A Project Report on

on

Blood Bank Management System

Submitted in partial fulfilment for the course

CIOE03
Database Management System

Bachelor of Engineering

in

CSE (Artificial Intelligence and Machine Learning)

Submitted by

USN-1MS22EE047 Name-SHILU KUMARI

USN-1MS22EC022 Name-ANKITA M JAKA

Under the guidance of

Bhagyashree Hosmani

Teaching Associate

CSE (AIML)

M. S. Ramaiah Institute of Technology

(Autonomous Institute Affiliated to VTU) MSR Nagar, MSRIT Post

Bangalore-560054, Karnataka, India

CERTIFICATE

This is to certify that **Ankita M Jaka(1MS22EC022) and Shilu Kumari(1MS22EE047)** have successfully completed the Case Study titled **"Blood Bank Management System**" in partial fulfilment of the requirements of the course **CIOE03 Database Management System** offered by Ramaiah Institute of Technology, Bengaluru in partial fulfillment for the award of Bachelor of Engineering in **CSE (Artificial Intelligence and Machine Learning)** of the Visvesvaraya Technological University, Belagavi during the year 2024-25.

Bhagyashree Hosmani
Faculty Incharge

Marks Allotment:

Total Marks	Marks Obtained

Signature of Faculty with Date

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ABSTRACT

The Blood Bank Management System is designed to efficiently manage and streamline the process of blood donation, storage, and distribution. It facilitates real-time tracking of blood inventory, donor registration, and request handling, ensuring the right blood type is available when and where it's needed. The system enhances coordination between donors, hospitals, and blood banks, reducing manual errors and delays. By automating key operations and maintaining an organized database, it improves transparency, accessibility, and reliability in blood supply management, ultimately supporting better healthcare delivery.

INRODUCTION

A Blood Bank Management System is a software-based solution developed to address these challenges by automating the processes involved in blood donation, storage, and distribution. It provides a centralized platform to maintain donor records, manage blood inventory, process requests from hospitals, and ensure proper matching of blood types. The system also helps in identifying eligible donors, scheduling donation camps, and generating reports for analysis and planning.

The goal of this system is to enhance the efficiency, accuracy, and responsiveness of blood bank operations. It supports faster communication between blood banks and healthcare facilities, improves data security, and ensures that critical resources are available when needed, ultimately contributing to better patient care and emergency preparedness.

SOFTWARE REQUIREMENTS

1. Web Server

Apache Server

Installed as part of: XAMPP

2. Backend Technology

PHP (v5.6 to v7.4 recommended; avoid PHP 8+ unless updated for compatibility)

3. Frontend Technology

HTML, CSS, JavaScript

4. Database

MySQL (included in XAMPP)

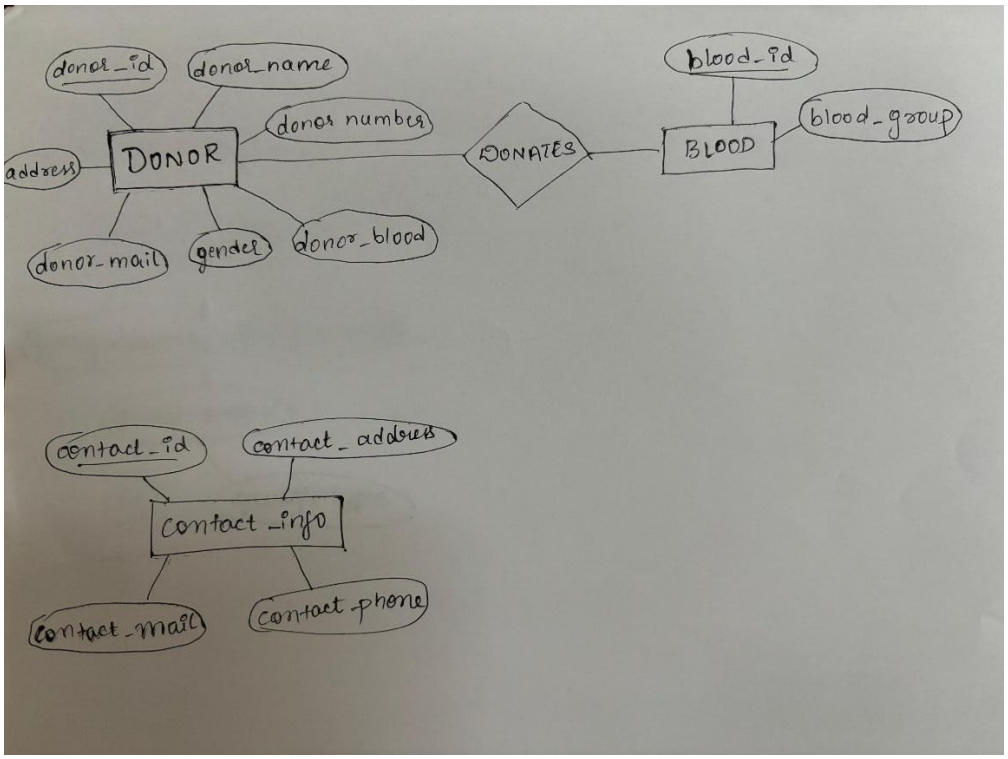
5. Database Management Tool

phpMyAdmin (comes bundled with XAMPP)

6. Code Editor

Visual Studio Code

ER DIAGRAM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DONOR
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contact_info
contact_mail
contact_phone

SCOPE OF STUDY

1. Donor Management

- Allows new donors to register through a web form.
- Stores donor information such as name, age, blood group, contact number, address.
- Enables the admin to view and manage donor records in the backend.

2. Blood Request Management

- Users can request specific blood groups through an online form.
- Blood requests are stored and managed in the database for further processing.

3. Admin Panel Functionality

- Donors
- Blood requests
- Contact queries
- Informational website content (e.g., “About Us”, “Why Donate Blood”)
- Admins can delete or update records directly from the panel.

4. User Interface

- Public-facing website includes:
- Home page
- About Us
- Why Donate Blood
- Contact Us form
- Responsive design ensures accessibility on multiple devices.
- Simple navigation for both donors and recipients.

5. Database Management

- MySQL database stores:

- Donor details
- Blood request records
- User messages from the contact form
- Ensures data consistency and supports CRUD operations (Create, Read, Update, Delete).
- Organized schema to support scalable development.

FINDINGS

During the development and implementation of the Blood Bank and Donation Management System (BB&DMS), the following findings were observed:

1. Efficient Data Management

The use of MySQL as the backend database enabled efficient storage and retrieval of donor and request data. The relational database structure allowed smooth handling of CRUD operations, ensuring data integrity and consistency throughout the system.

2. User-Friendly Interface

The project features a clean and simple web interface developed using HTML, CSS, and JavaScript, which provides an intuitive user experience. Donors and blood seekers can navigate the system easily without any technical knowledge.

3. Streamlined Donor Registration and Blood Request Processes

The system provides a seamless flow for:

- Registering as a blood donor.
- Submitting blood requests online.
- Storing all data in a centralized database, accessible to the admin for decision-making.

4. Ease of Deployment

The project is built using PHP and MySQL, making it easy to deploy on platforms like XAMPP. This ensures the system can run in local environments without complex setup.

5. Limitations Identified

- Lack of Real-Time Inventory Management: The system does not maintain an automatic count of available blood stock.
- No Notification System: The system lacks automatic alerts (e.g., email or SMS) for blood requests or donor reminders.
- Static Blood Availability: There is no module for tracking or displaying the live availability of different blood types.

IMPLEMENTATION

1. System Environment

- Frontend: HTML, CSS, JavaScript
- Backend: PHP (server-side scripting)
- Database: MySQL
- Server Environment: XAMPP (Apache, PHP, MySQL stack)
- Platform: Web-based (Runs on localhost)

2. Database Design

A structured relational database was created using MySQL. The main tables used are:

- donor – Stores donor details (name, age, blood group, contact, address)
- blood_request – Stores requests for blood from users (name, blood group needed, contact info)
- contact – Stores queries submitted through the "Contact Us" form

Each table is related through primary keys, and basic SQL queries (SELECT, INSERT, UPDATE, DELETE) are used for data manipulation.

3. Module Implementation

a. Donor Registration Module

- Donors register by submitting a form with personal and contact details.
- Data is inserted into the donor table via a PHP script.
- Admin can view and manage registered donors in the admin panel.
- Pages such as Home, About Us, and Why Donate Blood are implemented using HTML/CSS and contain general information for users.

b. Contact Form

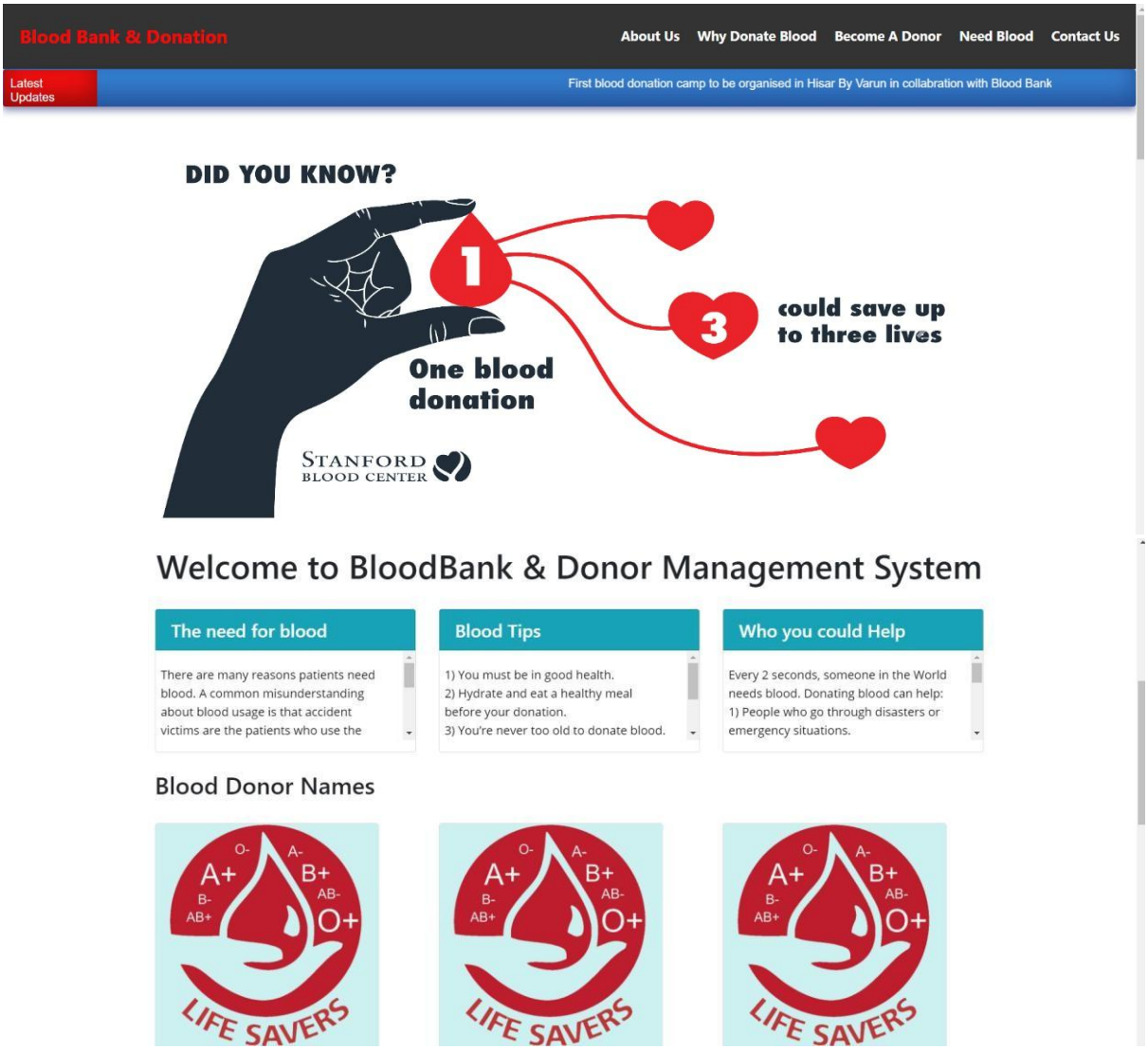
- Data is stored in the contact table and can be accessed by the admin.

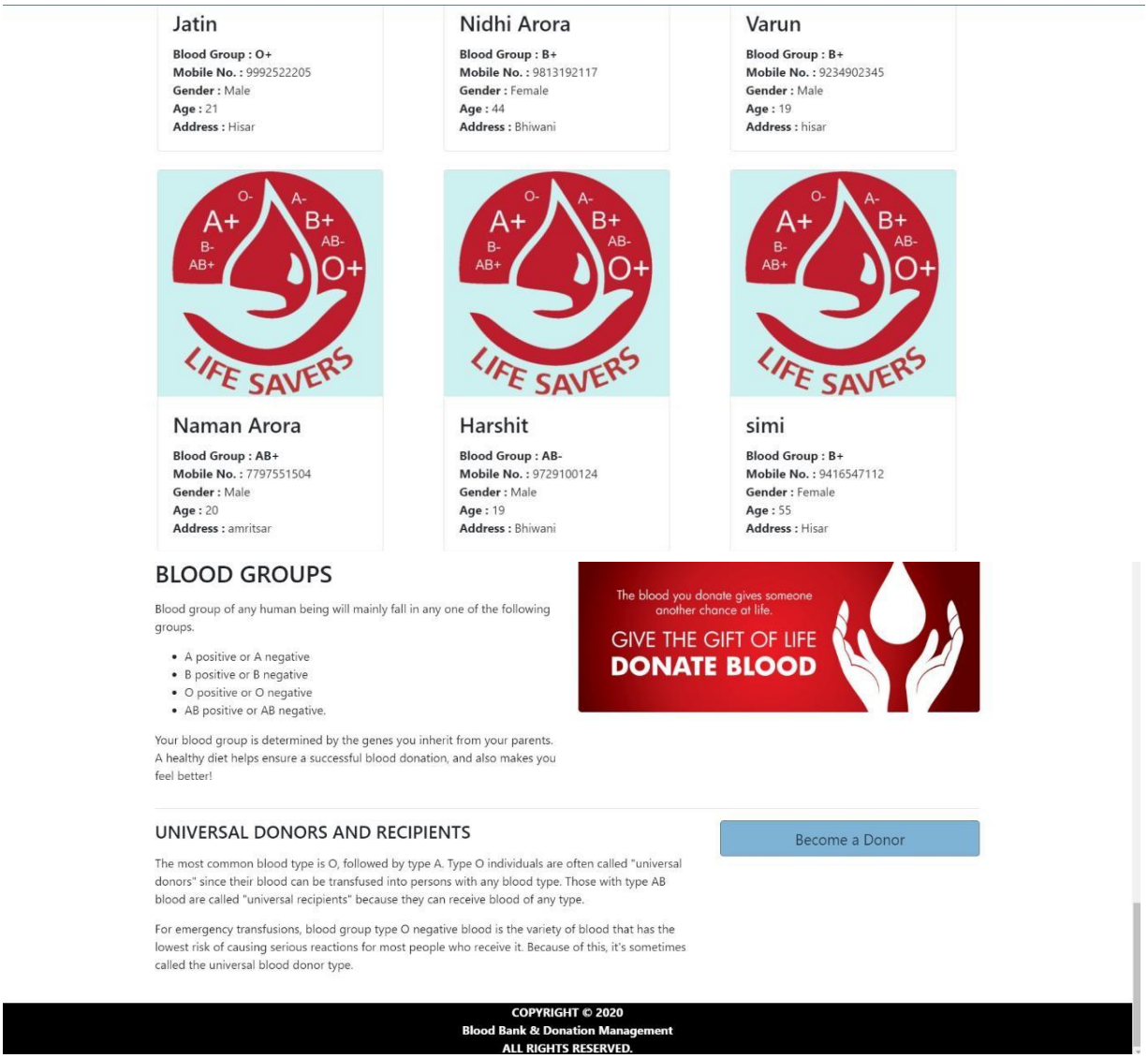
4. Testing and Deployment

- The system was tested locally using the XAMPP server.
- All modules were tested individually for functionality and database connectivity.
- The final deployment is accessible via http://localhost/BDMS/home.php.

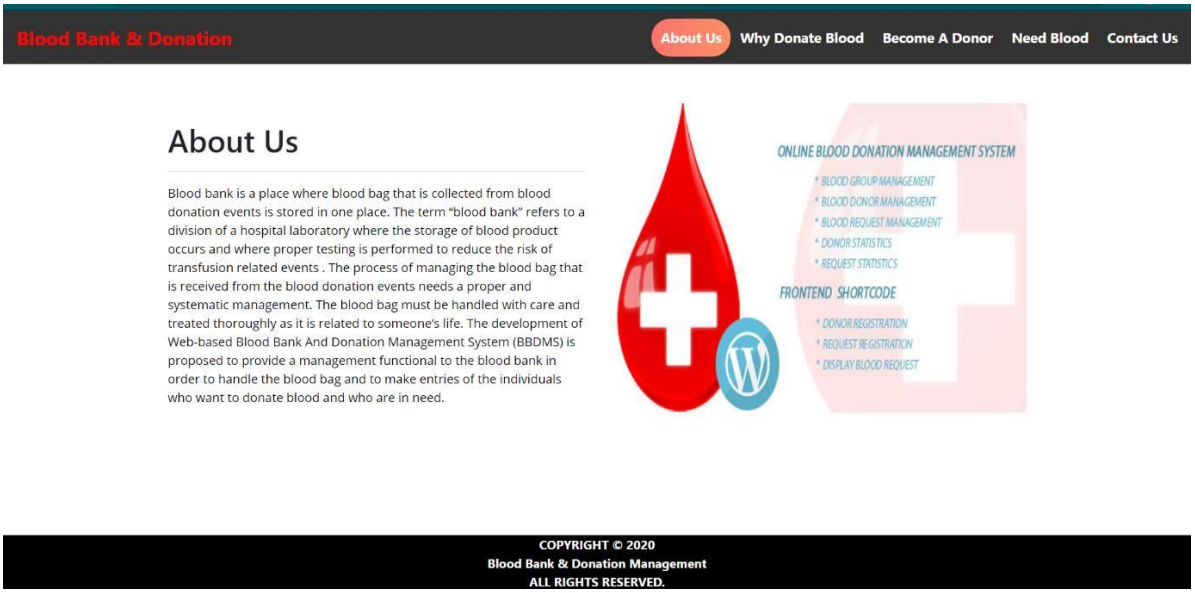
RESULTS

1. Home Page

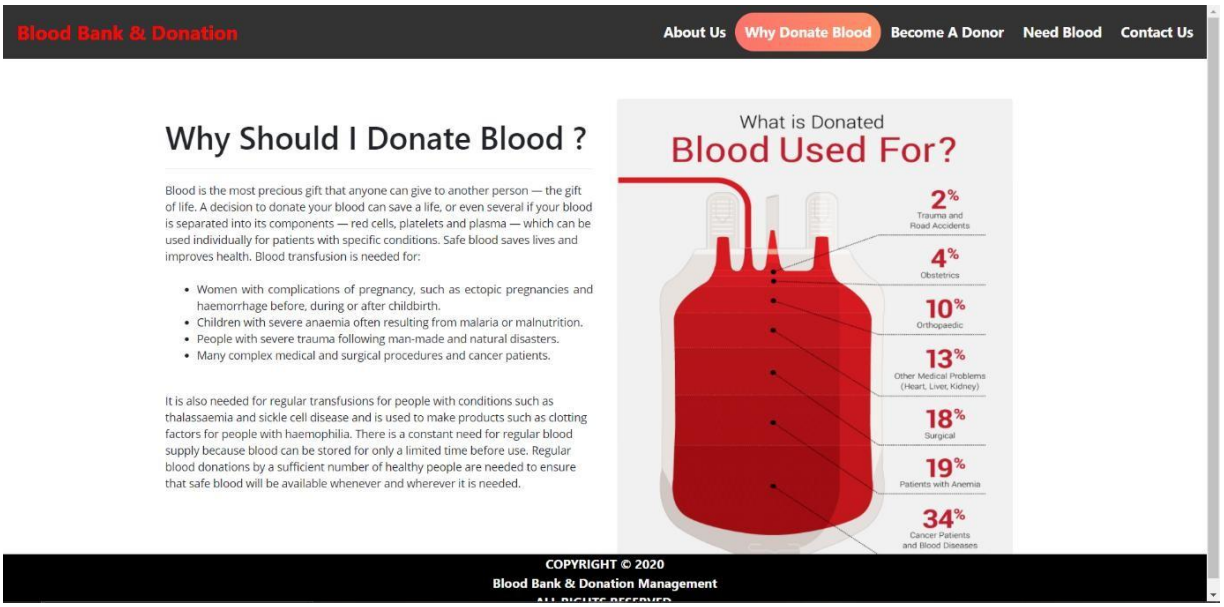




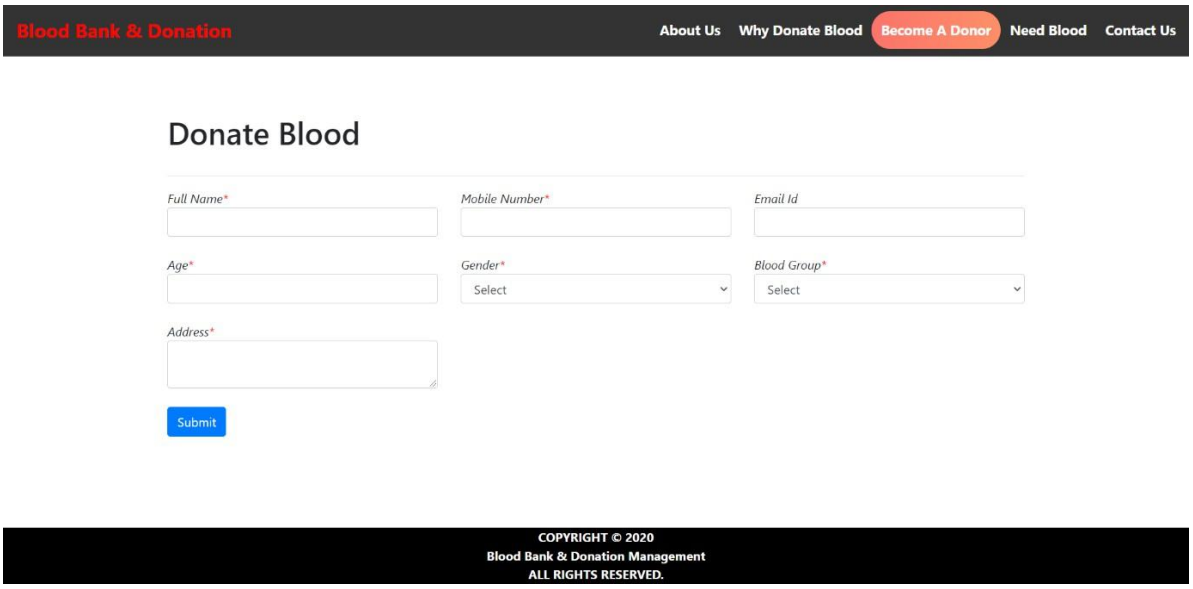
2. About Us Page



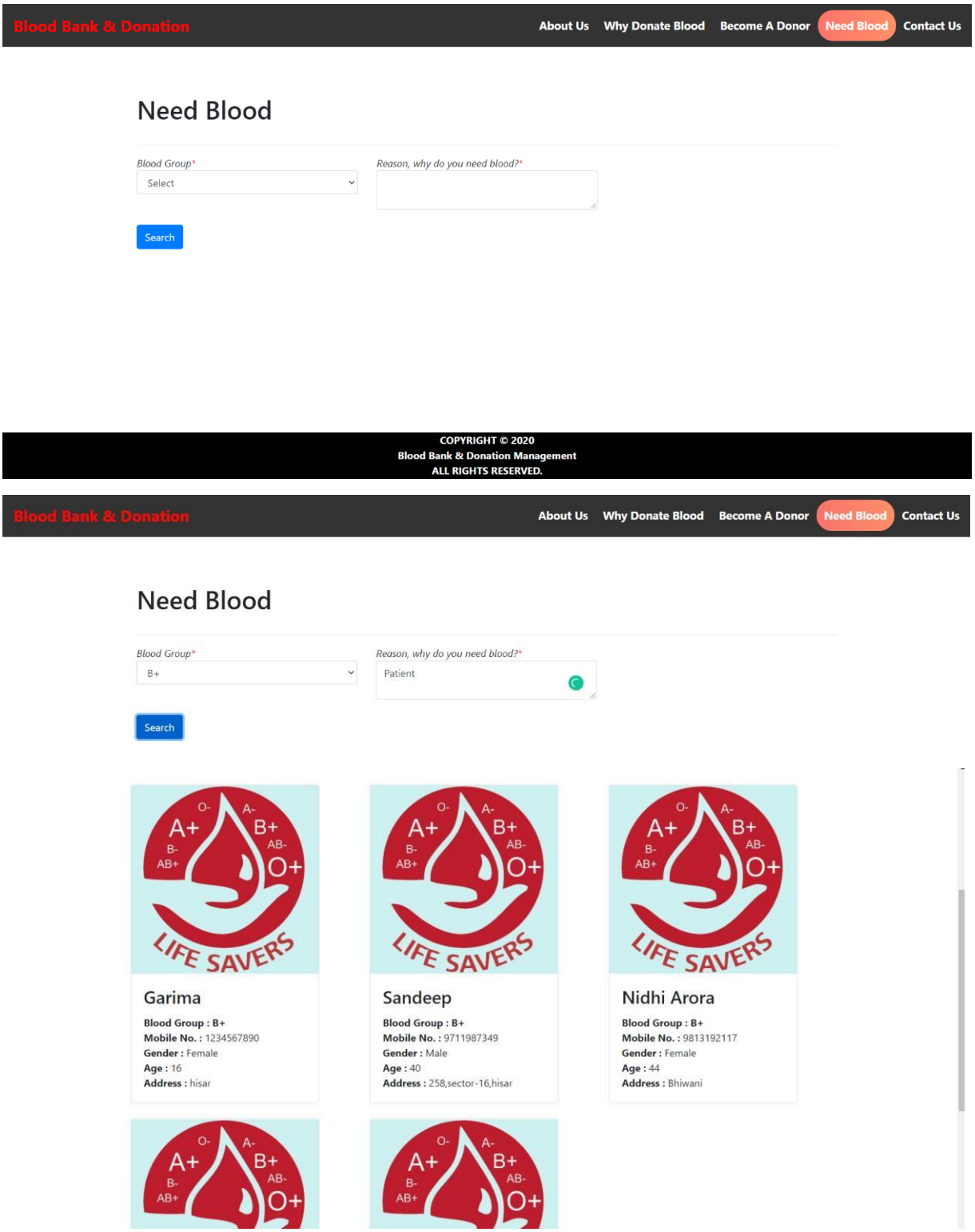
3. Why Donate Blood Page



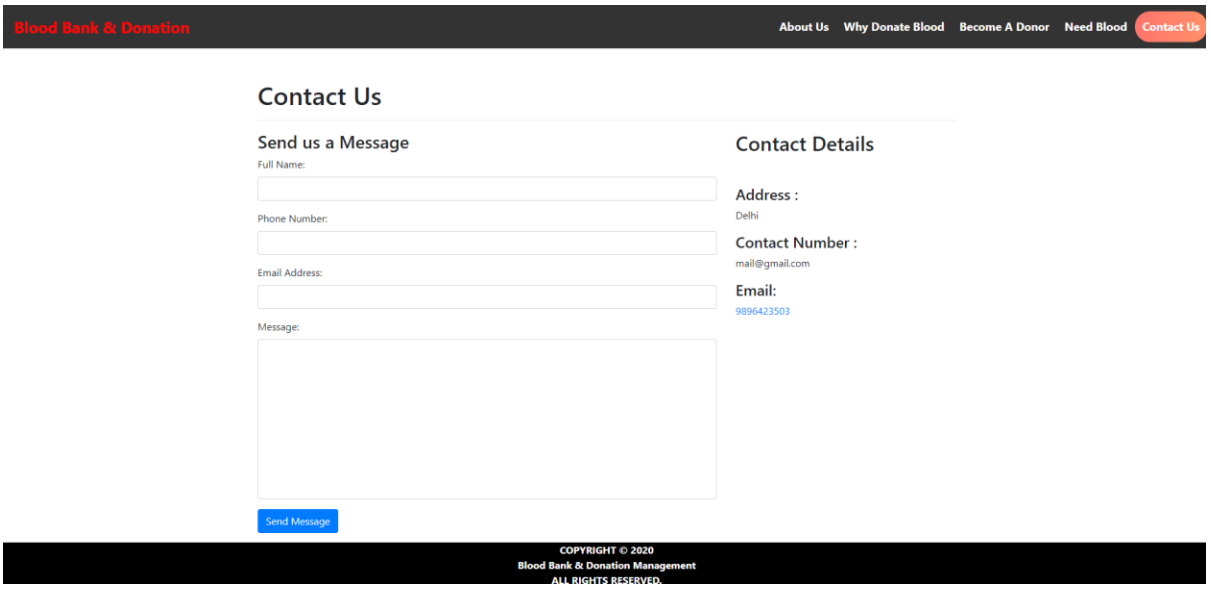
4. Become A Donor Page



5. Need Blood Page



6. Contact Us Page



CONCLUSIONS

The Blood Bank and Donation Management System (BB&DMS) successfully demonstrates how database-driven web applications can be used to manage essential healthcare services like blood donation and blood request processing. This system offers a centralized platform that simplifies the process of donor registration, blood request handling, and administrative data management.

By integrating PHP, MySQL, and web technologies (HTML, CSS, JavaScript), the system efficiently stores, retrieves, and manages blood bank-related data. It streamlines communication between blood donors, recipients, and administrators, reducing manual efforts and paperwork.

The project has achieved its primary objectives, including:

- Enabling donors to register online.
- Allowing users to submit blood requests.
- Providing an admin dashboard for managing records and queries.
- Maintaining a consistent and structured database.

However, the project also revealed areas that can be improved in the future, such as:

- Implementing real-time blood inventory tracking.
- Enhancing system security through password hashing and form validation.
- Introducing automated notifications via email or SMS.
- Expanding the system for use by multiple hospitals or donation centers.