



Darshan University

A Project Report on

“Blood Bank Management System”

Under the subject

Software Engineering (2101CS503)

B. Tech, Semester – V

Computer Science & Engineering Department

Submitted By

Student Name: Kishan Dabhi

Enrollment No.: 22010101033

Academic Year

(2024-2025)

Internal Guide

Prof. Rajkumar Gondaliya

Darshan University

Dean-DIET

Dr. Gopi Sanghani

Darshan University



**Computer Science & Engineering
Department
Darshan University**

DECLARATION

We hereby declare that the SRS, submitted along with the **Software Engineering (2101CS503)** for entitled “**Blood Bank Management System**” submitted in partial fulfilment for the Semester-5 of **Bachelor Technology (B. Tech)** in **Computer Science and Engineering (CSE)** Department to Darshan University, Rajkot, is a record of the work carried out at **Darshan University, Rajkot** under the supervision of **Prof. Rajkumar Gondaliya** and that no part of any of report has been directly copied from any students’ reports, without providing due reference.

Kishan Dabhi

Student’s Signature

Date: _____



**Computer Science & Engineering
Department
Darshan University**

CERTIFICATE

This is to certify that the SRS on “**Blood Bank Management System**”
has been satisfactorily prepared by **Kishan Dabhi (22010101033)** under my
guidance in the fulfillment of the course **Software Engineering (2101CS503)**
work during the academic year 2024-2025.

Internal Guide
Prof. Rajkumar Gondaliya
Darshan University

Dean-DIET
Dr. Gopi Sanghani
Darshan University

ACKNOWLEDGEMENT

I wish to express my sincere gratitude to my project guide Prof. **Rajkumar Gondaliya** and all the faculty members for helping me through my project by giving me the necessary suggestions and advices along with their valuable co-ordination in completing this work.

I also thank my parents, friends and all the members of the family for their precious support and encouragement which they had provided in completion of my work. In addition to that, I would also like to mention the Darshan University personals who gave me the permission to use and experience the valuable resources required for the project from the University premises.

Thus, in conclusion to the above said, I once again thank the faculties and members of **Darshan University** for their valuable support in completion of the project.

Thanking You

Kishan Dabhi

ABSTRACT

The Blood Bank Management System (BBMS) is a comprehensive web-based solution designed to automate and streamline the operations of blood banks. The system caters to various user roles including administrators, blood bank staff, donors, recipients, and doctors, ensuring efficient management and coordination. Key functionalities include user registration and management, blood donation scheduling, blood collection and inventory management, and blood request and distribution processes. BBMS enhances operational efficiency by maintaining accurate and up-to-date records of blood stocks, managing donor appointments, and ensuring timely distribution of blood to recipients. It also provides robust reporting and analytics capabilities to assist administrators in monitoring and decision-making. The system is designed with a focus on security, scalability, and usability, incorporating strong authentication measures, data encryption, and a user-friendly interface accessible across multiple devices. By leveraging modern web technologies and adhering to industry standards, BBMS aims to improve the reliability and effectiveness of blood bank operations, ultimately supporting better healthcare outcomes.

Table of Contents

List of Figures.....	I
List of Tables.....	II
1 Introduction.....	1
1.1 Product perspective	1
1.2 Product features.....	1
1.2.1 There are five different users who will be using this product:	1
1.2.2 The features that are required for the Admin are:	1
1.2.3 The features that are required for the Blood Bank Staff are:	1
1.2.4 The features that are required for the Donors are:	1
1.2.5 The features that are required for the Recipients are:	1
1.2.6 The features that are required for the Doctors are:	2
1.3 Functional Requirement.....	2
1.3.1 Admin	2
1.3.2 Blood Bank Staff	2
1.3.4 Donors	3
1.3.5 Recipients	3
1.3.6 Doctors	4
1.4 Non-Functional Requirement.....	4
1.4.1 Usability:.....	4
1.4.2 Accuracy:	4
1.4.3 Availability:	4
1.4.4 Maintainability:	4
1.4.5 Performance:.....	4
1.4.6 Reliability:	5
1.4.7 Security:.....	5
1.4.8 Scalability:.....	5
1.4.9 Portability:	5
1.4.10 Disaster Recovery:	5
2 Design and Implementation Constraints.....	6
2.1 Use case diagram.....	6
2.2 Activity diagram and Swimlane diagram.....	8
2.3 Sequence diagram	11
2.4 State diagram	12
2.5 Class diagram.....	13
2.6 Data flow diagram	14
2.6.1 Context diagram (level-0).....	14
2.6.2 DFD Level-1.....	15

3	External interface requirement (Screens)	16
3.1	Screen-1: Blood Stock Availability	16
3.2	Screen-2: Blood Storage Unit(BSU)	17
3.3	Screen-3: Thalassemia Request.....	18
3.4	Screen-4: Eligibility Requirements	20
3.5	Screen-5: Schedule an Appointment.....	21
4	Database design	22
4.1	List of Tables.....	22
5	Stories and Scenario	24
5.1	Story-1: Request Blood by Recipient.....	24
5.1.1	Scenario# S1.1	24
5.1.2	Scenario# S1.2	24
5.1.3	Scenario# S1.3	25
5.1.4	Scenario# S1.4	25
5.1.5	Scenario# S1.5	25
6	Test cases	26
7	References.....	30

List of Figures

Figure 2.1-1 Use case diagram for Blood bank management system	7
Figure 2.2-1 Activity diagram for Blood Request by Recipient.....	8
Figure 2.2-2 Activity diagram for Blood Collection Process	9
Figure 2.2-3 Swimlane diagram for Blood Request by Recipient	10
Figure 2.3-1 Sequence diagram for Blood request by Recipient.....	11
Figure 2.4-1 State diagram of Blood.....	12
Figure 2.5-1 Class diagram for Library management system	13
Figure 2.6-1 Context diagram for Blood bank management system	14
Figure 2.6-2 DFD level-1 for Blood bank management system.....	15
Figure 3.1-1 Screen-1: Blood Stock Availability	16
Figure 3.2-1 Screen-2: Blood Storage Unit (BSU)	17
Figure 3.3-1 Screen-3: Thalassemia Request	18
Figure 3.4-1 Screen-4: Eligibility Requirements	20
Figure 3.5-1 Screen-5: Schedule an appointment.....	21

List of Tables

Table 3.1-1 Screen element of Blood stock availability	16
Table 3.2-1 Screen element of Blood Storage Unit (BSU)	17
Table 3.3-1 Screen element of Thalassemia Request	18
Table 3.4-1 Screen element of Eligibility Requirements	20
Table 3.5-1 Screen element of Schedule an appointment	21
Table 4.1-1 Table: Blood.....	22
Table 4.1-2 Table: Recipient	22
Table 4.1-3 Table: Staff.....	23
Table 4.1-4 Table: Donor	23

1 Introduction

1.1 Product perspective

The primary purpose of BBMS is to provide an integrated platform that facilitates the coordination between blood donors, recipients, blood bank staff, and healthcare providers. By automating tasks such as donor registration, blood collection, inventory supervision, and distribution, the system minimizes manual errors, reduces administrative workload, and ensures that blood is available when and where it is needed. BBMS also aims to enhance transparency and traceability, allowing stakeholders to monitor and administer blood stocks effectively.

1.2 Product features

1.2.1 There are five different users who will be using this product:

- **Admin:** Oversees the overall system.
- **Blood Bank Staff:** Handles daily operations like blood collection, storage, and distribution.
- **Donors:** Individuals who donate blood.
- **Recipients:** Patients or hospitals in need of blood.
- **Doctors:** Medical professionals who request blood for patients.

1.2.2 The features that are required for the **Admin** are:

- Oversee user accounts, including creating, updating, and deleting user profiles.
- Assign and modify user roles and permissions.
- Monitor blood inventory levels and track blood expiry dates.
- Generate and view various analytical reports (donor statistics, blood usage, etc.).
- Oversee system performance and user activity.
- Ensure system security and data protection compliance.

1.2.3 The features that are required for the **Blood Bank Staff** are:

- Register new donors and update donor information.
- Schedule and coordinate blood donation appointments.
- Record details of blood collection, including donor ID, blood type, and collection date.
- Supervise and track blood inventory, including storage conditions and expiry dates.
- Process and log blood requests from recipients and doctors.
- Ensure proper handling and distribution of blood to requesting parties.

1.2.4 The features that are required for the **Donors** are:

- Register and create a personal profile.
- Schedule and coordinate donation appointments.
- Receive notifications and reminders for upcoming donation appointments.
- View donation history and eligibility for the next donation.
- Access information on the blood donation process and guidelines.

1.2.5 The features that are required for the **Recipients** are:

- Register and create a personal profile.
- Submit blood requests specifying blood type and quantity.
- Track the status of their blood requests.

- Receive notifications on request updates and fulfillment.
- Access information on blood availability and request guidelines.

1.2.6 The features that are required for the **Doctors** are:

- Register and create a professional profile.
- Submit blood requests for patients specifying blood type and quantity.
- Track the status of their blood requests.
- Receive notifications on request updates and fulfillment.
- Access information on blood availability and request guidelines.

1.3 Functional Requirement

1.3.1 Admin

- **User supervision:**
 - Add, update, and delete users (staff, donors, recipients).
- **Oversee blood inventory:**
 - Monitor blood stock levels and expiry dates.
- **Generate reports:**
 - Create donor statistics, blood stock reports, and distribution summaries.
- **System configuration:**
 - Customize system settings and preferences.
- **Role supervision:**
 - Define and modify roles and permissions.
- **Audit logs:**
 - Maintain and review logs of system activities.
- **Notification oversight:**
 - Configure and oversee system notifications.
- **Data backup:**
 - Schedule and handle regular data backups.
- **Compliance oversight:**
 - Ensure system compliance with health regulations.
- **Feedback collection:**
 - Collect and analyze user feedback.

1.3.2 Blood Bank Staff

- **Donor supervision:**
 - Register donors and update donor information.
- **Appointment scheduling:**
 - Schedule and coordinate donor appointments.
- **Blood collection:**
 - Record details of collected blood (donor ID, blood type, collection date).
- **Inventory tracking:**
 - Track blood storage, expiry dates, and availability.
- **Blood distribution:**
 - Handle requests from recipients, process and log distributions.
- **Donor eligibility check:**
 - Verify donor eligibility based on health criteria.

- **Blood testing:**
 - Record results of blood tests (e.g., blood type, infectious diseases).
- **Labeling:**
 - Label collected blood units for identification.
- **Storage oversight:**
 - Monitor and oversee blood storage conditions.
- **Donor reminders:**
 - Send reminders to donors for upcoming appointments.

1.3.4 Donors

- **Registration:**
 - Sign up and create profiles.
- **Profile updates:**
 - Update personal and contact information.
- **Appointment scheduling:**
 - Schedule and coordinate donation appointments.
- **Donation history:**
 - View past donations and eligibility for next donation.
- **Notification preferences:**
 - Set preferences for receiving notifications.
- **Health questionnaire:**
 - Complete and submit health questionnaires online.
- **Feedback submission:**
 - Provide feedback on donation experiences.
- **Donation guidelines:**
 - Access guidelines and tips for blood donation.
- **Eligibility checker:**
 - Check eligibility status based on donation history and health criteria.
- **Cancel appointments:**
 - Cancel or reschedule appointments as needed.

1.3.5 Recipients

- **Request blood:**
 - Submit requests for specific blood types.
- **Track request status:**
 - Monitor the status of their blood requests.
- **Recipient registration:**
 - Register and create profiles.
- **Profile updates:**
 - Update recipient information.
- **Request history:**
 - View past blood requests and statuses.
- **Urgency level:**
 - Indicate the urgency level of blood requests.
- **Notification preferences:**
 - Set preferences for request status notifications.
- **Feedback submission:**
 - Provide feedback on blood request fulfillment.

- **Hospital information:**
 - Link recipient profiles to hospital information.
- **Request modification:**
 - Modify pending blood requests if necessary.

1.3.6 Doctors

- **Submit requests:**
 - Request blood for their patients.
- **Track requests:**
 - Monitor the status of their requests.
- **Doctor registration:**
 - Register and create profiles.
- **Patient linkage:**
 - Link requests to specific patient profiles.
- **Request history:**
 - View history of blood requests made for patients.
- **Urgency indication:**
 - Indicate the urgency of blood requests.
- **Notification preferences:**
 - Set preferences for request status updates.
- **Feedback submission:**
 - Provide feedback on the blood request process.
- **Medical notes:**
 - Attach medical notes or instructions with blood requests.
- **Modify requests:**
 - Update or cancel blood requests as needed.

1.4 Non-Functional Requirement

1.4.1 Usability:

- The UI should be simple enough for everyone to understand and get the relevant information without any special training. Different languages can be provided based on the requirements.

1.4.2 Accuracy:

- The data stored about the books and the fines calculated should be correct, consistent, and reliable.

1.4.3 Availability:

- The System should be available for the duration when the library operates and must be recovered within an hour or less if it fails. The system should respond to the requests within two seconds or less.

1.4.4 Maintainability:

- The software should be easily maintainable and adding new features and making changes to the software must be as simple as possible. In addition to this, the software must also be portable.

1.4.5 Performance:

- The system should handle multiple requests simultaneously without significant delay.

1.4.6 Reliability:

- Ensure data consistency and regular backups.

1.4.7 Security:

- Implement strong authentication and authorization mechanisms to protect sensitive data.

1.4.8 Scalability:

- The system should be scalable to handle increasing amounts of data and users.

1.4.9 Portability:

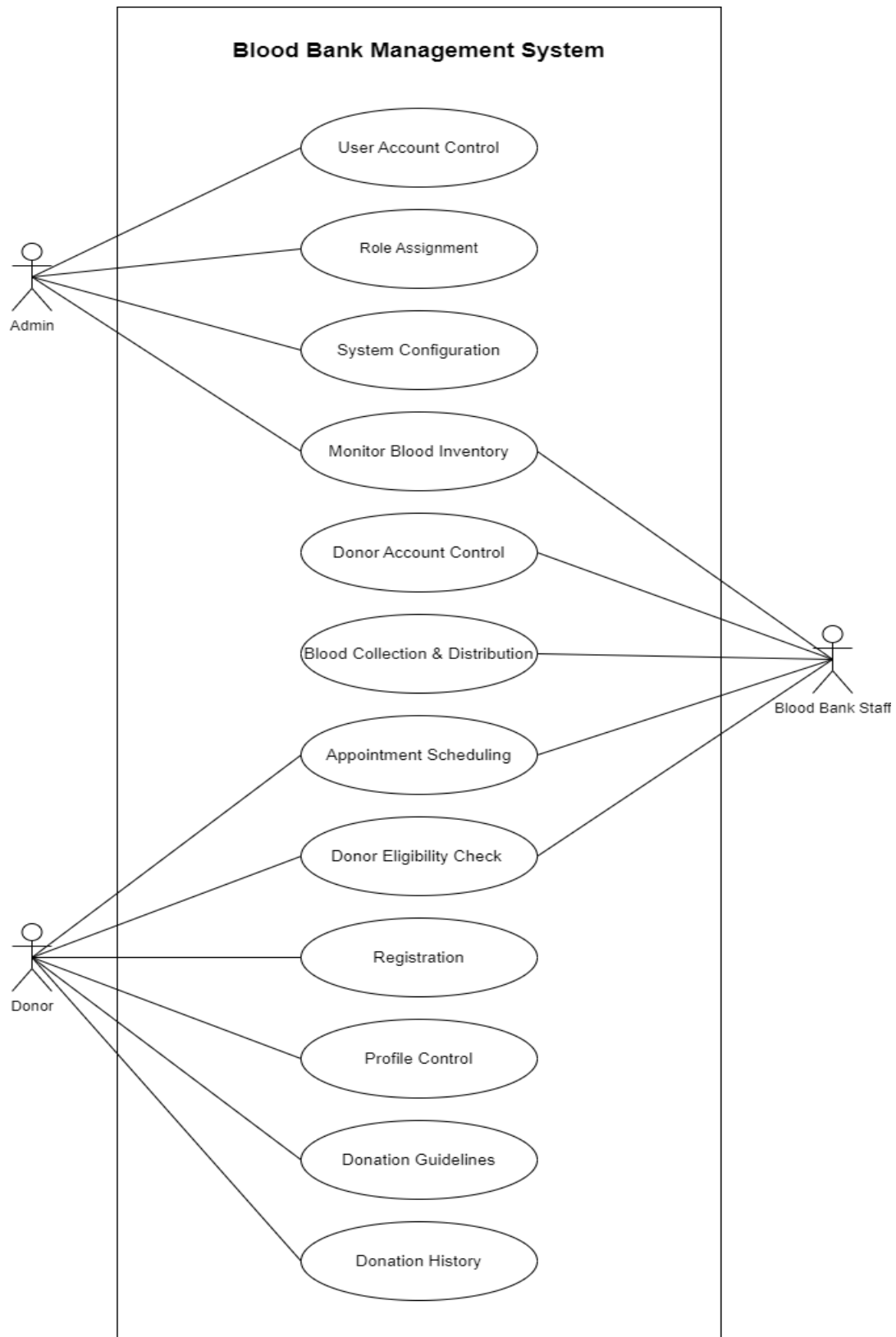
- The application should be compatible with various operating systems and devices.

1.4.10 Disaster Recovery:

- Establish a disaster recovery plan to restore services quickly after a failure.

2 Design and Implementation Constraints

2.1 Use case diagram



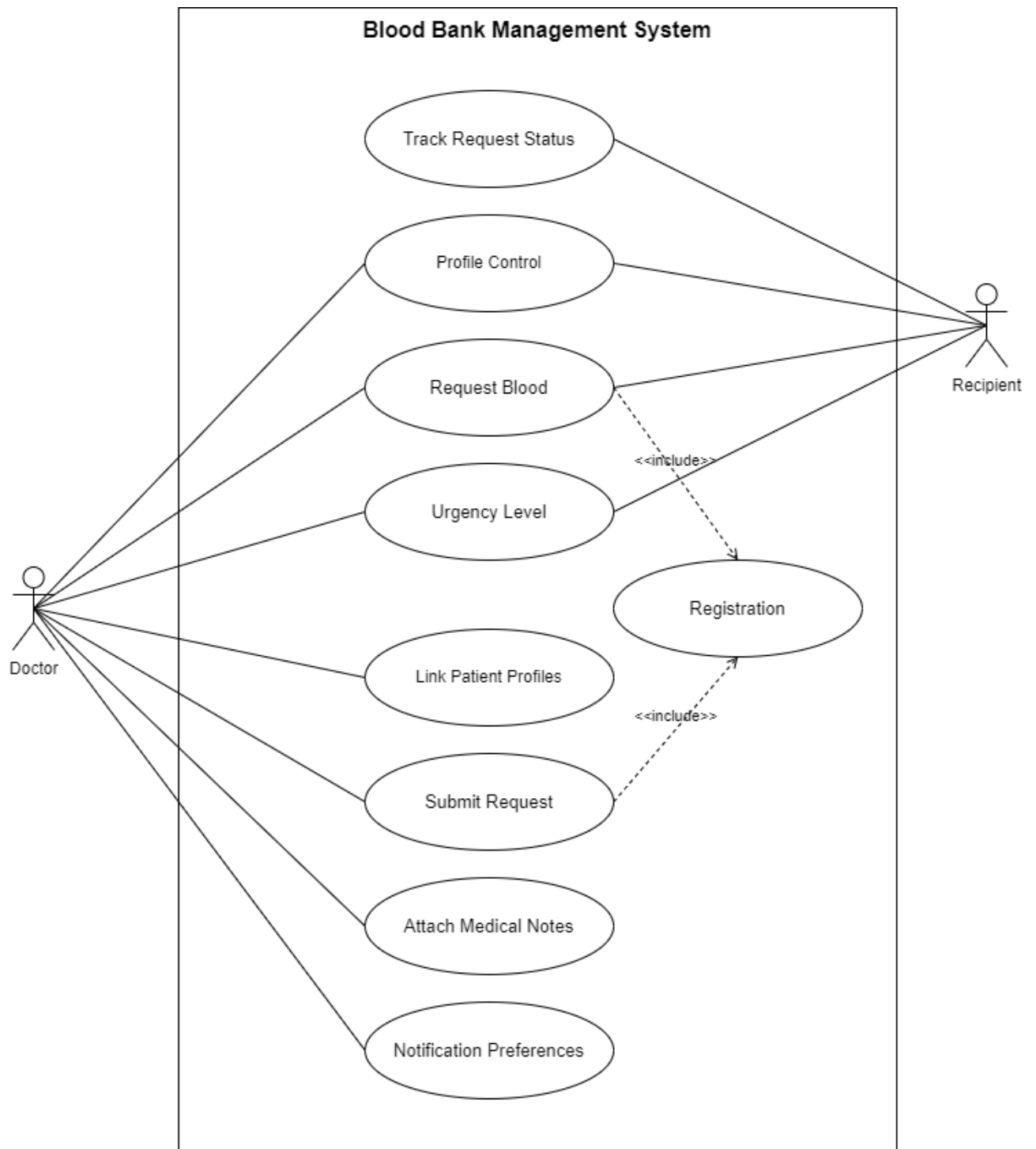


Figure 2.1-1 Use case diagram for Blood bank management system

2.2 Activity diagram and Swimlane diagram

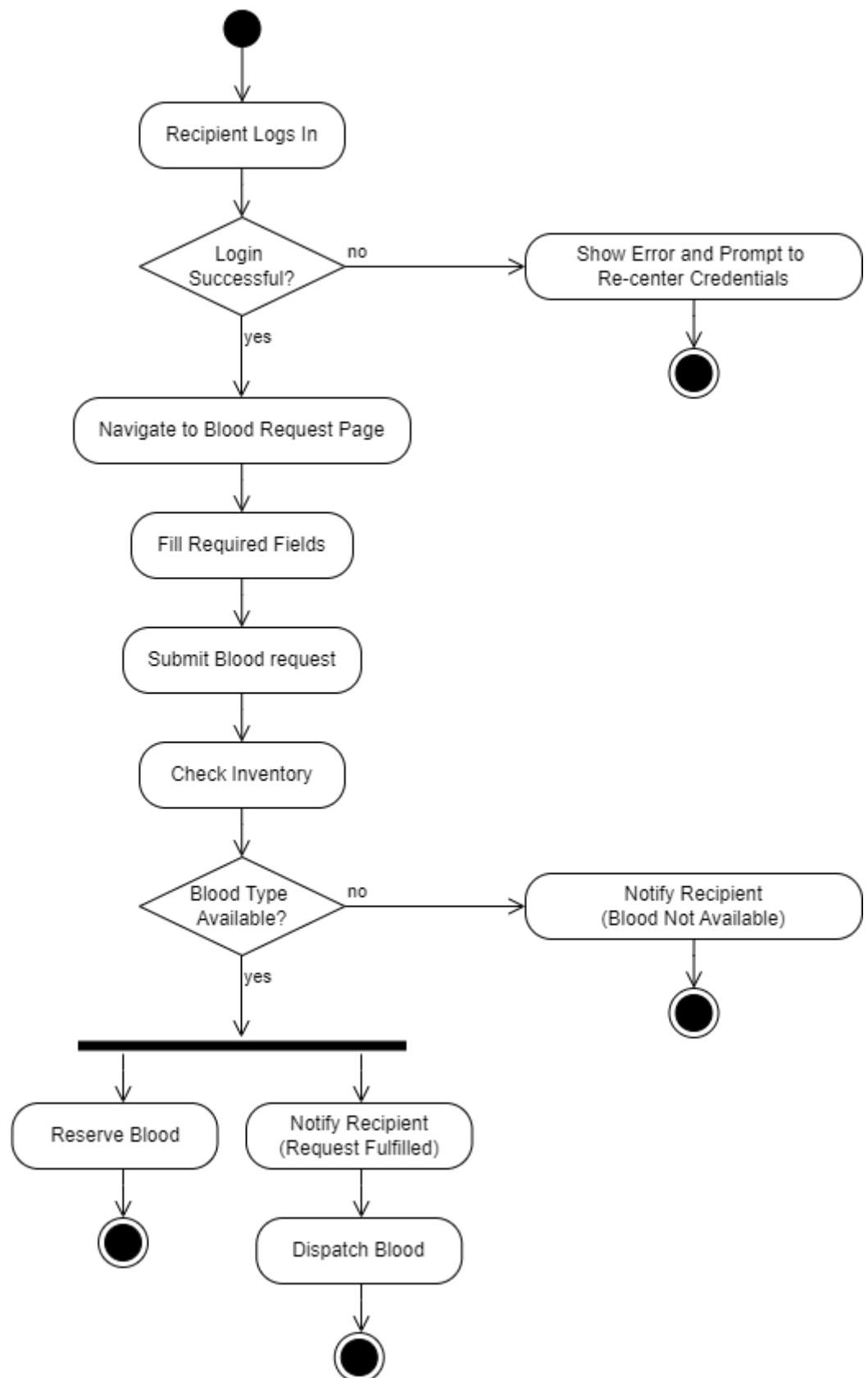


Figure 2.2-1 Activity diagram for Blood Request by Recipient

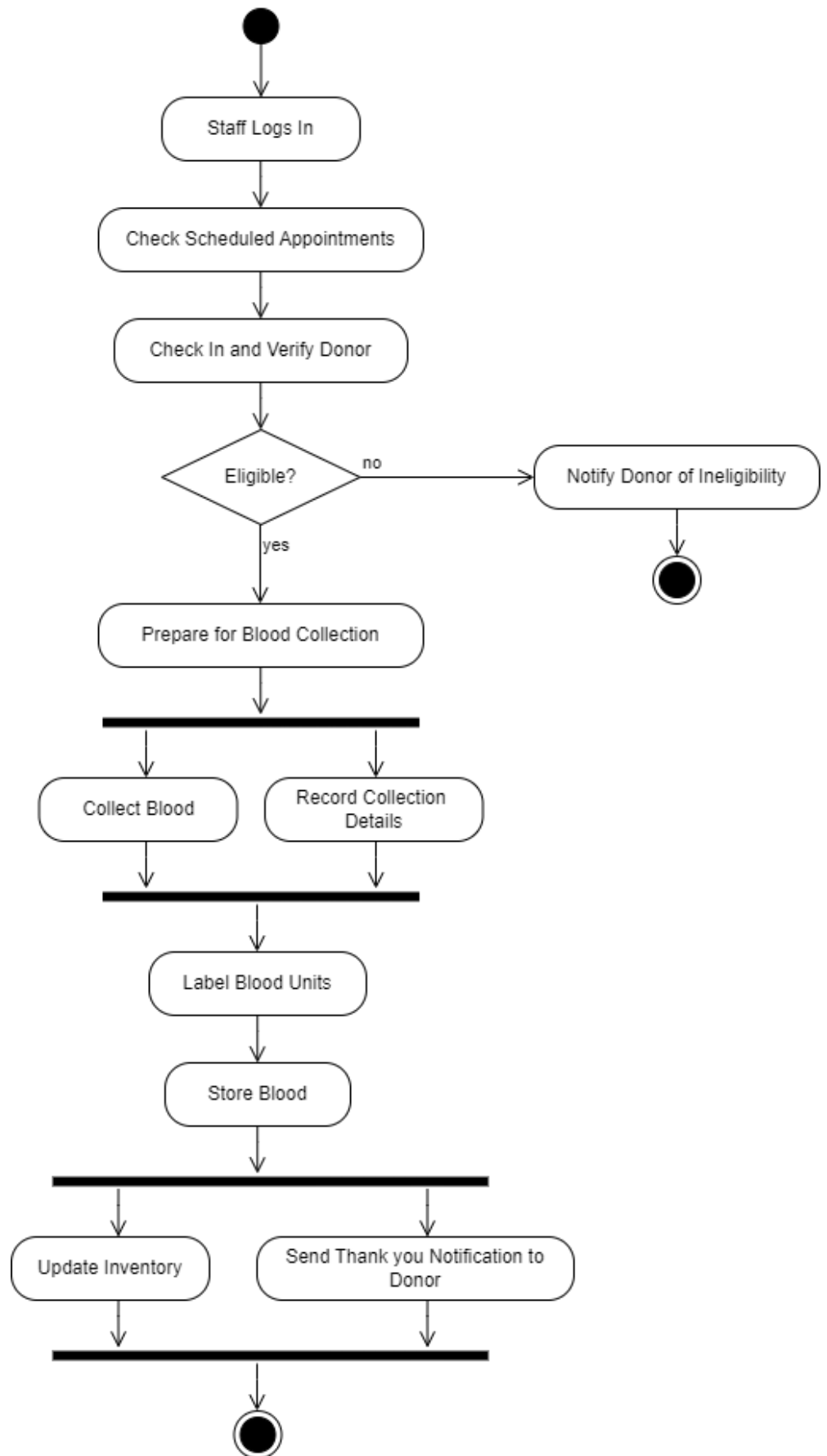


Figure 2.2-2 Activity diagram for Blood Collection Process

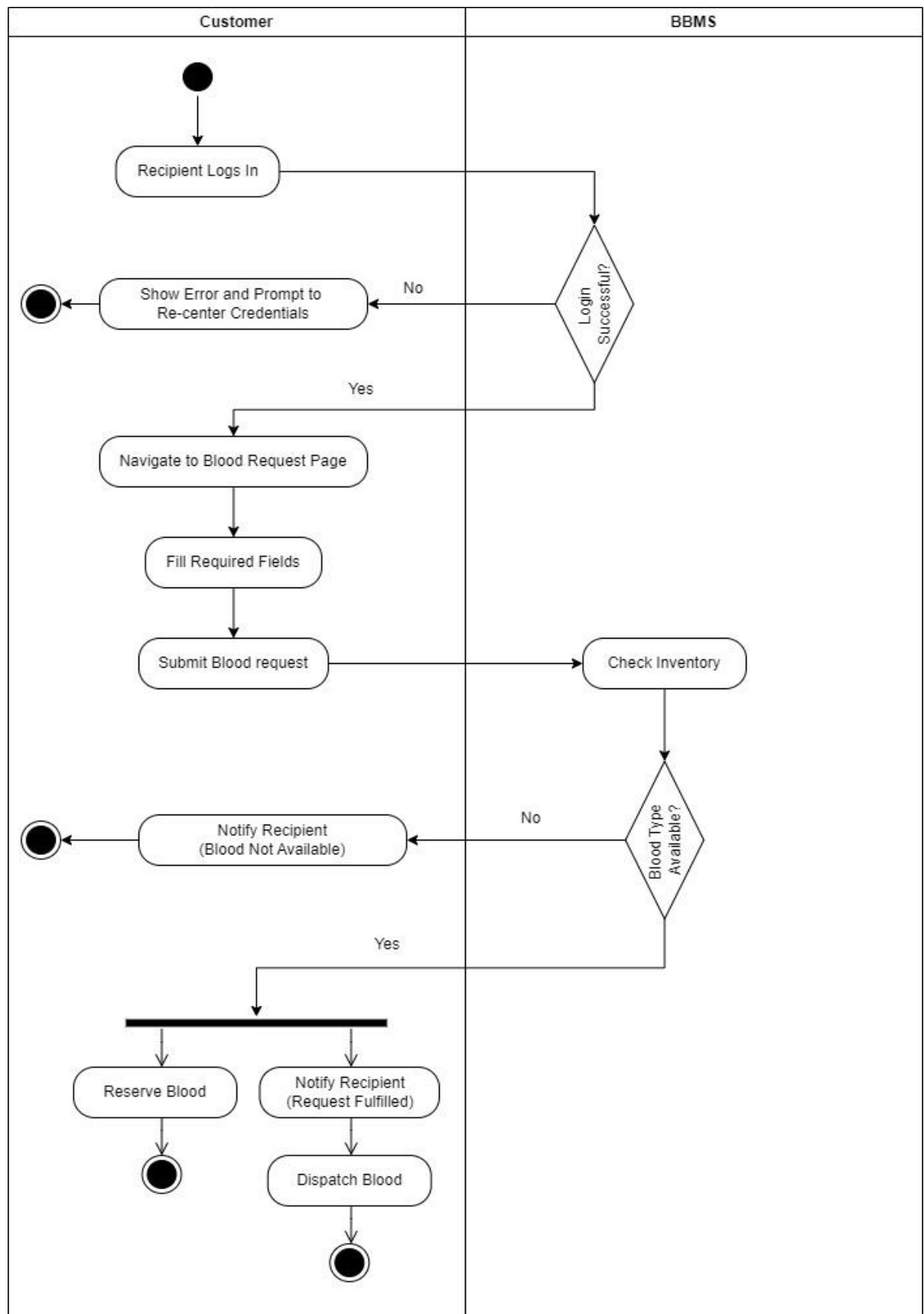


Figure 2.2-3 Swimlane diagram for Blood Request by Recipient

2.3 Sequence diagram

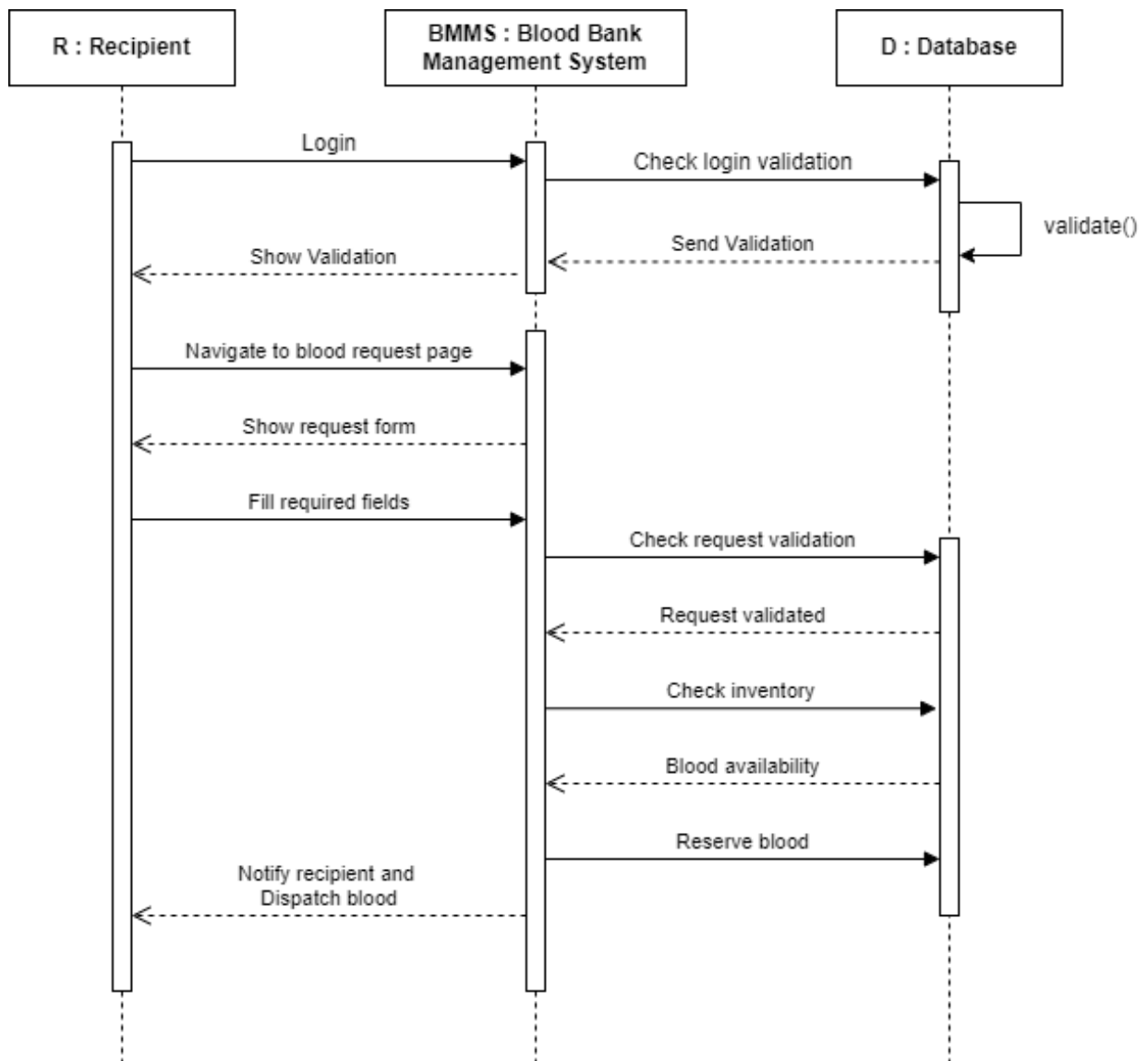


Figure 2.3-1 Sequence diagram for Blood request by Recipient

2.4 State diagram

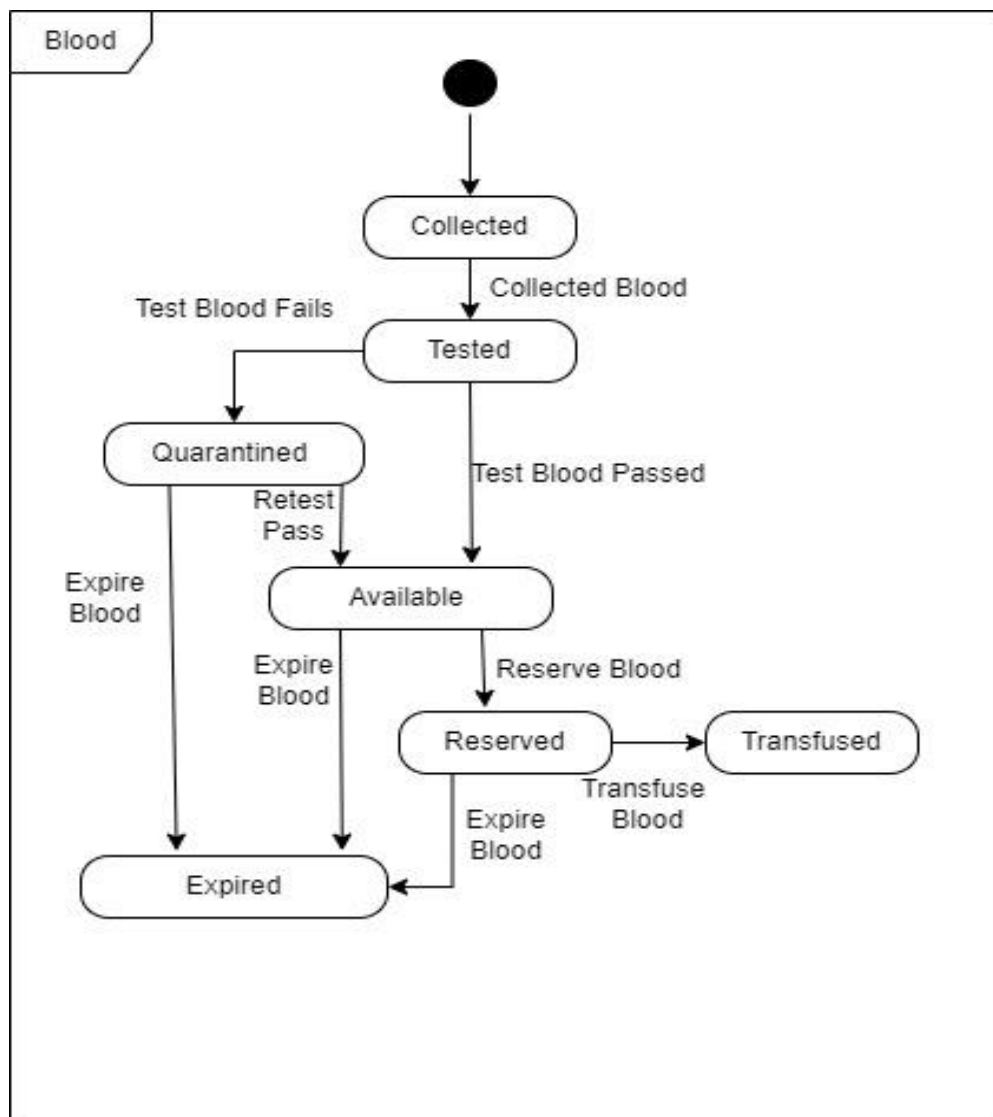


Figure 2.4-1 State diagram of Blood

2.5 Class diagram

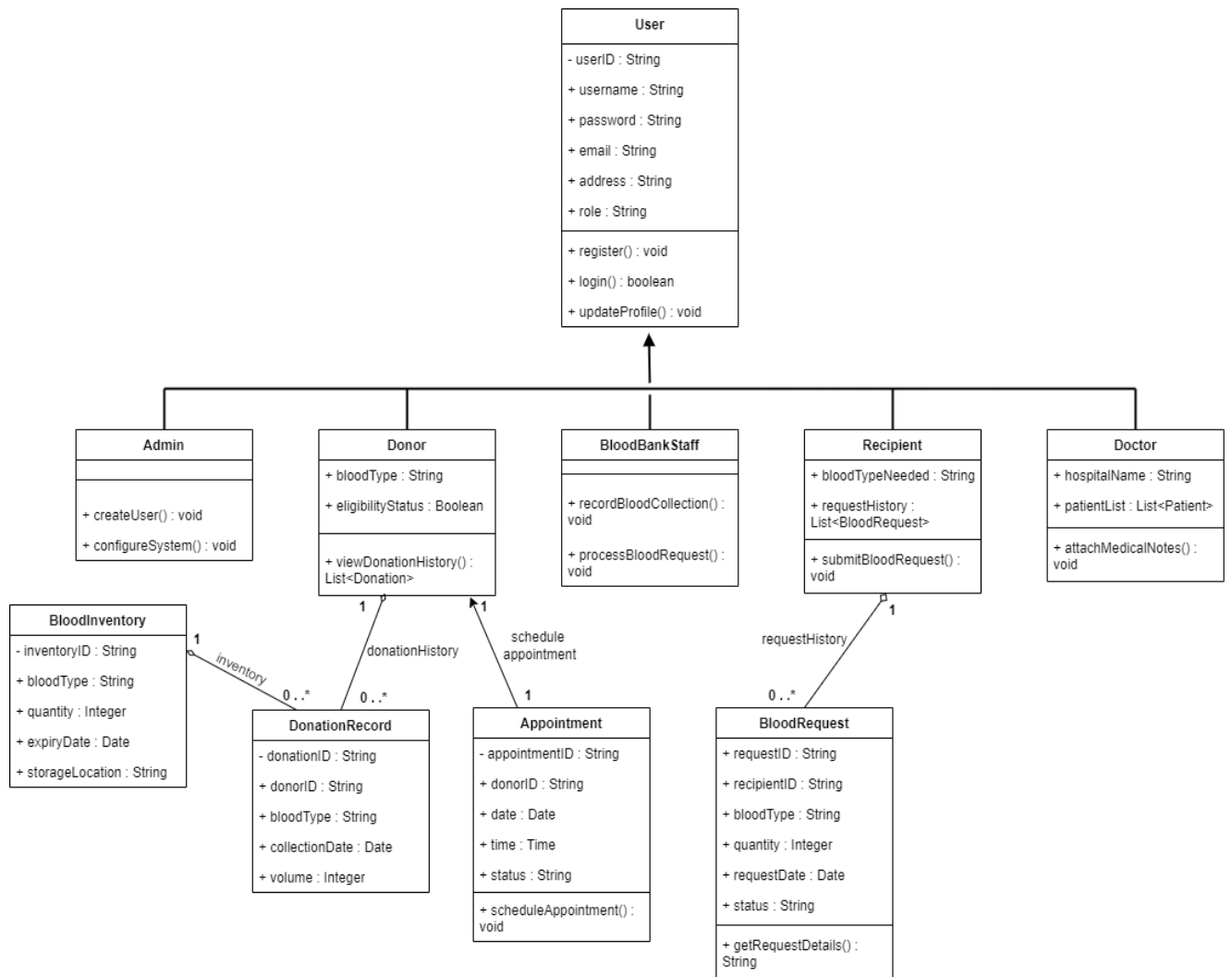


Figure 2.5-1 Class diagram for Library management system

2.6 Data flow diagram

2.6.1 Context diagram (level-0)

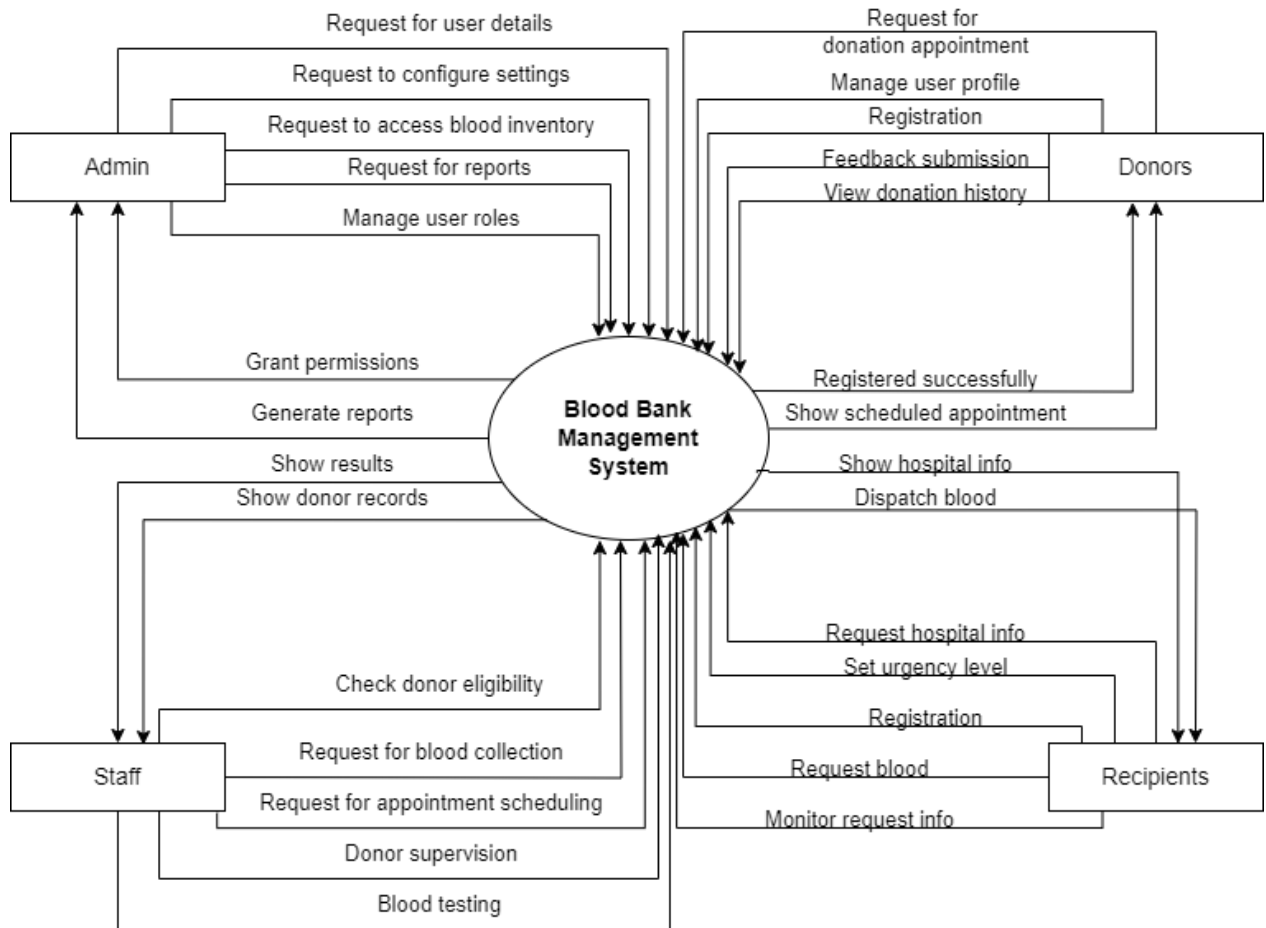


Figure 2.6-1 Context diagram for Blood bank management system

2.6.2 DFD Level-1

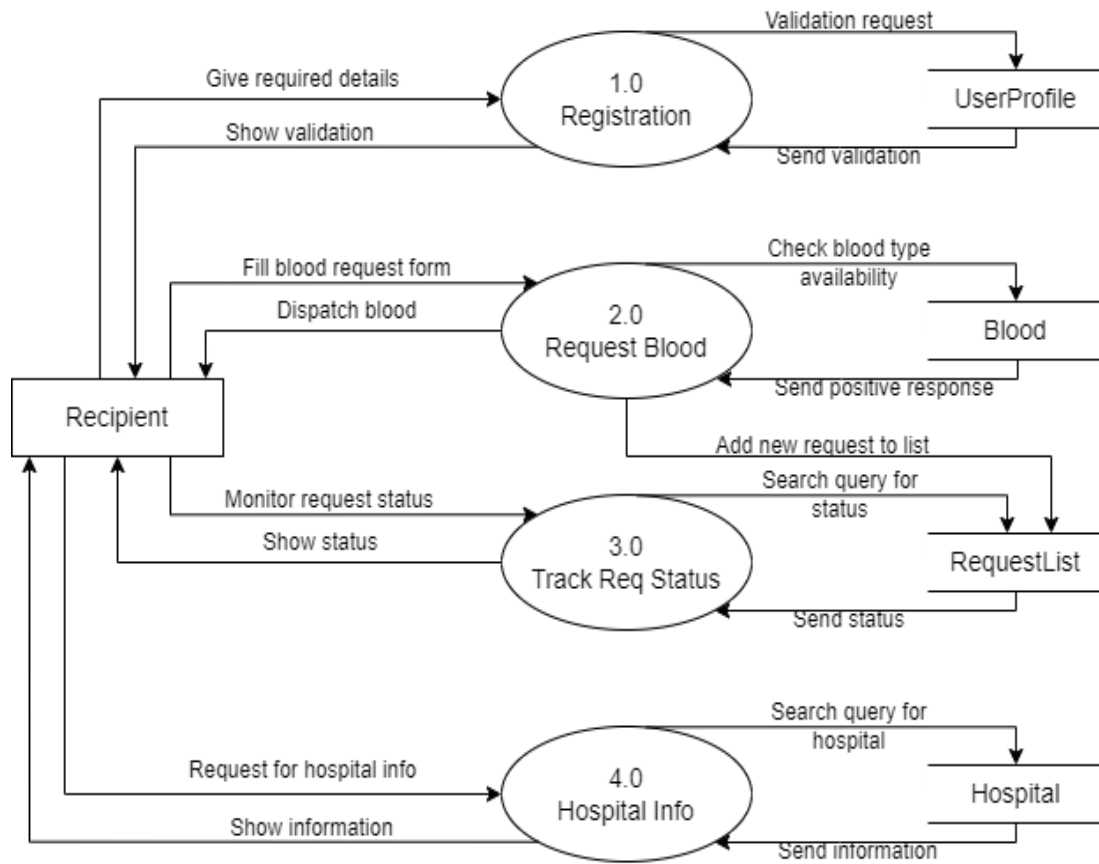


Figure 2.6-2 DFD level-1 for Blood bank management system

3 External interface requirement (Screens)

3.1 Screen-1: Blood Stock Availability

Blood Stock Availability

Search Blood Stock

Gujarat Morbi Oh-VE Whole Blood

Search

Government Blood Banks Other Blood Banks

Show 10 entries

S.No	Blood Bank	Category	Availability	Last Updated	Type
1	Shree Swaminarayan Sankar Dham Trust Sanskar Blood Centre, Morbi Shree Swaminarayan Sankar Dham Trust Sanskar Blood Bank, Sanala Road, Morbi, Morbi, Gujarat Phone: 9714940600, 02822-225733, Fax: -, Email: sanskarbloodbank@gmail.com	Charitable/Vol	Whole Blood Not Available Search for another Component	2024-07-18 17:03:25	Blood Bank
2	General Hospital, Morbi Blood Bank, General Hospital, Morbi, Morbi, Gujarat Phone: 7016595511, Fax: -, Email: ghmorbi@yahoo.co.in	Govt.	Whole Blood Not Available Search for another Component	2024-07-18 09:35:07	Blood Bank
3	Lifecare Blood Centre 1 st & 2nd floor, Akshar Arcade, Narsang mandir to Avni Chokadi Road, Morbi, Morbi, Gujarat Phone: 9023544444, Fax: -, Email: lifecarebloodcenter@gmail.com	Charitable/Vol	Whole Blood Not Available Search for another Component	2024-07-18 09:00:39	Blood Bank
4	Shree Blood Center Parmeshwar Plaza, 5th floor, 7/8 savaarplot morbi, Morbi, Morbi, Gujarat Phone: 9726910558, Fax: -, Email: shreebloodcenter@gmail.com	Charitable/Vol	Whole Blood Not Available Search for another Component	2024-07-18 08:48:12	Blood Bank

Showing 1 to 4 of 4 entries

Previous 1 Next

Figure 3.1-1 Screen-1: Blood Stock Availability

Purpose: This form will allow the target end-users to check the availability of blood type in the system. To check the bank availability, the following information will be encoded in the system.

Table 3.1-1 Screen element of Blood stock availability

Sr.	Screen Element	Input Type	O/M	1/N	Description
1	Navbar	Link	M	N	Links to navigate to different pages
2	Logo	Image	M	1	Logo image represents the system (BBMS)
3	Title	Text	M	1	A title describes what a given screen or interface is about
4	State	Select	M	1	Select state for a blood bank in which you are looking for blood stock availability
5	City	Select	M	1	Select city for a blood bank in which you are looking for blood stock availability
6	Blood Group	Select	M	1	Select blood group for which you are looking for stock availability
7	Blood Component	Select	M	1	Select blood component for which you are looking for stock availability
8	Search	Button	M	1	Click on the search button to view the desired search result
9	Search Result	Table	M	1	Search result table indicates blood bank details from desired inputs

3.2 Screen-2: Blood Storage Unit(BSU)

Nearest Blood Bank(BB)/ Blood Storage Unit(BSU)

Gujarat Morbi Sanskardham **Search**

Showing Blood Banks/Blood Storage Units as per the selection from the list

☒ Government Blood Banks ☐ Other Blood Banks [Click to show search results on Map](#)

Show 4 entries Search:

S.No.	Name	Address	Phone	Email	Category	Distance (km)	Type
1	General Hospital, Morbi	Blood Bank, General Hospital, Morbi, Dist. Morbi	7016595511	ghmorbi@yahoo.co.in	Govt.	-	Camps Stock
2	Lifecare Blood Centre	1 st & 2nd floor, Akshar Arcade, Narsang mandir to Avni Chokadi Road, Morbi, Morbi, Dist. Morbi	9023544444	lifecarebloodcenter@gmail.com	Charitable/Vol	-	Camps Stock
3	Shree Blood Center	Parmeshwar Plaza, 5th floor, 7/8 savsarplot morbi, Morbi, Dist. Morbi	9726910558	shreebloodcenter@gmail.com	Charitable/Vol	-	Camps Stock
4	Shree Swaminarayan Sankar Dham Trust Sanskar Blood Centre, Morbi	Shree Swaminarayan Sankar Dham Trust Sanskar Blood Bank, Sanala Road, Morbi, Dist. Morbi	9714940600, 02822-225733	sanskarbloodbank@gmail.com	Charitable/Vol	-	Camps Stock

Showing 1 to 4 of 5 entries Previous 1 2 Next

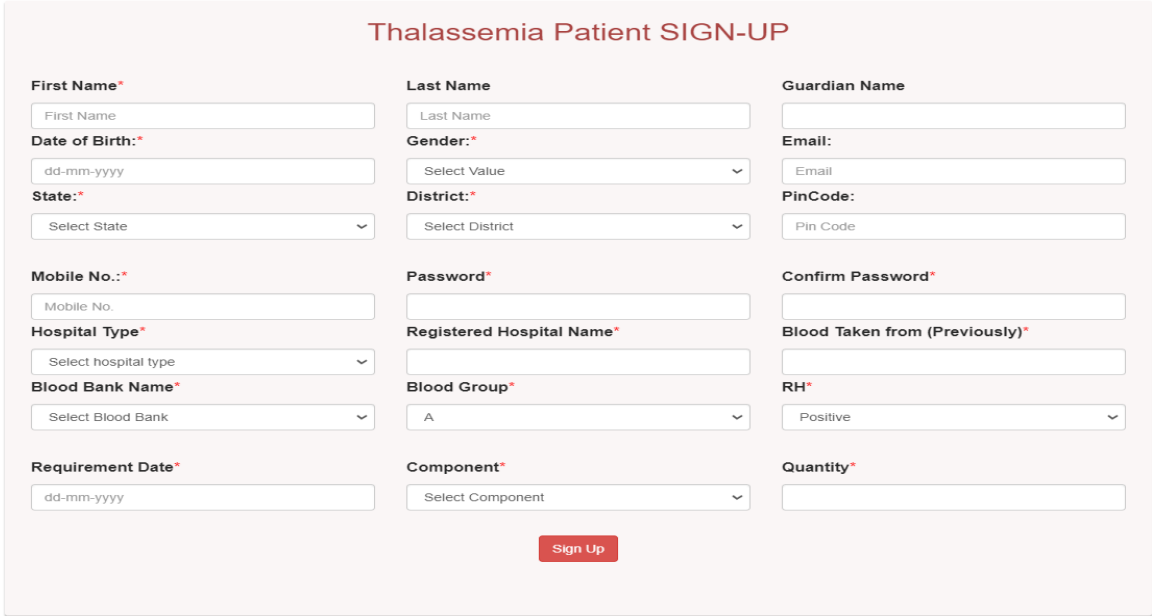
Figure 3.2-1 Screen-2: Blood Storage Unit (BSU)

Purpose: This form will allow the target end-users to view blood storage unit of nearest blood banks in the system. To view the storage units, the following information will be encoded in the system.

Table 3.2-1 Screen element of Blood Storage Unit (BSU)

Sr.	Screen Element	Input Type	O/M	1/N	Description
1	Navbar	Link	M	1	Links to navigate to different pages
2	Logo	Image	M	1	Logo image represents the system (BBMS)
3	Title	Text	M	1	A title describes what a given screen or interface is about
4	State	Select	M	1	Select state for a blood bank in which you are looking for blood stock availability
5	City	Select	M	1	Select city for a blood bank in which you are looking for blood stock availability
6	Blood Bank	Text Input	M	1	Write blood bank or hospital name for which you are looking for desired results
7	Search	Button	M	1	Click on the search button to view the desired search result
8	Search Result	Table	M	1	Search result table indicates blood bank details from desired inputs

3.3 Screen-3: Thalassemia Request



Thalassemia Patient SIGN-UP

First Name* **Last Name** **Guardian Name**

Date of Birth:* **Gender:*** **Email:**

State:* **District:*** **PinCode:**

Mobile No.:* **Password*** **Confirm Password***

Hospital Type* **Registered Hospital Name*** **Blood Taken from (Previously)***

Blood Bank Name* **Blood Group*** **RH***

Requirement Date* **Component*** **Quantity***

[Sign Up](#)

Figure 3.3-1 Screen-3: Thalassemia Request

Purpose: This form will allow the target end-users to request for thalassemia treatment at nearest blood banks in the system. To make request for thalassemia treatment, the following information will be encoded in the system.

Table 3.3-1 Screen element of Thalassemia Request

Sr.	Screen Element	Input Type	O/M	1/N	Description
1	Navbar	Link	M	1	Links to navigate to different pages
2	Logo	Image	M	1	Logo image represents the system (BBMS)
3	Title	Text	M	1	A title describes what a given screen or interface is about
4	First Name	Text Input	M	1	Enter first name of patient
5	Last Name	Text Input	O	1	Enter last name of patient
6	Guardian Name	Text Input	O	1	Enter guardian/parents name of patient
7	Date of Birth	Date Input	M	1	Enter Date of Birth of patient
8	Gender	Select	M	1	Select gender of patient
9	Email	Text Input	O	1	Enter email of patient
10	State	Select	M	1	Select state for a blood bank in which you are looking for thalassemia treatment
11	District	Select	M	1	Select district for a blood bank in which you are looking for thalassemia treatment
12	Pin Code	Text Input	O	1	Enter Pin code of selected district
13	Mobile No	Text Input	M	1	Enter mobile number of patient
14	Password	Text Input	M	1	Enter password

SRS – Blood Bank Management System

15	Confirm password	Text Input	M	1	Enter confirm password
16	Hospital Type	Select	M	1	Select hospital type
17	Registered Hospital Name	Text Input	M	1	Enter registered hospital name
18	Blood Taken from (Previously)	Text Input	M	1	Enter record of previously taken blood
19	Blood Bank Name	Text Input	M	1	Write blood bank or hospital name for which you are looking for desired results
20	Blood Group	Select	M	1	Select blood group for which you are making thalassemia request
21	RH	Select	M	1	Select RH for which you are making thalassemia request
22	Requirement Date	Date Input	M	1	Enter date of requirement
23	Component	Select	M	1	Select blood component for which you are making thalassemia request
24	Quantity	Number Input	M	1	Enter quantity of requirement
25	Sign Up	Button	M	1	Click on sign up button to submit request

3.4 Screen-4: Eligibility Requirements

Requirements by Donation Type

To ensure the safety of both patients and donors, these are some of the requirements donors must meet to be eligible to donate blood based on their donation type. To explore a list of eligibility information, [Search by Keyword](#) or [Browse All](#).

Now, more people can donate blood. Learn about recent eligibility changes for those who spent time in Europe, and the elimination of questions based on gender and sexual orientation in our [Eligibility FAQs](#). More information also on our [LGBTQ+ Donors](#) page.

Whole Blood Donation

- Donation frequency: Every 56 days, up to 6 times a year*
- You must be in good health and feeling well**
- You must be at least 16 years old in most states.
- You must weigh at least 110 lbs

[See additional requirements for students >>](#)
[Learn more about donating whole blood >>](#)

Give Whole Blood [MAKE AN APPOINTMENT](#)

Figure 3.4-1 Screen-4: Eligibility Requirements

Purpose: This form will allow the target end-users to read instructions make request for an appointment at nearest blood banks in the system. To view the requirements, the following information will be encoded in the system.

Table 3.4-1 Screen element of Eligibility Requirements

Sr.	Screen Element	Input Type	O/M	1/N	Description
1	Navbar	Link	M	1	Links to navigate to different pages
2	Logo	Image	M	1	Logo image represents the system (BBMS)
3	Contact Links	Button/Link	M	N	Contact buttons allow users to view and connect with organization.
4	Title	Text	M	1	A title describes what a given screen or interface is about
5	Description	Text	M	1	Description for what is given interface is about
6	Notification	Text	O	1	Notify more information
7	Sidebar	Link	M	1	Links to navigate to different pages
8	Donor Image	Image	O	1	Image that represents blood donation by donor
9	Instruction	Text	M	N	Guidelines and instructions about whole blood donation
10	Learn More	Link	M	N	Links that navigate to additional information about donating whole blood
11	Zip Code	Number Input	M	1	Enter zip code of city to make an appointment
12	Make an Appointment	Button	M	1	Click to make an appointment request

3.5 Screen-5: Schedule an Appointment

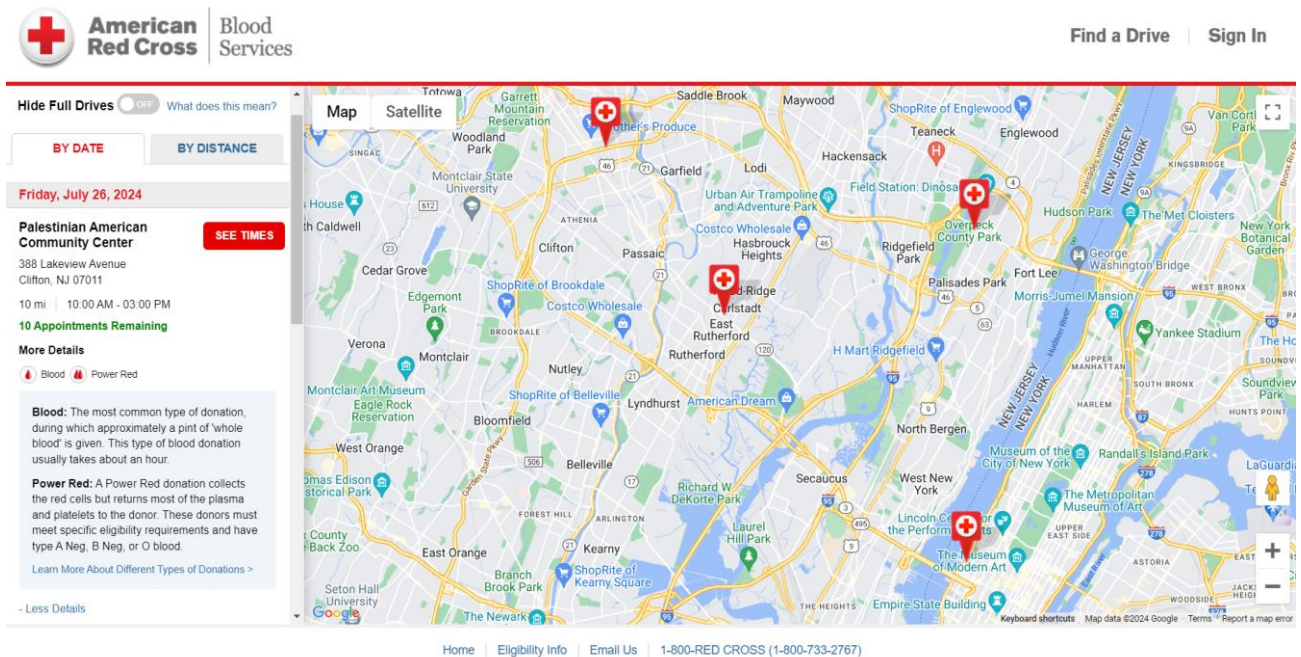


Figure 3.5-1 Screen-5: Schedule an appointment

Purpose: This form will allow the target end-users to schedule an appointment at nearest blood banks in the system. To schedule an appointment, the following information will be encoded in the system.

Table 3.5-1 Screen element of Schedule an appointment

Sr.	Screen Element	Input Type	O/M	1/N	Description
1	Navbar	Link	M	1	Links to navigate to different pages
2	Logo	Image	M	1	Logo image represents the system (BBMS)
3	Find a Drive	Button/Link	M	1	Contact buttons allow users to search and book a drive for transportation.
4	Sign In	Button/Link	M	1	Link to navigate to the Sing In page.
5	By Date	Button	M	1	A button to filter/sort blood banks according to dates.
6	By Distance	Button	M	1	A button to filter/sort blood banks according to shortest distance.
7	Appointment Date	Date	M	1	Indicates date of an available appointment for a blood bank.
8	Blood Bank	Text	M	1	Indicates blood bank name.
9	See Times	Button	M	1	Indicates times for an available appointment for a blood bank.
10	Address	Text	M	1	Indicates blood bank address.
11	Appointments Remaining	Number Input	M	1	Indicates number of appointments remaining.
12	More Details	Text	M	1	Indicates more details and provides more information to schedule an appointment.
13	Map	Media	M	1	Shows all the nearest blood banks from you.
14	Footer	Link	M	N	Indicates contact links.

4 Database design

4.1 List of Tables

- Blood
- Recipient
- Donor
- Staff
- Blood Bank

Table 4.1-1 Table: Blood

Column	Data Type	Null	Keys & Constrains	Default Value & Description
BloodID	Varchar(10)	NN	PK (Auto Increment)	Unique identifier for the blood unit
BloodType	varchar(5)	NN	CHECK (BloodType IN ('A+', 'A-', 'B+', 'B-', 'AB+', 'AB-', 'O+', 'O-'))	Blood type of the unit
Component	varchar(50)	AN		Blood component for the unit
Availability	Bit	NN		Check availability of blood
CollectionDate	DateTime	NN		Default : CURRENT_DATE Date the blood was collected
ExpiryDate	DateTime	NN		Expiry date of the blood unit
DonorID	varchar(10)	NN	FK REFERENCES Donor(DonorID)	ID of the donor who donated the blood

Table 4.1-2 Table: Recipient

Column	Data Type	Null	Keys & Constrains	Default Value & Description
RecipientID	Varchar(10)	NN	PK (Auto Increment)	Unique identifier for the recipient
Name	Varchar(50)	NN		Name of the recipient
Email	Varchar(50)	NN	UNIQUE	Email address of the recipient
Phone	Varchar(15)	NN		Phone number of the recipient
Address	Varchar(100)	NN		Address of the recipient

Table 4.1-3 Table: Staff

Column	Data Type	Null	Keys & Constrains	Default Value & Description
StaffID	Varchar(10)	NN	PK (Auto Increment)	Unique identifier for the staff member
Name	varchar(50)	NN		Name of the staff
Email	Varchar(50)	NN	UNIQUE	Email address of the staff member
Phone	Varchar(15)	NN		Phone number of the staff member
IsAdmin	Boolean	NN		Check if staff member is admin
Designation	varchar(100)	NN		Role or position of the staff member

Table 4.1-4 Table: Donor

Column	Data Type	Null	Keys & Constrains	Default Value & Description
DonorID	Varchar(10)	NN	PK (Auto Increment)	Unique identifier for the donor
Name	varchar(50)	NN		Name of the donor
Email	Varchar(50)	NN	UNIQUE	Email of the donor
Phone	varchar(15)	NN		Phone number of the donor
DOB	DateTime	AN		Date of birth of the donor
BloodType	Varchar(5)	NN	CHECK (bloodType IN ('A+', 'A-', 'B+', 'B-', 'AB+', 'AB-', 'O+', 'O-'))	Blood type of the donor

Table 4.1-5 Table: Blood Bank

Column	Data Type	Null	Keys & Constrains	Default Value & Description
BankID	Varchar(10)	NN	PK (Auto Increment)	Unique identifier for the blood bank
Name	varchar(50)	NN		Name of the blood bank
Email	Varchar(50)	NN	UNIQUE	Email address of the blood bank
Location	Varchar(100)	NN		Location of the blood bank
Phone	varchar(15)	NN		Phone number of the blood bank

5 Stories and Scenario

5.1 Story-1: Request Blood by Recipient

Story # S1	:	As a Recipient, I want to request a specific type of blood So that I can receive the blood I need for a medical procedure.
Priority	:	High
Estimate	:	L
Reason	:	Allowing recipients to request blood ensures timely fulfilment of critical medical needs.

5.1.1 Scenario# S1.1

Scenario# S1.1	:	Requesting Blood with Available Stock
Prerequisite	:	Recipient is logged into their account.
Acceptance Criteria	:	Given: The recipient navigates to the blood request page. When: The recipient selects the blood type and quantity from available stock. Then: The system confirms the request and prepares the blood for distribution.

5.1.2 Scenario# S1.2

Scenario# S1.2	:	Requesting Blood with Insufficient Stock
Prerequisite	:	Recipient is logged into their account.
Acceptance Criteria	:	Given: The recipient navigates to the blood request page. When: The recipient selects a blood type, but the system shows insufficient stock. Then: The system alerts the recipient and provides an estimated availability date.

5.1.3 Scenario# S1.3

Scenario# S1.3	: Urgent Blood Request
Prerequisite	: Recipient is logged into their account.
Acceptance Criteria	: Given: The recipient indicates that the request is urgent. When: The system prioritizes the request based on urgency. Then: The system sends an alert to the blood bank staff to expedite the process.

5.1.4 Scenario# S1.4

Scenario# S1.4	: Modifying a Blood Request
Prerequisite	: Recipient has an existing blood request.
Acceptance Criteria	: Given: The recipient wants to modify the quantity or type of blood. When: The recipient updates the request details. Then: The system saves the changes and recalculates availability.

5.1.5 Scenario# S1.5

Scenario# S1.5	: Cancelling a Blood Request
Prerequisite	: Recipient has an existing blood request.
Acceptance Criteria	: Given: The recipient decides to cancel the request. When: The recipient clicks the cancel option. Then: The system cancels the request and frees up the blood stock.

6 Test cases

Project Name:	Blood Bank Management System	Test Designed by:	K. H. Dabhi
Module Name:	Registration	Test Designed date:	23-08-2024
Release Version:	1.0	Test Executed by:	K. H. Dabhi
		Test Execution date:	23-08-2024

Pre-condition: Web application should be accessible				
Test Case ID	Test Title	Test Type	Description	Test Case ID
TC_001	Registration to web application with valid credential	Functional	Registration to blood bank management system web application through valid credential	TC_001
TC_002	Registration to web application with invalid credential	Functional	Registration to blood bank management system web application through invalid credential	TC_002
TC_003	Verify registration page elements	GUI	Verify that all elements are available on registration page	TC_003

SRS – Blood Bank Management System

Test Case Title	Registration to web application with valid credential
Test Type	Functional
Test Priority	High
Pre-condition	Web application should be accessible

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	BUG ID
1	Access Web application URL	The site launched properly	Site launched successfully	Pass		https://accounts.google.com/ServiceLogin	
2	Enter valid Email in email field	Email field should be editable and accept the Email	Email input accepted	Pass		Email: kdabhi@gmail.com	
3	Enter valid Password in Password field	Password field should be editable and accept the password and display as star or dot	Password input displayed in dot and accepted	pass		Password: kdabhi123	
4	Enter valid Confirm Password in Confirm Password field	Confirm Password field should be editable and accept the password and display as star or dot	Confirm Password input displayed in dot and accepted	pass		Password: kdabhi123	
5	Enter valid captcha code in captcha field	Captcha field should be editable and accept captcha and captcha is case sensitive	Captcha input accepted	Pass	Step required when human action validation on perform	get captcha from image which is near by captcha field	
6	Click on register button	User should register into site and navigated to dashboard	User navigated to dashboard and username should be display in top of the right side.	pass			

Test Case Title	Registration to web application with invalid credential
Test Type	Functional
Test Priority	Medium
Pre-condition	Web application should be accessible

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1	Verify that User is not able to Register with invalid Email and invalid Password	Should be display an error message enter wrong email or password	Display an error of wrong email and password	Pass			
2	Verify that User is not able to Register with Valid Email and invalid Password	Should be display an error message enter correct password	Display an error of wrong password	Pass			
3	Verify that User is not able to Register with invalid Email and Valid Password	Should be display an error message enter correct email	Display an error of wrong email	Pass			
4	Verify that User is not able to register with valid Email and Password and blank Confirm Password	Set required field validation message for Confirm Password	Display an error of wrong confirm password	Fail	Not performed validation function fix it		Bug_002

Test Case Title	Verify registration page elements
Test Type	GUI
Test Priority	Medium
Pre-condition	Web application should be accessible

Test Step	Test Case Description	Expected Result	Actual Result	Status	Comment	Data	Bug ID
1	Launch application with the given URL	The site launched properly	Site launched successfully	Pass		https://accounts.google.com/ServiceLogin	
2	Verify that the registration screen contains elements such as Email, Password, Confirm Password, Register button, Remember password check box, and Already have an account link.	All listed control displayed properly on the page	Registration page loaded successfully	Pass			
3	Verify that cursor is focused on "Email" text box on the page load	Cursor is focused in Email textbox	Cursor focus in Email textbox	Pass			
4	Verify that tab functionality is working properly or not	When tab pressed cursor move in next control	Cursor moving in next control	Pass			
5	Verify that all the fields such as Email, Password has a valid placeholder	All text fields have proper placeholder	All text fields have proper placeholder	Pass			
6	Verify that the labels float upward when the text field is in focus or filled (In case of floating label)	When field is focused or filled, label display on top of the filled	When field is focus or filled, label display on top of the filled	Pass	step required when fields with floating label		
7	verify that already have an account link working properly	when click on already have an account load login page	Already have an account not working	Fail			

7 References

- http://www.w3schools.com/html/html_intro.asp
- <https://www.w3schools.com/php/default.asp>
- <https://www.javatpoint.com/uml>
- <https://eraktkosh.mohfw.gov.in>
- <https://www.redcrossblood.org>