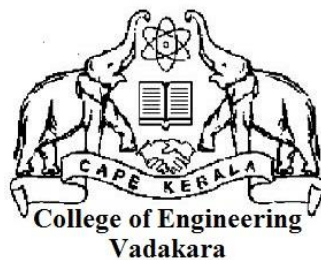


# **BLOODIFY**

## **THE ONLINE BLOOD BANK**

### **Software Requirement Specification**

#### **Version 1.1**



*Prepared By*

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## Document Control Data Sheet

<b>Project Code</b>	Bloodify
<b>Project Name</b>	Bloodify-The Online Blood Bank
<b>Document Name</b>	Software Requirement Specification
<b>Version</b>	1
<b>File Name</b>	Bloodify-Online Blood Bank _SRS.doc
<b>Classification</b>	Confidential
<b>Client</b>	College Of Engineering Vadakara

	<b>Name</b>	<b>Signature &amp; Date</b>
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<b>Approved By</b>	Sithara E P Sruthi Shibili	
<b>Distribution List</b>	All people who ready to donate blood and who required blood. And hospitals having blood banks.	

## Document change procedures and history

Version	Date	Author	Reviewer	Sign
1.0	13-09-2017	Group 11	Sithara E P	
1.1	20-11-2017	Group 11	Sithara E P	

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# **1 Introduction**

## **1.1 Purpose**

In today's world of emerging technology, computers and mobiles playing a vital role in every walk of life. The problems due to the traditional system are overcome with the help of tasks being online. This new system named "Bloodify" is a Online system for donating and requesting blood. It provides environment to maintain the blood banks of the hospitals and consumer can check the availability of blood groups in the hospital, and user information to the administrator. The groups of people that are going to use the system are administrator and consumers. Consumers are the people and the hospitals can update personal information and blood availability information. The administrator can perform the operations such as addition of new consumer, deletion of consumer, modification of consumer. Proposed system shall provide authentication to avoid unauthorized access.

The purpose of this Software Requirements Specification document is to maintain all the functions and the specifications of 'Bloodify'. Besides it contains detailed descriptions of all the requirements specified. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, and the constraints under which it must operate. This document is intended for both the consumers and the developers of the system.

## **1.2 Intended Audience**

This intended audience of this document includes people who need blood, who ready to donate blood and blood banks of every hospital.

## **1.3 Scope of Project**

The existing system is a manual system. In the existing system, people who are in need of blood are very difficult to find out donors. They want to go the hospital blood bank and buy blood on payment. Some blood groups are rarely available so the people who are in need rare blood group cannot get blood at correct time.



**Drawbacks**

- Time consuming
- Difficult to find out donors
- The techniques used are more complicated

The proposed system is very much efficient than the existing system. This is an online web application with an android app which helps a user to find out a donor in an easy way. The proposed system was developed to overcome the difficulties such as finding donor, register donor details etc. in order to help people who are in need of blood. The online blood bank site can be used effectively for getting the details of blood donors online.

**Advantages**

- Less time consuming
- Easy, efficient and simple
- Give quick and efficient services to the users
- Fast and convenient
- High speed response to the users
- Registration for every individual who are willing to donate

**1.4 Glossary**

<b>Term</b>	<b>Definition</b>
Bloodify – The Online Blood Bank	Bloodify is an Online Blood Bank system that could be used for donating, requesting and enquiring Blood.
Administrator	Administrator having the overall control of the system
Consumer	The people who need blood and ready to donate blood and the blood banks of hospitals.
User	A user of the Bloodify can be Consumer or Administrator
Database	Collection of all the information about the users and the blood banks.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.

Table 1.1 Glossary

## 1.5 References

## 1.6 Overview of Document

Overall Description section, of this document gives an overview of the functionality of the Online Blood Bank System. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the Online Blood Bank System. Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

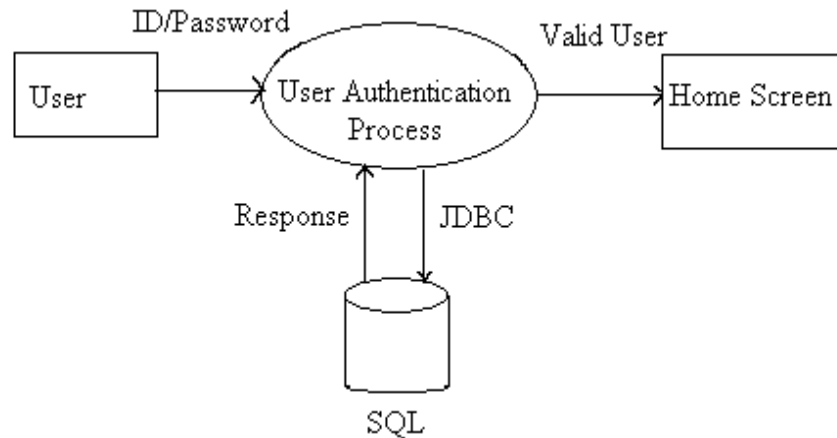
# 2 Overall Description

## 2.1 System Environment

The project Bloodify involves three users and they are Administrator, consumers and hospitals. The administrator has all the controls to the system. Only after the login process, the rest of the application is made available to the user. In order to login, user has to first register by providing desired user-ID and password. Provided user-IDs and passwords by the users are maintained in a database. SQL database is used to maintain a database. Then the user logs in to the application by giving user-ID and password provided during registration process. PHP is used to connect the application with the database.

User Login Sequence will be as follows:

- User registration by providing user-ID and password(credentials)
- User will be prompted to enter user credentials.
- If the user enters correct credentials then he gets access to the application and can view the personal details and the donation details.



**Figure 2.1: BLOODIFY System Environment**

## 2.2 Product Perspective

The project Bloodify involves three users and they are administrator, Hospital and consumers. There is only one administrator having the overall control of the system. The administrator has all the controls to the system. Each user i.e. administrator, hospitals, consumer, can login to the system by using the username and password. The administrator has the authorization to change the user details.

## 2.3 Product Functions

EBS will have three major functions as described in the subsections below.

### 2.3.1 Login

There is only one administrator having the overall control of the system. The user logs in to the application by giving user-ID and password. Based on the user, if it is a donor he can view his donations and requests and if it is an administrator he can perform consumer management.

### 2.3.2 User Management

To design front-end forms according to user specifications it was like addition of new users, deletion, modification of users, etc. This module deals with user information details.

**2.3.2.1 New User Acquisition**

The proposed software allows the end user to add the new user with his personal details

**2.3.2.2 Update User details**

If any particulars has modified with user details, this sub module is used to modify the user details by the administrator.

**2.3.2.3 Deletion of User**

If any user disconnects the connection then administrator has to delete the user related information from system. This module is used to delete the user.

**2.3.2.4 Query user**

Whenever administrator needs to see the details of any particular user then this sub module will invoke the details and will display on the screen.

**2.3.2.5 Donate Blood**

If any of the users ready to donate blood, they can use this sub module to donate blood after filling a form.

**2.3.2.6 Request Blood**

If any of the users need Blood immediately, He/She can use this sub module to post a blood request on the app/site.

**2.3.3 Hospital's Blood Bank management**

This sub module is used to maintain the details of the blood bank. This module also can update data of blood availability.

**2.3.3.1 Blood Availability**

This sub module is used to check the availability of Bloods. It will show the blood groups and the number of units available. And can update this details with the current statistics. This module also can used for checking the blood requests came from the patients. The requested amount of units can be mention in this module.

**2.3.3.2 Request Blood**

This sub module is allows the Blood Bank to request blood for stocking. It will provide the hospital blood banks to post a request on the app wall. That request includes the details of the blood group and the number of units required.

## **2.4 User Characteristics**

Users who can access the system are three

### **2.4.1 Donors**

Only after the login process, the rest of the application is made available to the user. In order to login, user has to first register by providing desired user-ID and password. Consumer can update personal information, view the bill.

### **2.4.2 Administrator**

Administrator has overall control of the system. Administrator can perform the operations such as addition of new consumer, deletion of consumer, update consumer details, query consumer, bill generation, and receipt creation.

### **2.4.2 Hospital's Blood Banks**

They can manage the blood bank details and can donate or request blood. They also can store the details of the patients who need blood.

## **2.5 Development Environment**

Development environment is as follows. Final decision on the development environment shall be taken during the design phase.

- PHP
- Database: SQL

## **2.6 Constraints**

- Regulatory Policies:** NA
- Hardware Limitations:** NA
- Interfaces to other application:** An external interface for online bill payment is provided.
- Parallel operations:** NA
- Audit Functions:** NA
- Control Functions:** NA

- g. **Safety and Security Considerations:** The password and a valid username are the security issues. The backup process at the server side shall satisfy data protection.
- h. **Reliability Requirements:** Total number of bugs in the system shall not exceed 1% of the total line number of code, except connection reliability, which is out of range.
- i. **Criticality of the Application:** The server applications shall be available 365 days.

## 2.7 Assumptions and Dependencies

Since the BLOODIFY is only accessible through the Internet and the android app it is assumed that the end user has a connection to the Internet. It is also assumed that the user has a web browser able to display the website or a smart phone for installing the BLOODIFY app..

# 3 Requirements Specification

## 3.1 External Interface Requirements

### 3.1.1 User interfaces

The system will allow access using web browsers or the android app. Most common browsers will be supported and not supported by android version older than 4.1 Jelly Bean. The system will provide the ability for consumer and administrator to access the BLOODIFY via the Internet. There will be three different user interfaces that will accompany this website: one for the donors next for the hospitals and another for the administrator.

At first donors has to register with the BLOODIFY. The donor can login into the BLOODIFY by using the username and password provided during the registration process. After login donor can view the personal details, blood requests and donation details.

The administrator will be provided with special functionalities like

- User management

### 3.1.2 Hardware interfaces

There are no external hardware interface requirements for BLOODIFY.

### 3.1.3 Software interfaces

There are no external software interface requirements for BLOODIFY web app. But there is an android platform needed to install the BLOODIFY app.

### 3.1.4 Communications interfaces

There are no external communications interface requirements for BLOODIFY.

## 3.2 Functional Requirements

### 3.2.1 Login Management

#### 3.2.1.1 Login Information

The system shall maintain at a minimum the information in Table 3.1.

Property	Mandatory	Explanation
User Name	Yes	Username for the login process
Password	Yes	Password for the login process

**Table 3.1: User Login Information**

#### 3.2.1.2 Administrator login Operation

By giving the user name and password the admin can login into the BLOODIFY and thereby managing usres.

#### 3.2.1.3 User login Operation

By giving the user name and password the user can login into the BLOODIFY and can view his personal details, update the personal details, request blood and donate blood. Hospitals can see the availability of the blood and they also can request blood.

### 3.2.2 User Management

#### 3.2.2.1 Personal Information of donors

The system shall maintain at a minimum the information in Table 3.2.

Property	Mandatory	Explanation
Name	Yes	Name of the user
Address	Yes	Address of the user
Location	Yes	Local area of the user r
Town	Yes	Name of town of the user
Pin code	Yes	Pin code of that area
Phone	Yes	Contact number of the user
Blood Group	Yes	Blood Group of the user
Last donation	Yes	Date of last blood donation
Age	Yes	Age of the donor
Weight	Yes	Weight of the donor

**Table 3.2: Personal Information**

#### 3.2.2.2 Hospital Information

The system shall maintain at a minimum the information in Table 3.3.

Property	Mandatory	Explanation
Hospital ID	Yes	ID of the hospitals
Name	Yes	Complete name of the Hospital
Address	Yes	Full address of the hospital
Phone	Yes	Contact number of the hospital
Blood Available	Yes	Availability of blood in the blood bank
Blood required	Yes	Blood required in the blood bank
Total capacity	Yes	Total capacity of the blood bank



Patients	Yes	Details of the patients who need blood
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**Table 3.3: Hospital Information****3.2.2.3 New Consumer Acquisition Operation**

Here new user can register into the BLOODIFY with his personal details and by providing a username and password. The hospitals can request for registration and admin will provide username and password after verifying the given data.

**3.2.2.4 Modify User Operation**

Here the administrator can modify the details of a user with a particular username.

**3.2.2.5 Delete User Operation**

Here the administrator can delete a user with a particular username.

**3.2.2.6 Query User Operation**

Here the administrator can view the details of a user with a particular username.

**3.2.3 Request and Donate****3.2.3.1 Online Request generation**

Here the user can generate the online request on the BLOODIFY app or web app wall for a particular blood group with required amount of units.

**3.2.3.2 Donation operation**

The donors can donate blood by pressing donate button on the request. It will goto a form filling page. Donors must fill that form before submitting. That will send the details like Name and Phone number to the requested person.

**3.2.3.3 Request and Donation Information**

The system shall maintain at a minimum the information in Table 3.5.

Property	Mandatory	Explanation
Requester ID	Yes	Username of the requester

Requester Name	Yes	Name of the requester
Mobile No	Yes	Mobile number of the consumer
Date and Time	Yes	Date and time of request
Blood Group	Yes	Requested Blood group
Units	Yes	Number of units required
Donor ID	Yes	Username of the donor
Donor Name	Yes	Name of the donor
Mobile No	Yes	Contact Number of the Donor
Date and Time	Yes	Date and Time of the Donation
Blood Group	Yes	Blood group of the donor

**Table 3.4: Request and Donation Information**

## 4 System Features

This section gives the details of system features and functions identified as different use cases relevant for various users (or actors) of the system. The following sections group and specify the use cases.

### 4.1 Software Requirements Collected From Actors

R.No	Requirements	Requirement Type	Priority
R1	The system must allow user to post blood request on the wall of the web app and the android app	STRQ1	High
R2	The system must allow the user to donate blood	STRQ2	High
R3	User can view details of the request, donation and the complete details of the user	STRQ3	High
R4	The consumer has to register with his personal details	STRQ4	High
R5	System access is limited to user and administrator	FEAT1	High

R6	The consumer can update his personal details	STRQ5	High
R7	User may view previous requests and donations	STRQ6	High
R8	The administrator can perform operations such as addition of new consumer, deletion of consumer, update consumer details, query consumer.	STRQ7	High
R9	System shall provide authentication to avoid unauthorized access	STRQ8	High
R10	System has to be a web application or android app	FEAT2	High
R11	System should be developed using SQL as backend and PHP as front end	FEAT3	High
R12	System should run in the LAN	FEAT4	High
R13	Use CAPTCHA to reduce automated logins	FEAT5	Medium

**Table 4.1: Software Requirements**

## 4.2 List of Actors

Actor No	Actor	Description
A1	Donors	Donor can update personal details, donate blood and request blood.
A2	Hospitals	Hospitals can update blood availability details and can request blood.
A3	Administrator	Administrator can perform the operations such as deletion of consumer, update consumer details, query consumer.

**Table 4.2: Actors**

### 4.3 List of Use Cases

Use Case No	Use Cases	Description
UC1	Register	Actors: Donor, Hospital
UC2	Login	Actors: Administrator , Donor, Hopital
UC3	Update Personal details	Actors: Donor, Hospital
UC4	View Donation or request details.	Actors: Donor, Hospital
UC5	Delete user	Actors: Administrator
UC6	Update user details	Actors: Administrator
UC7	Query user	Actors: Administrator
UC8	Donate blood	Actors: Donor
UC9	Request Blood	Actors: Donors, Hospitals

**Table 4.3: Use Cases**

### 4.4 Mapping Functional Requirements to Use Cases

Functional Requirement (STRQ) No	Description	Use Case No
STRQ1	The system must allow the user to post the blood request on the wall of web app and android app	UC9
STRQ2	System must allow user to donate blood	UC8
STRQ3	User can view details of the request, donation and the complete details of the user	UC3,UC4

STRQ4	The consumer has to register with his personal details	UC1
STRQ5	The consumer can update his personal details	UC3
STRQ 6	Consumers may view previous donations and requests	UC4
STRQ 7	The data entry administrator can perform operations such as addition of new consumer, deletion of consumer, update consumer details, query consumer	UC4,UC5,UC6,U C7
STRQ8	System shall provide authentication to avoid unauthorized access	UC2

**Table 4.4: Functional Requirements to Use Cases Mapping**

## 4.5 Use Case Diagram



**Figure 4.1: BLOODIFY Use Case**

### 4.5.1 Use Case-1: Register

<b>Use Case</b>	<b>UC1. Register</b>
<b>Description</b>	Allows the user to register by entering the personal details
<b>Assumptions</b>	User has a username to use the system
<b>Actors</b>	Donors, Hospitals
<b>Entry Condition</b>	Access the home page of BLOODIFY
<b>Steps</b>	<p>For Donors</p> <ol style="list-style-type: none"> <li>1. Press 'New User Registration' button in the home page</li> <li>2. System displays the registration page</li> <li>3. Enter Name(Mandatory field)</li> <li>4. Enter Mobile No.(Mandatory field)</li> <li>5. Enter Donor's date of birth(Mandatory field)</li> <li>6. Enter Donor's weight(Mandatory field)</li> <li>7. Enter User place of residence</li> <li>8. Enter User's address(Mandatory field)</li> <li>9. Enter User's e-mail ID(Not Mandatory field)</li> <li>10. Enter Username, which the Donor wants to use in future(Mandatory field)</li> <li>11. Enter Password, which the Donor wants to use in future(Mandatory field)</li> <li>12. Press 'Register' button</li> </ol> <p>For Hospitals</p> <ol style="list-style-type: none"> <li>1. Press 'New Hospital registration' button in the home page</li> <li>2. System Displays the registration page</li> <li>3. Enter Hospital ID(Mandatory field)</li> <li>4. Enter Hospital Name(Mandatory field)</li> <li>5. Enter Phone No.(Mandatory field)</li> <li>6. Enter Hospital's address(Mandatory field)</li> </ol>

	7. Enter Password, which the hospital want to use in future(Mandatory field) 8.Press ' Register' button
<b>Variations</b>	None
<b>Exit condition</b>	If all mandatory values entered correctly ,Then Display message "Registered successfully" Else Display message "mandatory values missing"
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.5: UC1****4.5.2 Use Case-2: Login**

<b>Use Case</b>	<b>UC2. Login</b>
<b>Description</b>	Allows the user to login to the system using his user ID and password
<b>Assumptions</b>	User has to be a registered member of the system
<b>Actors</b>	Donor, Hospital, Administrator
<b>Entry Condition</b>	Access Home Page of BLOODIFY
<b>Steps</b>	1. User types in username field 2. User types in password field 3. User clicks on the 'Login' button 4. IF credentials are valid THEN show home page of User ELSE display error message
<b>Variations</b>	CAPTCHA can be Included to reduce automated login



<b>Exit condition</b>	<p>If credentials are valid, Then</p> <p style="text-align: center;">Show Home page of Consumer or administrator</p> <p>Else</p> <p style="text-align: center;">Display error message “Invalid User ID or password. Please try again”</p>
<b>Non-functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.6: UC2**

### 4.5.3 Use Case-3: Update personal details

<b>Use Case</b>	<b>UC3. Update personal details</b>
<b>Description</b>	Allows the User to edit the personal details
<b>Assumptions</b>	User has successfully logged into the system
<b>Actors</b>	Donor, Hospital
<b>Entry Condition</b>	Access the User home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the ‘Update Details’ button in the home page</li> <li>2. System displays the existing details of the User</li> <li>3. Edit required fields</li> <li>4. Click ‘submit’ button</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If User is a valid user and details updated, Then</p> <p style="text-align: center;">Display message “Personal Details updated successfully”</p> <p>Else</p> <p style="text-align: center;">Display “User does not exist” error message</p>

<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.7: UC3**

#### 4.5.4 Use Case-4: View Blood Donations, Requests Details

<b>Use Case</b>	<b>UC4. View Donation and Request details</b>
<b>Description</b>	Allows the User to view the Donations and Requests of blood
<b>Assumptions</b>	User has successfully logged into the system
<b>Actors</b>	Donor, Hospital
<b>Entry Condition</b>	Access the User home page of BLOODIFY
<b>Steps</b>	1. Click 'View DR Details' button in the home page 2. System displays all the older blood donations and blood requests.
<b>Variations</b>	None
<b>Exit condition</b>	If User is a valid user, Then  Display the bill Else  Display " User does not exist" error message
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.8: UC4**

#### 4.5.5 Use Case-5: Delete User

<b>Use Case</b>	<b>UC5. Delete User</b>
<b>Description</b>	Allows the administrator to delete a particular user
<b>Assumptions</b>	Administrator has successfully logged into the system
<b>Actors</b>	Administrator
<b>Entry Condition</b>	Access the Admin home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the 'Delete User' button in the home page</li> <li>2. System displays the Delete Consumer page</li> <li>3. Enter username to be deleted</li> <li>4. Press 'Delete' button</li> <li>5. System displays message "Are you sure to delete the user?" having two buttons 'Yes' and 'No'</li> <li>6. Click 'Yes' button to delete the User</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If username is valid ,Then</p> <p style="padding-left: 40px;">Display "successfully deleted the user" message</p> <p>Else</p> <p style="padding-left: 40px;">Display "Username does not exist or error in deletion " error message</p>
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.9: UC5**

#### 4.5.6 Use Case-6: Update User Details

<b>Use Case</b>	<b>UC6. Update user details</b>
<b>Description</b>	Allows the administrator to update the details of a particular user
<b>Assumptions</b>	Administrator has successfully logged into the system
<b>Actors</b>	Administrator
<b>Entry Condition</b>	Access the Admin home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the 'Update User' button in the home page</li> <li>2. System displays the Update User page</li> <li>3. Enter username whose details to be updated</li> <li>4. Press 'Show' button</li> <li>5. IF username valid THEN <ol style="list-style-type: none"> <li>1. System displays the existing details of the user</li> <li>2. Edit the required fields of user details click 'Update' button</li> </ol> </li> <li>ELSE Display error message</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If username is valid and details updated, Then</p> <p style="padding-left: 40px;">Display "successfully Updated the user details" message</p> <p>Else</p> <p style="padding-left: 40px;">Display "user does not exist or error in update" error Message</p>
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.10: UC6**

#### 4.5.7 Use Case-7: Query User

<b>Use Case</b>	<b>UC7. Query User</b>
<b>Description</b>	Allows the administrator to View the details of a particular user
<b>Assumptions</b>	Administrator has successfully logged into the system
<b>Actors</b>	Administrator
<b>Entry Condition</b>	Access the Admin home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the 'Query User' button on the top of the home page</li> <li>2. System displays the Query User page</li> <li>3. Enter username whose details to be viewed</li> <li>4. Press 'Show' button</li> <li>5. IF username valid THEN displays the details of the user ELSE Display error message</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If username valid , Then</p> <p style="padding-left: 40px;">Display the user details including details of previous donations and blood requests</p> <p>Else</p> <p style="padding-left: 40px;">Display "User does not exist " error message</p>
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.11: UC7**

#### 4.5.8 Use Case-8: Donate Blood

<b>Use Case</b>	<b>UC8. Donate Blood</b>
<b>Description</b>	Allow the donor to Donate Blood
<b>Assumptions</b>	Donor has successfully logged into the system
<b>Actors</b>	Donor
<b>Entry Condition</b>	Access the User home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the 'Donate Blood' button in the home page</li> <li>2. System displays the Blood Donation page</li> <li>3. Displays all the hospitals who need blood</li> <li>4. Press 'Donate' button on any of the hospital</li> <li>5. System displays a form. That must filled before donating blood.</li> <li>6. Press "Submit" button after filling the form</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If form filled without any error, Then</p> <p style="padding-left: 40px;">Display "Donation request sent successfully" message</p> <p>Else</p> <p style="padding-left: 40px;">Display "Can't donate right now "error message</p>
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.12: UC8**

#### 4.5.9 Use Case-9: Request Blood

<b>Use Case</b>	<b>UC9. Receipt Creation</b>
<b>Description</b>	Allows the user to post a request on blood on the wall of the BLOODIFY
<b>Assumptions</b>	User has successfully logged into the system
<b>Actors</b>	Donor, Hospital
<b>Entry Condition</b>	Access the User home page of BLOODIFY
<b>Steps</b>	<ol style="list-style-type: none"> <li>1. Click the 'Request Blood' button in the home page</li> <li>2. System displays Request Blood page</li> <li>3. Enter Blood group, required units, contact number, Name and address of the requester.</li> <li>4. Press 'Submit' button</li> <li>5. IF Form filled correctly  Display the message " Request posted successfully"  ELSE Display error message</li> </ol>
<b>Variations</b>	None
<b>Exit condition</b>	<p>If form filled correctly, Then</p> <p>Display "Request posted successfully" message</p> <p>Else</p> <p>Display "Form not filled correctly please try again" error message</p>
<b>Non Functional</b>	The error message should be colored in red
<b>Issues</b>	Usage should be only within the LAN and browser should be compatible

**Table 4.13: UC9**

## 5 Other Nonfunctional Requirements

In software engineering non-functional requirements are requirements which specify criteria that can be used to judge the operation of a system, rather than specific behaviors. This should be contrasted with functional requirements that specify specific behavior or functions. Non-functional requirements are often called qualities of a system. Other terms for non-functional requirements are "constraints", "quality attributes", "quality goals" and "quality of service requirements". Qualities, of Non-functional requirements can be divided into two main categories. Execution qualities, such as security and usability, are observable at run time. Evolution qualities, such as extensibility and scalability, embody in the static structure of the software system.

### 5.1 Performance Requirements

The server on which this system will be running is expected to be available at all hours of the day to provide full time accessibility. The system is developed based on the client server architecture, a request-response paradigm and is implemented with the help of a PHP and it uses SQL server as back end.

Major performance requirements are:

- All web pages should be loaded within 10 seconds
- The system should provide proper authentication

### 5.2 Security Requirements

The access to the software application will be restricted to the authorized users identified by a valid username and password. New user can register or signup to the system with personal details. The users will be categorized into three roles administrator, donors and hospitals. The modules and functions accessible or available to the users will vary based on their roles. The users will be able to login to the application using the

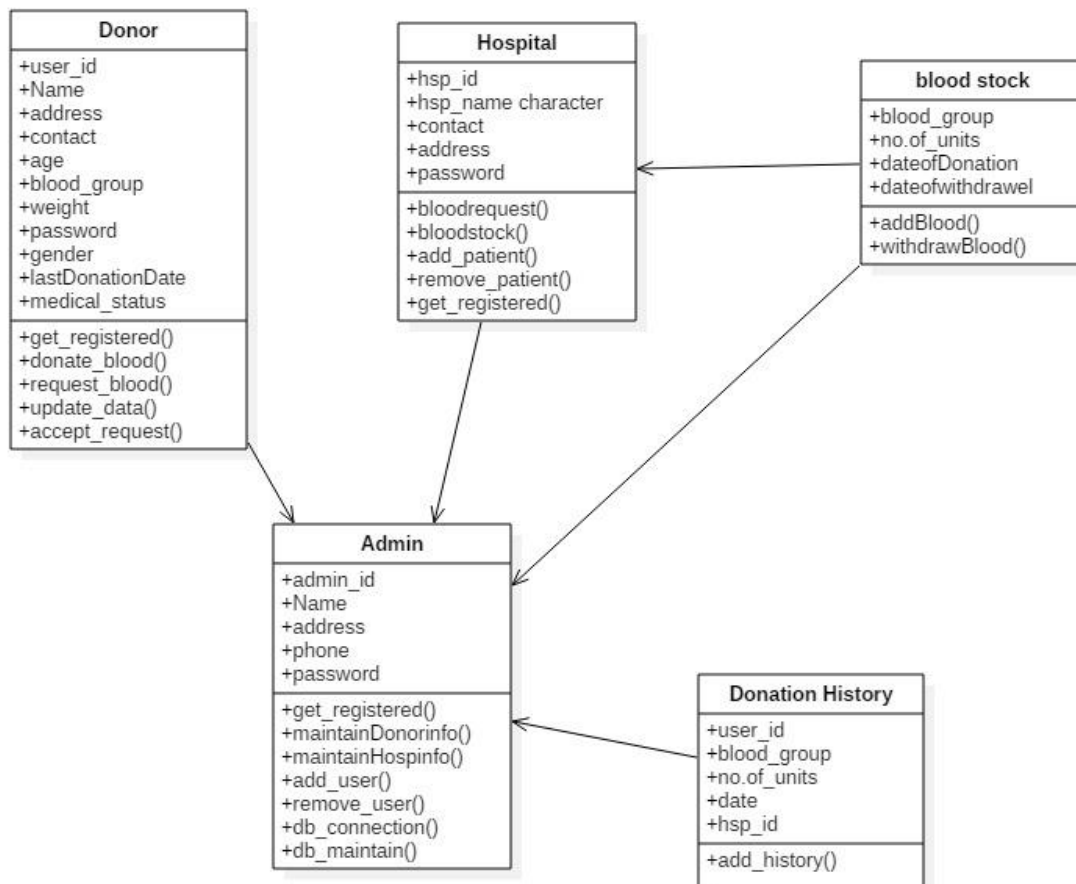


username and password and access the modules or functions based on their role. CAPTCHA will be included to reduce automated login. Error messages will be displayed in the case of errors during the system access.

## 6.0 Uml Diagrams

### 6.1 Class diagram

Class diagrams are used to describe the structure of a system. Class diagrams describe the system in terms of objects, classes, attributes, operations and their associations. Objects are instances of the classes. In UML classes are depicted by boxes composed of three compartments. The top compartment displays the name of the class. The center compartment displays its attributes, and the bottom compartment displays operations. A link represents the connection between the classes.



**Figure 6.1: Bloodify Class Diagram**

## 6.2 Sequence Diagram

Sequence diagram is an Interaction Diagram that describes the patterns of communication among a set of interacting objects. An object interacts with another object by sending messages. The reception of message by an object triggers the execution of a method, which in turn may send messages to other objects. Arguments may be passed along with a message and are bound to parameters of the executing method in the receiving object. Sequence Diagrams represent the objects participating in the interaction horizontally and time vertically.

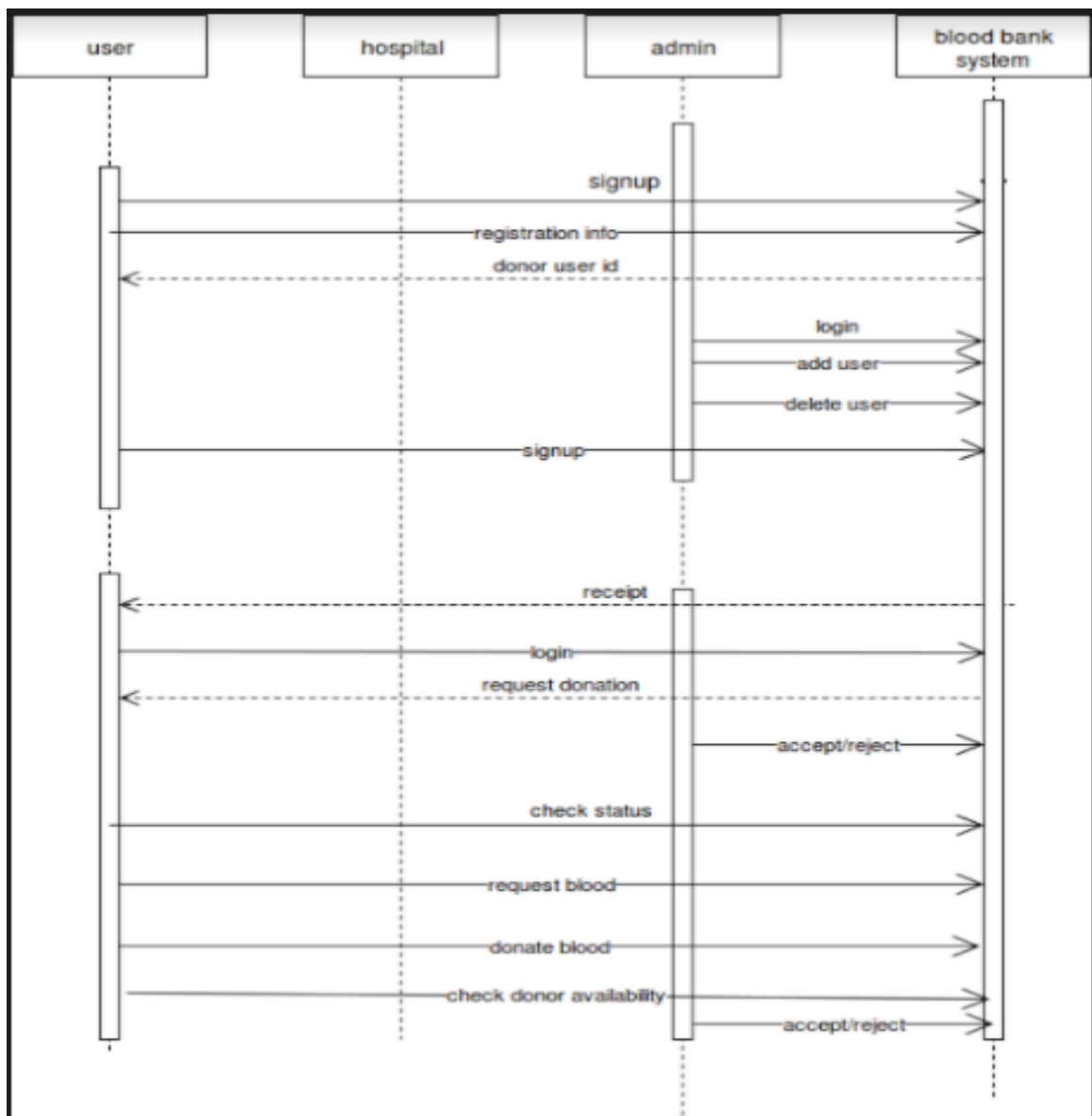
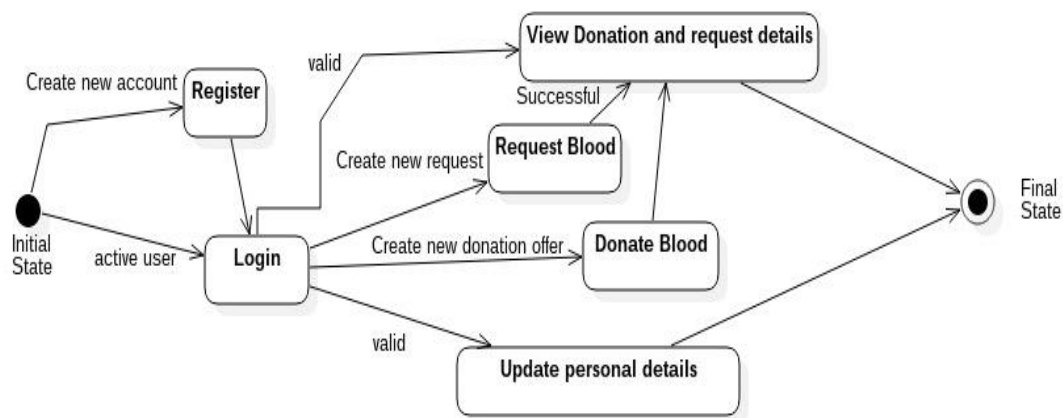


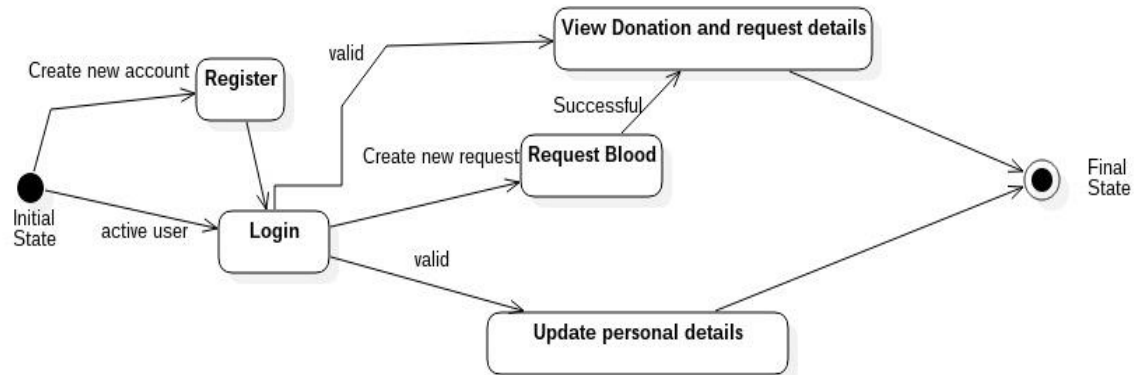
Figure 6.2 Sequence Diagram

### 6.3 State Chart Diagrams

State chart diagrams describe the dynamic behavior of an individual object as a number of states and transition between these states. A state represents particular set of values for an object. Given a state, a transition represents a future state the object can move to and the conditions associated with the change of state. A state is represented by a rounded rectangle. A transition is depicted by open arrows connecting two states. States are labeled with their name. A small solid black circle indicates the initial state. A circle surrounding a small solid black circle indicates a final state.

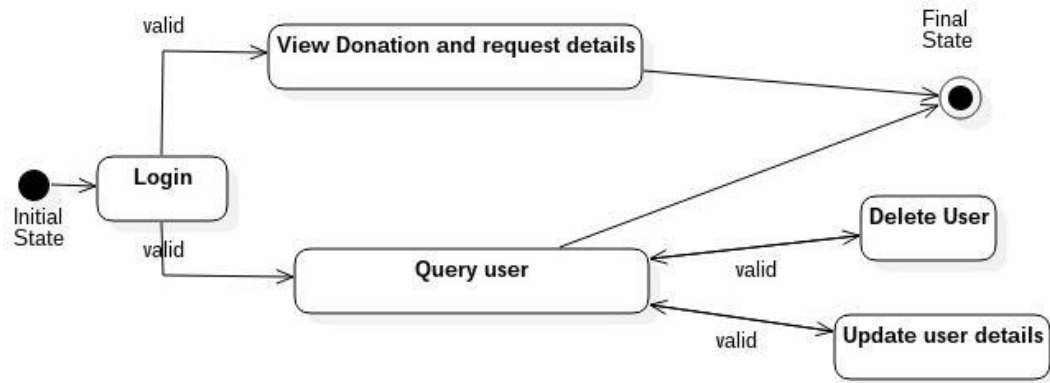


Donor State Chart



Hospital State Chart

state



Administrator State Chart

**Figure 6.2 State chart Diagram**

## 6.4 Deployment Diagram

A deployment diagram shows on which hardware component each software component is installed (or deployed). It also shows the communication links among the hardware components. A deployment diagram models the physical deployment of artifacts on nodes. The nodes appear as boxes, and the artifacts allocated to each node appear as rectangles within the boxes. A single node in a deployment diagram may conceptually represent multiple physical nodes, such as a cluster of database servers. There are two types of nodes: Device Node and Execution Environment Node. Devices nodes are physically computing resources with processing memory and services to execute software, such as typical computer or mobile phones. Execution Environment Node is a software computing resource that runs within an outer node and which itself provides a service to host and execute other executable software elements.

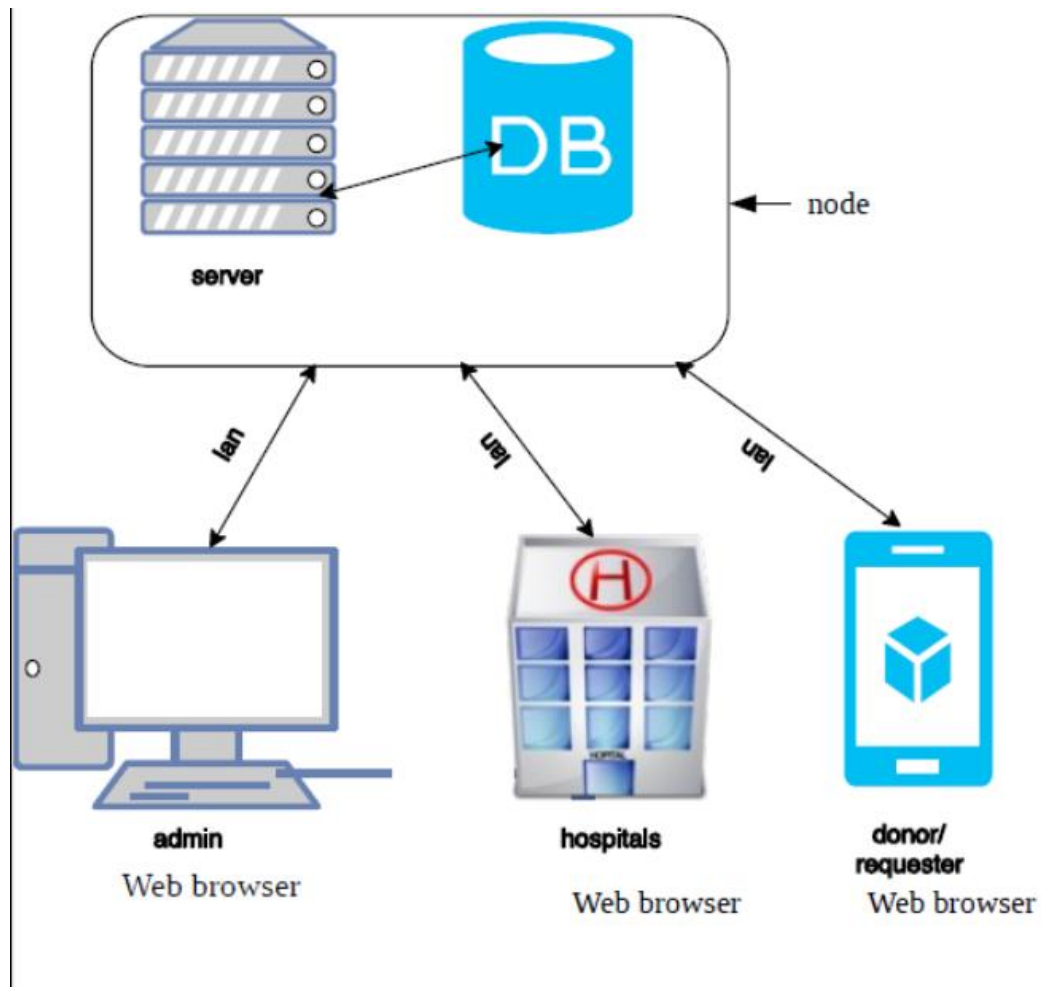


Figure 6.3 Deployment Diagram

## 7.0 Screens

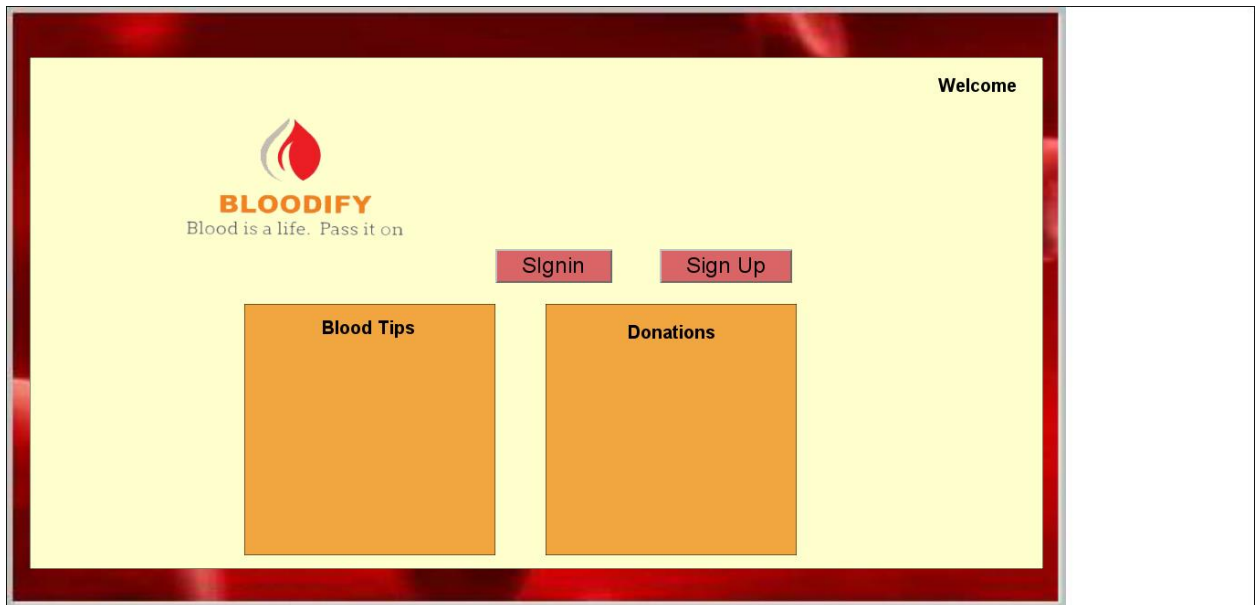


Figure 7.1 Home page

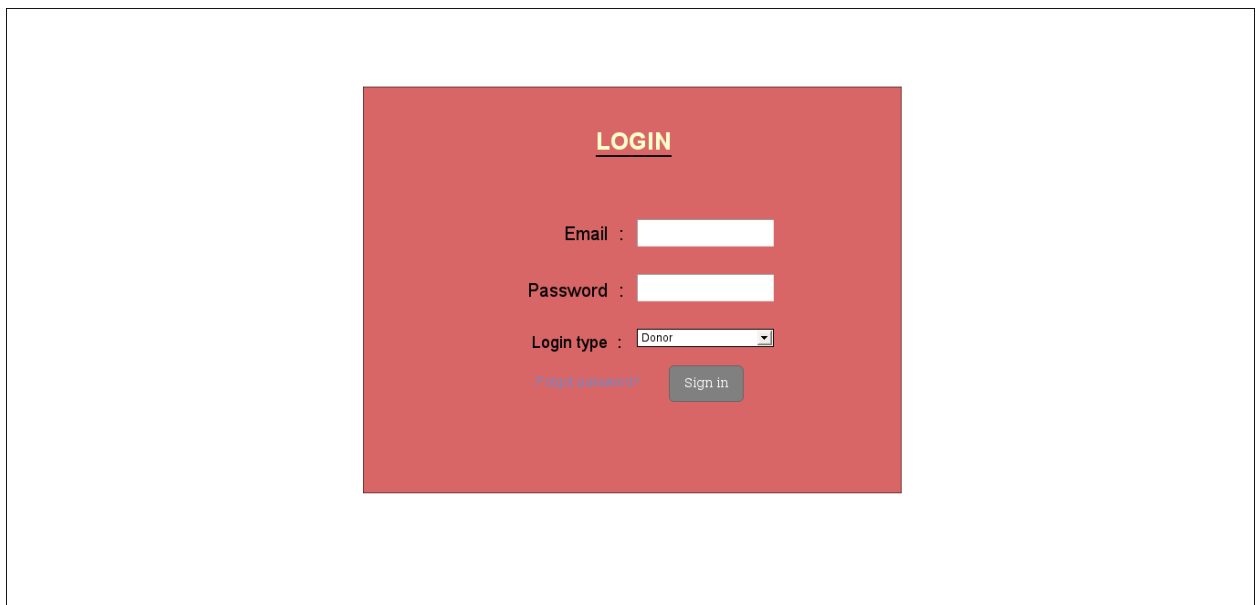


Figure 7.2 Login



Figure 7.3 Admin Home page



Figure 7.4 User list





Figure 7.5 Hospital list

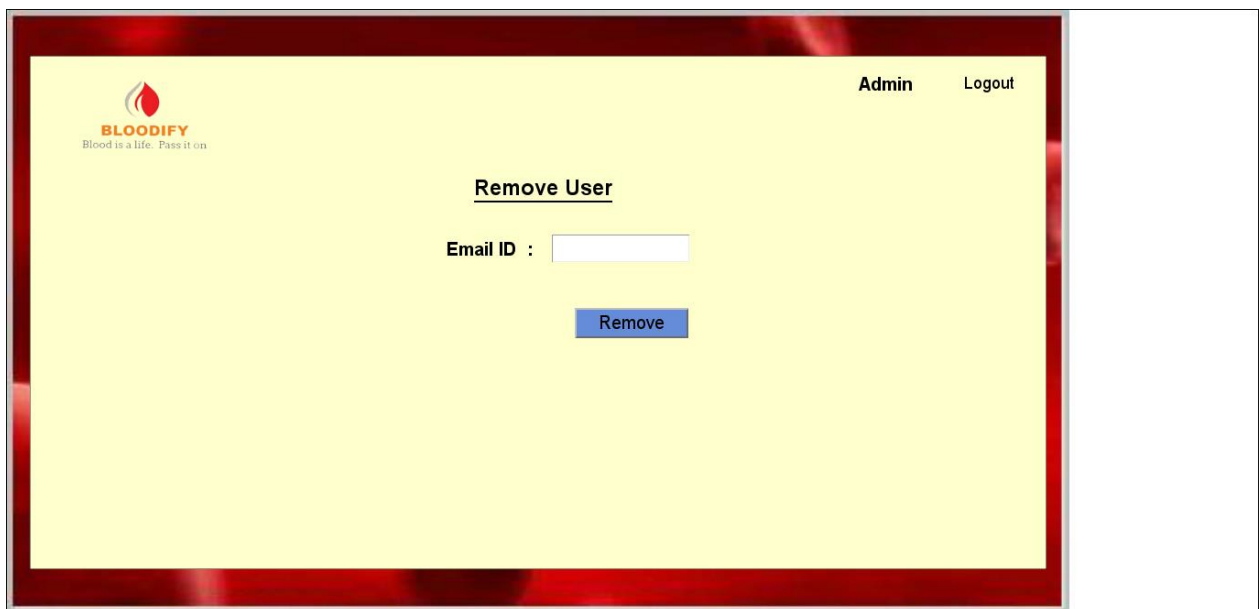
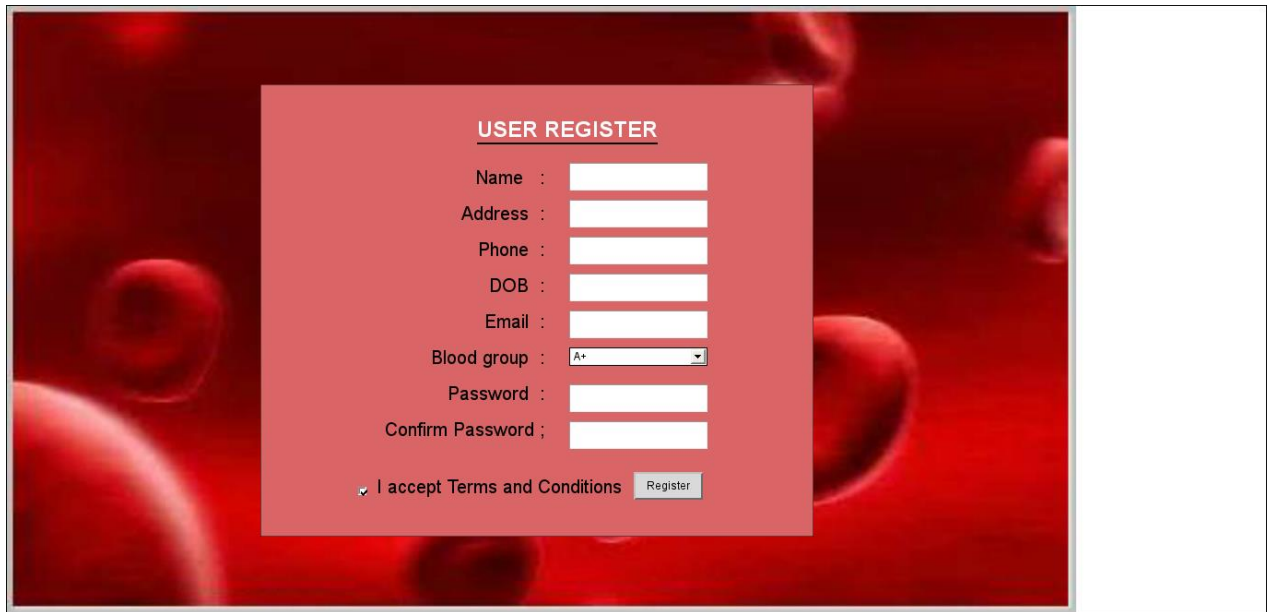


Figure 7.6 Remove User



The image shows a 'USER REGISTER' form with a red background featuring a blood cell pattern. The form is a light red rectangle with the following fields: Name, Address, Phone, DOB, Email, Blood group (a dropdown menu showing 'A+'), Password, and Confirm Password. At the bottom, there is a checkbox for 'I accept Terms and Conditions' and a 'Register' button.

**USER REGISTER**

Name :

Address :

Phone :

DOB :

Email :

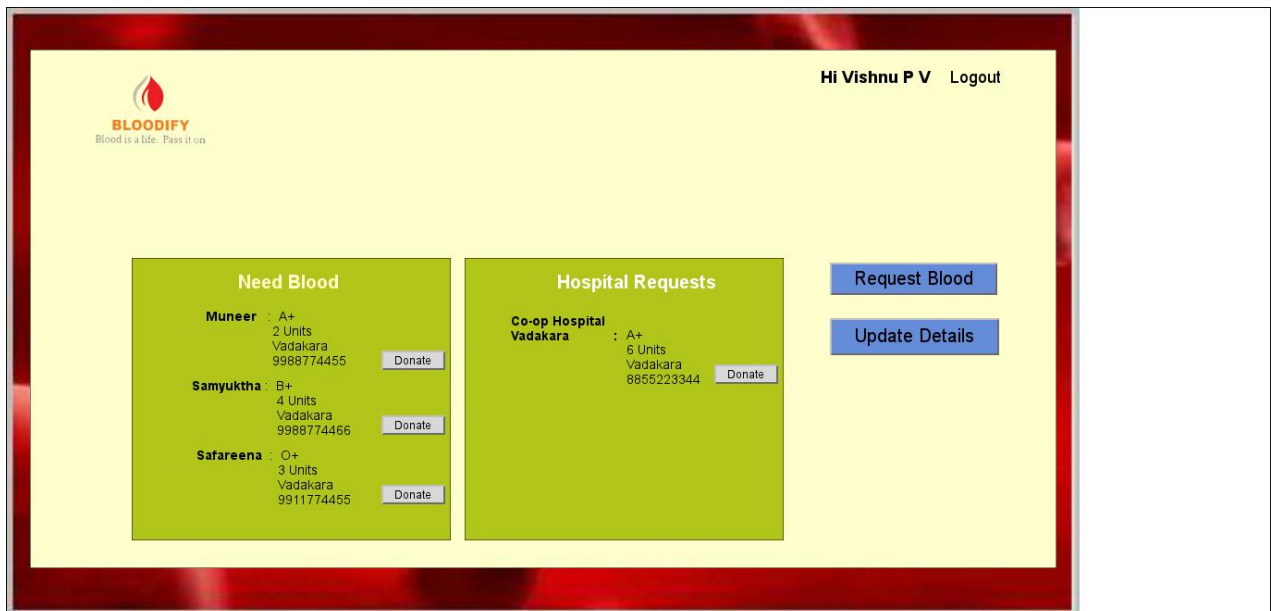
Blood group :

Password :

Confirm Password :

☒ I accept Terms and Conditions

Figure 7.7 User Registration



The image shows a 'User Home' page with a yellow background and a red border. At the top left is the 'BLOODIFY' logo with the tagline 'Blood is a life. Pass it on'. At the top right, it says 'Hi Vishnu P V' and 'Logout'. The main content area has two green boxes: 'Need Blood' and 'Hospital Requests'. The 'Need Blood' box lists three donors: Muneer (A+, 2 Units, Vadakara, 9988774455), Samyuktha (B+, 4 Units, Vadakara, 9988774466), and Safareena (O+, 3 Units, Vadakara, 9911774455), each with a 'Donate' button. The 'Hospital Requests' box lists one request: Co-op Hospital Vadakara (A+, 6 Units, Vadakara, 8855223344) with a 'Donate' button. To the right of these boxes are two blue buttons: 'Request Blood' and 'Update Details'.

**BLOODIFY**  
Blood is a life. Pass it on

Hi Vishnu P V Logout

**Need Blood**

Muneer : A+  
2 Units  
Vadakara  
9988774455

Samyuktha : B+  
4 Units  
Vadakara  
9988774466

Safareena : O+  
3 Units  
Vadakara  
9911774455

**Hospital Requests**

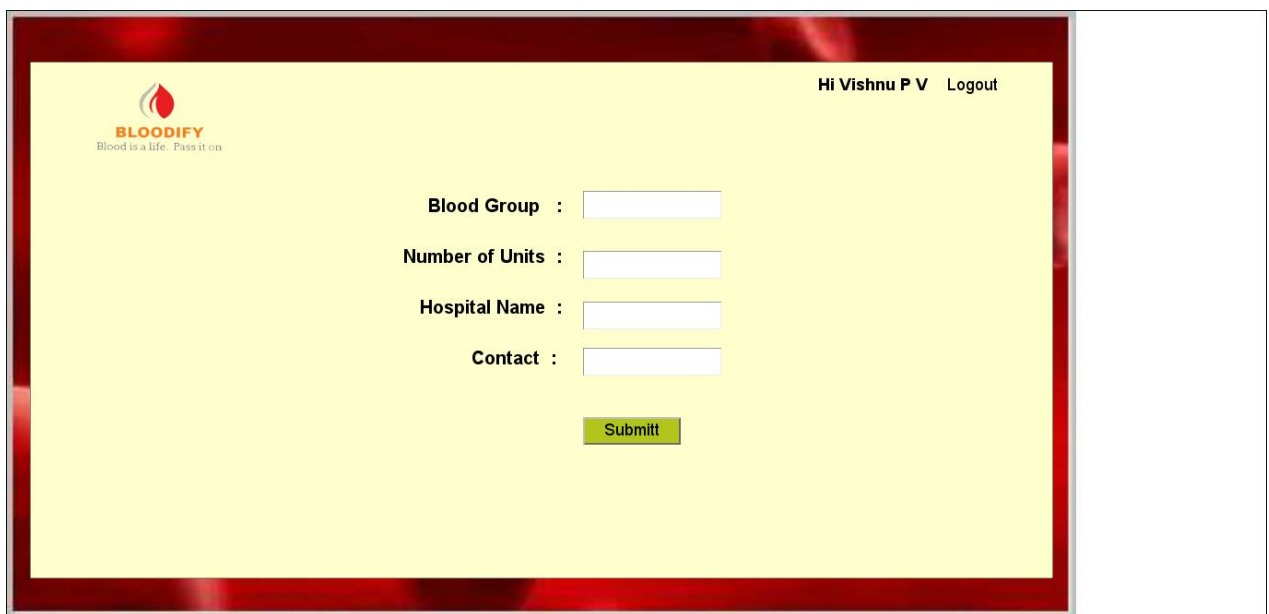
Co-op Hospital  
Vadakara : A+  
6 Units  
Vadakara  
8855223344

Figure 7.8 User Home



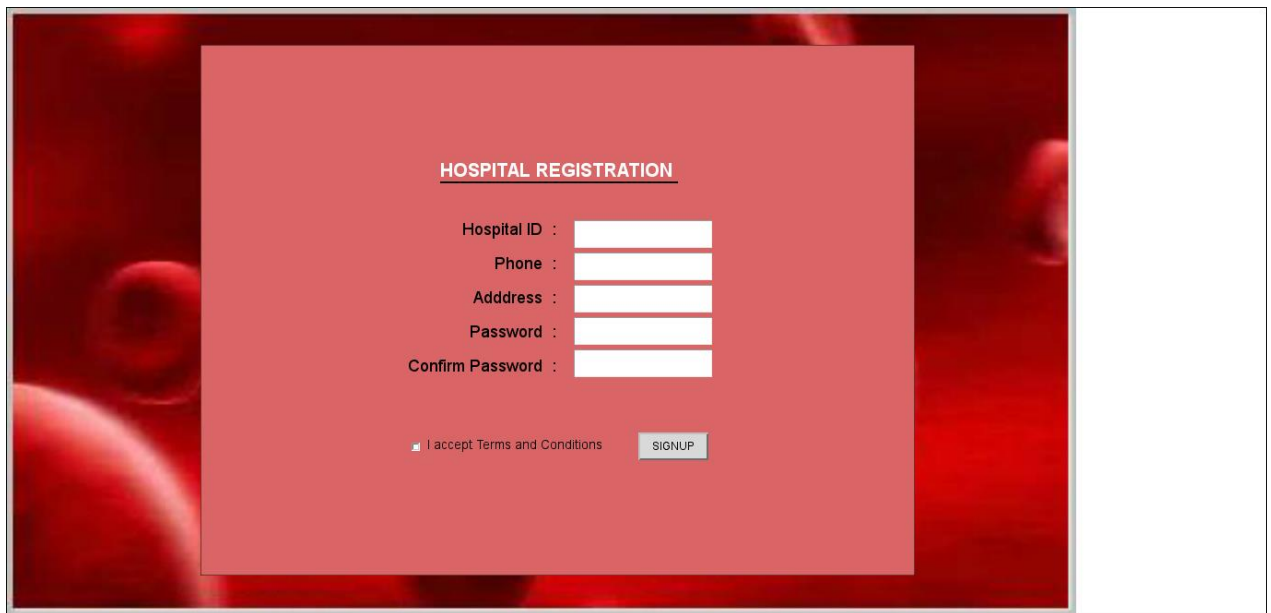
The screenshot shows a web application interface for 'Bloodify'. The header includes the logo and tagline 'BLOODIFY Blood is a life. Pass it on.' on the left, and the user name 'Hi Vishnu P V' with a 'Logout' link on the right. The main content area is titled 'Update details' and contains four input fields: 'Address', 'Phone', 'DOB', and 'Email'. Below these fields is an 'Update' button.

Figure 7.9 Update details



The screenshot shows a web application interface for 'Bloodify'. The header includes the logo and tagline 'BLOODIFY Blood is a life. Pass it on.' on the left, and the user name 'Hi Vishnu P V' with a 'Logout' link on the right. The main content area contains four input fields: 'Blood Group', 'Number of Units', 'Hospital Name', and 'Contact'. Below these fields is a 'Submitt' button.

Figure 7.10 Request Blood



The image shows a web form titled "HOSPITAL REGISTRATION" on a red background with a blood cell pattern. The form is a light red rectangle containing several input fields and a button. The fields are labeled "Hospital ID", "Phone", "Address", "Password", and "Confirm Password". Below the fields is a checkbox labeled "I accept Terms and Conditions" and a "SIGNUP" button.

**HOSPITAL REGISTRATION**

Hospital ID :

Phone :

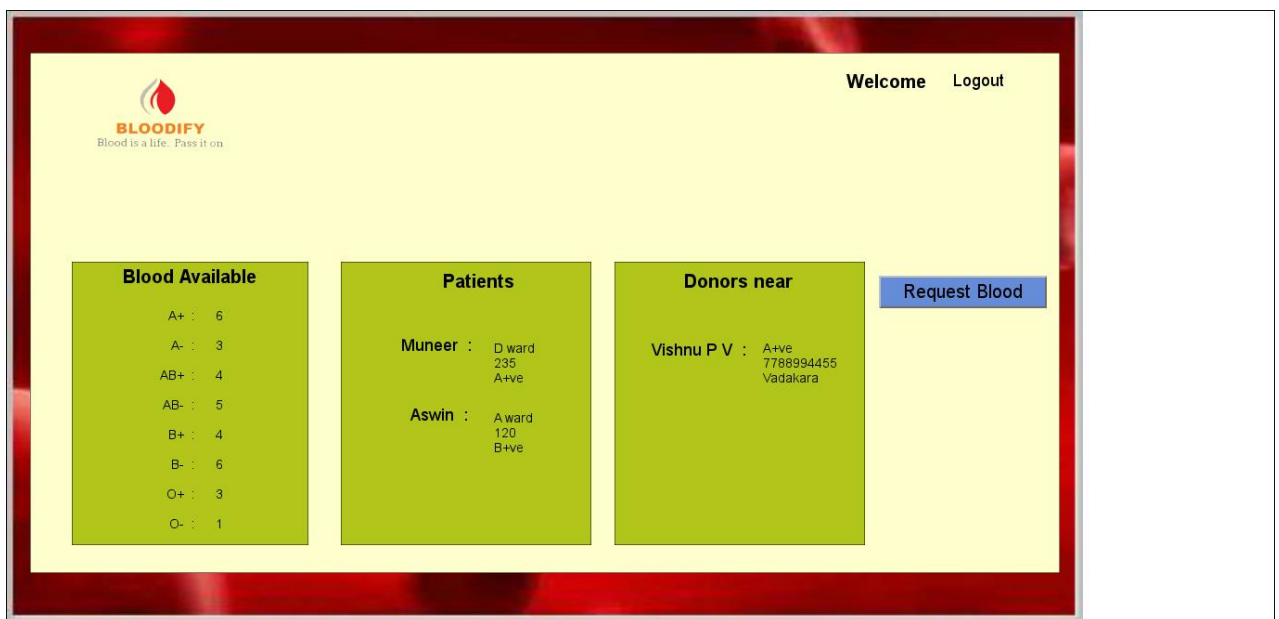
Address :

Password :

Confirm Password :

☐ I accept Terms and Conditions

Figure 7.11 Hospital Registration



The image shows a web dashboard titled "Hospital's Home" with a yellow background and a red border. The dashboard features a logo for "BLOODIFY" with the tagline "Blood is a life. Pass it on." in the top left. In the top right, there are links for "Welcome" and "Logout". The main content area is divided into three green boxes: "Blood Available", "Patients", and "Donors near". To the right of these boxes is a blue "Request Blood" button. The "Blood Available" box lists blood types and their counts. The "Patients" box lists two patients, Muneer and Aswin, with their ward numbers and blood types. The "Donors near" box lists a donor, Vishnu P V, with their blood type, phone number, and location.

**BLOODIFY**  
Blood is a life. Pass it on.

Welcome Logout

**Blood Available**

A+	6
A-	3
AB+	4
AB-	5
B+	4
B-	6
O+	3
O-	1

**Patients**

Muneer : D ward  
235  
A+ve

Aswin : A ward  
120  
B+ve

**Donors near**

Vishnu P V : A+ve  
7788994455  
Vadakara

Figure 7.12 Hospital's Home