentReference.set(user).addOnSuccessListener(new OnSuccessListener<Void>() {
                @Override
                public void onSuccess(Void aVoid) {
                }
            });
            startActivity(new Intent(getApplicationContext(), DonorActivity.class));
        }else{
            Toast.makeText( context: RegistrationActivity.this, text: "Error! "+task.getException().getMessage(),Toast.LENGTH_SHORT).show()
        }
    }
});
```

RegistrationActivity > onCreate() > new OnClickListener > onClick()

users	DY27oOXNhMa9Ak6tbhCwpy9zPjT2
<p>+ Add document</p> <p>1PLTJl6ox0Z20HF1ZKfIR4nUhL23</p> <p>2MaEb15zvTN96CPfYsKzKGwFVih2</p> <p>2whdnISpPDbuUI1x16bLytAo2TU2</p> <p>5SvGvSvaA1Wlim6Fw1i0lkw4rax1</p> <p>DY27oOXNhMa9Ak6tbhCwpy9zPjT2</p> <p>E6sNDUlkhpesNdw12LbBo1B0cvd2</p> <p>GdvHNPhNwPg4Imkx4Lob50Rm1Yk1</p> <p>pV9s8cUglAgW3H1KdF01tXe1PDs1</p>	<p>+ Start collection</p> <p>+ Add field</p> <p>Available: "Not Ready"</p> <p>Blood: "B+"</p> <p>Gender: "Male"</p> <p>LDD: "6-3-2020"</p> <p>Location: "Bhola"</p> <p>Name: "Arif Hossain"</p> <p>Phone: "01681716449"</p>

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