Project Report

On

Raktkosh

Submitted in partial fulfillment for the award of

Diploma in Advance Computing(E-DAC) from

C-DAC, ACTS (Pune)

Guided by:

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Mr. Upender Yadav	**PRN Number 210540181259**

Centre for Development of Advanced Computing (C-DAC), Pune

ACKNOWLEDGEMENT

This project **"Raktkosh"** was a great learning experience for us and we are submitting this work to Advanced Computing Training School (CDAC ACTS).
We are very glad to mention the name of *Mr. Suleman S.* for his valuable guidance to work on this project. His guidance and support helped me to overcome various obstacles and intricacies during the course of project work.

We got the valuable guidance of *Ms. Madhura Autankar*, who helped in her areas of teaching in way a lot.

We are highly grateful to *Ms. Risha P.R.* (Manager (ACTS training Centre), C-DAC, for her guidance and support whenever necessary while doing this course Diploma in *Advanced Computing (E-DAC)* through C-DAC ACTS, Pune.

Our heartfelt thanks go to *Ms. Swati Salunkhe* (Course Coordinator, E-*DAC*) who gave all the required support and kind coordination to provide all the necessities and extra hours to complete the project and throughout the course up to the last day here in C-DAC ACTS, Pune.

From:

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TABLE OF CONTENTS:

List of Figures:

1. Introduction of Project:

The **Raktkosh** is an online platform to connect blood donors and receivers under one roof. We have created a website using that user can do blood donation by searching the details of blood banks, donor and receiver.

Through this platform, receivers can look up for donors or blood bank for specific blood group near them. While donor can look up for receiver or blood bank to donate in. They need to visit at some medical facility for transfusion.

This application only makes the searching for donors/receiver easy. User can put request for needed blood type in Post section and can get or donate blood at a time. This will also helpful in emergency situations.

The main idea is to make it easier to search and connect them in the least possible time. Through this platform, receivers can look up for donors or blood banks for specific blood groups near them. While donors can look up for a receiver or blood bank to donate in. Implemented using Spring Boot, REST-API, MySQL, React Js, etc.

For all this a lot of APIs is used for the ease of users. API allows two applications to talk to each other and then the application interprets that data and presents the user with the information the user wanted in a readable way.

For the login of users into this website we use the user email authentication, which allows users to sign up with their email. This platform is based on REST services and it tends to independency of all services. This platform is rapid and frequent due to this technique.

2. Product Overview and Summary

2.1 Purpose:

We need a website where user can donate and receive blood which helps in emergency conditions. Here we need to contact with blood donor and blood banks foe receiving blood. Through this platform user also can post a request of need of blood with blood type and antigen and available donor can also post a blood availability. User can get the contact details of nearby location blood banks for receiving and donating blood which helps in ease of blood transfusion.
Here we are providing user friendly UI to the users which will help in maintaining the relationship of users with the website functionalities.

2.2 Scope:

Raktkosh is a platform where user can search for blood donor or blood banks or receiver for blood transfusion. User can post the request of blood on website. Can search for nearby location where gets blood in blood banks or from the donor. User gets to know about availability of blood types which helps while in emergency conditions.

2.3 Overview:

Section 3.0, the Overall Description, provides an overview of the components and the relationship between them. Section 4.0 provides the Specific Requirements of the product. In the subsection (4.1) and (4.2) of which the various functional requirements and various interface respectively are discussed. Section 5.0 describes Database Design details.

2.4 Feasibility Study

Feasibility is determination of whether a projects worth doing or not. Before actually recommending the new system, it is important to investigate if it is feasible to develop the new system.

Before developing and implementing a system we have sure that our system is feasible in the following ways:

1. Technical Feasibility.

2. Operational Feasibility.

- **Technical Feasibility:**

In the type of feasibility study, the system analyst has to check whether it is possible or not to develop the requested system with availability of manpower, software, hardware, etc.

Thesystem which we run in Linux as well as windows platform and hence are suitable for the end-user and have to platform independent. The system is technically feasible because it does not require too many resources and runs with the browser.

A proof of concept was implemented to verify the technical feasibilityto retrieve data from various APIs.

- **Operational Feasibility:**

In this type of feasibility study the operation implementation of the system is considered. Checking is done regarding whether it is feasible for the users to use the application.

User should get the benefits of system for their needs and have satisfaction by using system functionalities.

Thus, the proposed system is said to be operationally feasible only of the end users are able to understand the system clearly and correctly and can use the system with ease and with the minimum training.

3. Overall Description:

1. Product Features

The project's aim is to provide a website for blood donation which is containing J2EE (Platform independent), React JS, REST APIs for users.

2. Technology Used

BACK END

Spring Boot Hibernate.
MYSQL for storage of data
REST API

FRONT END

React Js
Bootstrap
Redux
Browser

Platform:

Web Development: J2EE Spring Boot, React, MySQL

J2EE Spring Boot

Spring Boot has been built for Rapid Application Development. The goal of Spring Boot is to provide a way to create Java applications quickly and simply, through an embedded server. By default, it used an embedded version of Tomcat and hence eliminating the need of Java EE containers.
It is a framework to ease the bootstrapping and development of new Spring Applications. Bootstrapping with defaults included in the configuration/ jar-dependencies. Easy to create standalone applications with embedded Tomcat/Jetty/Undertow. It provides defaults for code and annotation configuration to quick start new spring projects within no time. Plenty of Spring Boot Starter to quickly get up and running.
No code generation and no requirement for XML configuration. It reduces lots of development time and increases productivity.

React

React is a JavaScript library for building user interfaces. It has transformed the way we think about front-end development. React.js has clasped the engagement of the open-source community. And its demand is irreversible in the coming future. It is here to stay.

Improved performance: React uses Virtual DOM, thereby creating web applications faster. Virtual DOM compares the components' previous states and updates only the items in the Real DOM that were changed, instead of updating all of the components again, as conventional web applications do.

MySQL

MySQL is an open-source relational database management system (RDBMS).A list of commonly used MySQL queries to create database, use database, create table, insert record, update record, delete record, select record, truncate table and drop table etc. MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications.
The most common use for MySQL, however, is for the purpose of a web database. It can be used to store anything from a single record of information to an entire inventory of available products for an online store. In association with a scripting language such as PHP or Perl (both offered on our hosting accounts) it is possible to create websites which will interact in real-time with a MySQL database to rapidly display categorized and searchable information to a website user.

3.2 User Classes

There is two type of user which can access this website. One is customer and the second one is ADMIN which will manage the users, products and orders.
In user there three users:

- Blood Bank
- Donor
- Receiver

3.3 General Constraints

Users should have an email for signup and login into specific user accounts. After login user will specify role as Donor or Receiver as per their need.
Should have a browser with proper internet service, which helps to use our User Interface (UI) with an ease. Can use websites functionalities for their blood request.

4. REQUIREMENTS

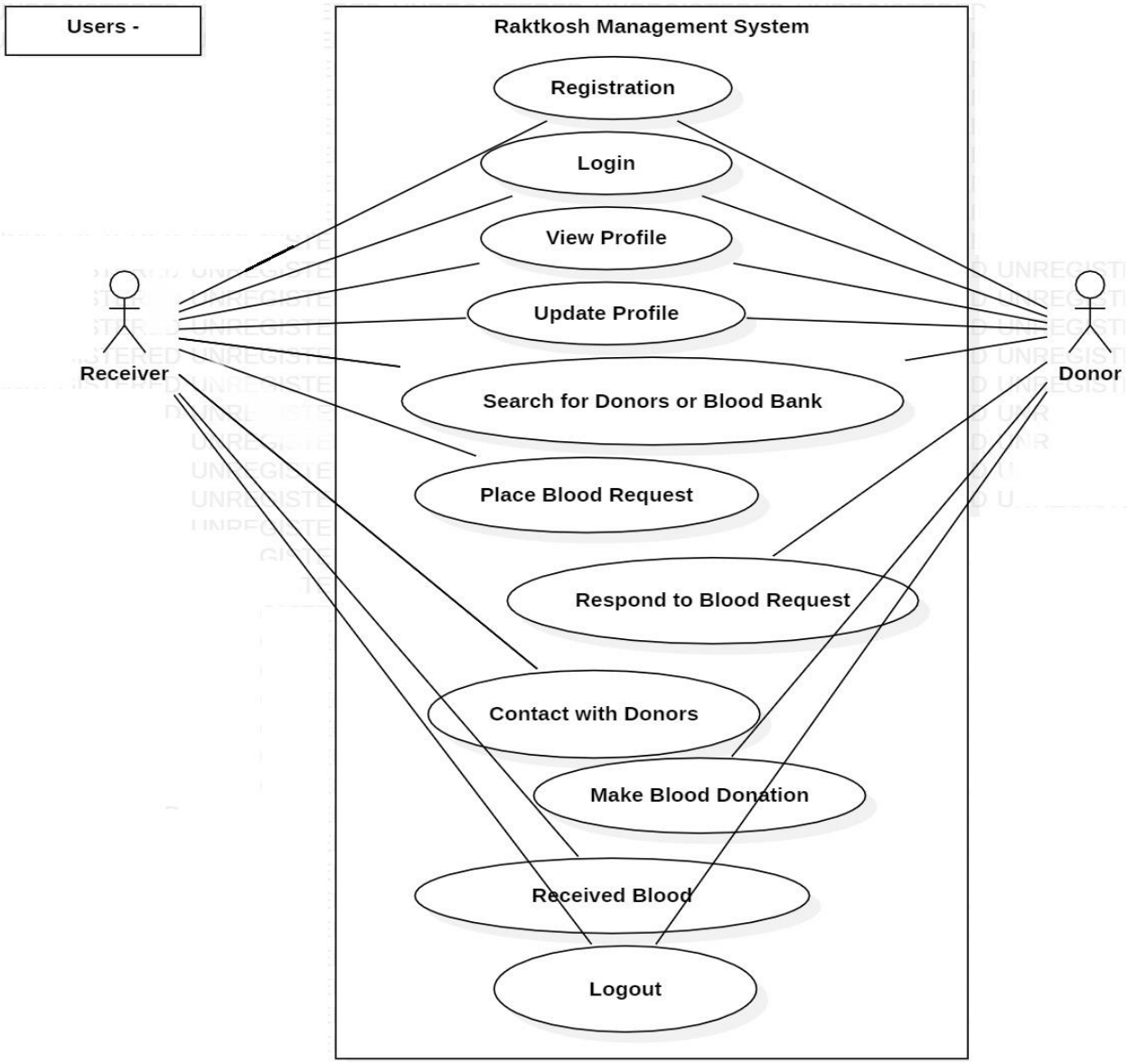
1. FUNCTIONAL REQUIREMENTS

4.1.1 Complete System:

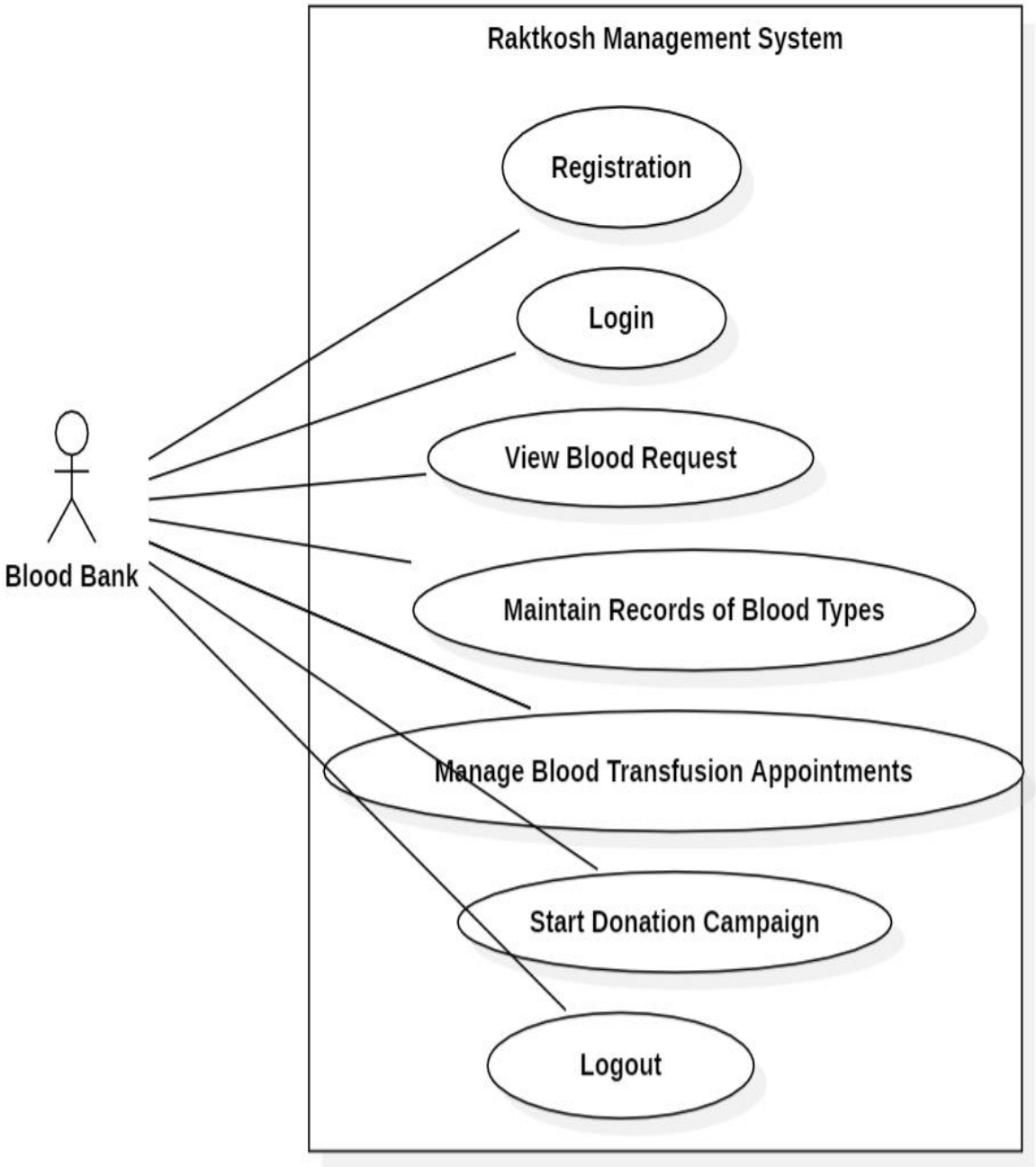
A) Use Case Diagrams:

A use case diagram shows various use cases with different types of users the system has and their interaction with UI.

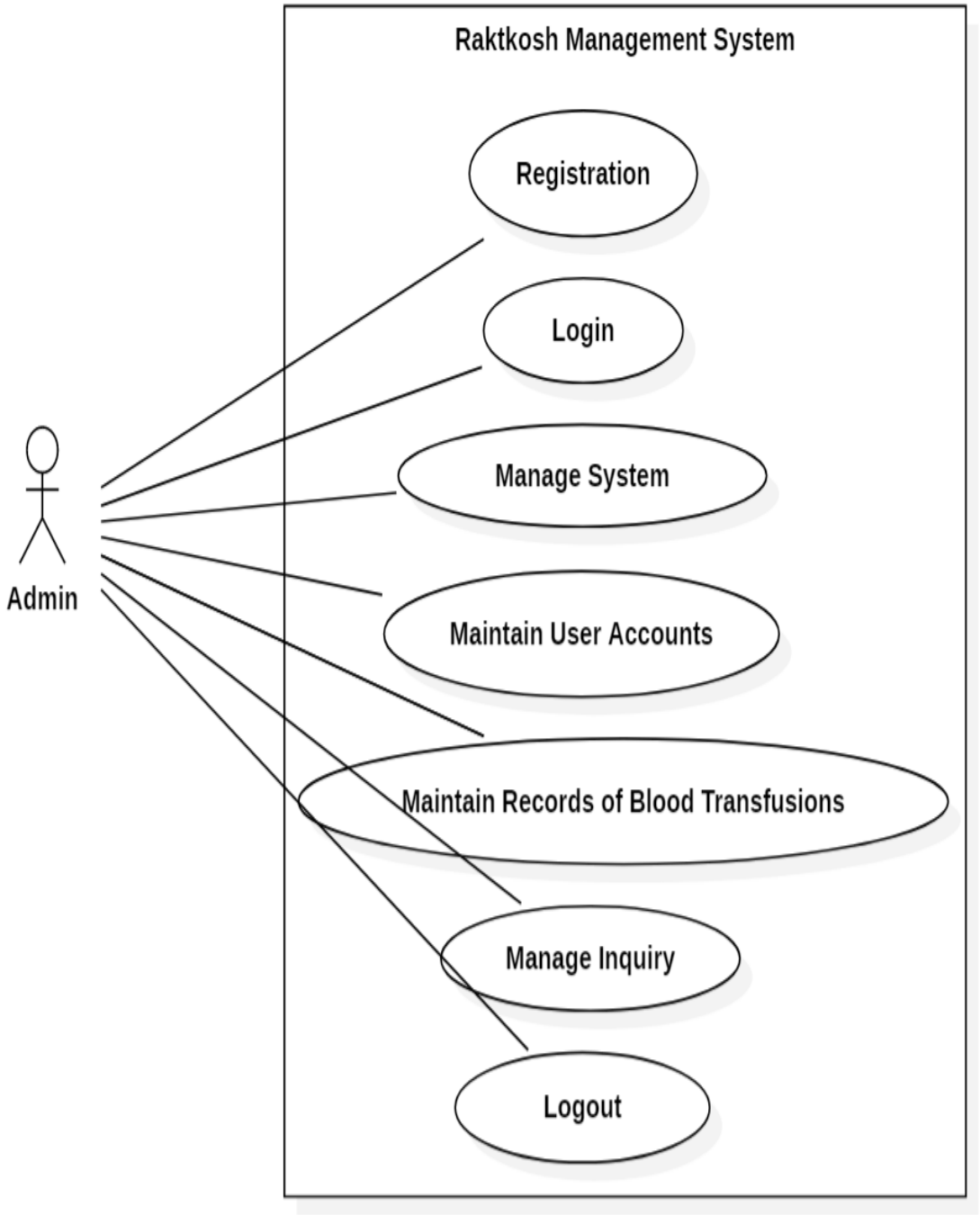
I] User- Functionalities for users (Donor and Receiver)



II] Blood Bank- Functionalities for Blood Bank



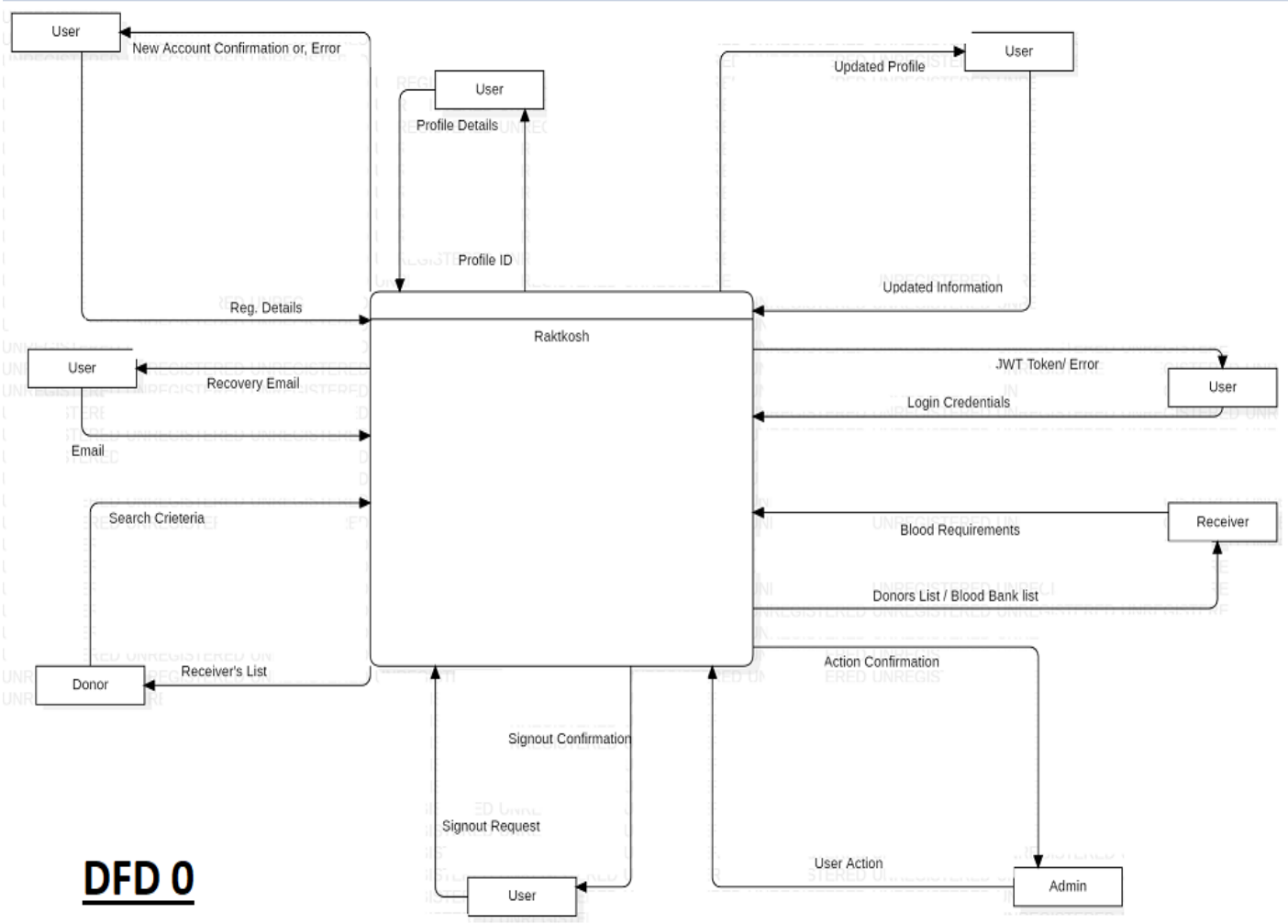
III] Admin- Functionalities for Admin



B) Data Flow Diagrams:

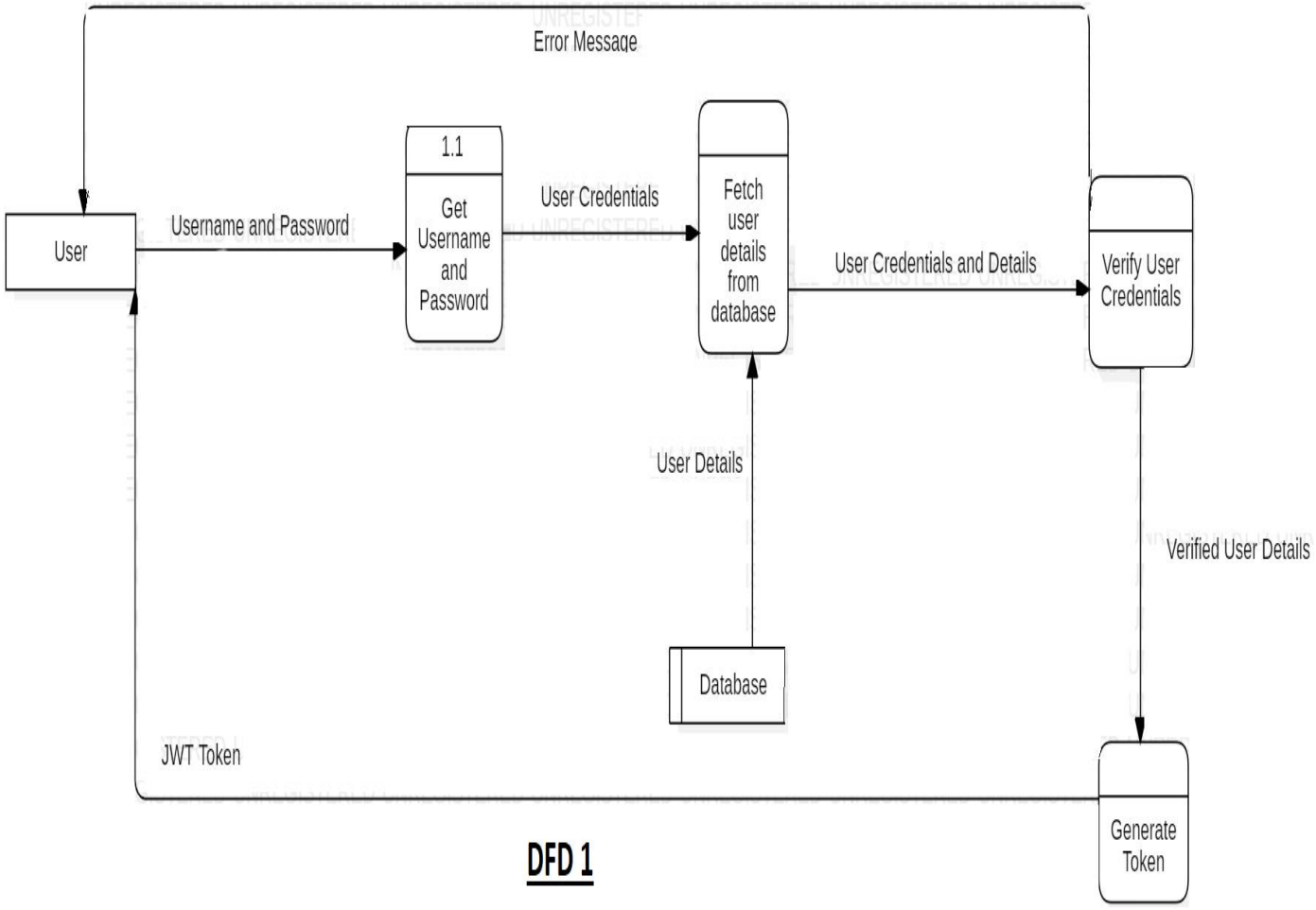
Way of representing a flow of data through a process or a system, provides information about the input and outputs for each entity and the process itself.

Level 0:



DFD 0

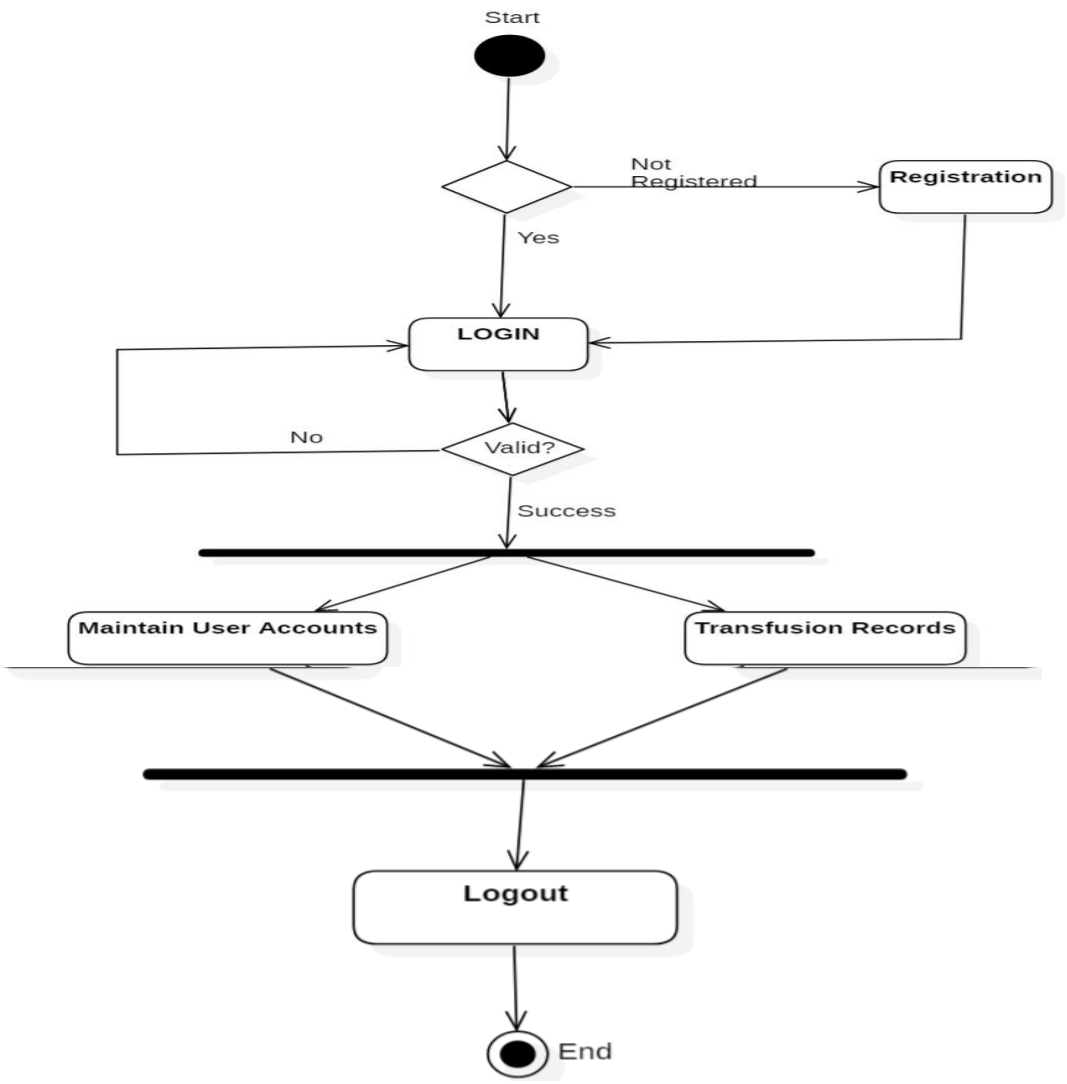
Level 1:


Error Message
1.1
Get Username and Password
User
Username and Password
User Credentials
Fetch user details from database
User Credentials and Details
Verify User Credentials
User Details
Verified User Details
Database
JWT Token
Generate Token

DFD 1

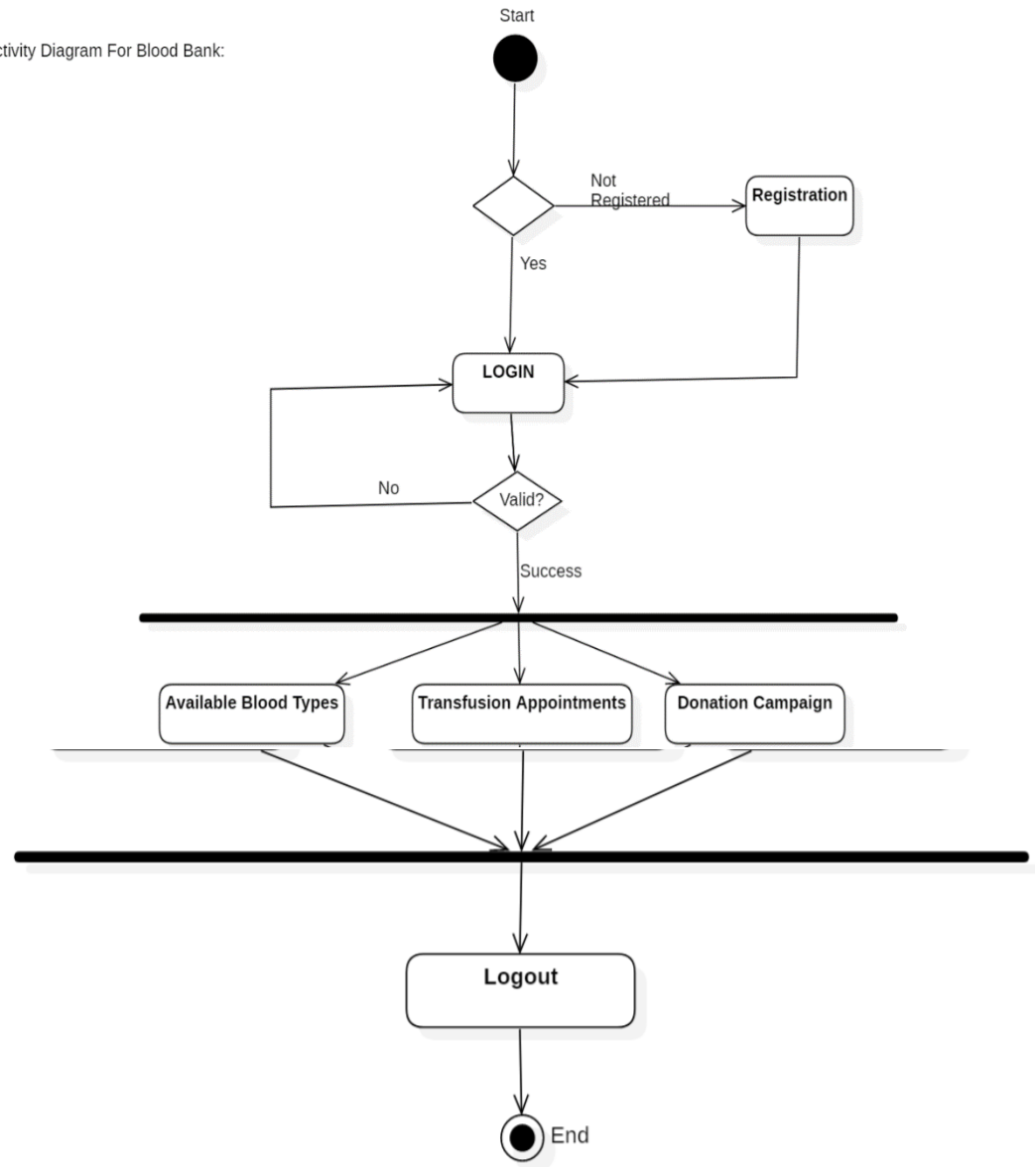
C) Activity Diagrams:

I) Admin:



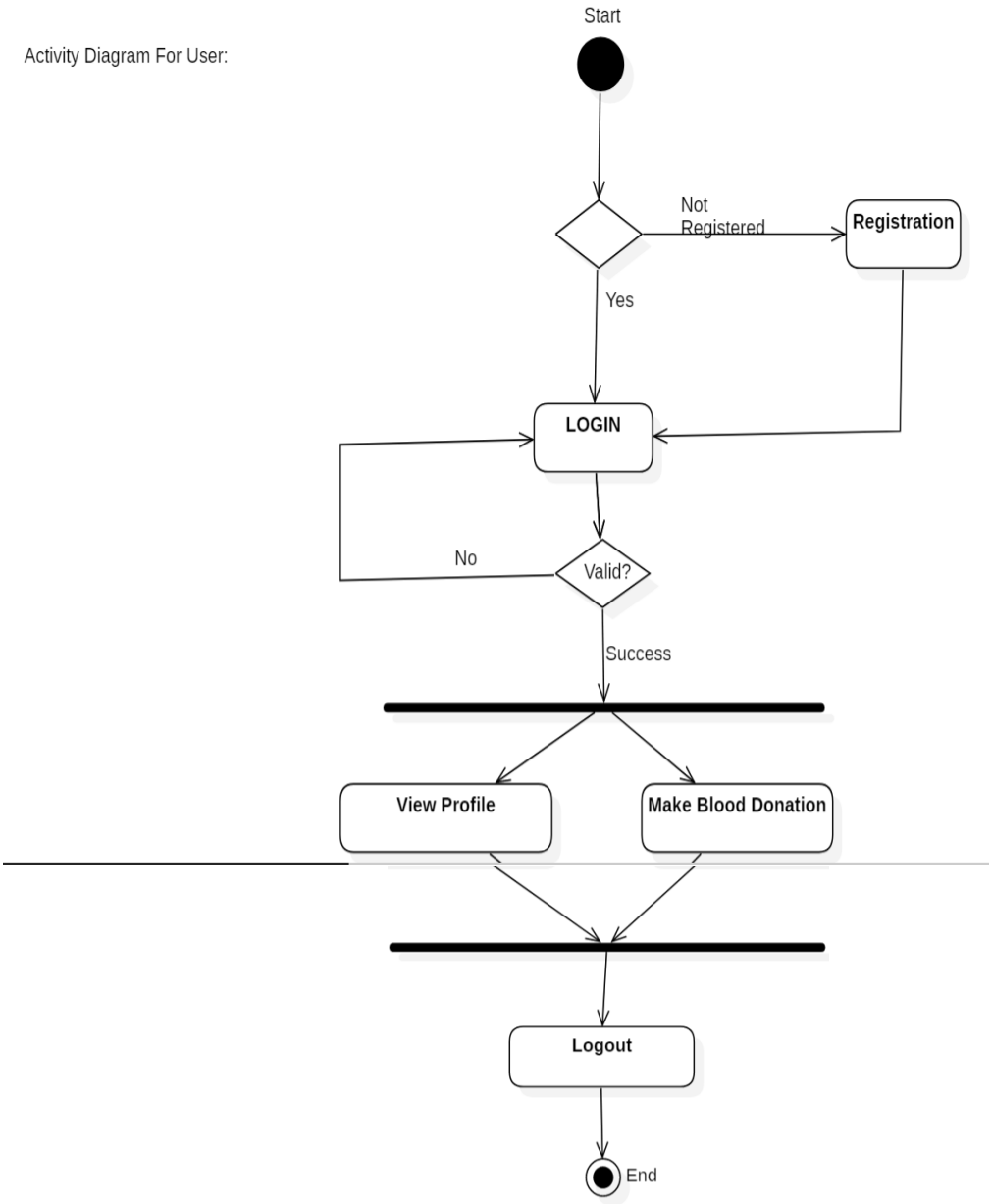
II) Blood Bank:

Activity Diagram For Blood Bank:



III) Users:

Activity Diagram For User:

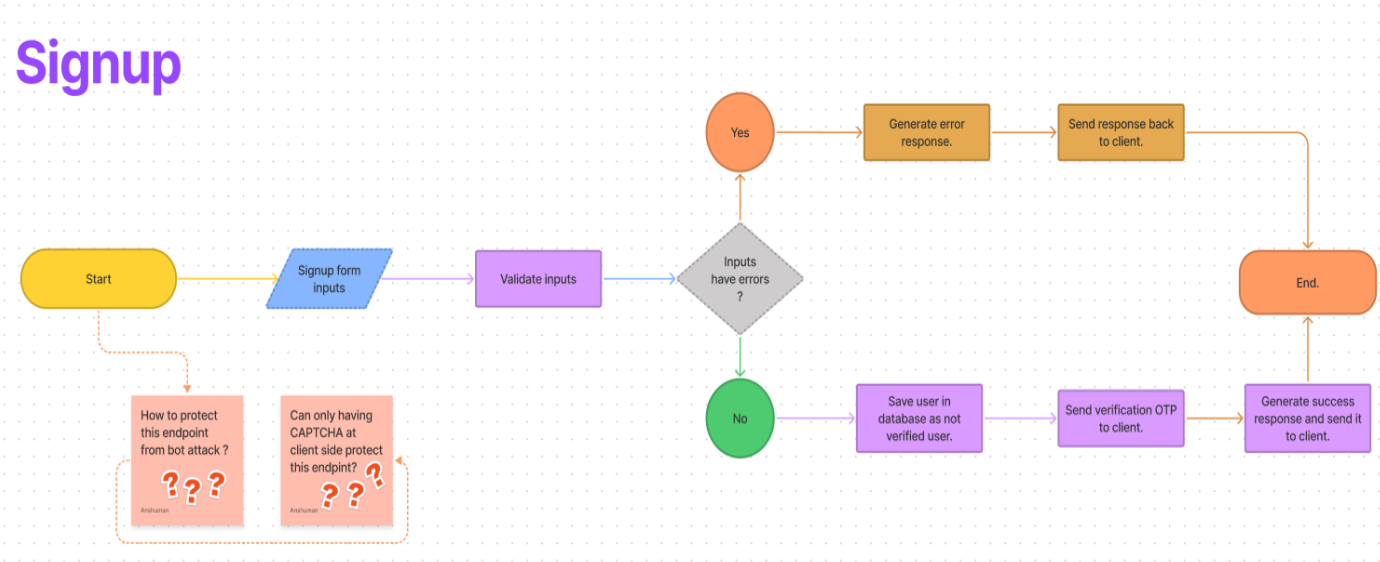


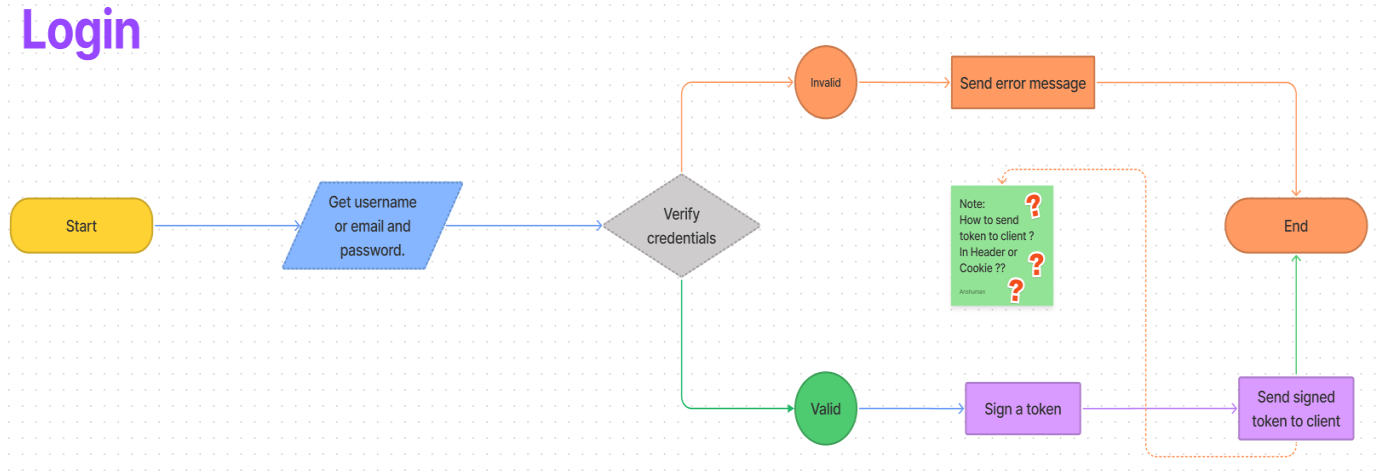
5. Design

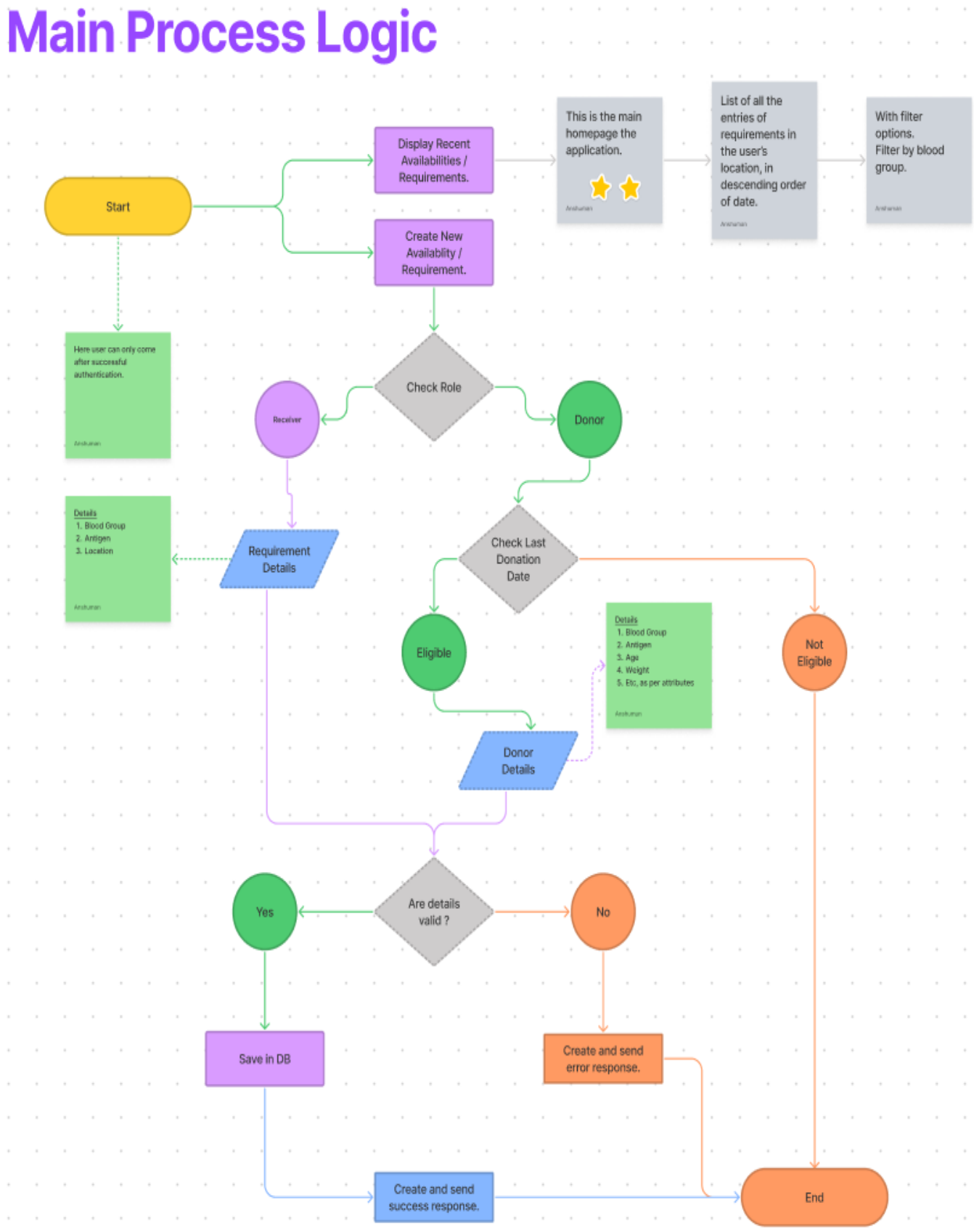
5.1 High level Design

The following diagram depict the main logic of project design.

D) Flow Diagrams:





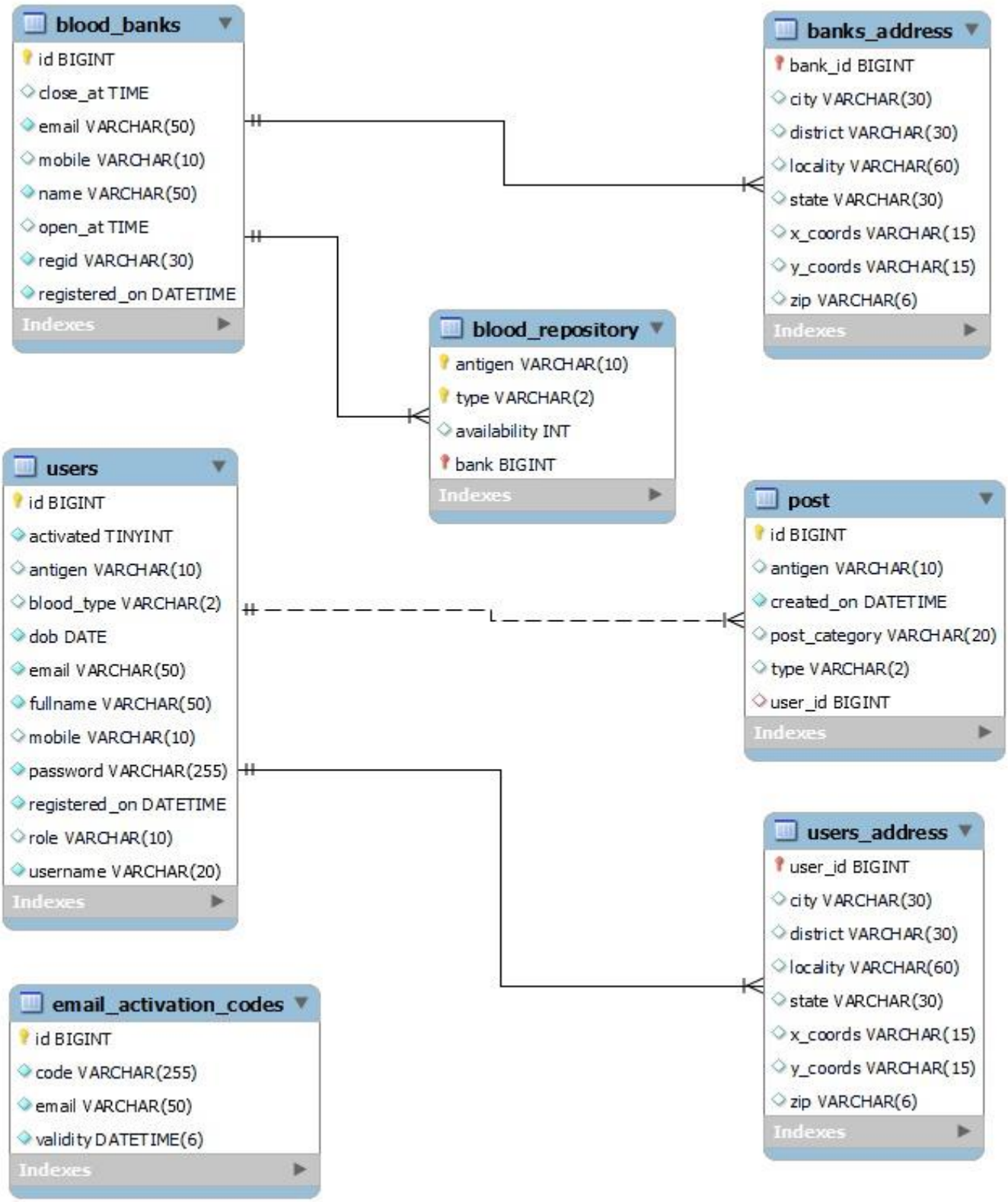


5.2 Database Design

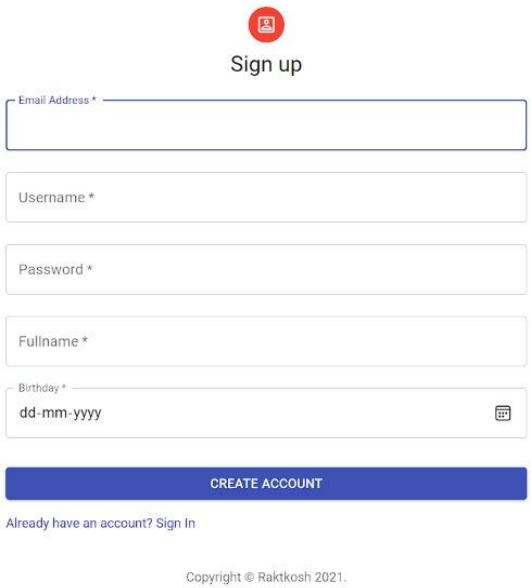
5.2 Database Design :

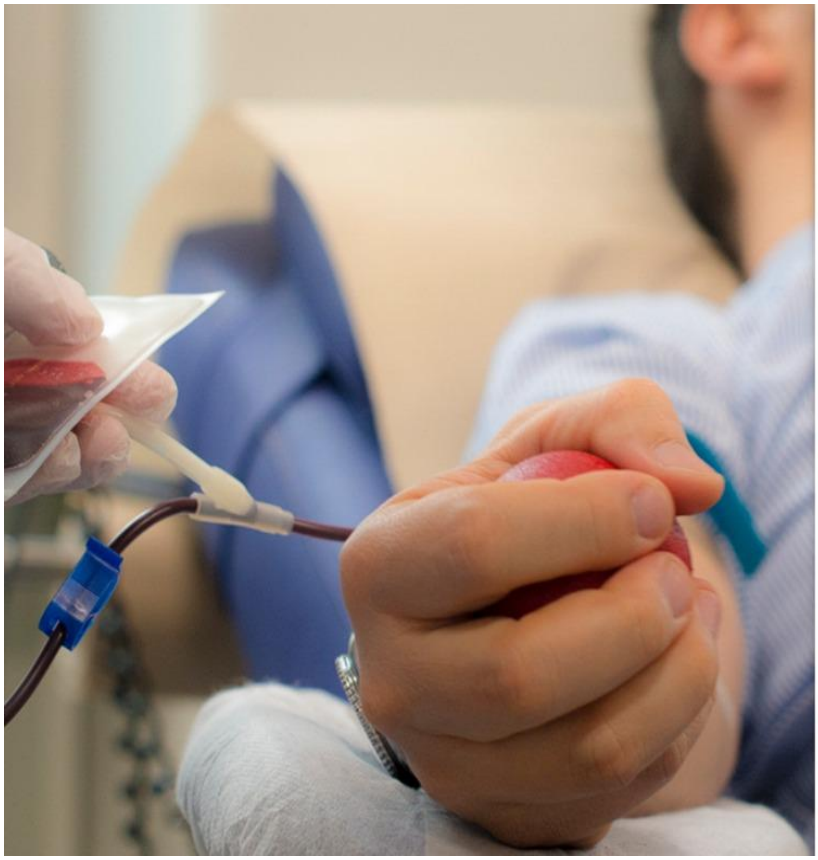
The following table structures depict the database design.

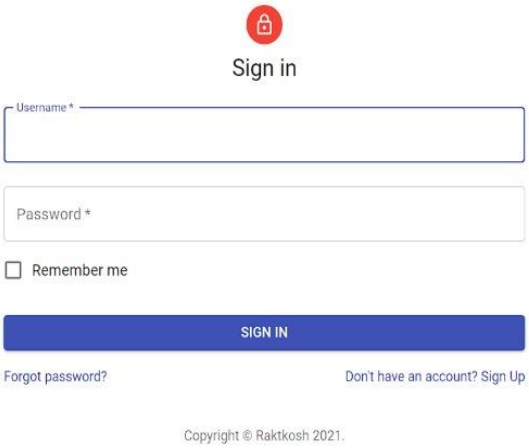
E) ER Diagram

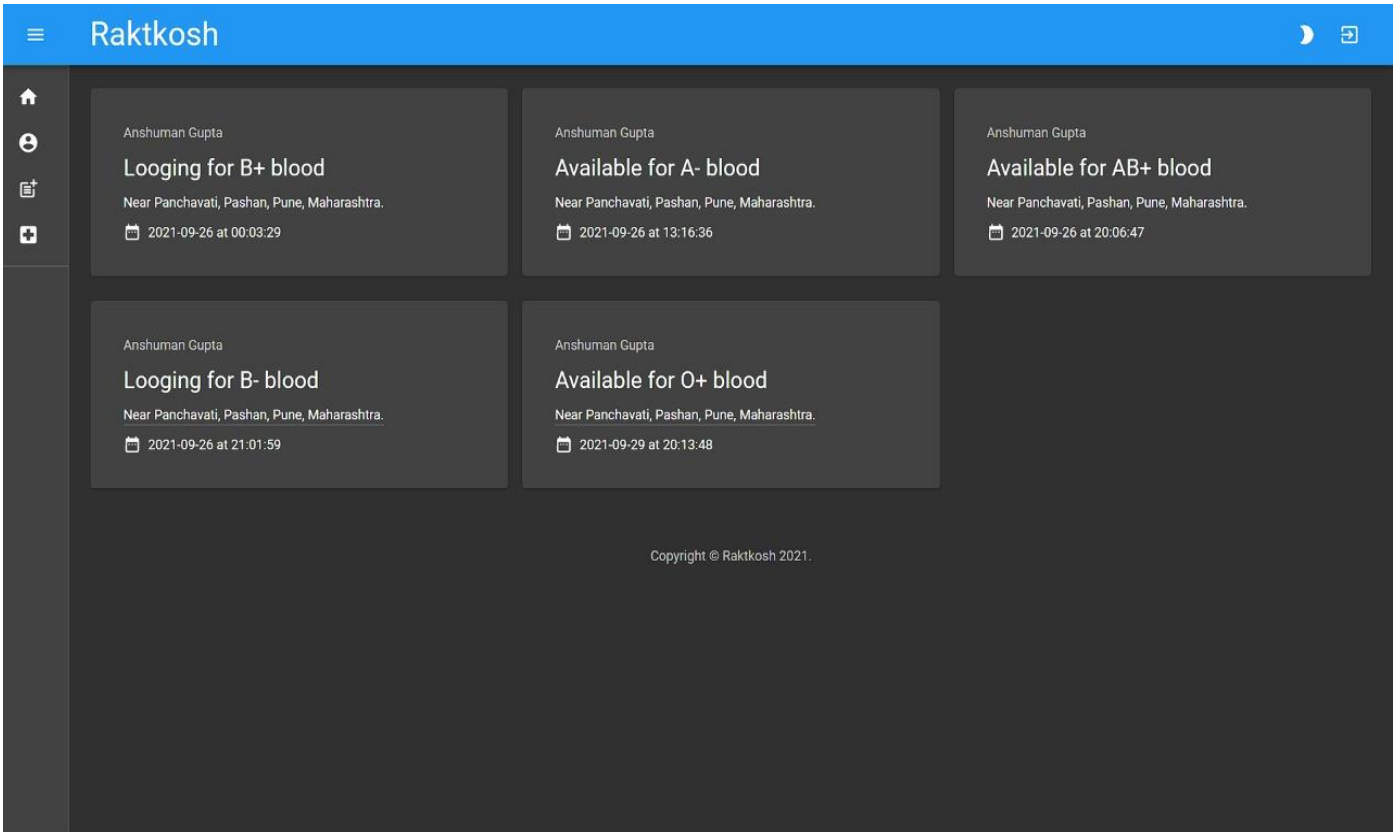


6. USER INTERFACE






Sign in
Username *
Password *
Remember me
SIGN IN
Forgot password?
Don't have an account? Sign Up
Copyright © Raktkosh 2021.


Raktkosh
Anshuman Gupta
Looging for B+ blood
Near Panchavati, Pashan, Pune, Maharashtra.
2021-09-26 at 00:03:29
Anshuman Gupta
Available for A- blood
Near Panchavati, Pashan, Pune, Maharashtra.
2021-09-26 at 13:16:36
Anshuman Gupta
Available for AB+ blood
Near Panchavati, Pashan, Pune, Maharashtra.
2021-09-26 at 20:06:47
Anshuman Gupta
Looging for B- blood
Near Panchavati, Pashan, Pune, Maharashtra.
2021-09-26 at 21:01:59
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Near Panchavati, Pashan, Pune, Maharashtra.
2021-09-29 at 20:13:48
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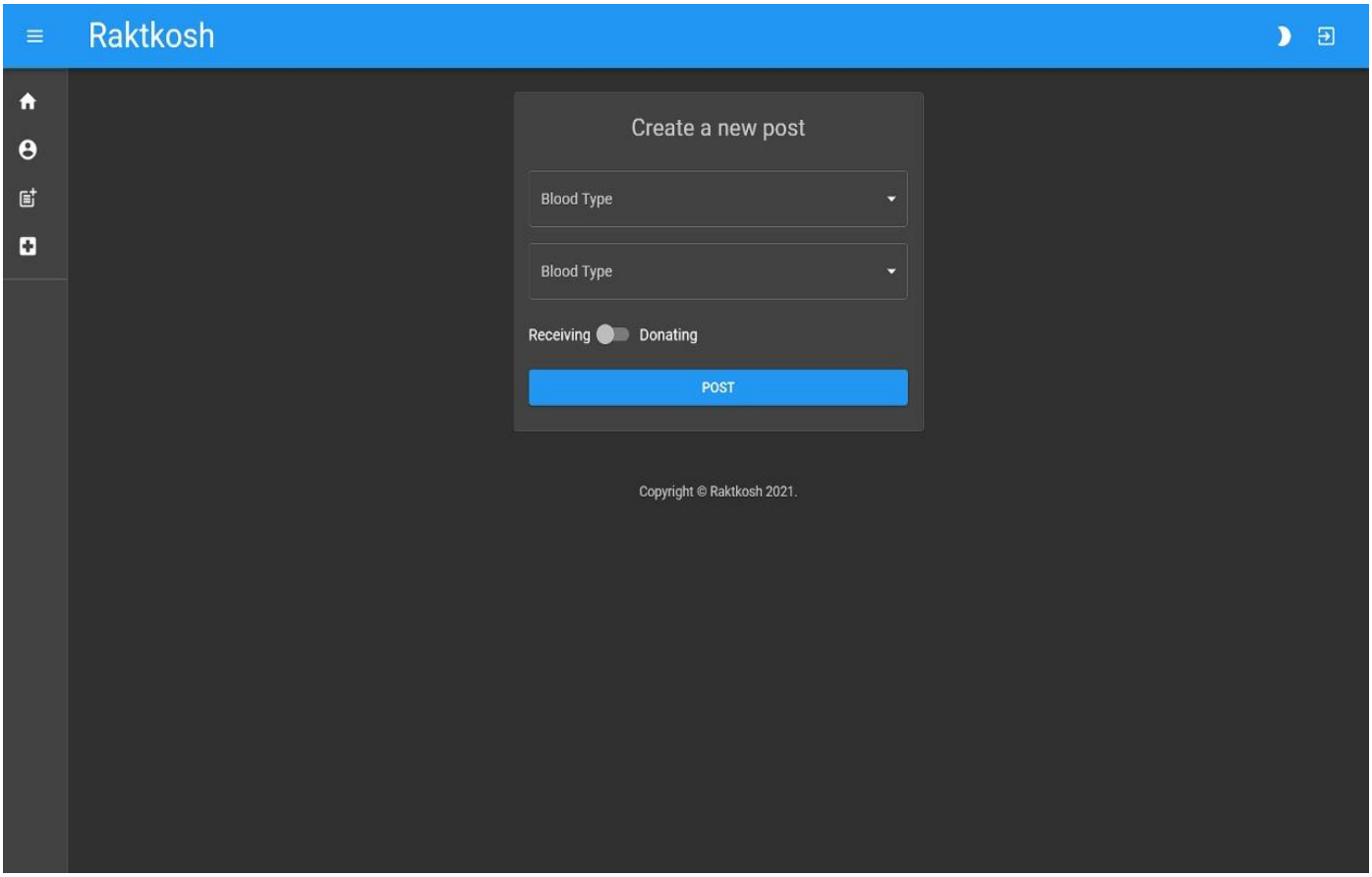
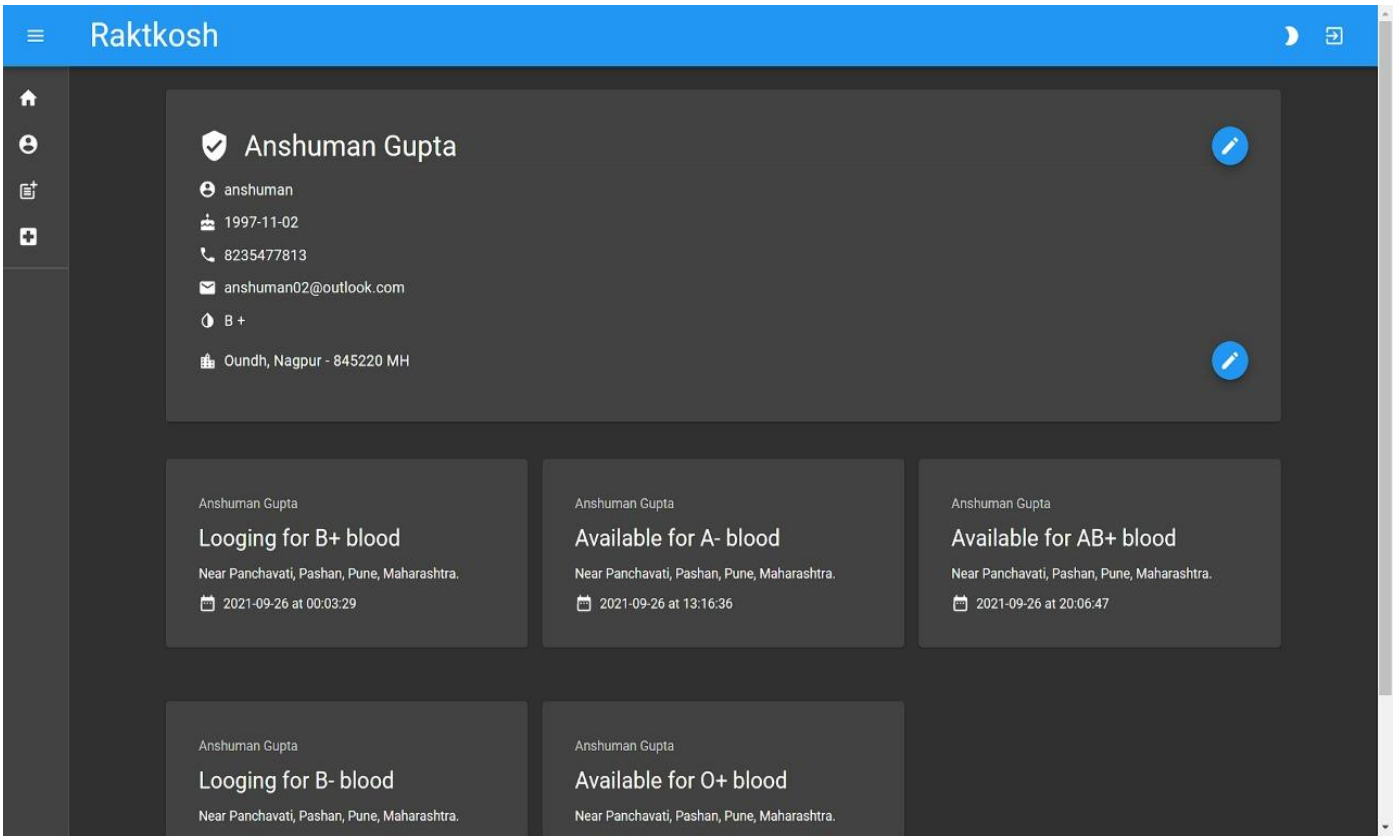

Raktkosh
Create a new post
Blood Type
Blood Type
Receiving
Donating
POST
Copyright © Raktkosh 2021.


Raktkosh
Anshuman Gupta
anshuman
1997-11-02
8235477813
anshuman02@outlook.com
B +
Oundh, Nagpur - 845220 MH
Anshuman Gupta
Looging for B+ blood
Near Panchavati, Pashan, Pune, Maharashtra.
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Anshuman Gupta
Available for O+ blood
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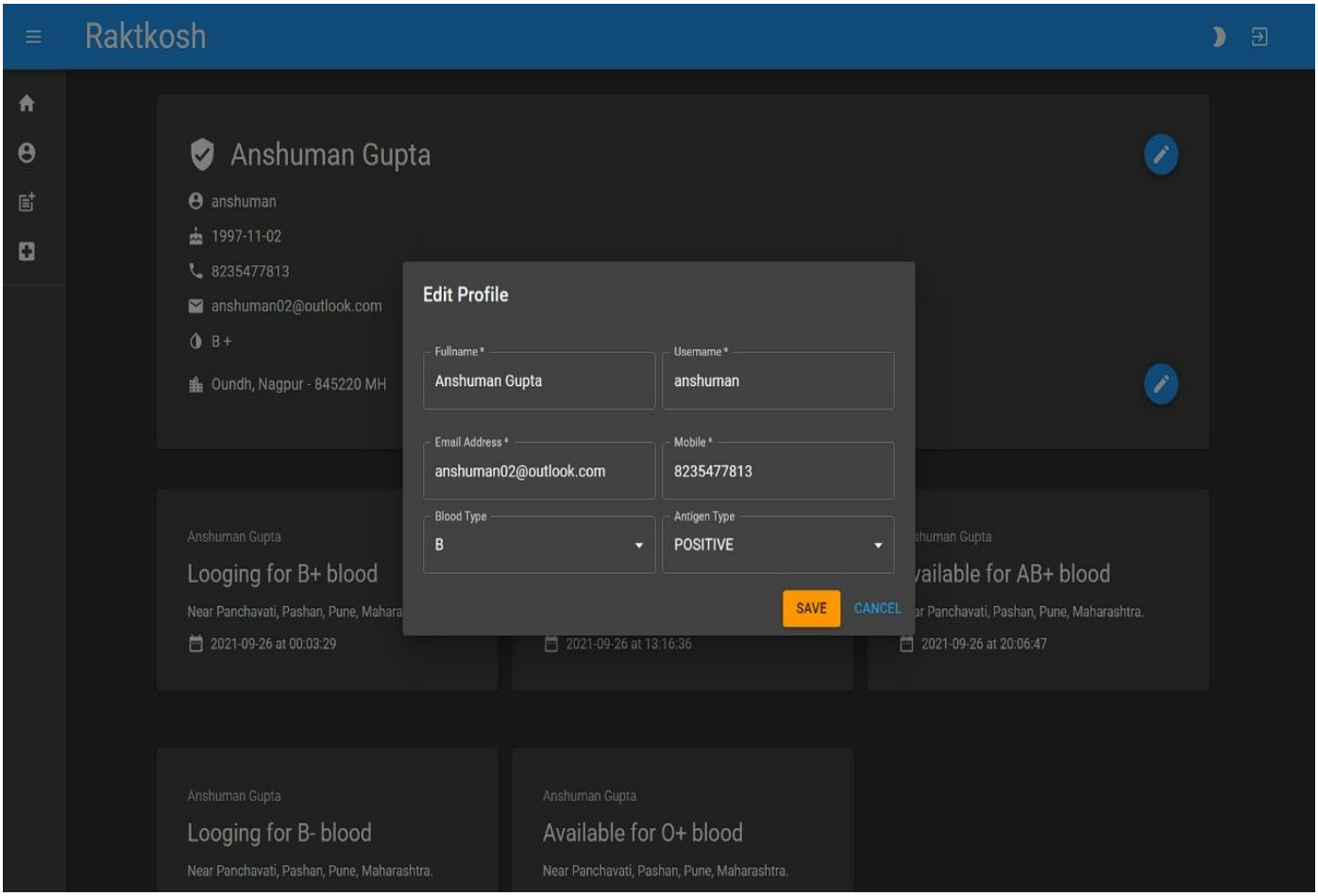
Raktkosh
Anshuman Gupta
anshuman
1997-11-02
8235477813
anshuman02@outlook.com
B +
Oundh, Nagpur - 845220 MH
Edit Profile
Fullname *
Anshuman Gupta
Username *
anshuman
Email Address *
anshuman02@outlook.com
Mobile *
8235477813
Blood Type
B
Antigen Type
POSITIVE
SAVE
CANCEL
Anshuman Gupta
Looging for B+ blood
Near Panchavati, Pashan, Pune, Mahara
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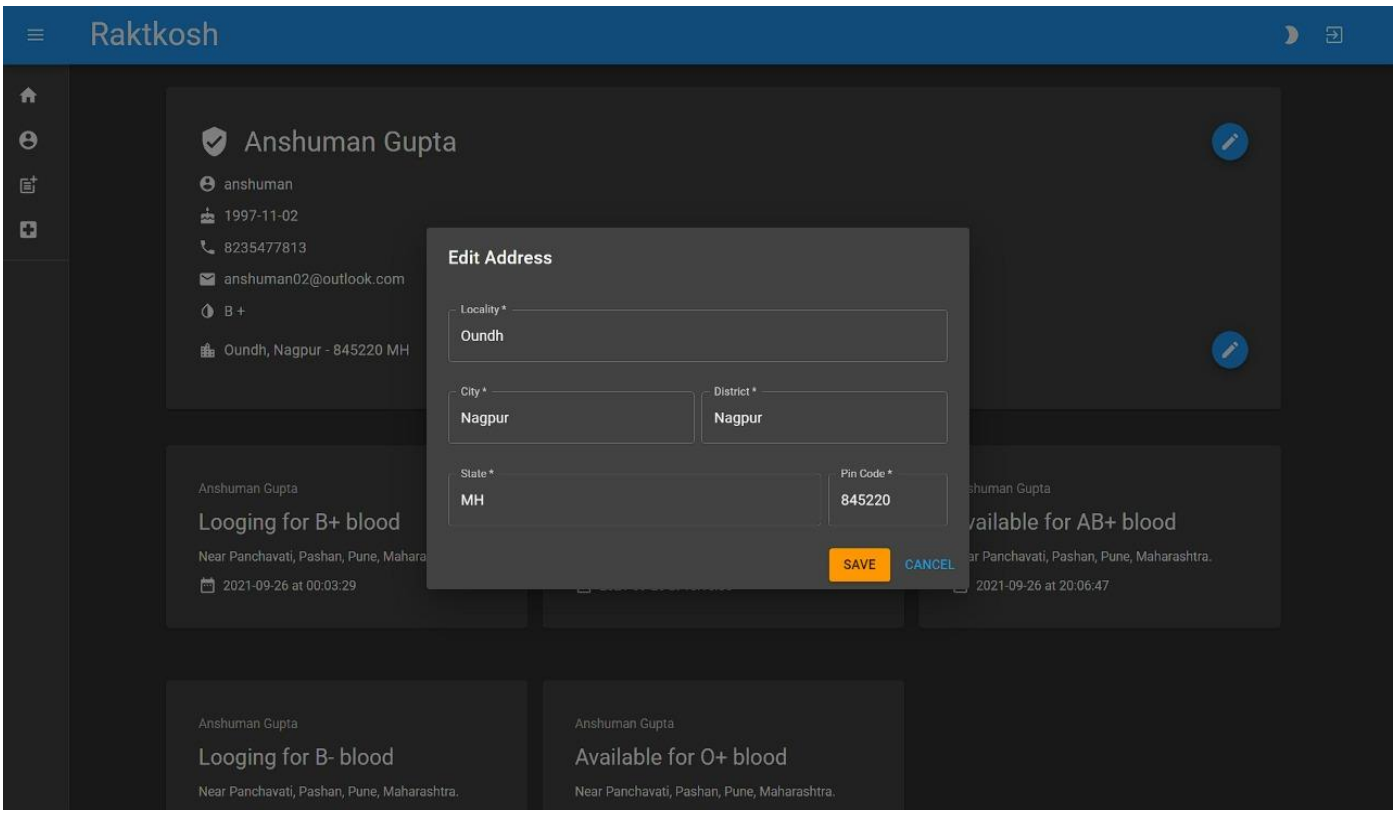
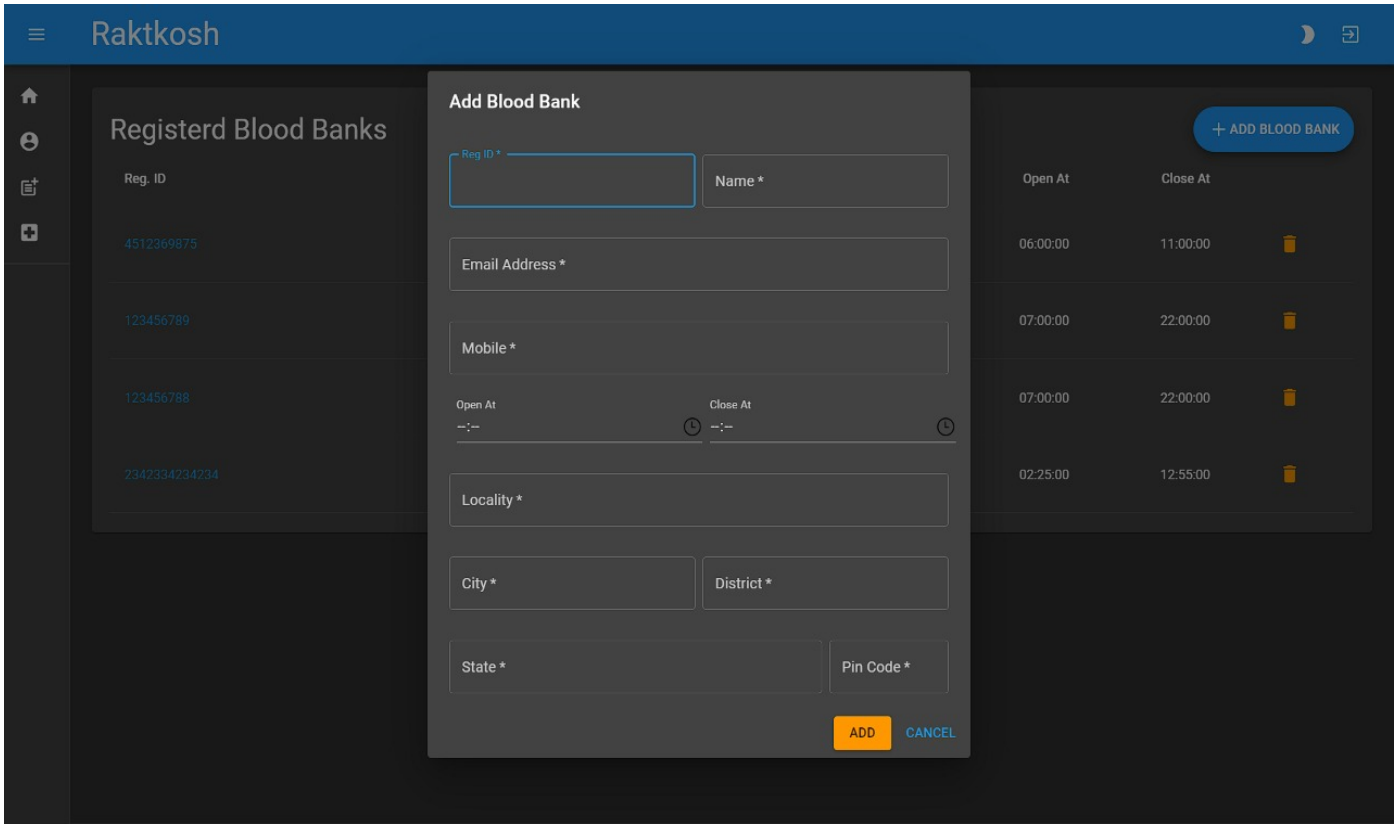

Raktkosh
Anshuman Gupta
anshuman
1997-11-02
8235477813
anshuman02@outlook.com
B +
Oundh, Nagpur - 845220 MH
Edit Address
Locality *
Oundh
City *
Nagpur
District *
Nagpur
State *
MH
Pin Code *
845220
SAVE
CANCEL
Anshuman Gupta
Looging for B+ blood
Near Panchavati, Pashan, Pune, Mahara
2021-09-26 at 00:03:29
Anshuman Gupta
ailable for AB+ blood
Panchavati, Pashan, Pune, Maharashtra.
2021-09-26 at 20:06:47
Anshuman Gupta
Looging for B- blood
Near Panchavati, Pashan, Pune, Maharashtra.
Anshuman Gupta
Available for O+ blood
Near Panchavati, Pashan, Pune, Maharashtra.


Raktkosh
Registerd Blood Banks
+ ADD BLOOD BANK
Reg. ID
Open At
Close At
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06:00:00
11:00:00
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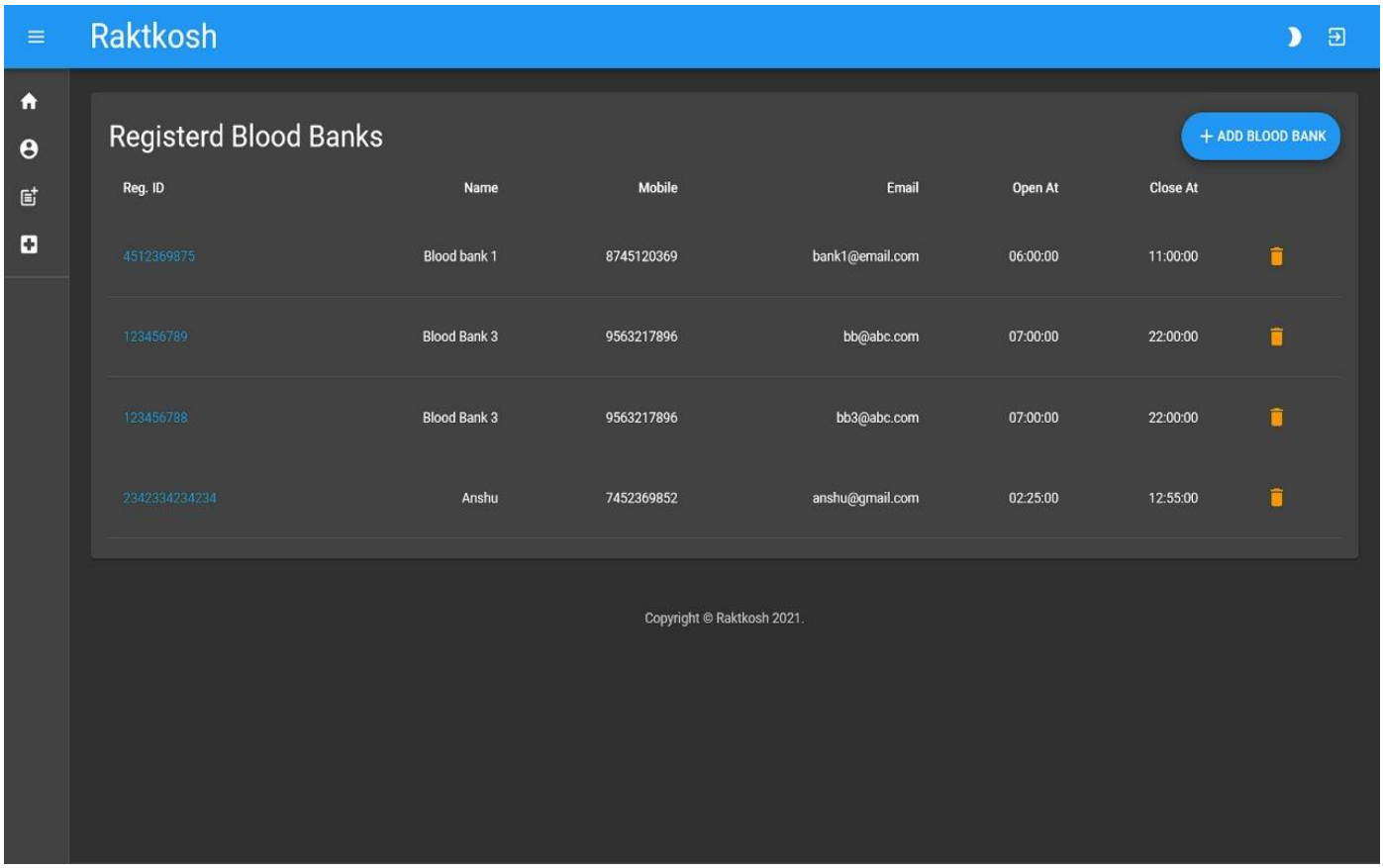
07:00:00
22:00:00
123456788
07:00:00
22:00:00
2342334234234
02:25:00
12:55:00
Add Blood Bank
Reg ID *
Name *
Email Address *
Mobile *
Open At
--:--
Close At
--:--
Locality *
City *
District *
State *
Pin Code *
ADD
CANCEL


Raktkosh
Registerd Blood Banks
+ ADD BLOOD BANK
Reg. ID
Name
Mobile
Email
Open At
Close At
4512369875
Blood bank 1
8745120369
bank1@email.com
06:00:00
11:00:00
123456789
Blood Bank 3
9563217896
bb@abc.com
07:00:00
22:00:00
123456788
Blood Bank 3
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07:00:00
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7452369852
anshu@gmail.com
02:25:00
12:55:00
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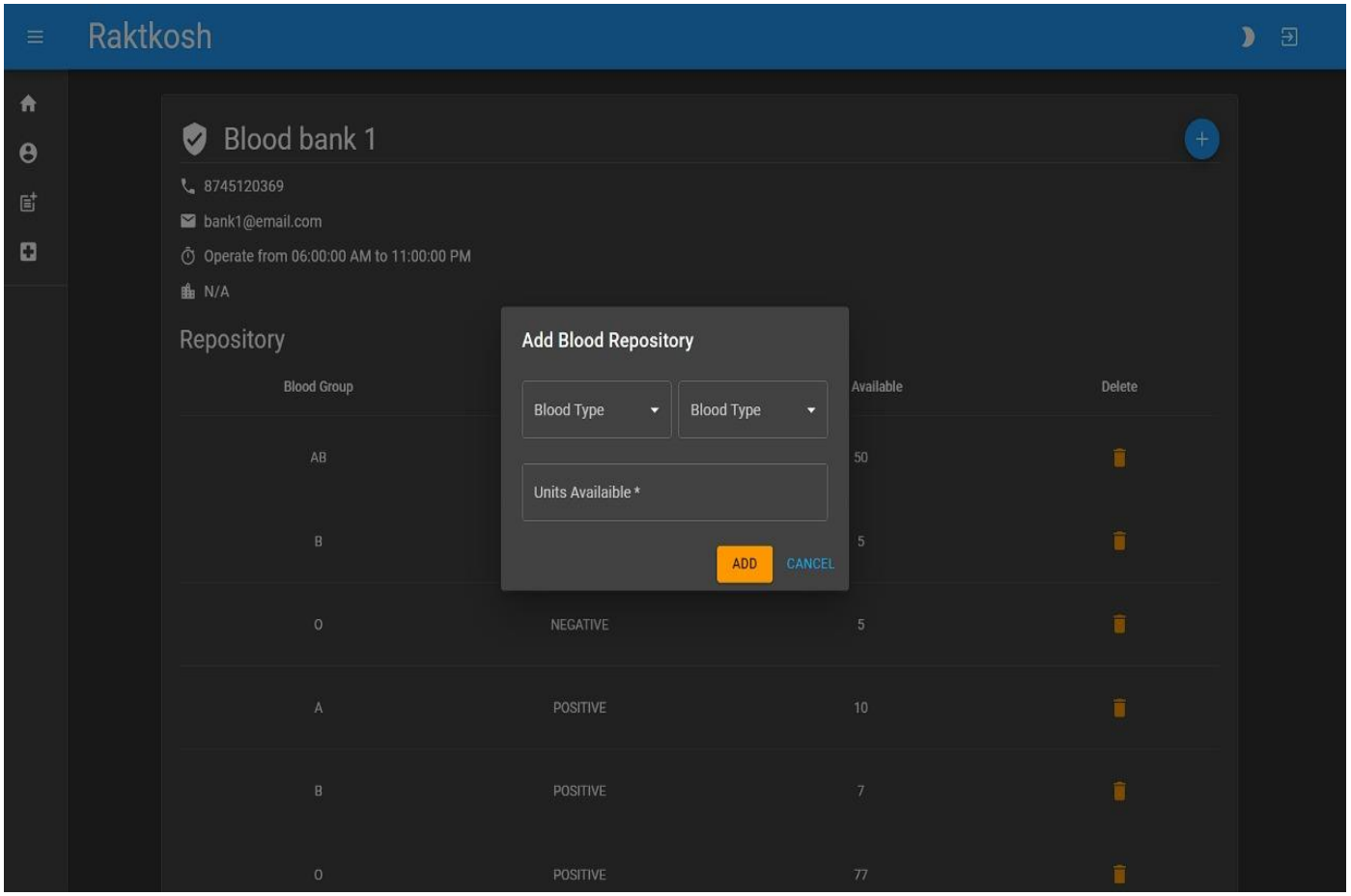
Raktkosh
Blood bank 1
8745120369
bank1@email.com
Operate from 06:00:00 AM to 11:00:00 PM
N/A
Repository
Add Blood Repository
Blood Type
Blood Type
Units Availaible *
ADD
CANCEL
Blood Group
Available
Delete
AB
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B
5
O
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POSITIVE
10
B
POSITIVE
7
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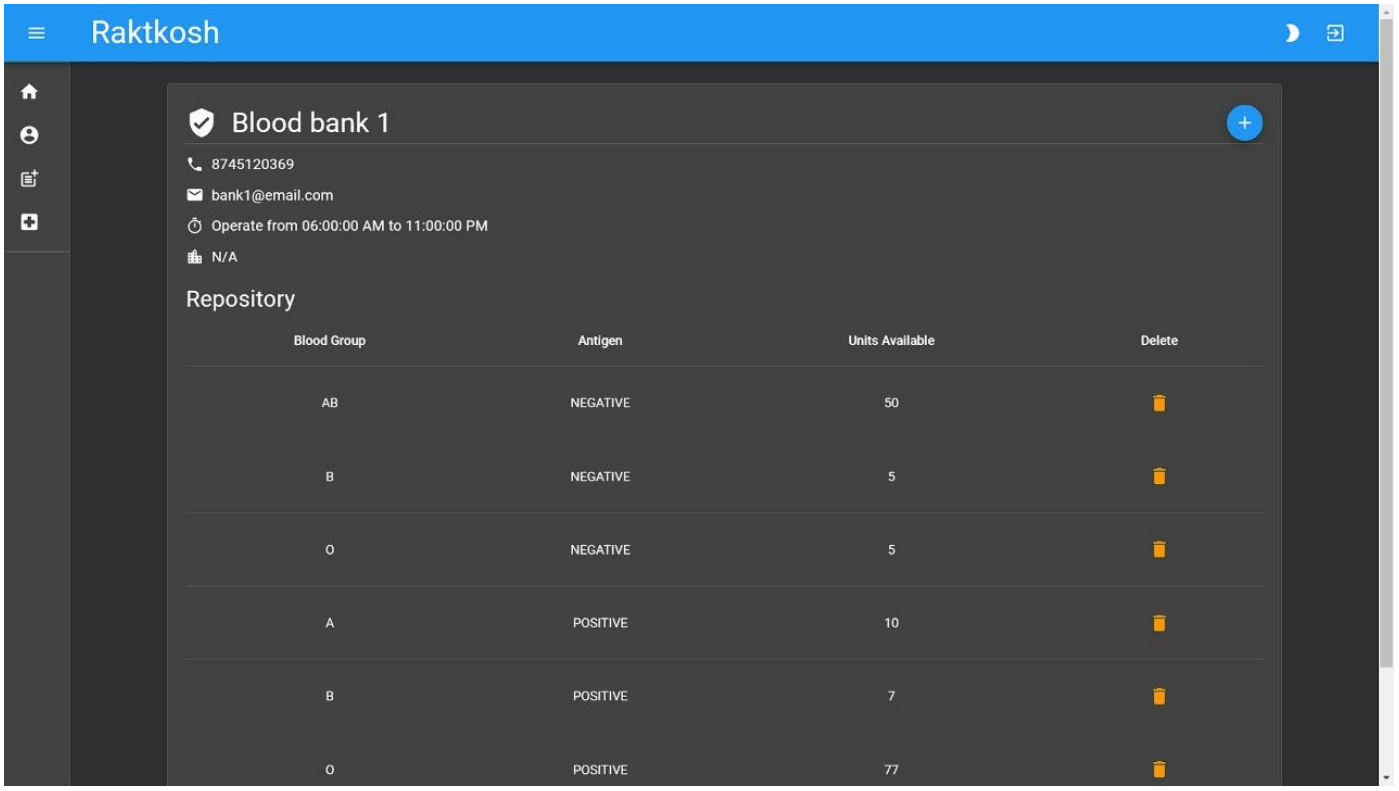
Raktkosh
Blood bank 1
8745120369
bank1@email.com
Operate from 06:00:00 AM to 11:00:00 PM
N/A
Repository
Blood Group
Antigen
Units Available
Delete
AB
NEGATIVE
50
B
NEGATIVE
5
O
NEGATIVE
5
A
POSITIVE
10
B
POSITIVE
7
O
POSITIVE
77

7. Testing:

The report of the testing is given here under.

Test Case

Sr. No	Test Case Title	Description	Expected Outcome	Error Message	Result
1	Landing page Displayed	Information about Raktkosh website system.	Will See the information. Click to login button and redirect to login page.	No Error	Passed
2	Sign Up	Should not allow any controlto be empty if not null	If validated User will fill the form and allow to go to Login page.	Validation Error or Non-unique email	Passed
3	Login Page	User should see login page when user will enter email and password.	After signing in user to be directed to home page	Invalid Login error	Passed
4	Home page	Home page display for every successful log in.	Home Page Displayed	No Error	Passed
5	Post Section	Users can see different post of requested blood type.	Responds to specific post.	No Error	Passed
6	User Profile	Here, user can see all his / her details.	User can manage is profile.	Invalid Details or All Fields are required.	Passed
7	User Address Details	User fill address details.	User's address details saved to profile and system.	Invalid pin Number or All Fields are required.	Passed
8	Blood Bank Details	User will see the Blood bank contact details and available blood type with Units. And Admin can update Blood Bank information.	List of Available blood type and units to users. From Admin updated details.	No Error Non-Unique Email or Registration No.	Passed
9	Sign Out	User should be able to logout from the website	User will logout and will be redirected to the Sign In page.	No Error	Passed

8. Project Management Methodology:

a. Used Git HUB for central project repository.

b. Scrum Agile Methodology was used.

9. FUTURE SCOPE:

a. We will provide a free-will donation payment gateway to the system so that he can also donate through online mode as per wish.

b. We will be adding more blood banks to the website so that it will give more reach to the users to search for blood.

c. We will also add an image gallery and give access to the user to upload images taken while blood donation.

d. We will add a section for personal blogs where users can write blogs about blood donations.

10. References:

a. https://en.wikipedia.org/wiki/Blood_donation_in_India

b. https://www.redcrossblood.org

c. https://bloodbanktoday.com

d. https://www.mskcc.org/about/get-involved/donating-blood/general-blood-platelet-donor-guidelines

e. https://www.baeldung.com