

# Online Blood Bank Management System

**Md. Arshad Pasha<sup>1</sup>, M. Akshay Kanth<sup>2</sup>, R. Krupakar<sup>3</sup>, Dr. B. Raghu<sup>4</sup>**

<sup>1,2,3</sup>B. Tech - CSE Final Year Students, Department of Computer Science & Engineering, SVS Group of Institutions

<sup>4</sup>Professor and Principal, Department of Computer Science & Engineering

## ABSTRACT:

In this project we initialized with the process of online system for the Blood Bank which has done on the basis of latest research works. The quantity of men and women who are in need of blood are growing in huge number day by day. In order to help folks who are in need of blood, My Online Blood Bank can be used correctly for purchasing the info of blood donors having the same blood institution and with within the equal metropolis. With the assist of my Online Blood Bank folks who are having the concept of donating blood receives registered in my Online Blood Bank giving his total info. My Online Blood Bank website is available to everybody without problems. A person who loves to donate blood gives his required info.

## 1. About the project

An online Blood Bank Management System can be utilized in any centre, clinic, lab, or crisis circumstance which requires blood units for endurance. The Online Blood Bank site is a true exertion of facilitating all cycles rotating around getting and giving blood. The site empowers the client to get to without any problem data with respect to the accessibility of blood classifications in different blood donation centres. Our framework can be utilized to track down the required measures of blood in crisis circumstances from either blood donation centres or even blood benefactors. The goals of proposing such a framework are to annul the frenzy made during a crisis due inaccessibility of blood. The objective of this undertaking is to give individuals a solitary answer for all the blood-giving and getting issues all at one place in a solitary snap.

### 1.1 Problem Definition

A Blood Bank is a place where blood is collected and stored for use by others who need it due to health emergencies or a lack of blood. Therefore, it is necessary to develop a data management system to minimize the cost and time of manual labor to access blood bank information. The donor will be the person who donates the blood; it will contain information such as: name, age, gender, contact, blood group, address, disease. The patient will be the person who will receive the blood; this will have the following attributes: ide, name, gender, blood group, contact, address.

### 1.2 Existing system

This project acts as an awfully important role in saving the lifetime of the one in need of blood and which is additionally its main aim. This method is developed so as that users can view the information about registered blood donors like name, address, and other such personal information along with their details of blood group.

So as to cross verify and also safety purpose a donor or a receiver must provide their details together with certain documents which can include Aadhar card, pan card.

The project consists of a login page where the user should register so only, he/she can view the availability of blood and will also register to donate blood if he/she wishes to. Also, the donor or receiver are presupposed to provide their blood reports and a few other health related documents for security purposes.

### 1.3 Proposed system

Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar. Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme.

### 1.4 Limitations:

In the previous systems searching was in dire straits donors within the-majority of cities but not foreach city. Many a times the contact person's details were received but weren't sufficient again and again. Therefore, the applications were also not available in offline systems. Also, sometimes it absolutely was difficult to get in touch with the hospitals in emergency-situations. There was no centralized database of volunteer donors. So, it became really tedious for one to travel searching for blood just in case of emergency. The only option in such situations is to manually looked for donors, match and then make phone calls to every donor.

### 1.5 Future system:

Creating a future-oriented online blood bank system involves leveraging advanced technologies and innovations to enhance blood donation, management, and assistance.

- **Advanced Features and Components:**
- **Blockchain Integration for Transparency and Traceability:**

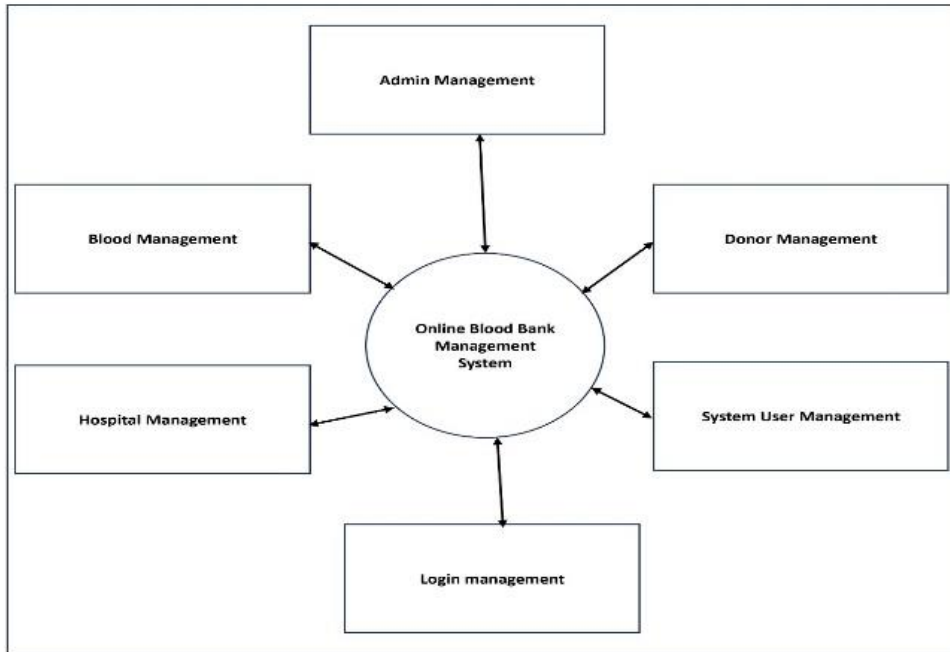
Utilize blockchain technology to ensure transparency in blood donation records, enhancing traceability and reducing errors or fraud in blood inventory management.

- **AI-Powered Matching and Prediction:**

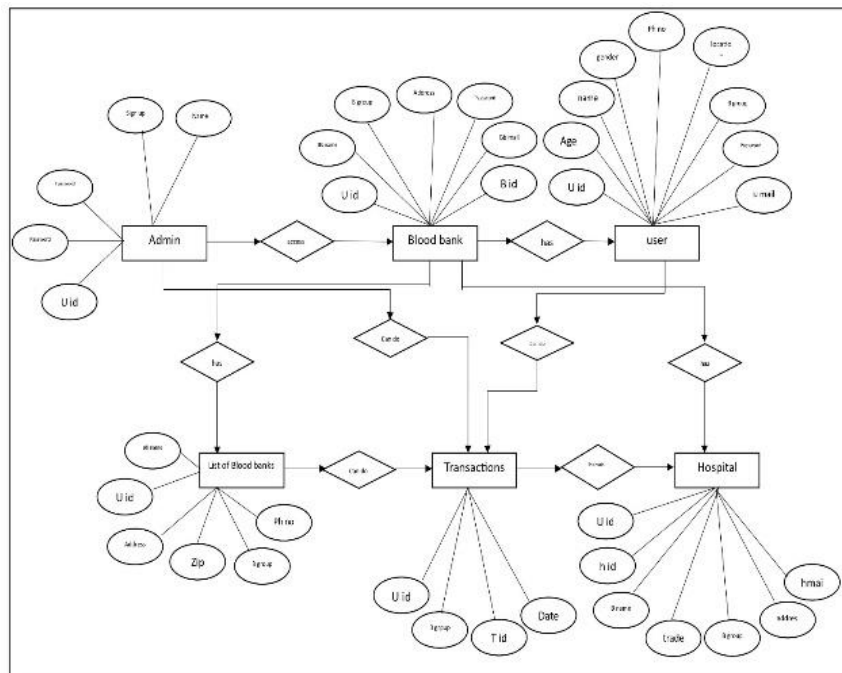
Implement Artificial Intelligence (AI) algorithms to match donors with recipients more efficiently based on various parameters like blood type, location, availability, and urgency. Use predictive analytics to anticipate future blood demand based on historical data, events, and seasonal trends.

## 2. Design Analysis

The identified entity or the characteristic may be entered within the code; conversely there are numerous System design is the manner of planning a brand-new machine or to replace the present device. It specifies all the capabilities which can be to be within the completed product.



Zero Level DFD Diagram of Online Blood Bank Management System



ER Diagram of Online Blood Bank Management System

### 3.1 Modules Description

- Login Page
- Registration
- Individual
- Hospital
- Blood bank
- Transaction

- Map

### **3.1.1 Login Page**

The login page of an Online Blood Bank Management System is a crucial gateway that ensures secure access to the system's functionalities. It serves as the initial interface where authorized users, such as administrators, donors, and recipients, can authenticate their identity to gain entry into the platform. Typically, it consists of input fields prompting users to enter their unique credentials, such as a username or email address and a password.

### **3.1.2 Registration**

The registration process for donors in an Online Blood Bank Management System is a pivotal step in enlisting individuals willing to contribute to the blood donation cause.

It serves as the gateway for potential donors to create their profiles within the system, allowing them to participate in blood donation activities and become part of a community committed to saving lives through blood donations.

The donor registration interface typically includes fields to collect essential information, such as personal details (name, age, gender), contact information (address, phone number, email), blood type, medical history, and any relevant eligibility criteria for blood donation, such as weight and health status.

### **3.1.3 Individual (End User)**

In an Online Blood Bank Management System, the individual end-user, whether a donor or recipient, plays a crucial role in the blood donation ecosystem. Each end-user interacts with the system in unique ways, contributing to or benefiting from the blood donation process. For a donor, the system offers a platform to register, schedule, and manage blood donations. Meanwhile, recipients can utilize the system to request blood, track donation availability, and manage their specific requirements.

### **3.1.4 Hospital**

In an Online Blood Bank Management System, the individual end-user, whether a donor or recipient, plays a crucial role in the blood donation ecosystem. Each end-user interacts with the system in unique ways, contributing to or benefiting from the blood donation process. For a donor, the system offers a platform to register, schedule, and manage blood donations.

### **3.1.5 Blood Bank**

Blood banks are fundamental pillars in the healthcare ecosystem, serving as vital repositories of life-saving blood products and playing a crucial role in an Online Blood Bank Management System. These facilities collect, test, store, and distribute blood donations, ensuring a steady and safe supply of blood for medical treatments, surgeries, and emergencies. A blood bank is a specialized facility responsible for collecting, testing, processing, storing, and distributing blood and blood products to meet the demands of healthcare institutions and patients in need. Within the framework of an Online Blood Bank Management System, these centres play a pivotal role in ensuring a consistent and safe supply of blood for medical treatments, emergencies, surgeries, and various healthcare procedures.

### **3.1.6 Transactions**

In the architecture of our online blood bank management system, the Transaction module serves as a crucial mechanism facilitated by Java, HTML, and MySQL, ensuring seamless and secure interactions between donors, recipients, and the blood bank. HTML provides the user interface where donors can log in to the system and initiate the donation process. Donors can view their profiles, update their availability for donation, and schedule appointments for donation through an intuitive and user-friendly interface.

### 3.1.7 Maps

Incorporating maps within an online blood bank management system, through the fusion of Java, HTML, and MySQL, offers a dynamic tool to visualize and optimize the donation process, donor locations, and recipient needs. HTML forms the user interface that integrates mapping functionalities into the system.

## 4. Data Structures and Database Design

Now showing the tables of a data structures and database design of Online Blood Bank Management System.

Bid	Numeric (5)
Bname	Varchar (15)
Bid	Varchar (10)
Address	Alpha numeric (20)
Password	Alpha numeric (8)
email	Alpha numeric (20)

Table 1 Data structure of Blood bank Register

Hid	Numeric (5)
Bname	Varchar (15)
Trade	Varchar (10)
Bid	Varchar (10)
Address	Alpha numeric (8)
Pass	Alpha numeric (8)
Email	Alpha numeric (20)

Table 2 Data structure of Hospital Register

UId	Numeric (5)
Name	Varchar (15)
Email	Alpha numeric (20)
Mobile	Numeric (10)
Gender	Varchar (10)
Age	Numeric (2)
Lid	Varchar (10)
Location	Alpha numeric (20)
Pass	Alpha numeric (8)

Table 3 Data structure of User Register

### Table 1 Data Structures Online Blood Bank Management System

- Hospital Register

Hid	B Name	Trade	Bid	Address	pass	email
1	Ram	12/06/2001	AB+	Warangal	Ram113	Ram21@gmail.com
2	MAHESH	23-02-2003	AB-	Kazi pet	mah123	mahesh@gmail.com
3	RAJESH	14/06/2002	O+	Hyderabad	raj111	rajesh@gmail.com
4	Mayur	25/11/2007	AB+	Hyderabad	9.99E+09	mayur@gmail.com
5	AKSHAY	17/08/2002	O-	Hyderabad	abc121	akshay@gmail.com
6	BUNTY	10/10/2003	A+	Warangal	Arvinda	bunty@gmail.com
7	Mukesh	20/02/2003	A+	Hyderabad	mukesh11	mukesh@gmail.com
8	Rakesh	20/12/2001	B+	Warangal	rak@123	rakesh@gmail.com

Table 19 Hospital Register

- User Register

UId	Name	email	Mobile	Gender	Age	Lid	location	pass
1	ram	ramu@gmail.com	88767687	male	23	A-	Warangal	999999
2	Rakesh	rakesh@gmail.com	99876787	male	21	A+	Warangal	888888
3	shiva	shiva2@gmail.com	89886567	male	20	B-	Warangal	7468447
4	Akshay	akshay@gmail.com	78754786	male	23	AB+	Kazi pet	87545
5	krupakar	krupakar@gmail.com	89865476	male	23	O+	Warangal	9867
6	Mukesh	mukesh@gmail.com	89876544	male	21	O+	Warangal	9878
7	Srikanth	ss@gmail.com	89864336	male	22	AB-	Warangal	6765

Table 20 User Register

### Table 2 Database of Online Blood Bank Management System

## 5. Implementation

A blood bank management system is a software application designed to manage various aspects of a blood bank, including donor registration, blood stock, list of blood banks and hospitals. These blood banks are

located within hospitals and primarily serve the patients of that hospital. They maintain a supply of blood needed for transfusions during surgeries, emergencies, and other medical procedures.

## 6. Conclusion

The project has been conducted with the process of literature review and the design process got update with necessary input data and date base design.

The report generation feature of an online blood bank management system allows administrators to generate various types of reports to gain insights into the system's performance, blood transactions, donor details, and other key metrics.

## Future Enhancement

Mobile Application Development: Create mobile applications using Python frameworks like Kivy or PyQT for donors and recipients to easily find blood donation centers, schedule appointments, receive notifications about urgent blood needs, and track donation history

## References

1. Code based on JAVA.
2. "Java Server Pages (JSP): A Beginner's Tutorial" by Budi Kurniawan - JSP is another important technology for building dynamic web pages in Java. This book offers a beginner-friendly tutorial on JSP development, which can be useful for creating the user interface of your blood bank management system.
3. "Java EE Development with Eclipse" by Deepak Vohra - Eclipse is a popular Integrated Development Environment (IDE) for Java development, and this book focuses on using Eclipse for Java EE (Enterprise Edition) development. It covers various Java EE technologies such as servlets, JSP, JDBC, and JPA, which are relevant for building enterprise web applications like a blood bank management system.
4. Online Blood Bank Management System Concepts, by Shubam Kumar, Devik Bagadiya (2017).
5. Web-Based Blood Bank System Concepts, by Adnan Faisal, Ammar Hussain (2019).
6. Online Blood Bank Concepts, by B. Lakshmi Prasanna, C. Kula Deekshith (2019).
7. Online Blood Bank Management System Concepts, by Aditya S. Iyer, Dr.C. Menaka (2020).
8. Cloud Based Blood Bank Management System Concepts, by Rasika Bhitale, Jidnesh Koli (2021).
9. Internet & World Wide Web.

## Websites

1. <https://en.m.wikipedia.org/wiki/MySQL>
2. <https://www.javatpoint.com/interface-in-java>
3. <https://www.mysql.com/products/workbench/>
4. <https://www.w3schools.com/java/default.asp>
5. <https://netbeans.apache.org/front/main/index.html>
6. <https://www.eclipse.org/>
7. <https://www.oracle.com/in/>