

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

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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)

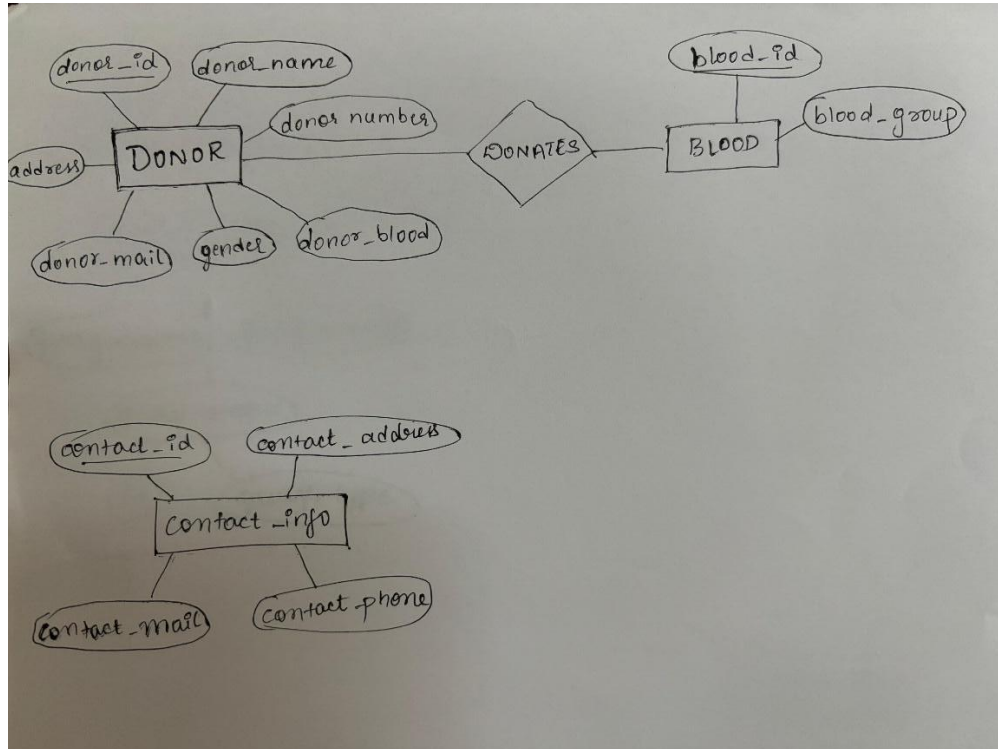
5. Database Management Tool

phpMyAdmin (comes bundled with XAMPP)

6. Code Editor

Visual Studio Code

ER DIAGRAM



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


Blood Bank & Donation

Latest Updates

About Us Why Donate Blood Become A Donor Need Blood Contact Us

First blood donation camp to be organised in Hisar By Varun in collaboration with Blood Bank

DID YOU KNOW?



One blood donation could save up to three lives

STANFORD BLOOD CENTER

Welcome to BloodBank & Donor Management System

The need for blood

There are many reasons patients need blood. A common misunderstanding about blood usage is that accident victims are the patients who use the

Blood Tips



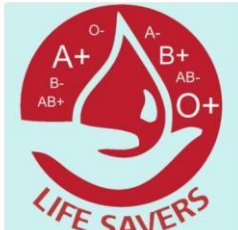
- 1) You must be in good health.
- 2) Hydrate and eat a healthy meal before your donation.
- 3) You're never too old to donate blood.

Who you could Help

Every 2 seconds, someone in the World needs blood. Donating blood can help:

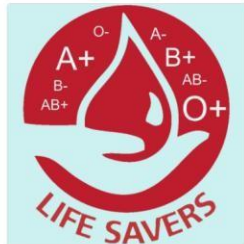
- 1) People who go through disasters or emergency situations.

Blood Donor Names

Jatin

Blood Group : O+
Mobile No. : 9992522205
Gender : Male
Age : 21
Address : Hisar

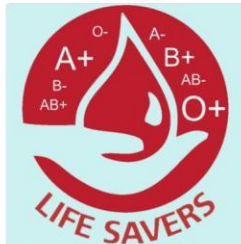


Naman Arora

Blood Group : AB+
Mobile No. : 7797551504
Gender : Male
Age : 20
Address : amritsar

Nidhi Arora

Blood Group : B+
Mobile No. : 9813192117
Gender : Female
Age : 44
Address : Bhiwani



Harshit

Blood Group : AB-
Mobile No. : 9729100124
Gender : Male
Age : 19
Address : Bhiwani

Varun

Blood Group : B+
Mobile No. : 9234902345
Gender : Male
Age : 19
Address : hisar



simi

Blood Group : B+
Mobile No. : 9416547112
Gender : Female
Age : 55
Address : Hisar

BLOOD GROUPS

Blood group of any human being will mainly fall in any one of the following groups.

- A positive or A negative
- B positive or B negative
- O positive or O negative
- AB positive or AB negative.

Your blood group is determined by the genes you inherit from your parents. A healthy diet helps ensure a successful blood donation, and also makes you feel better!



UNIVERSAL DONORS AND RECIPIENTS

The most common blood type is O, followed by type A. Type O individuals are often called "universal donors" since their blood can be transfused into persons with any blood type. Those with type AB blood are called "universal recipients" because they can receive blood of any type.

For emergency transfusions, blood group type O negative blood is the variety of blood that has the lowest risk of causing serious reactions for most people who receive it. Because of this, it's sometimes called the universal blood donor type.

[Become a Donor](#)

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2. About Us Page

Blood Bank & Donation

[About Us](#)

[Why Donate Blood](#)

[Become A Donor](#)

[Need Blood](#)

[Contact Us](#)

About Us

Blood bank is a place where blood bag that is collected from blood donation events is stored in one place. The term "blood bank" refers to a division of a hospital laboratory where the storage of blood product occurs and where proper testing is performed to reduce the risk of transfusion related events. The process of managing the blood bag that is received from the blood donation events needs a proper and systematic management. The blood bag must be handled with care and treated thoroughly as it is related to someone's life. The development of Web-based Blood Bank And Donation Management System (BBDMS) is proposed to provide a management functional to the blood bank in order to handle the blood bag and to make entries of the individuals who want to donate blood and who are in need.



ONLINE BLOOD DONATION MANAGEMENT SYSTEM

- * BLOOD GROUP MANAGEMENT
- * BLOOD DONOR MANAGEMENT
- * BLOOD REQUEST MANAGEMENT
- * DONOR STATISTICS
- * REQUEST STATISTICS

FRONTEND SHORTCODE

- * DONOR REGISTRATION
- * REQUEST REGISTRATION
- * DISPLAY BLOOD REQUEST

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3. Why Donate Blood Page

Blood Bank & Donation

[About Us](#)
[Why Donate Blood](#)
[Become A Donor](#)
[Need Blood](#)
[Contact Us](#)

Why Should I Donate Blood ?

Blood is the most precious gift that anyone can give to another person — the gift of life. A decision to donate your blood can save a life, or even several if your blood is separated into its components — red cells, platelets and plasma — which can be used individually for patients with specific conditions. Safe blood saves lives and improves health. Blood transfusion is needed for:

- Women with complications of pregnancy, such as ectopic pregnancies and haemorrhage before, during or after childbirth.
- Children with severe anaemia often resulting from malaria or malnutrition.
- People with severe trauma following man-made and natural disasters.
- Many complex medical and surgical procedures and cancer patients.

It is also needed for regular transfusions for people with conditions such as thalassaemia and sickle cell disease and is used to make products such as clotting factors for people with haemophilia. There is a constant need for regular blood supply because blood can be stored for only a limited time before use. Regular blood donations by a sufficient number of healthy people are needed to ensure that safe blood will be available whenever and wherever it is needed.

What is Donated Blood Used For?



Percentage	Use
2%	Trauma and Road Accidents
4%	Obstetrics
10%	Orthopaedic
13%	Other Medical Problems (Heart, Liver, Kidney)
18%	Surgical
19%	Patients with Anemia
34%	Cancer Patients and Blood Diseases

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4. Become A Donor Page

Blood Bank & Donation

[About Us](#)
[Why Donate Blood](#)
[Become A Donor](#)
[Need Blood](#)
[Contact Us](#)

Donate Blood

Full Name*

Mobile Number*

Email Id

Age*

Gender*

Blood Group*

Address*

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5. Need Blood Page

Need Blood

Blood Group* Reason, why do you need blood?*

Select

[Search](#)

Need Blood

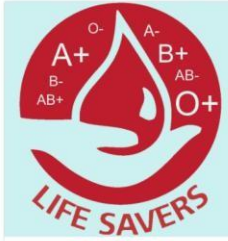
Blood Group* Reason, why do you need blood?*

B+ Patient

[Search](#)



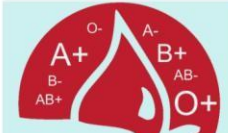
Garima
Blood Group : B+
Mobile No. : 1234567890
Gender : Female
Age : 16
Address : hisar



Sandeep
Blood Group : B+
Mobile No. : 9711987349
Gender : Male
Age : 40
Address : 258,sector-16,hisar



Nidhi Arora
Blood Group : B+
Mobile No. : 9813192117
Gender : Female
Age : 44
Address : Bhiwani




6. Contact Us Page

[Blood Bank & Donation](#)[About Us](#)[Why Donate Blood](#)[Become A Donor](#)[Need Blood](#)[Contact Us](#)

Contact Us

Send us a Message

Full Name:

Phone Number:

Email Address:

Message:

[Send Message](#)

Contact Details

Address :
Delhi

Contact Number :
mail@gmail.com

Email:
9896423503

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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.