IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Blood Bank Management System

Mr Omkar Vijay Patil [1] Mr B Jokesh [2] Mr Kshitij Nitin Kundley [3]

[1] [2] [3] Student, Final Year of Master of Computer Application,

Ajeenkya DY Patil University,

Pune, Maharashtra, India

Keywords: Patient, Donor, and Blood

ABSTRACT

The Blood Bank System offers a superior alternative to the conventional methods of manually managing enormous volumes of data related to stock availability and donor and patient requests. An open-source online application called Blood Bank System was created using PHP and MySQL. The primary goal of the development is to offer online blood bank services to the public. It is a browser-based system created to store, process, retrieve, and analyse data related to the inventory and administrative management inside a blood bank system. This project is designed to keep track of all patient information, blood donor information, and the bank's inventory of all blood types. The blood bank system project report includes data on blood such as Blood Groups, Blood Stocks Available, Donor Details, and Patient Details. This system is utilised to store all administrative, donor, blood stock, and patient information. The goal is to increase openness in this industry, make it simple and free of corruption to receive blood from a blood bank, and improve the efficiency of the blood bank management system.

INTRODUCTION

The Blood Bank Management System will produce an e-Information on the donor and the organisation that is involved in blood donation. Through this application, anyone interested in donating blood can register themselves. In a similar vein, any organisation wishing to register on this website may also do so. Additionally, anyone who is a general consumer can use this website to request blood online. The primary administrator has the ability to add, delete, and modify content as needed.

OBJECTIVE

- The creation of a system to assist hospital management in keeping track of all blood donations and blood inventory is our key goal.
- Time savings for hospital administration.
- An efficient yet effective method of managing records.
- From any desktop, users may readily access records at any time.
- You won't have to be concerned about losing any written records.

PROBLEM STATEMENT

Existing System:

• No use of remote apps or web services.
• Data in a manual system is at risk of being mismanaged.
• Reduced Security.
• There is insufficient cooperation between users and various applications.
• Even though technology has advanced significantly, the majority of blood banks still operate with manual systems today. A patient will often ask friends, family, and relatives whether they can donate blood when the hospital does not have the type of blood they require. This makes it difficult and time-consuming, and it could put the life of the person who needs blood right now in peril

Proposed System:

• The goal of this project is to keep track of all patient information, blood donor information, and the bank's inventory of all blood types. The goal is to increase openness in this industry, make it simple and free of corruption to receive blood from a blood bank, and improve the efficiency of the blood bank management system. The Blood Bank System Project Report includes details on blood, including:
• Blood type
• Blood supply on hand
Donor and patient information, This system is utilised to store all administrative, donor, blood stock, and patient information.
• The person's time and labour are much decreased compared to the current method, which is very adaptable and user-friendly.
• Simple and practical.
• The availability of services is not restricted to the branch's operating hours. This website is supported 365 days per year, seven days per week.

PRODUCT SCOPE

This strategy aids in organizing and supplying the required blood for doctors and those in charge of managing the blood inventory. The registration of donors, inventory management, and distribution control of blood bags and other goods are the three core operations of blood banks that are examined in this research study.

Three potential system users are included in the study:

- The hospital administration
- Donors
- Patients.

METHODOLOGY

Project Identification and Selection: In this project, our goal was to create an online blood bank system that would be primarily responsible for managing donor blood information. Anyone who is interested in donating blood can do so at a hospital or blood donation facilities.

Project Initiation and Planning: We have compiled the system's user requirements and prepared the project's scope and purpose before starting. The outcomes of this phase include the proposed system's features, scope and limitations, objectives, costs and advantages, and user interface design.

Analyzing System needs: We have examined the current system and found its flaws. We also create entity relation diagrams (E-R diagrams) and data flow diagrams (DFDs) for the suggested system.

Designing the Proposed System: We constructed a DFD and user interface based on the analytical phase and transformed the E-R diagram into a relational database model.

Development of the Proposed System: We will translate the proposed system's architecture into computer software during this step, which will involve computer programming utilizing the PHP-written software tool phpMyAdmin which translates the design specifications into computer code and is intended to handle MySQL administration.

Testing the Proposed System: In this step, the programming code is tested to see if it will function properly under the circumstances of our system or not. In order to create a system with the best performance possible, we will resolve errors in this phase.

Implementing the Proposed System: We want to put this system online so that patients and donors can view their blood request and donation records online and administrators can easily add, edit, delete, and query records.

SYSTEM REQUIREMENTS

Server Side:-

- OS : Windows 10
- RAM : 8GB
- Processor : Intel Core Processor
- Server : XAMPP

Client Side:-

- OS : Windows 10
- RAM : 8GB
- Processor : Intel Core Processor

DESIGN AND IMPLEMENTATION

The Blood Bank Management System is a web-based programme, hence an internet connection is necessary.

- The Blood Bank Management System will be accessible online via any web browser and run on computers.
- The online application uses PHP, MySQL, JavaScript, CSS, HTML, and jQuery.

ER DIAGRAM

An Entity Relationship (ER) Diagram is a type of flowchart that demonstrates the connections among "entities" such as individuals, objects, or ideas within a system. When creating or resolving relational databases, ER Diagrams are most frequently used in the fields of software engineering, business information systems, education, and research. On Star UML, we run the ER Diagram.

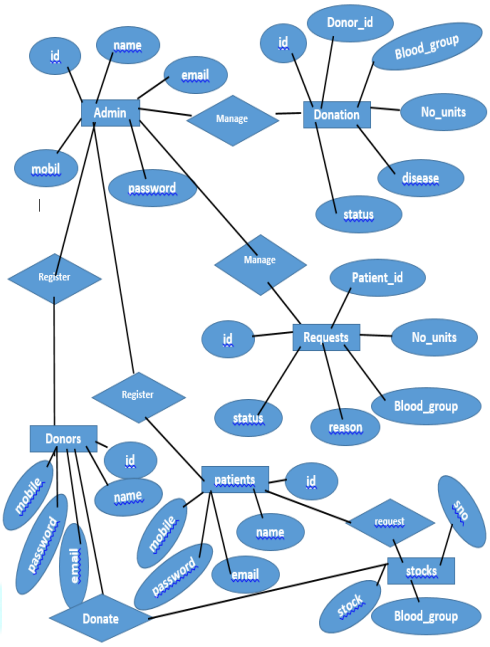

Figure: 1 (ER DIAGRAM)

USE CASE DIAGRAM

This diagram illustrates the interactions between use cases. Keep users from knowing the system requirements. The user could be an actor.

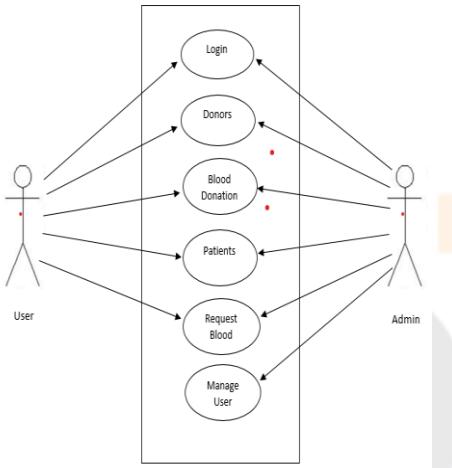

Figure: 2 (Use Case Diagram)

FUTURE SCOPE

• We'll make our service available to a much wider audience;
• We'll offer a better user interface with better graphics.
• The donors will be able to receive certificates from us.
• We will offer email capability to improve communication with donors and patients.

RESULT

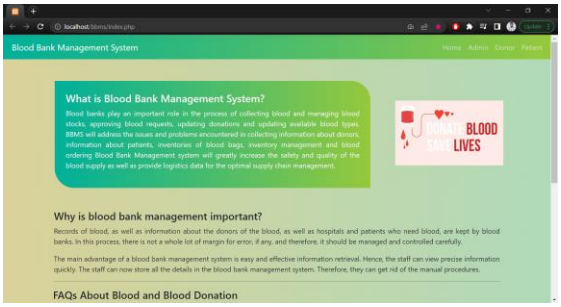

Figure: 4 (Home Page)

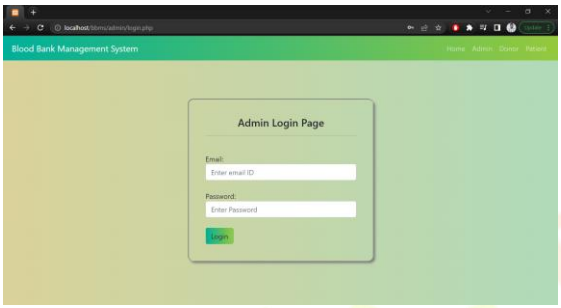

Figure: 5 (Admin Login Page)

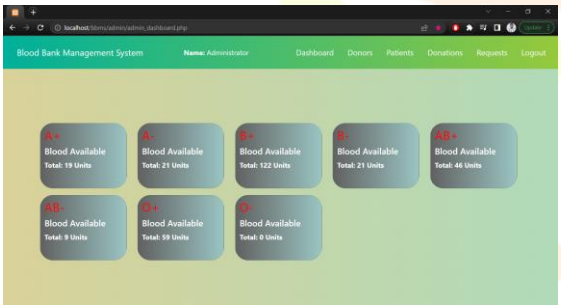

Figure: 6 (Admin Dashboard Page)

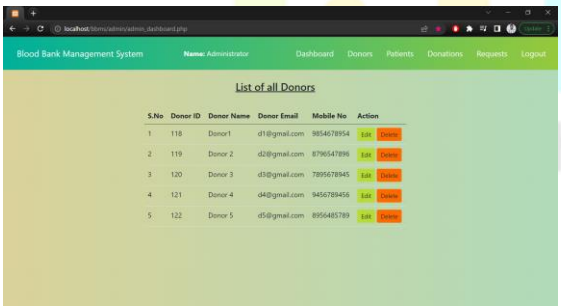

Figure: 7 (List of all Registered Donors)

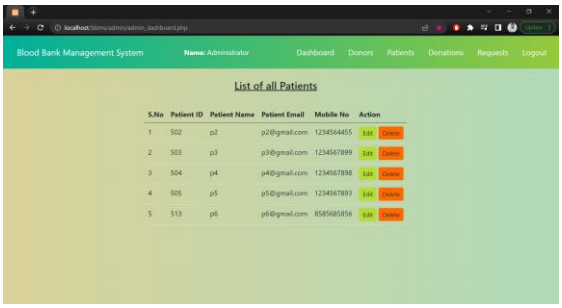

Figure: 8 (List of all Registered Patients)

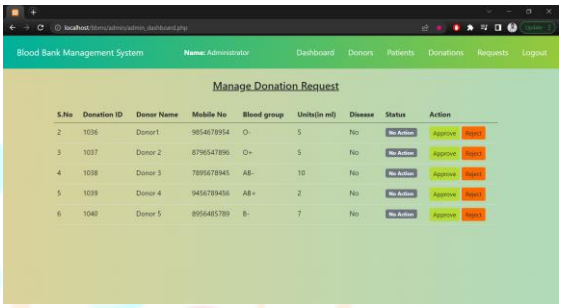

Figure: 9 (Blood Donations)

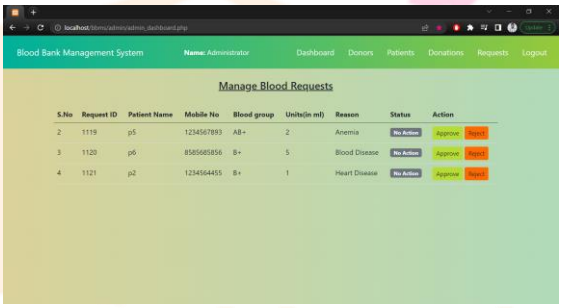

Figure: 10 (Blood Request Page)

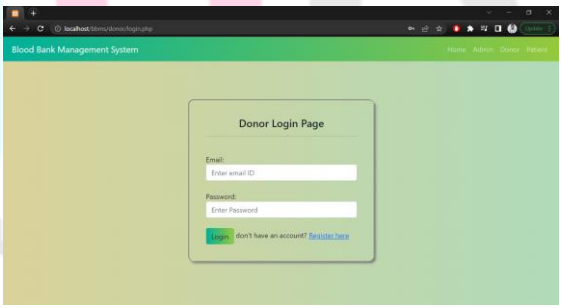

Figure: 11 (Donor Login Page)

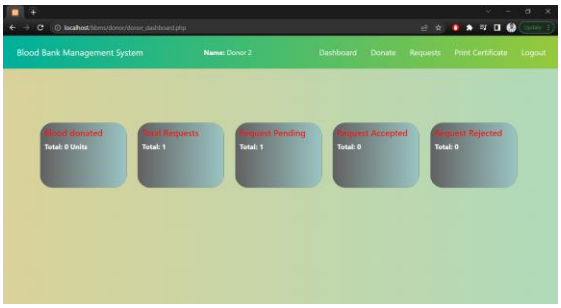

Figure: 12 (Donor Dashboard Page)

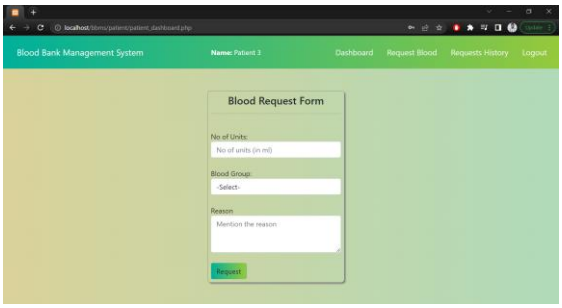

Figure: 16 (Patient Blood Request Form)

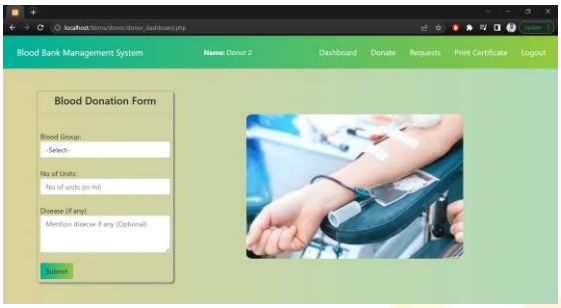

Figure: 13 (Donors Blood Donation Form)

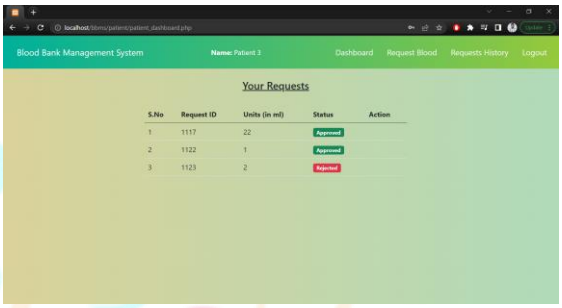

Figure: 17 (Patient Blood Request History Page)

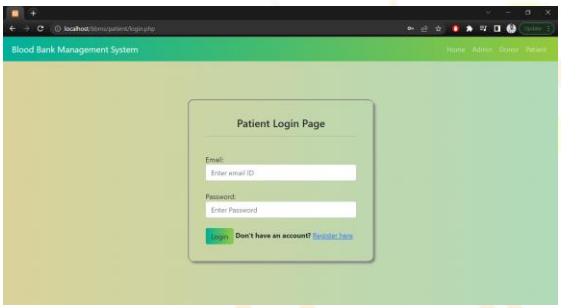

Figure: 14 (Patient Login Page)

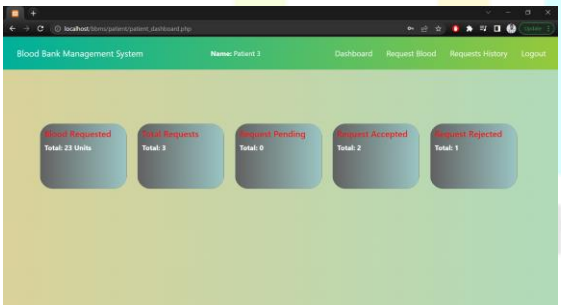

Figure: 15 (Patient Dashboard Page)

CONCLUSION

The results of the study support the conclusion that the online system for managing blood banks is superior to the manual system. According to the results, respondents prefer using the online blood bank management system over the manual system since it provides a number of advantages and benefits that increase its efficacy and efficiency. It may be argued that the online blood bank management system improves since it offers better ways of handling the various operations in blood banks as a result of the users' greater confidence in the system.

As a result of this project, we have got numerous chances to develop, produce, test, and install an application. This has made it simpler to put into practise a variety of database management techniques, and as a result, I've gained knowledge of MySQL, PHP, HTML, JavaScript, jQuery, and Personal Web Server.

In addition, the project gave us the chance to talk with our teacher and learn from their expertise.

ACKNOWLEDGEMENT

Our research paper on the documentation of the blood bank management system is complete.

I want to express my gratitude to Dr. Himanshu A. Patel, who has been my internal mentor and has supported me throughout this research with the utmost patience and collaboration. He helped with this project, and we are really grateful that he gave us some of his valuable time

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