RV COLLEGE OF ENGINEERING®
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DEPARTMENT OF ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

Efficient Blood Inventory Management System

Mini-Project Report

Submitted By

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in partial fulfillment of the requirements for the 5th Semester DBMS Laboratory (CD252IA)

Under the guidance of

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CERTIFICATE

Certified that the project work titled **EFFICIENT BLOOD INVENTORY MANAGEMENT SYSTEM** is carried out by Varun Banda (1RV22AI062), Labdhi Ranka (1RV22AI068), Omkar Babu Mastamardi (1RV23AI403) who are bonafide students of RV College of Engineering, Bengaluru, in partial fulfilment of the curriculum requirement of 5th Semester Database Management Systems Laboratory Mini Project during the academic year 2024-2025. It is certified that all corrections/suggestions indicated for the Internal Assessment have been incorporated in the report. The report has been approved as it satisfies the academic requirements in all respect laboratory mini-project work prescribed by the institution.

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2.	

CONTENTS

CHAPTER 1

INTRODUCTION

The blood donation system today often faces inefficiencies and lack of coordination, resulting in delayed responses, difficulty in locating donors, and critical shortages during emergencies, which disrupt timely healthcare services. To address these challenges, we propose a streamlined Blood Bank and Donation Management System that aims to integrate and organize data, allowing for efficient donor registration, blood availability tracking, and streamlined user management. This system ensures quicker responses, improves donor-recipient coordination, and enhances overall operational efficiency for blood banks.

Statistics play a crucial role in understanding blood donation trends and optimizing resource allocation. According to global health reports, approximately 118.5 million blood donations are collected worldwide each year, yet many regions still face shortages due to an imbalance in supply and demand. Studies indicate that only about 3-4% of eligible donors donate blood regularly, highlighting the need for improved donor engagement. Furthermore, data-driven analysis has shown that real-time tracking systems can reduce blood wastage by up to 20% and enhance availability in critical situations. By leveraging statistical insights such as donor frequency, blood group distribution, and demand forecasting, our system aims to bridge the gap between donors and recipients, ensuring a more efficient and responsive blood donation network.

By integrating statistical analysis into the Blood Bank and Donation Management System, we can better predict shortages, encourage timely donations, and improve accessibility to blood resources, ultimately ensuring that critical medical needs are met effectively.

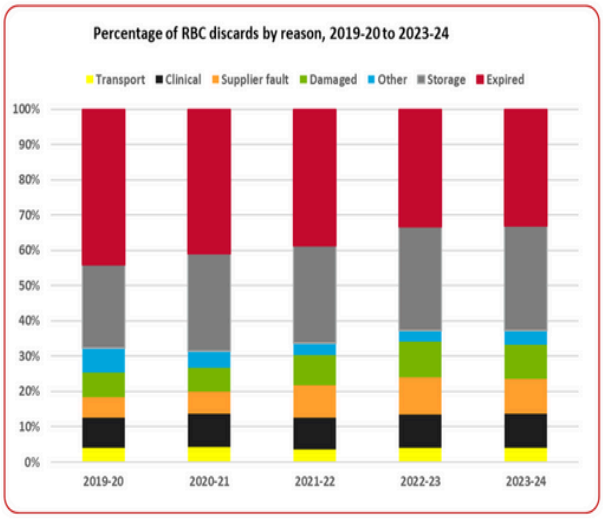

Figure1.1: percentage of RBC discard by reason

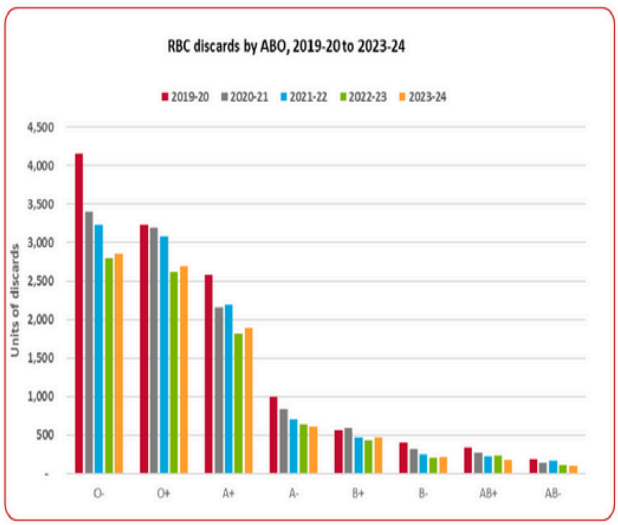

Figure 1.2: RBC discards by ABO

1.1 Objective

The objectives of the proposed work are:

1. To create an efficient, reliable, and user-friendly blood inventory management system that addresses the logistical and operational challenges of managing blood supplies in healthcare facilities.

2. To focus on optimising blood stock management, donor information tracking, and streamlining the entire process to improve blood availability and reduce wastage.

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3. To ensure timely and adequate availability of blood for those in need, thus supporting effective healthcare delivery

1.2 Scope

The developed Blood Bank and Donation Management System will be a highly efficient and scalable platform that integrates key functions to streamline the blood donation process and ensure the timely availability of blood during emergencies. By managing processes such as donor registration, blood availability tracking, and request handling, the system not only enhances operational efficiency but also improves user experience for both donors and recipients.

Its advanced database design ensures secure and accurate data storage, preventing errors and ensuring the reliability of information. The system's user-friendly interface provides seamless access for administrators, donors, and recipients, enabling quick responses to critical needs. This holistic approach ensures smoother workflows for blood banks, optimized resource utilization, and an effective, user-centric solution to address blood donation challenges.

CHAPTER 2

SOFTWARE REQUIREMENT SPECIFICATION

This chapter includes requirements specified for software and hardware. Additionally, it includes functional and non-functional requirements respectively.

2.1 Software Requirements

A. Client-Side Software Requirements:

1.Operating System:

- **Minimum:** Windows 10, macOS Catalina, Linux Ubuntu 18.04.
- **Recommended:** Windows 11, macOS Ventura, Latest stable Linux versions.

2.Web Browser:

- **Minimum:** Chrome 80+, Firefox 70+
- **Recommended:** Latest versions of Chrome, Firefox, Safari

3.Database Access Tools:

- **Minimum:** Basic browser-based MySQL interface or phpMyAdmin
- **Recommended:** MySQL Workbench or similar client software

4.Additional Tools:

- **Minimum:** Basic text editors like Notepad or browser-based tools for viewing reports.
- **Recommended:** Advanced tools like Microsoft Excel (for data export) or third-party reporting tools for enhanced data analysis and reporting capabilities.

B. Developer-Side Software Requirements:

1.Operating System:

- **Minimum:** Windows 10, macOS Catalina, Linux Ubuntu 18.04
- **Recommended:** Windows 11, macOS Ventura, or the latest stable Linux version.

2.Web Server:

- **Minimum:** Apache 2.4
- **Recommended:** Apache 2.4 or Nginx

3.Programming Language:

- **Minimum:** PHP 7.4
- **Recommended:** PHP 8.2

4.Database:

- **Minimum:** MySQL 5.7
- **Recommended:** MySQL 8.0 or PostgreSQL

5.Frontend Technologies:

- **Minimum:** HTML5, CSS3, JavaScript
- **Recommended:** HTML5, CSS3, JavaScript (with ReactJS for scalability)

6.Responsive Framework:

- **Minimum:** Bootstrap 4
- **Recommended:** Bootstrap 5 or Tailwind CSS

7.Development Tools:

- **Minimum:** Text editor like Notepad++ or Visual Studio Code (VS Code)
- **Recommended:** Advanced IDEs like VS Code with extensions, PHPStorm, or Sublime Text

8.Version Control:

- **Recommended:** Git (using GitHub, GitLab, or Bitbucket)

2.2. Hardware Requirements

A. Client-Side (End-Users Like Hospitals and Blood Banks)

1.Processor (CPU):

- **Minimum:** Dual-core processor, 2.5 GHz
- **Recommended:** Quad-core processor or higher, 3.5 GHz or better
- **Reason:** Ensures smooth performance and quick load times for users accessing the application, especially during inventory updates and searches.

2.RAM:

- **Minimum:** 4 GB
- **Recommended:** 8 GB or more
- **Reason:** Provides enough memory for multitasking, such as running multiple browser tabs or accessing other applications while using the system.

3.Storage:

- **Minimum:** 128 GB HDD
- **Recommended:** 256 GB SSD
- **Reason:** SSDs offer faster data access, leading to quicker application responses and smoother user experience.

4.Display:

- **Minimum:** 1366x768 resolution
- **Recommended:** 1920x1080 resolution or higher
- **Reason:** Ensures clear visibility of the user interface, especially when viewing detailed reports or data visualizations.

5.Network:

- **Minimum:** 1 Mbps internet connection
- **Recommended:** 10 Mbps or higher
- **Reason:** A stable and fast internet connection is essential for real-time updates, notifications, and seamless access to the application.

B. Developer/Server-Side Requirements:

1.Processor (CPU):

- **Minimum:** Dual-core processor, 2.5 GHz
- **Recommended:** Quad-core processor or higher, 3.5 GHz or better

2.RAM:

- Minimum: 4GB

3.Storage:

- **Minimum:** 128 GB HDD
- **Recommended:** 256 GB SSD
- **Reason:** Fast storage helps with quick data processing, local database operations, and efficient performance during development.

4.Display:

- **Minimum:** 1366x768 resolution
- **Recommended:** 1920x1080 resolution or higher

5.Network:

- **Minimum:** 1 Mbps internet connection
- **Recommended:** 10 Mbps or higher.

6.Backup and Data Protection:

- **Minimum:** Local backups (external storage)
- **Recommended:** Cloud backups (Google Drive, GitHub)

2.3 FUNCTIONAL REQUIREMENTS

2.3.1 Donor Registration and Management

- **Input:** New donor information, including blood type, contact details, and medical history.
- **Process:** System captures, stores, and verifies donor details.
- **Output:** Registered donors with complete profiles accessible for future reference.

2.3.2 Inventory Management

- **Input:** Information on blood donations received and issued.
- **Process:** Updates inventory based on new donations and blood usage.
- **Output:** Real-time display of blood stock levels by type.

2.3.3 Low-Stock Alerts

- **Input:** Inventory threshold levels for blood types.
- **Process:** Monitors inventory and triggers alerts when levels fall below the set threshold.
- **Output:** Notifications sent to administrators for timely restocking.

2.3.4 Search Functionality

- **Input:** Query for specific blood types or donors.
- **Process:** Searches database based on input criteria.
- **Output:** List of matched blood types or donor profiles.

2.3.5 User Authentication

- **Input:** User credentials during login.
- **Process:** Authenticates users based on role and grants access accordingly.
- **Output:** Authorized access to relevant sections of the system.

2.3.6 Donation Tracking

- **Input:** Donation details, including donor ID, date, blood type, and expiration.
- **Process:** Records and monitors individual donations.
- **Output:** Detailed record of each donation's lifecycle.

2.3.7 Reporting and Analytics

- **Input:** Inventory and usage data.
- **Process:** Compiles data into structured reports.
- **Output:** Reports on blood availability, usage trends, and donor statistics.

2.4 Non-Functional Requirements

2.4.1 Performance:

- The system should efficiently handle up to 100 concurrent users without any noticeable lag or delays during normal and peak usage times.

2.4.2 Usability:

- The interface is designed with responsive features to adapt seamlessly to different screen sizes (desktop, tablet, and mobile), ensuring a consistent user experience across all devices.

2.4.3 Reliability:

- The system is expected to maintain a high level of availability, targeting a 99.9% uptime to ensure continuous, real-time access to blood inventory data.

2.4.4 Security:

- The application employs robust encryption protocols and secure login mechanisms to protect sensitive data, including donor information and blood stock details, from unauthorized access.

2.4.5 Scalability:

- The system architecture is designed to accommodate growth in both donor information and inventory data, allowing efficient handling of increasing data volumes without compromising performance.

2.4.6Data Accuracy:

- Strict validation checks are enforced during data entry to maintain high accuracy in donor records and inventory updates, reducing the likelihood of errors or discrepancies.

2.4.7 Compliance:

- The system adheres to relevant healthcare and data privacy regulations, such as GDPR or HIPAA, to ensure proper handling and protection of sensitive data.

2.4.8 Maintainability:

- The codebase follows a modular structure, enabling easier modifications, updates, or bug fixes, which facilitates smooth future enhancements or maintenance tasks.

2.4.9 Disaster Recovery:

- The system includes regular backups of critical data, with a plan to restore operations and data access within one hour in the event of a failure, minimizing potential downtime and data loss.

CHAPTER 3

Entity Relationship Diagram

This chapter gives a brief overview on the Entity-Relationship(ER) diagram created for this project, along with a lengthy description on all its parts. Yellow is entities, blue is relationships, and red are attributes.

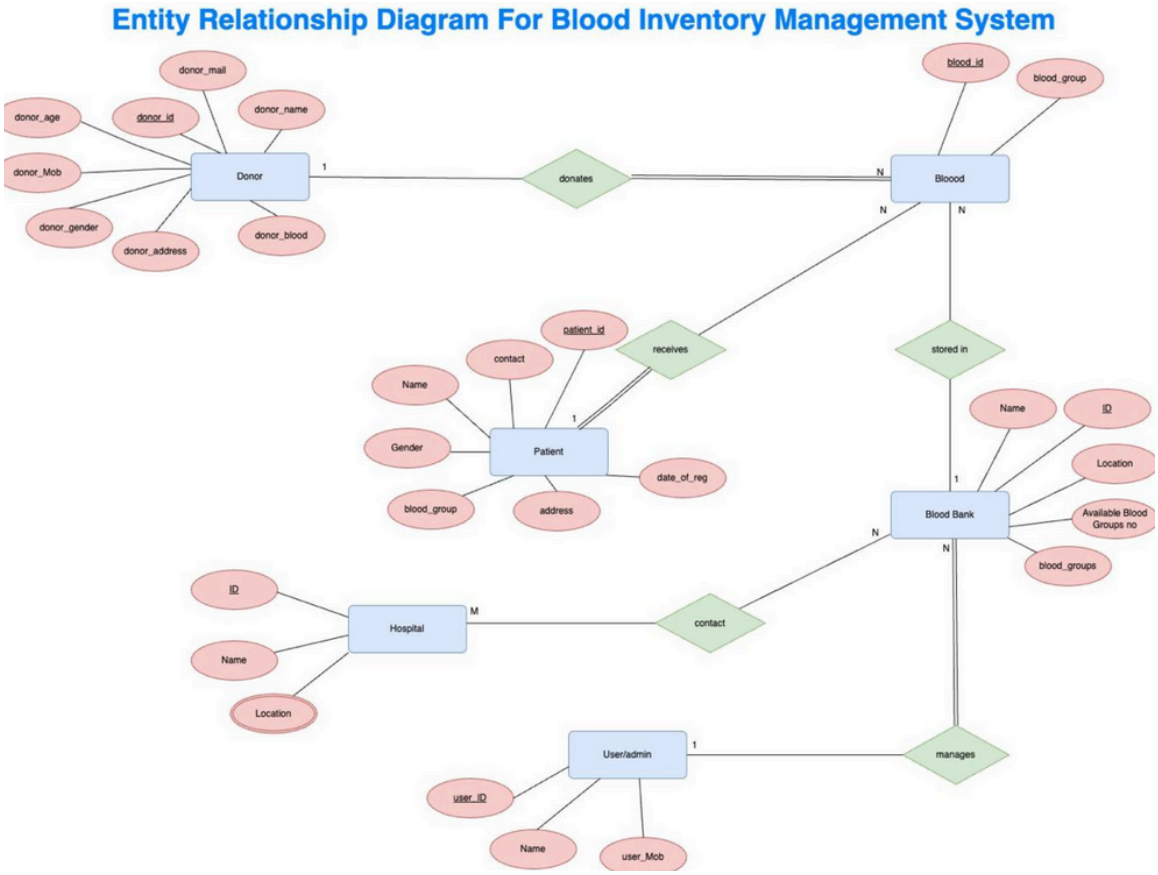


Figure 3.1: Entity Relationship Diagram of Blood Inventory Management System

The above Entity Relationship diagram is a blueprint or a representation of the Blood Inventory Management System (BIMS) being developed.It consists of 6 entities and 6 relations, which include relationships that ensure the proper management of blood inventory, donors, patients, and the collaboration between hospitals and blood banks. The entities encompass a wide variety of data about the system being developed, ranging from donors who provide blood, patients who receive it, to administrators managing the system.All the entities are mentioned below with the list of the corresponding attributes present in them accordingly.

3.1 Entities

3.1.1.Donor: Stores information about the blood donors.

- **Attributes**: donor_id, donor_name, donor_age, donor_gender, donor_blood, donor_address, donor_mail, donor_Mob.

3.1.2 Blood: Stores details of the blood units available in the system.

- **Attributes:** blood_id, blood_group.

3.1.3 Patient: Stores details of patients who receive blood.

- **Attributes:** patient_id, Name, Gender, blood_group, address, contact, date_of_reg.

3.1.4 Blood Bank: Stores and manages information about blood banks and their inventories.

- **Attributes:** ID, Name, Location, Available Blood Groups No, blood_groups.

3.1.5 Hospital: Stores information about hospitals connected to blood banks.

- **Attributes:** ID, Name, Location.

3.1.6 User/Admin: Maintains details of users or administrators managing the blood inventory system.

- **Attributes:** user_id, Name, user_Mob.

3.2 Relationships

3.2.1 Donates:

- **Between:** Donor → Blood
- **Description:** A donor donates blood to the system.

3.2.2 Receives:

- **Between:** Patient → Blood
- **Description:** A patient receives blood from the system.

3.2.3 Stored In:

- **Between:** Blood → Blood Bank
- **Description:** Blood units are stored in blood banks.

3.2.4 Manages:

- **Between:** User/Admin → Blood Bank
- **Description:** A user/admin manages the operations of blood banks.

3.2.5 Contact (Patient to Blood Bank):

- **Between:** Patient → Blood Bank
- **Description:** A patient is registered with a specific blood bank to access and receive blood units required for treatment.

3.2.6 Contact (Blood Bank to Hospital):

- **Between:** Blood Bank → Hospital
- **Description:** A blood bank collaborates with multiple hospitals to supply blood and maintain inventory coordination.

CHAPTER 4

DETAILED DESIGN

This chapter has data flow diagrams (DFDs) which graphically represent as to how the data flows within the airport management system.

4.1 Data Flow Diagram Level 0

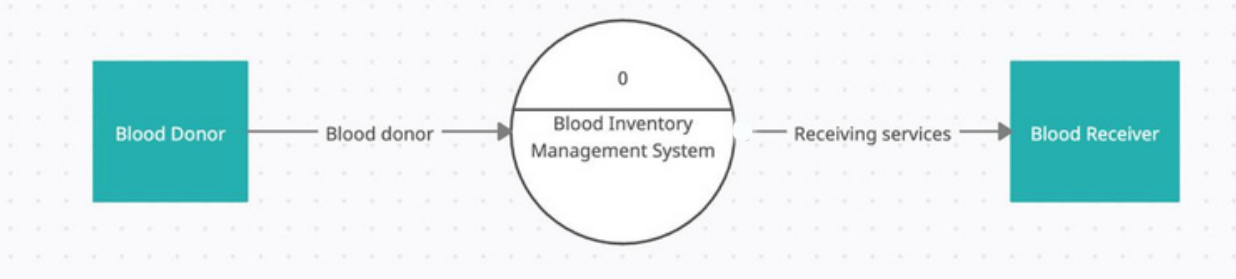


Figure 4.1: Level 0 Data Flow Diagram Efficient Blood Inventory Management System

The figure 4.1 provides an overview of the Blood Inventory Management System. The system facilitates the interaction between blood donors, the inventory management system, and blood receivers. The primary functionality involves the donation of blood by donors, storage and monitoring of inventory, and fulfilling blood requests from receivers.

4.2 Data Flow Diagram Level 1

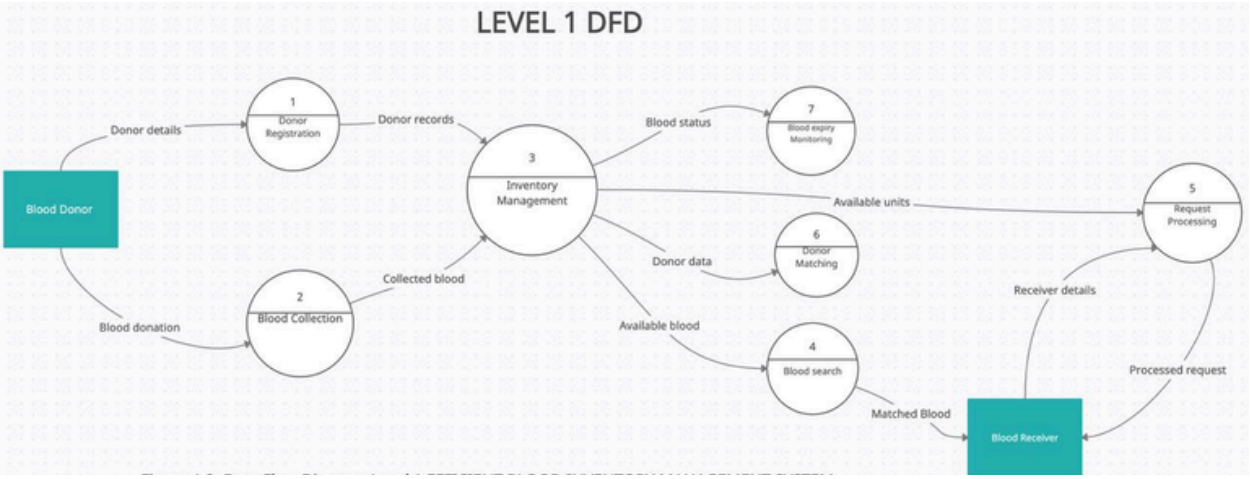


Figure 4.2: Level 1 Data Flow Diagramfor Efficient Blood Inventory Management System

The figure 4.2 gives information on different processes possible in the system. Possible functionalities:

1.Donor Registration

2. Blood Collection

3. Inventory Management

4. Blood Search

5. Request Processing

6. Donor Matching

7. Blood expiry monitoring

4.3 Data Flow Diagram Level 2 for Efficient Blood Inventory Management System

each functionality or process mentioned in the figure 4.2 is broken down into several sub-processes or sub-functionalities in order as follows:

Figure 4.3: Donor Registration

4.3.1 Donor Registration(Figure 4.3): This functionality enables new donors to register in the system by providing their personal details such as Name, Mobile no.,Email Id,Age,Gender,Blood Group ,Address. The process verifies donor identity through proper documentation, and upon successful verification, creates a donor profile that can be accessed by blood receivers. The registration process ensures proper documentation and validation of donor information before they can participate in blood donation activities

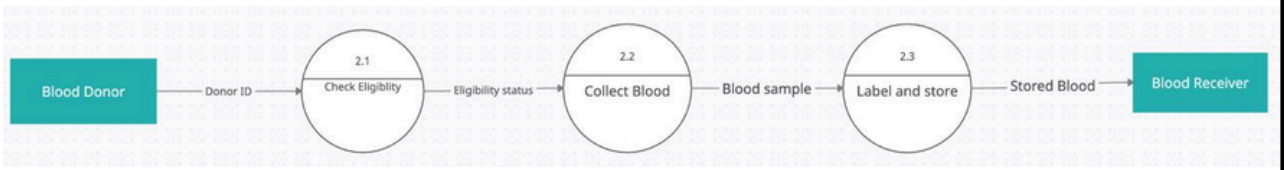


Figure 4.4: Blood Collection

4.3.2 Blood Collection (Figure 4.4): This functionality manages the blood donation process where registered donors can donate blood. The system first checks donor eligibility based on their Donor ID, followed by the actual blood collection process. After collection, the blood sample is properly labeled and stored in the system database. This ensures proper tracking and handling of blood units from collection to storage.

Figure 4.5: Inventory Management

4.3.3 Inventory Management (Figure 4.5): This functionality enables systematic tracking of blood units in the blood bank. The process begins with checking current inventory levels, updating stock information when new units are added or removed, and monitoring blood unit expiry dates. The system maintains real-time information about available blood units and ensures proper stock management through expiry monitoring.

Figure 4.6: Blood Search

4.3.4 Blood Search (Figure 4.6): This functionality allows users to search for specific blood types when needed. The process checks the blood type required against available units and facilitates the reservation of matched blood units. This helps in quick identification and allocation of required blood units to receivers.

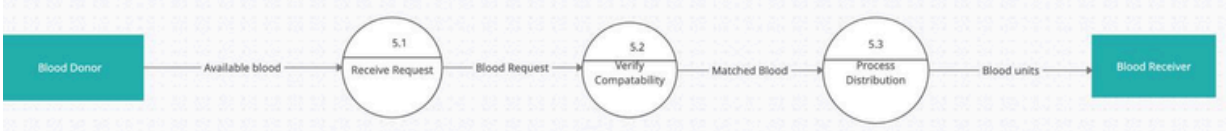


Figure 4.7: Request Processing

4.3.5 Request Processing (Figure 4.7): This functionality manages blood request handling from initial receipt to final distribution. When available blood is requested, the system processes the request by verifying blood compatibility and managing the distribution process. This ensures efficient handling of blood unit requests and proper distribution to receivers.

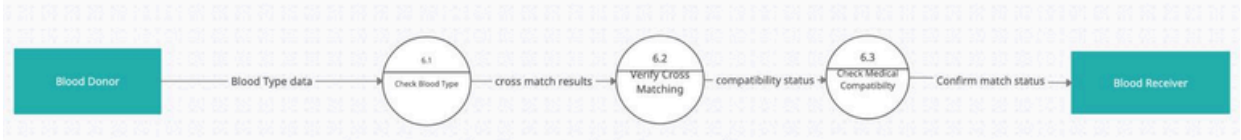


Figure 4.8: Donor Matching

4.3.6 Donor Matching (Figure 4.8): This functionality ensures proper matching between donors and receivers. The process includes checking blood type compatibility, verifying cross-matching results, and confirming medical compatibility. This comprehensive matching process ensures safe and compatible blood transfusions.

Figure 4.9: Blood Expiry Monitoring

4.3.7 Blood Expiry Monitoring (Figure 4.9): This functionality manages the monitoring of blood unit expiration dates. The system generates expiry alerts for blood units approaching their expiry date, removes expired units from the available inventory, and updates blood status accordingly. This helps maintain quality control and ensures only usable blood units are available for distribution.

CHAPTER 5

RELATIONAL SCHEMA AND NORMALIZATION.

5.1 Relational Schema

This chapter includes the relational schema which involves mapping the relations between different entities or data tables defined. Figure 5.1 displays the relational mapping. A relational schema defines the structure and design of the relation or the data table in the database.

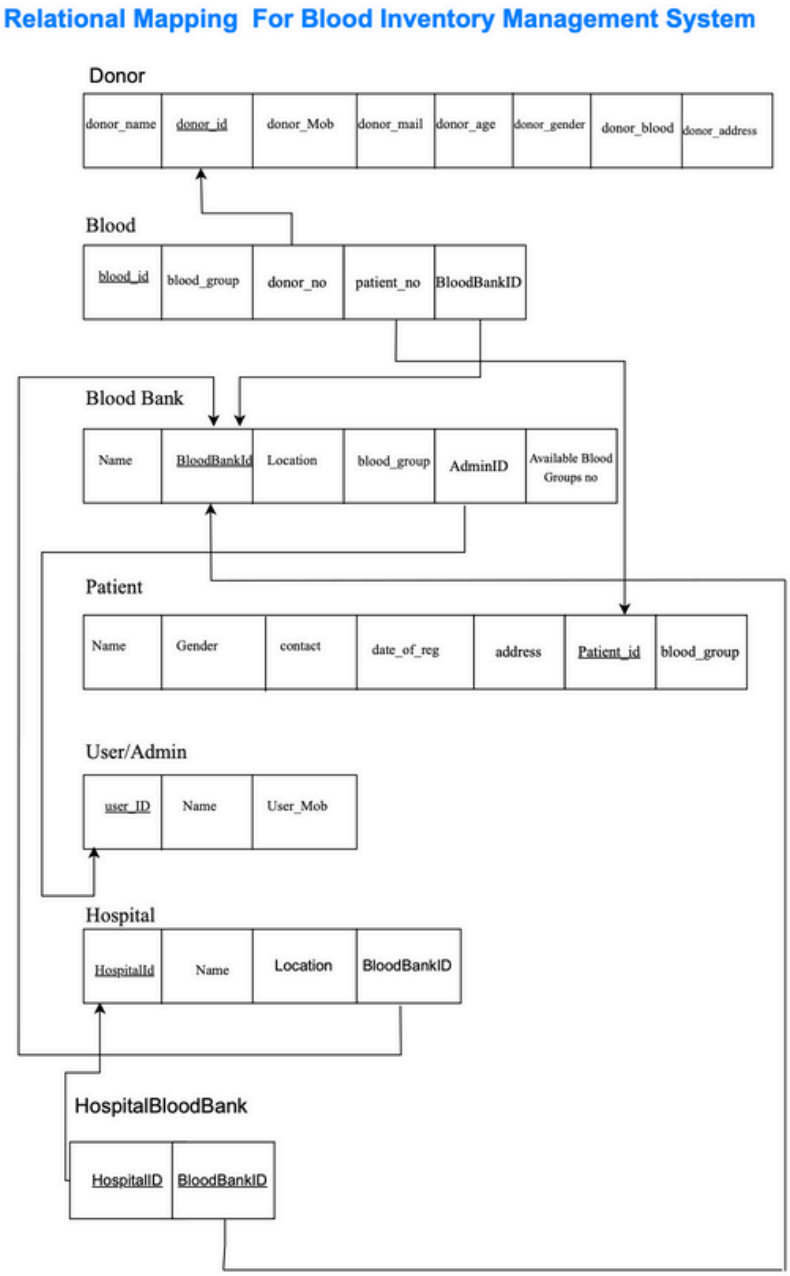


Figure 5.1: Relational Schema For Efficient Blood Inventory Management System

Relationships

5.1.1 Donor:

- **Primary Key:** donor_id
- **Relationships:**Linked to Blood via donor_no.

5.1.2 Blood:

- **Primary Key:** blood_id
- **Relationships:**
  - Linked to Donor via donor_no.
  - Linked to Patient via patient_no.
  - Linked to Blood Bank via BloodBankID.

5.1.3 Blood Bank:

- **Primary Key:** BloodBankID
- **Relationships:**
  - Linked to Blood via BloodBankID.
  - Linked to Hospital via BloodBankID.
  - Linked to User/Admin via AdminID.

5.1.4 Patient:

- **Primary Key:** Patient_id
- **Relationships:**Linked to Blood via patient_no.

5.1.5 User/Admin:

- **Primary Key:** user_ID
- **Relationships:**Linked to Blood Bank via AdminID.

5.1.6.Hospital:

- **Primary Key:** HospitalID
- **Relationships:**
  - Linked to Blood Bank via BloodBankID.
  - Linked to HospitalBloodBank via HospitalID.

5.1.7.HospitalBloodBank:

- **Primary Key:** Not explicitly mentioned (Composite Key: HospitalID and BloodBankID).
- **Relationships:**
  - Linked to Hospital via HospitalID.
  - Linked to Blood Bank via BloodBankID.

5.2 Normalization

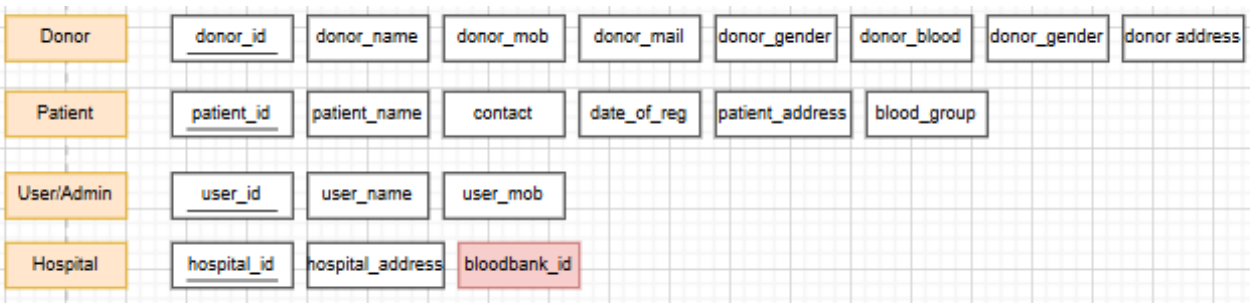
This section includes the normalised tables obtained as a result of normalization, a pro-cedure involving a set of steps to be checked to eliminate redundancy and functional dependencies between columns in a data table.

5.2.1 1NF (First Normal Form): Ensures that each column contains only atomic values that cannot be divided, and each record is unique.

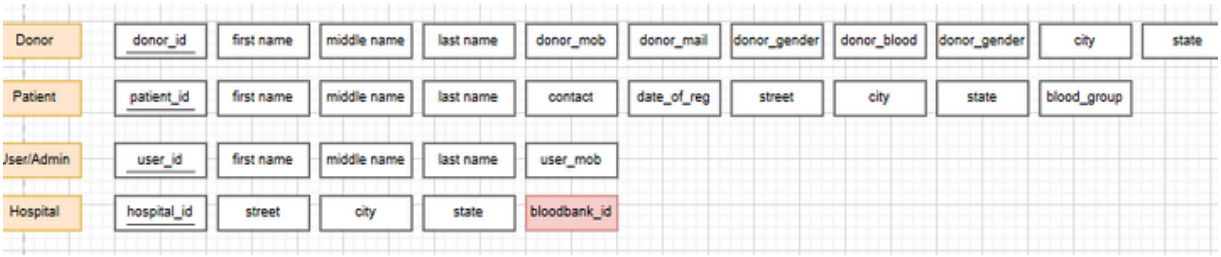
- Unique Primary Key (Key which is unique, and is not null)
- No duplicates

The Donor ,Patient ,User/Admin table has attributes donor_name and donor_address, patient_name , patient_address which are composite attributes and are not atomic .To make them atomic we need to make new attributes.The below before and after column highlights the changes and make them in 1st normal form.

- **Functional Dependencies:**
  - **Donor:**
    - **donor_id** → first name, middle name, last name, donor_mob, donor_mail, donor_gender, donor_blood, city, state
  - **Blood:**
    - **blood_id** → bloodbank_id, patient_no, donor_no
  - **Patient:**
    - **patient_id** → first name, middle name, last name, street, date_of_reg, contact, blood_group, city, state
  - **User/Admin:**
    - **user_id** → first name, middle name, last name, user_mob
  - **Hospital:**
    - **hospital_id** → city, street, bloodbank_id, state



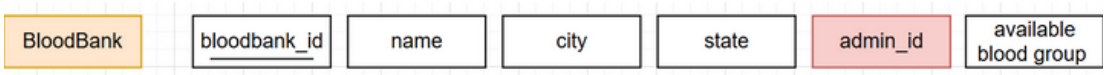
Before Normalization to 1NF



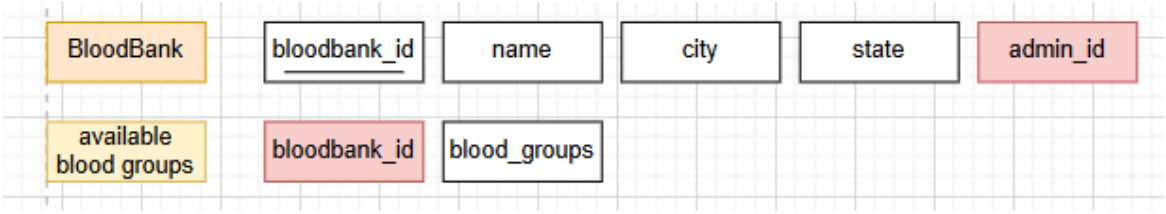
After Normalization to 1NF

Here blood_group is a multivalued attribute means non atomic. To overcome this problem we made seperate table (available in blood groups) .Now it is in 1st normal form.

- **Functional Depenendencies:**
  - **BloodBank:**
    - **bloodbank_id** → admin_id, state, city, name
    - **bloodbank_id** → blood_groups



Before Normalization to 1NF



After Normalization to 1NF

5.2.2 Second Normal Form (2NF) : Includes 1NF . Here, it should be ensured that no partial dependencies exist in the data tables. This means that each non-key attribute is dependent only on the primary key.It deals with a partial dependency example when a non-key attribute depends on part of a composite primary key.

- There are no partial dependencies in the data tables above.

5.2.3 Third Normal Form (3NF) : The data tables must be free of transitive dependencies. This means that each column should be directly related to the primary key and not to any other columns in the same data table.

- There are no transitive dependencies in the data tables above.

CHAPTER 6

CONCLUSION

The developed Blood Inventory Management System is a robust and scalable solution that integrates critical functions to ensure the seamless management of blood donations and requests. By streamlining processes such as donor registration, inventory monitoring, and blood request processing, the system enhances operational efficiency and ensures the availability of life-saving resources. Its efficient inventory tracking and expiry monitoring help reduce wastage, ensuring optimal resource utilization.

The system provides a secure platform for donors and receivers, maintaining transparency and reliability in data handling. Additionally, the matching of blood donors with receivers is performed with precision, ensuring compatibility and reducing delays in critical situations. The platform is designed to be user-friendly, offering an intuitive and accessible interface for both donors and receivers. Its responsive design ensures a smooth user experience across various devices.

Overall, the Blood Inventory Management System delivers a reliable and efficient platform for managing blood resources, contributing to a streamlined process and improved healthcare outcomes.

CHAPTER 7

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APPENDIX A
SNAPSHOTS

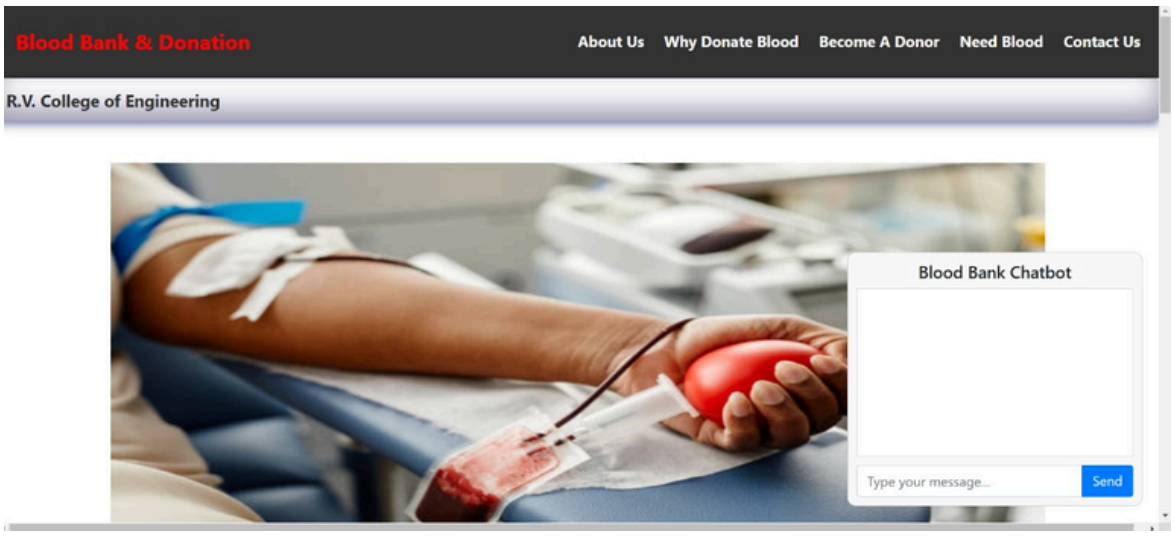

Figure 8.1: Blood Bank Website - User Home Page

Figure Description :- Our project's Home Page includes various sections to enhance user experience. The About Us tab provides a brief introduction to our website, while Why Donate Blood emphasizes the importance of blood donation. The Become a Donor section allows volunteers to register as blood donors, and Need Blood helps patients and hospitals connect with potential donors. For any inquiries, the Contact Us tab offers support and communication options. Additionally, our Blood Bank Chatbot is available to answer questions and assist users with their concerns.

Figure 8.2:Blood Bank Portal - List of Registered Donors Details

Figure Description :- The image showcases comprehensive details about blood donors, including their full names, blood groups, contact numbers, gender, age, and addresses.

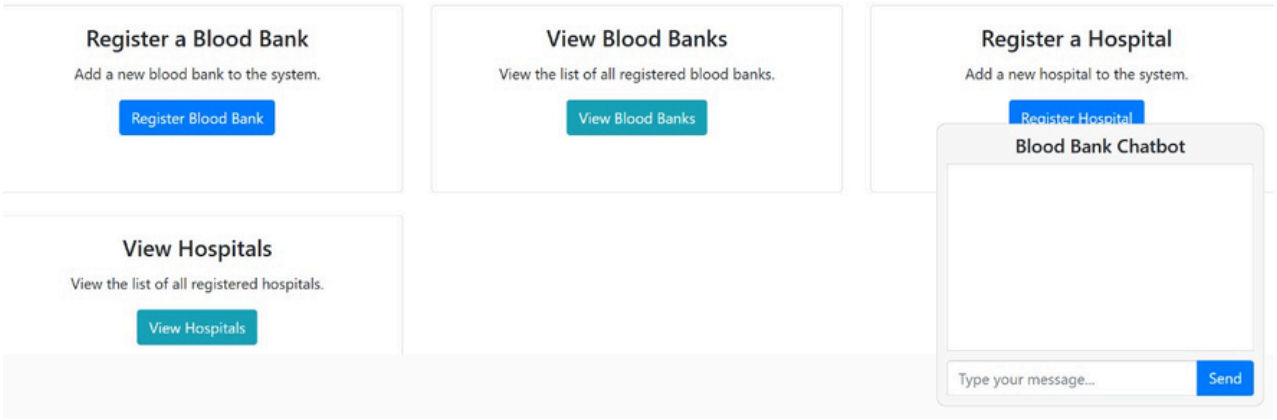

Figure 8.3: Blood Bank Website - User Home Page

Figure Description :- This page offers several options, including Register a Blood Bank, allowing blood banks to join our system, and View Blood Banks, which lists all registered blood banks. Similarly, Register a Hospital enables hospitals to become part of our network, while View Hospitals provides a directory of registered hospitals.

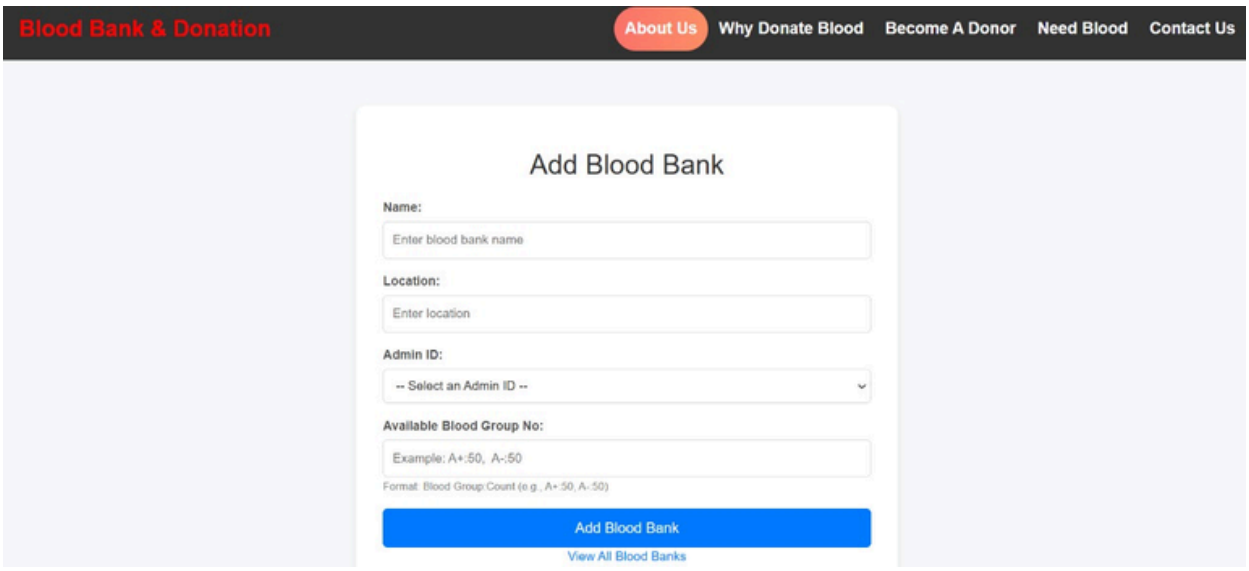

Figure 8.4: Blood Bank Portal - Blood Bank Registration Page

Figure Description :- New blood banks can register in the system by providing details such as their name, location, and available blood group numbers.

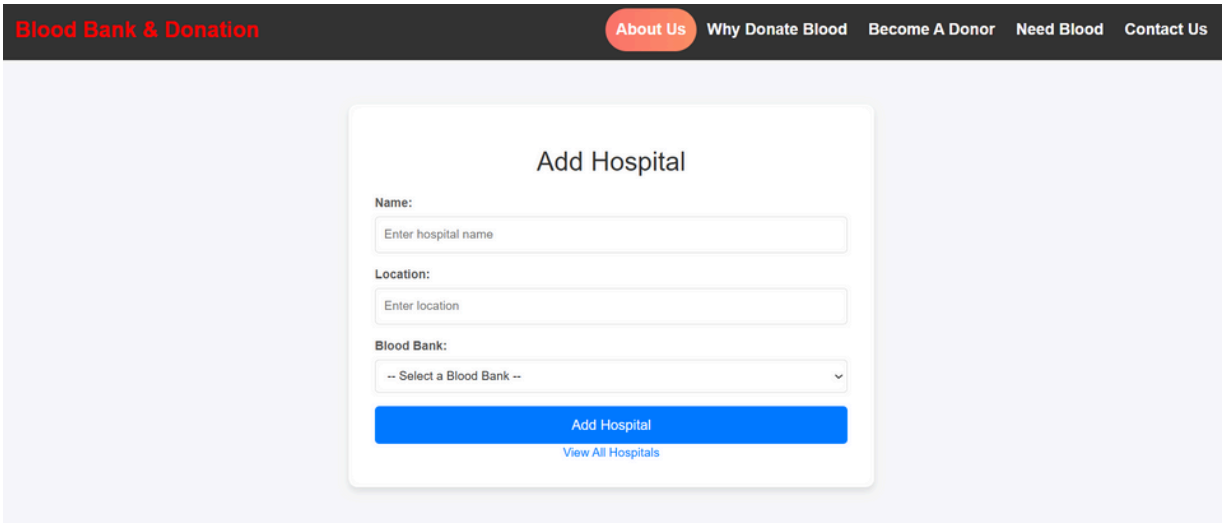

Figure 8.5:Blood Bank Portal - Hospital Registration Page

Figure Description :- NewHospitals can register in the system by providing details such as their Name, location, and BloodBank they want to associate themselves with.

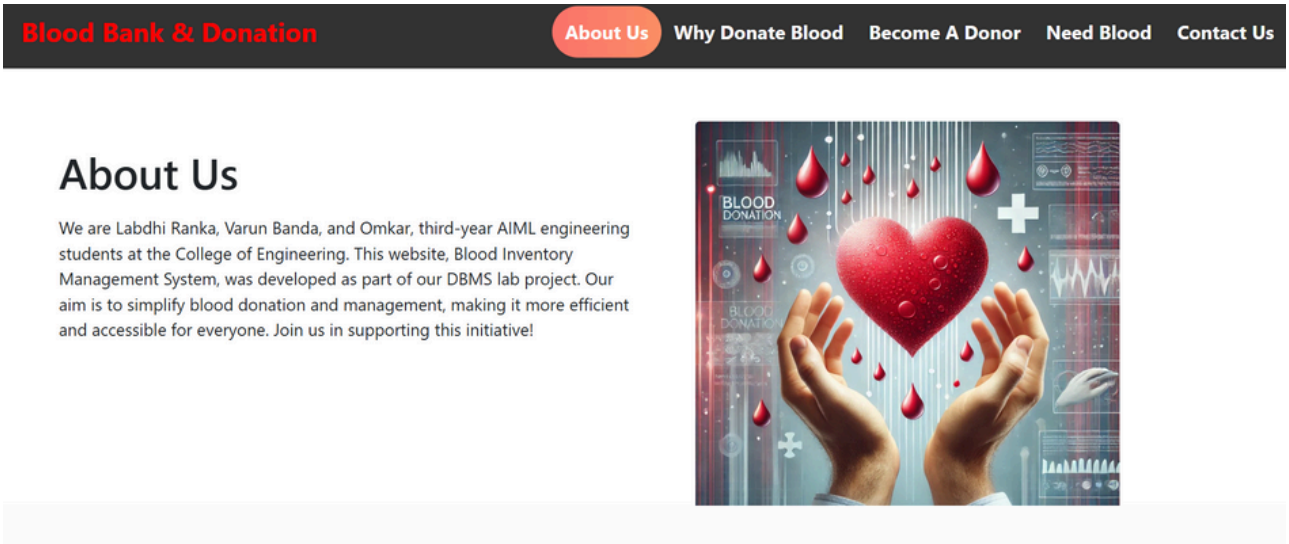

Figure 8.6: Blood Bank Website - About Us Page

Figure Description :- The About Us page provides an overview of the project, its purpose, and the technology used to develop it. It highlights the motivation behind the project, its key features, and the real-world problems it aims to solve. Additionally, it introduces the team members who contributed to the project, their roles, and their expertise in bringing the idea to life

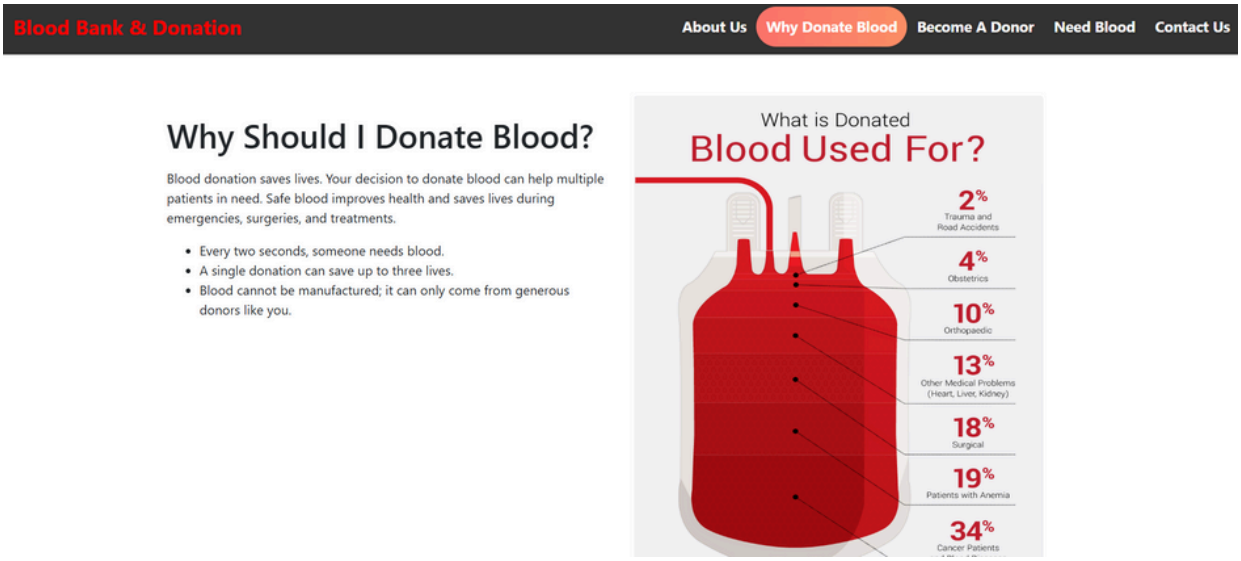

Figure 8.7: Blood Bank Website - Why Donate Page

Figure Description :- The figure provides information on the significance of why a person should donate blood and how the donated blood is used and where it is used.

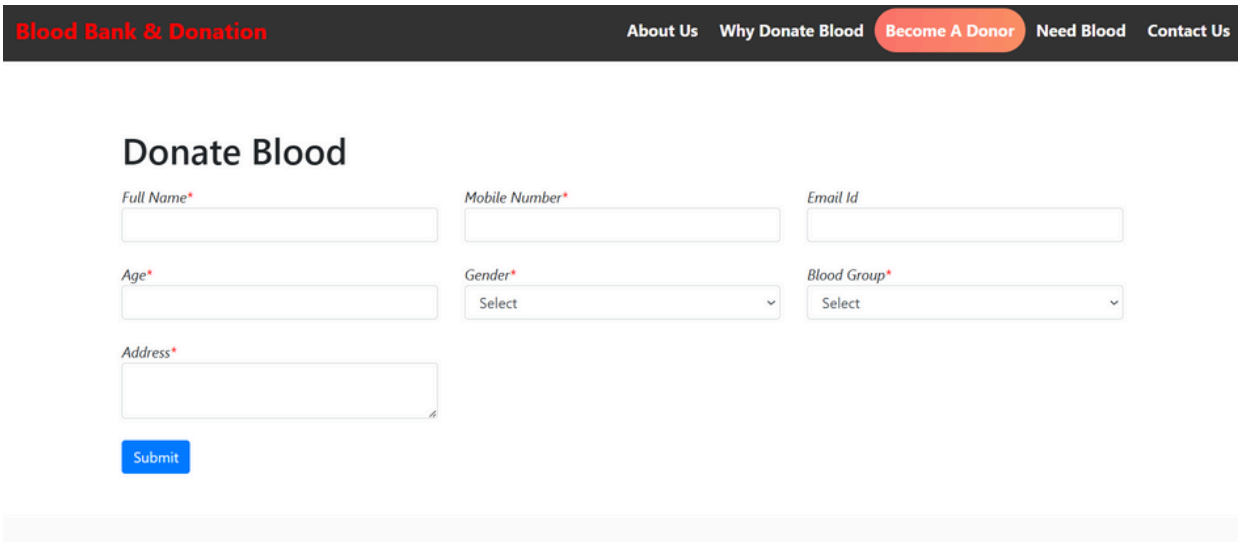

Figure 8.8: Blood Bank Portal - Donate Blood Page

Figure Description :- In order to register themselves in the system, new donors must enter their full name, address, blood group, age, gender, mobile number, and email address.

Figure 8.9:Blood Bank Portal - Need Blood Page

Figure Description :- Donors in need of blood can use this page to enter the blood group they require and the reason for their need. After clicking submit, they will receive a list of donors who have that particular blood group.

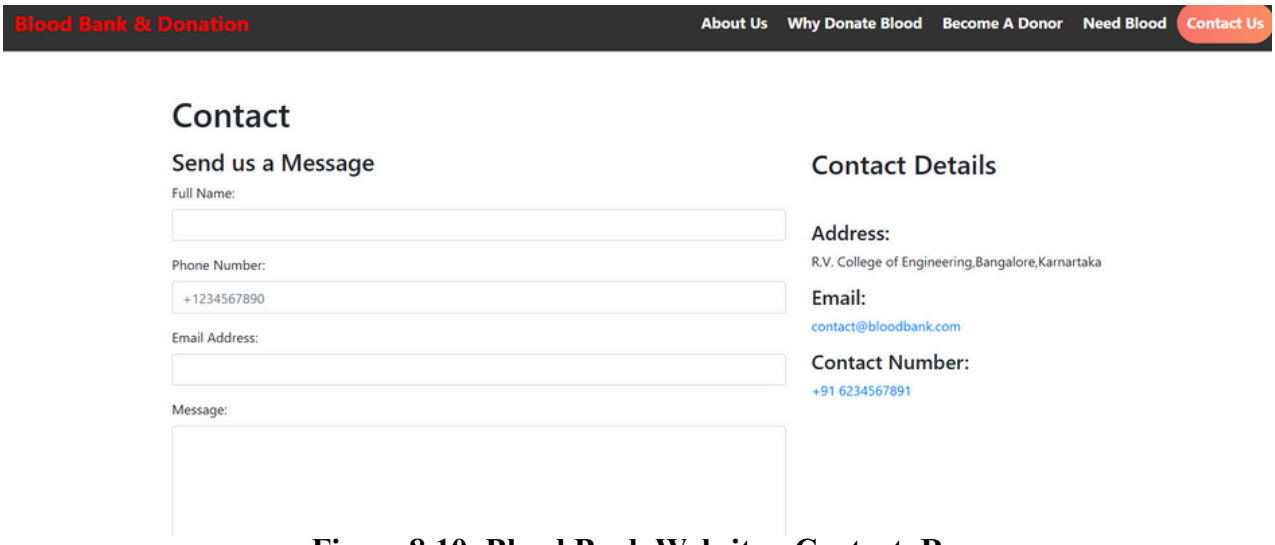

Figure 8.10: Blood Bank Website - Contact Page

Figure Description :- Here, the user can get in touch with the admin by providing their name, phone number, email address, and the message they would like to send to the admin. A query will then be generated in the admin panel.

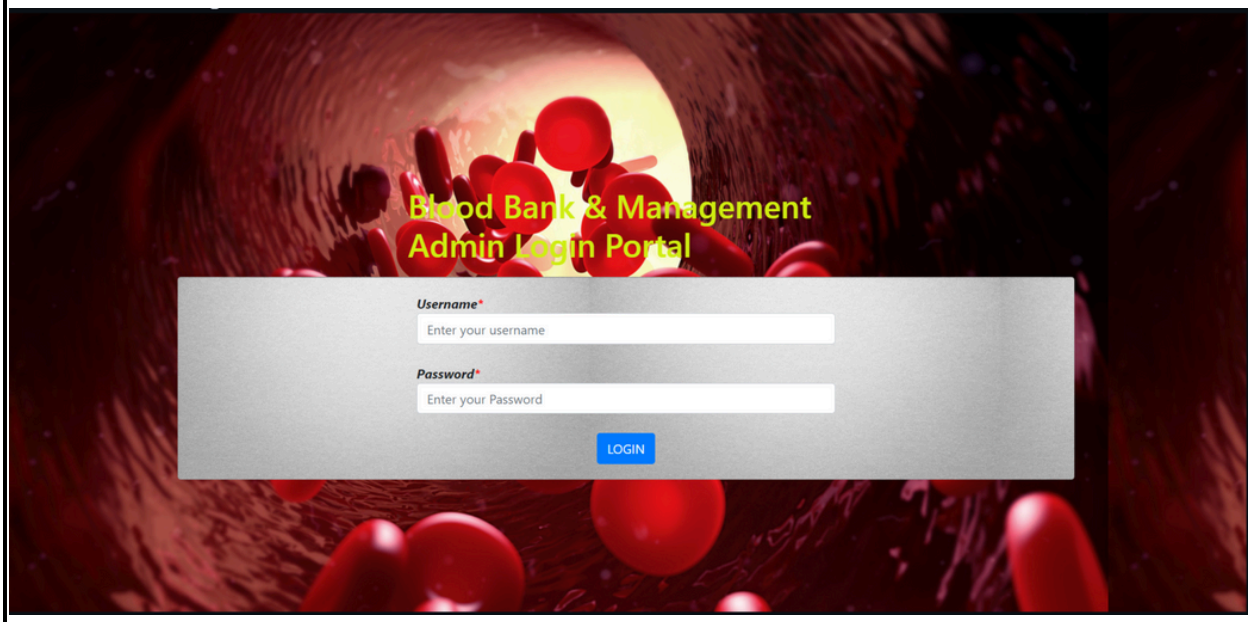

Figure 8.11:Blood Bank Management System - Admin Login Portal

Figure Description: Administrators can access the admin page through the Admin Login Portal by entering their username and password. The admin dashboard will then open after they click the submit button.

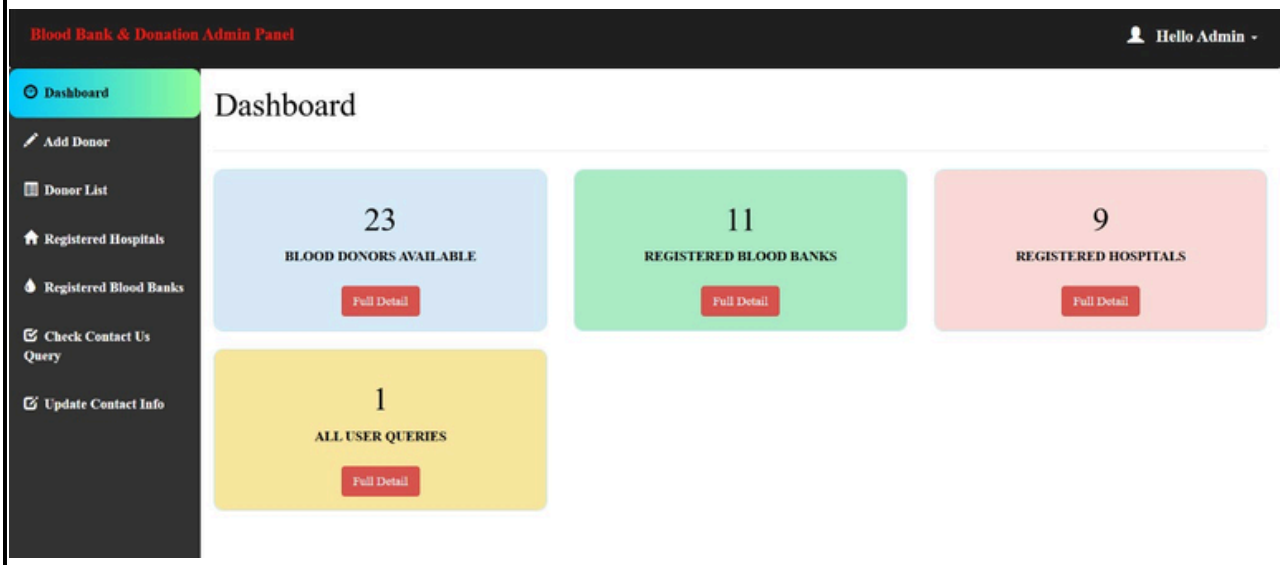

Figure 8.12:Blood Donation Admin Dashboard - Overview Page

Figure Description:-The picture displays the admin panel's dashboard, where the administrator can view the number of blood donors who are available, hospitals and bloodbanks that have registered, and user queries and also they can update the contact info for the frontend page.

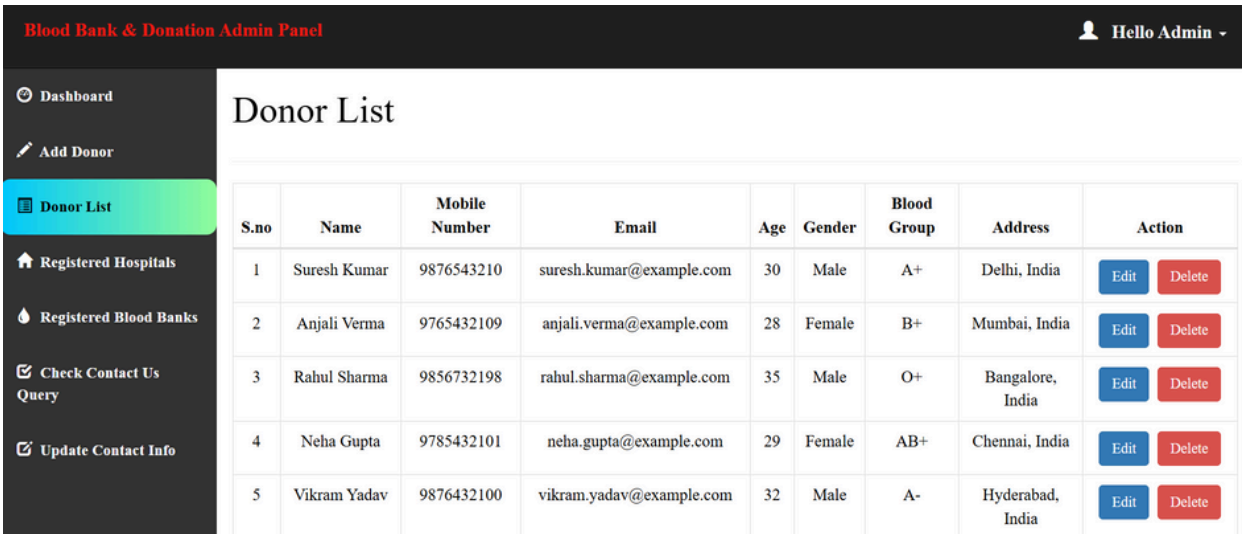

Figure 8.13: Blood Donation Admin Donor List Page

Figure Description:-The page displays the donor who has registered with the system, along with the following columns: S.no., Name, Email ID, Mobile Number, Age, Gender, Blood Group, and Address action option for the administrator to modify the donor information.Additionally, it displays the donor's self-report; this will be updated once the registration process is complete.

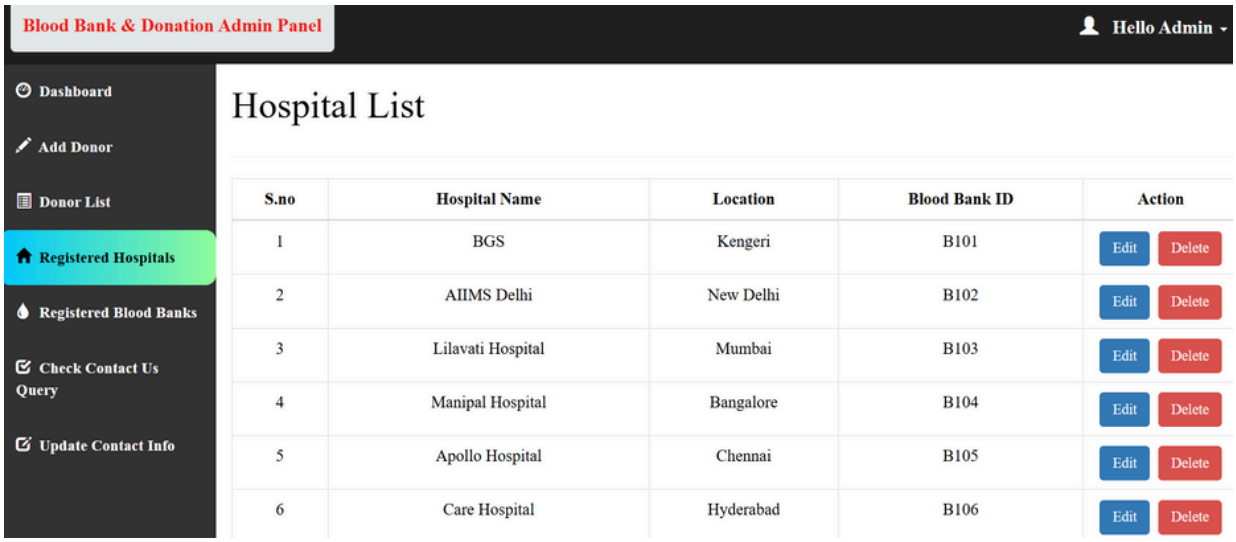

Figure 8.14: Admin Panel , Registration Hospital Page

Figure Description:- The page is showing the hospital registered to the system with colume name : S.no ,Hospital Name, Location , Blood Bank ID action option for the admin to edit the hospital details **.**

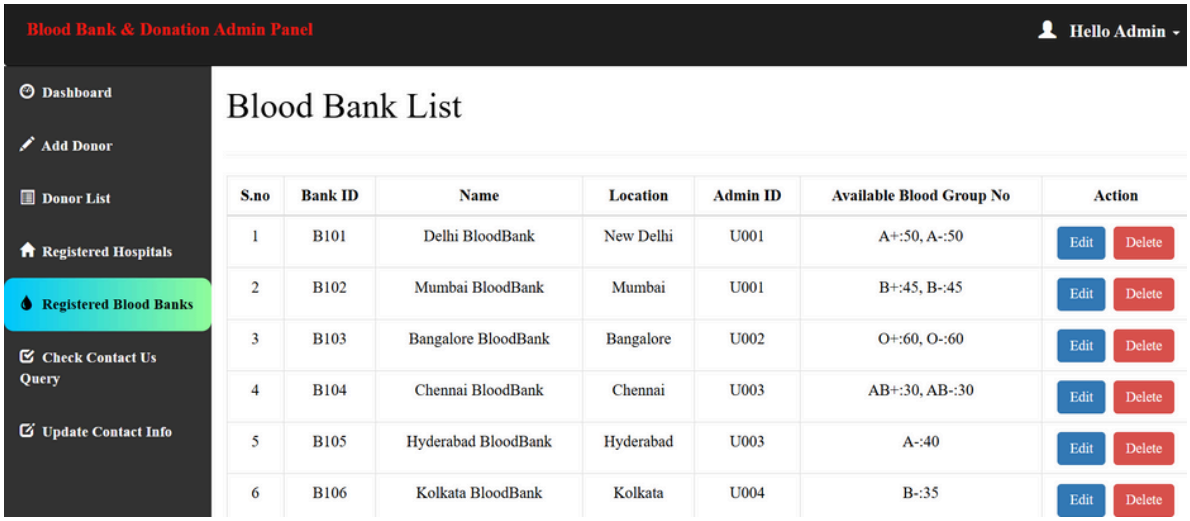

Figure 8.15: Admin Panel , Blood Bank List Page

Figure Description:- The page is showing the Blood Bank registered to the system with colume names: S.no ,BloodBank ID, Blood Bank Name, Location , Admin ID , Available Blood Group No and action option for the admin to edit the Blood Bank details .

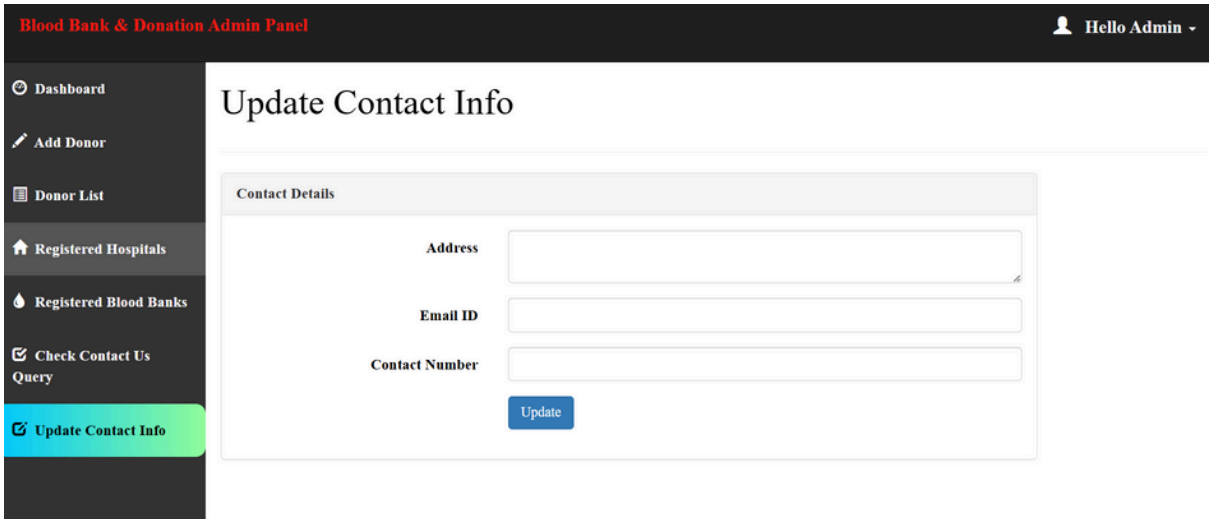

Figure 8.16: Admin Panel , Update Contact Info Page

Figure Description:-This page allows the administrator to update the user's address, email address, and phone number. The front end will display it following this update.