NEED BLOOD

Group No-05

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Project Overview

Every two seconds, someone in the world needs blood. Blood is essential to help patients survive surgeries, cancer treatment, chronic illnesses, traumatic injuries, accidents, kidney transplants, thalassemia patients and patients with life-threatening ailments. The national blood requirement requires about 400,000 units of blood per year, with an average of 1200-1400 blood packets per day.

There are 4 main blood groups (types of blood) – A, B, AB and O. Among them the rarest blood types are: B negative(B -ve), which is found in 1.5 percent of the total population, AB negative(AB -ve), which is found in 0.6 percent of the total population, AB positive(AB +ve), which is found in 3.4 percent of the total population. For a small percentage of the population, finding someone else with the same blood type can be difficult. Patients who require frequent blood transfusions as part of their treatment, like those with sickle cell disease or thalassemia, can need close blood type matches to prevent these patients from developing complications from their transfusion therapy. Therefore, most of the hospitals have a blood bank to store different blood types to perform blood transfusions. When storing the blood samples the standard environment have to be maintained. The main source to collect blood is organizing blood donation campaigns. But the problem is with the pandemic situation and the curfew imposed, it was impossible to organize mobile blood donation camps. As a result, the number of donors has drastically reduced. Although there are many blood donation campaigns, delays in transporting blood samples may cause inaccurate results. Further samples may be exposed to light or heat during delays, resulting in the degradation of analytes, for example, bilirubin.

The only solution for the shortage of blood in the blood banks is organizing blood donation campaigns. Due to above mentioned problems there is a requirement of another solution to collect blood without shortage effectively. Therefore, this Mobile Application is proposed to act as an online Blood Bank which gather information of the of the volunteer blood donors. The main advantage of the proposed application is to identify area wise donors with rearrest blood types. Further this app facilitates to mitigate issues with transporting and storing blood samples. Because of the limited number of blood banks in rural areas the proposed app is a better solution to save more lives.

List of Features

1. Register
2. Login
3. Profile Page
4. Search a Donor by City and Blood Group
5. Search results
6. Request for a Donor

Brief Description of each Feature

1. Register

If user is not registered yet user has to register using “Sign Up” option in the first activity. When user selects that option, user moves second activity which has capability to register as Donors or Recipients separately. When press option called “RECIPIENT” in second user can move onto “Recipient Registration” activity and register as a Recipient at the beginning by providing Username, Password collects Name, Age, City, Weight, Blood Group, Email and Mobile Number of users. By pressing “Become RECIPIENT” button user can again move onto first activity and login as a registered user. When press option called “DONOR” in second activity user can move onto “Donor Registration” activity and register as a Donor at the beginning by providing Username, Password collects Name, Age, City, Weight, Blood Group, Email and Mobile Number of users. By pressing “Become DONOR” button user can again move onto first activity and login as a registered user.

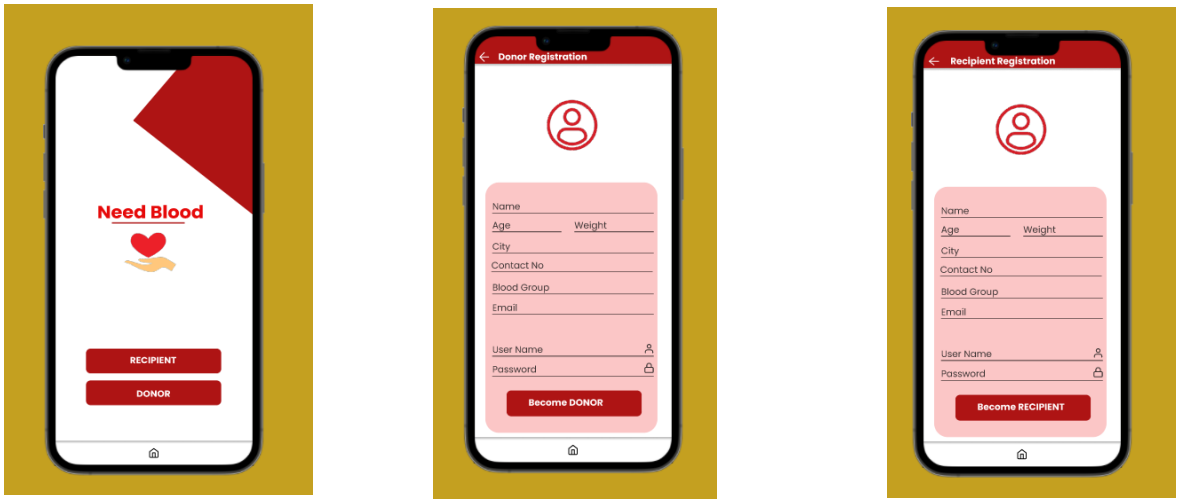

Figure 1: Interfaces for register as a Donor and a Recipient

2. Login

The registered users can login to their profile by entering their Username and Password. After entering these two details user can press button called “Login” and moves on to activity which has details of their profile and options for search donors and post request

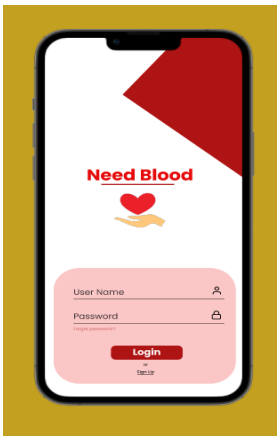

Figure 2: Interface for the Login as registered user

3. Profile

In this interface User can see their profile after login as a registered Recipient or a registered Donor. This interface has two options called “Search Donors” and “Post Request”.

As well as there is a special feature called “Recipients requests”. It displays posted requests of the recipients. If Donor has possibility to donate blood according to recipients’ requirements Donor will help, otherwise Donors can share recipients posts with others using share and call option.

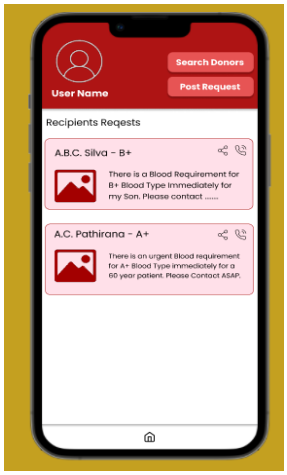

Figure 3: Interface of profile page

4. **Search a Donor by City and Blood Group**

By selecting “Search Donors” option users can move onto activity called “Search Donors”. Using that activity, Donors can be searched according to the recipients’ requirement such as City and Blood Group. When recipients search donors, this app connects with the Google Map API and search for the nearest donor. As a special facility of this application a user who has registered as a recipient can search any type of Blood Group. For further clarification a Doctor who has registered as a recipient can search donors for his patients with different Blood requirement.

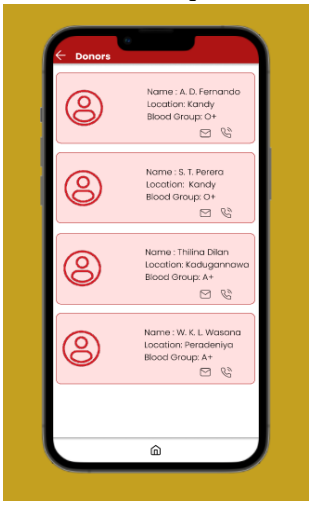

Figure 3: Interface for the Search Donor

5. **Search result**

By selecting “Find Donors” option user can move onto activity called “Donors” and get following details. That means with the response of “Search Donor” activity API call this interface displays the information of suggested donors. Further the recipients can contact the donor via voice call or email. This email option is important because if Donor couldn’t answer the voice call, he or she get email notification immediately and can response.

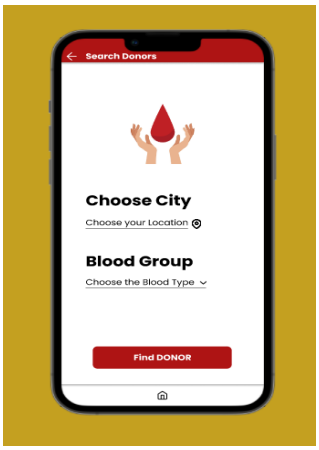

Figure 4: Interface for getting results of Donors.

6. **Request for a Donor**

In this activity user has opportunity to write a heart felt message and add an image for community. After that user can press “Post” button and post it through app. The recipients can use this feature to convey their requirement. The donors can help them if possible.

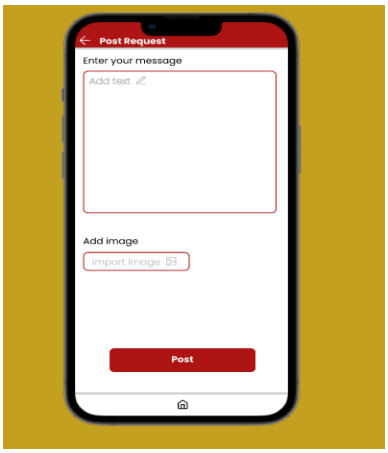

Figure 5: Interfaces for Requesting to a Donor

Design Decisions

This Mobile application is proposed to act as an online Blood Bank. In order to convince this idea in more effective way the name “Need Blood” is selected. The colour palette of the app contains Red and White to represent the main idea of the app. The black coloured texts are used in the white background to make it easy to read. To make the app visually exciting images are used in necessary places. Buttons are used to fulfill actions and to navigate through pages. Those are red in colour with white texts on the buttons to highlight the actions. This app has a user friendly layout and simple wording. The app provides facilities for location tracking and that can be used as the API call. The app facilitates to use the app as Donors or Recipients by making it effective to use.The app has designed according to the given guidelines. The data is stored in a local SQLite database with Room Database and Android Architecture components.

Class Diagram

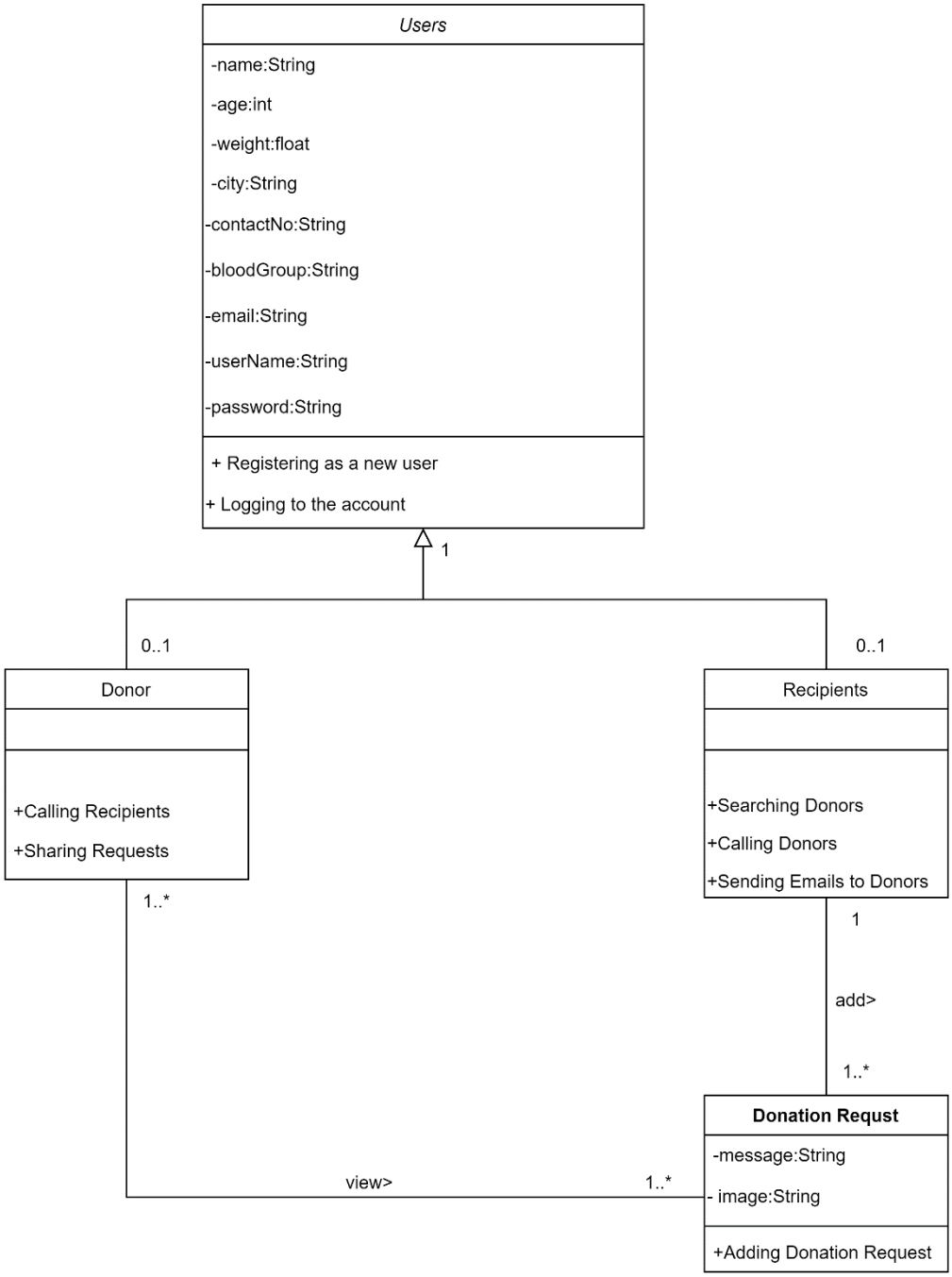

Figure 6: Class Diagram

Wireframe/ Paper Sketch

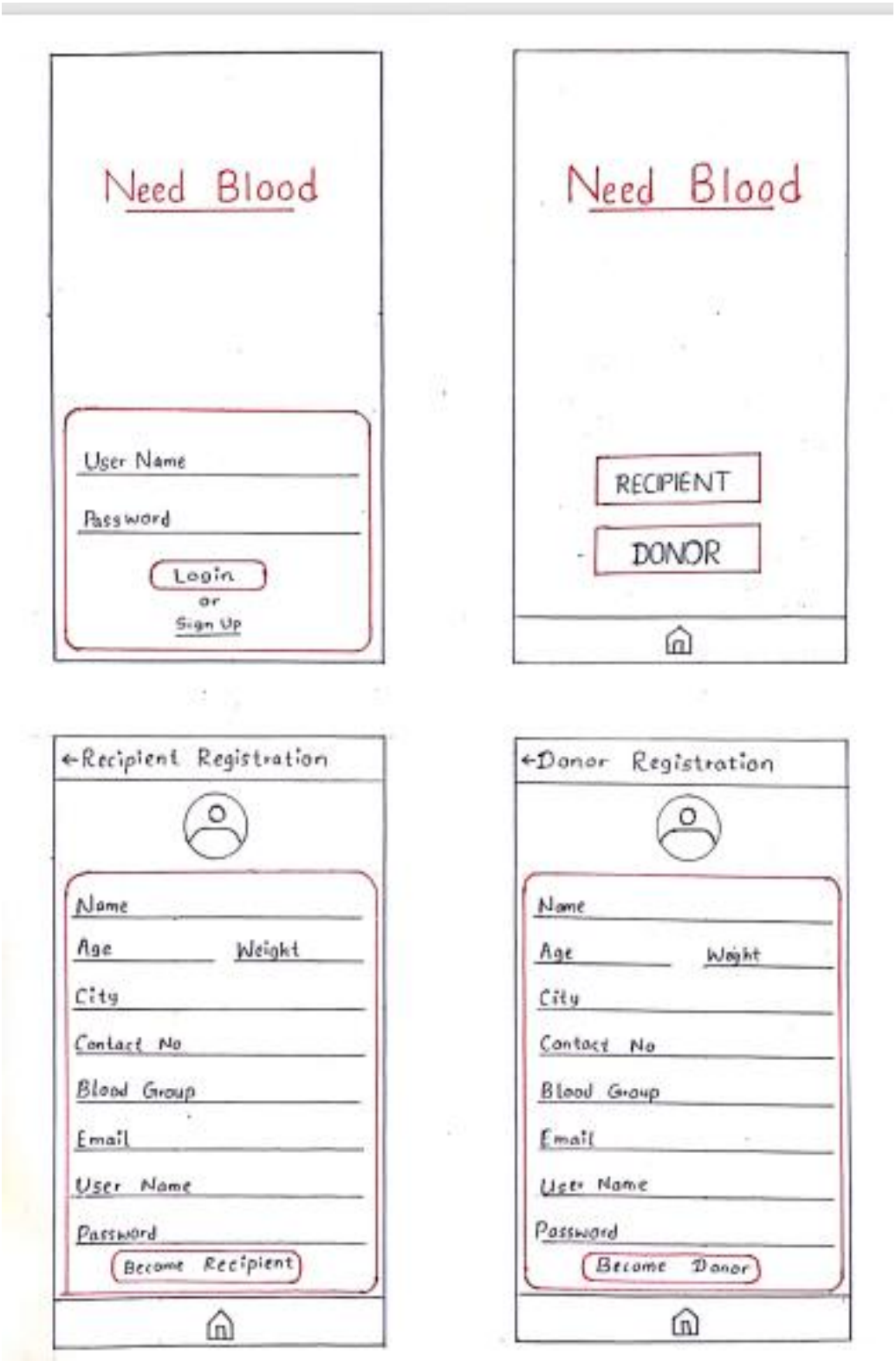

Figure 7: Paper sketch of full product

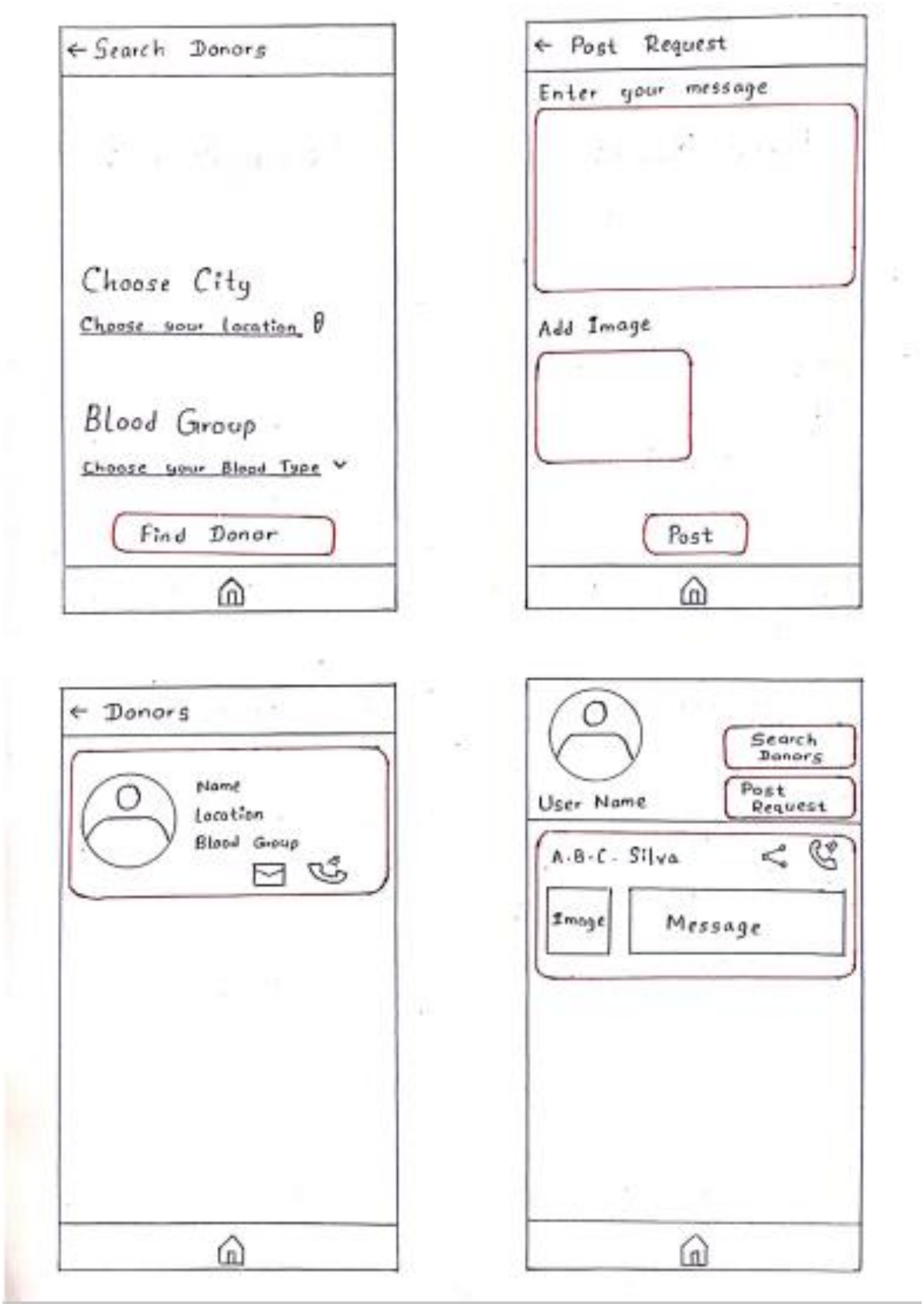

Figure 8: Paper sketch of full product

High Fidelity Prototype

https://www.figma.com/proto/WnEv7aeVU38dAsQEB4Nfme/Need-Blood?node-id=5%3A39&scaling=scale-down&page-id=0%3A1&starting-point-node-id=1%3A2