# Visvesvaraya Technological University, Belagavi- 590018



# DBMS MINI PROJECT REPORT ON "BLOOD BANK MANAGEMENT SYSTEM"

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2022 - 2023

# A.J. INSTITUTE OF ENGINEERING AND TECHNOLOGY Kottara Chowki, Mangalore – 575006

#### DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING



# **CERTIFICATE**

This is to certify that the Mini project entitled "Blood Bank Management System" Is a bonafide work carried out by

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Name of the Examiners	Signature with date	
1	1	
2	2	

# **ABSTRACT**

The blood bank receives large number of blood from donors. The information about the blood donor needs to be updated. Whenever the information about the donor is required it is difficult for the blood bank authority's people to search the records manually. To solve this problem, we proposed a blood donation management system in which electronic information about the in the blood bank is created for the donor. The main objective is to automate the complete process of the blood donation in the blood bank. At present online databases are available, they did not offer direct link between the donor and the recipient. This project aims to develop a Blood Bank Management System. A Blood Bank Management System can be used in any clinic, hospital, labs or any emergency situation which requires blood units for survival.

Our system can be used to find required type of blood in emergency situations from either blood bank or even blood donors.

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## **CHAPTER 1**

#### INTRODUCTION

This has been designed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and, in some cases, reduce the hardships faced by this existing system.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus, by this all it proves it is user-friendly. Blood Bank Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus, it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the information of Donor, Blood Bank, Blood, Patient, Blood Group. Every Blood Bank Management System has different Blood Bank needs. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executives who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

The blood bank management system is a  $24 \times 7$  system provides services to the hospitals and other users. The system is easy to maintain all the information about the blood donor. Proposed work provides services to persons who pursue donors who are willing to donate blood.

#### 1.1 PROBLEM DEFINITION

In present scenario searching for blood donors can take place through blood bank enters or by toll free numbers. So far it is a time taken process.

Because it is having lots of manual work. It is waste of time to go to blood bank if the blood of particular group is not available and most of time user has to wait in queue.

# 1.2 Scope of the project

The present scenario in the blood bank is that the records are kept by writing in a file on the paper. Every management task is done manually. This creates a system unreliable and confusing to keep the correct track of the records. As modernizing is taking over all the systems and digitalizing helps them improve in so many particular ways. The Blood bank Management System is one of the systems which helps the administration in speeding up the tasks at the same time reducing the complexity.

The maintenance of the system like this is hardly required until it needs to change any part of the system. The information about the various things contained in the system are like blood stocks, donor details, hospital details, receiver details can get by just a few clicks unlike the paper documents required the serious reading for such information. It made easy to generate the reports of various operations performed in the blood bank are like blood donation like how many have donated, current blood stocks it can be stored.

#### **CHAPTER 2**

# SOFTWARE REQUIREMENT SPECIFICATION

# 2.1 Functional Requirements

- User login: This allows only registered users to login.
- ➤ Hospital login: Helps the authorized person to manage the details so that the data will be accurate.
- ➤ Donor details: This module helps the donor to insert all the necessary details that is personal and medical information like blood group, weight.

#### 2.2 Hardware Requirements

- > Processor: Intel i3 or above
- RAM: 8gb
- ➤ Hard disk: 20GB or above

# 2.3 Software Requirements

- > Operating system: Windows 11
- > Software used: XAMPP and Visual Studio
- ➤ Browser: Chrome, Mozilla Firefox or any other browsing application

#### 2.3.1 Visual Studio IDE

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs, as well as websites, web apps, web services and mobile apps.

#### 2.3.2 **XAMPP**

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, Maria DB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), Maria DB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web server - server application (Apache), database (Maria DB), and scripting language (PHP) - is included

in an extractable file. XAMPP is also cross-platform, which means it works equally well on

Linux, Mac and Windows. Since most actual web server deployments use the same components

as XAMPP, it makes transitioning from a local test server to a live server extremely easy as

well.

2.4 Languages Used

➤ PHP

> CSS

Java Script and HTML

> MySQL

2.5 User Interface

The web application provides good graphical user interface for the front end of the system so

that users can make use of the system with ease. A login page is provided for the users for

authentication. On successful authentication, the permission to use the web application is

provided.

2.5.1 Software Interface

The following software tools are used in the development of the system:

• Apache Server

• MySQL for database

• HTML and CSS for front end

JavaScript

2.5.2 Hardware Interface

• Processor: Intel Pentium 4 or above / AMD A8 or above

• Ram: 2GB or more

• Hard Disk: 20GB free space or more

# **CHAPTER 3**

# **SYSTEM DESIGN**

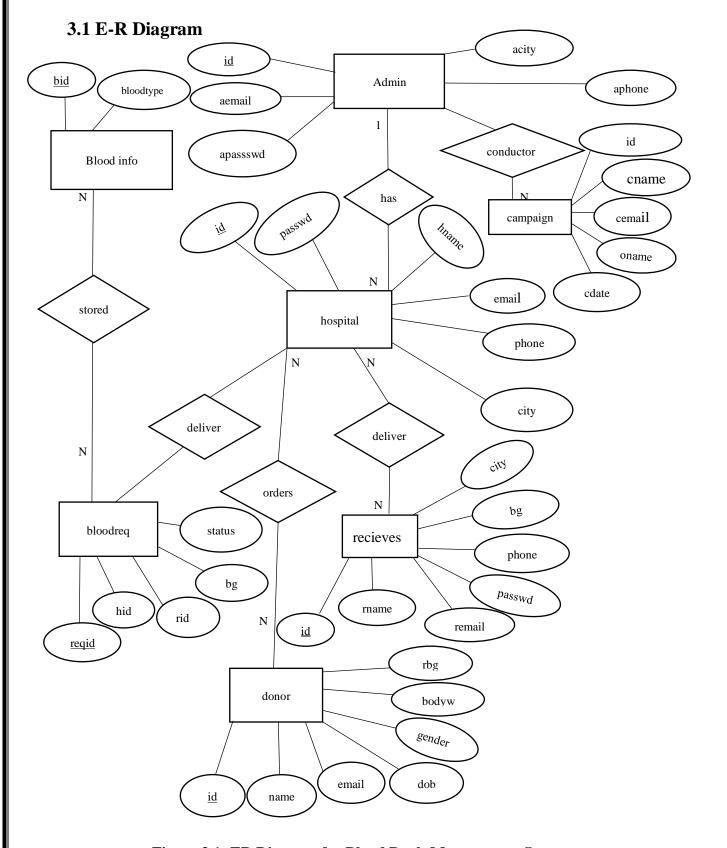


Figure 3.1: ER Diagram for Blood Bank Management System

Software design is the process by which an agent creates specification of software artifact, intended to accomplish goals, using the set of primitive components and subject to constraints.

# 3.2Schema Diagram

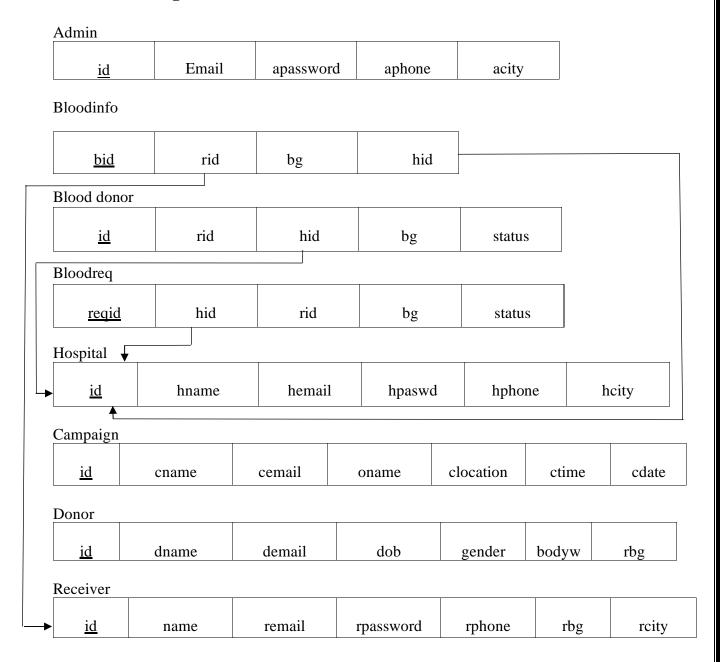


Figure 3.2: Schema Diagram for Blood Bank Management System

# **3.3 Table Description**

A table is a named original data base data set that is organized by rows and columns. The relational table is a fundamental relational data base concept because tables are the primary form of data storage. Columns form the table's structure and rows form the content.

In Table 3.31 donoid, rid, hid, bg, status are the five attributes. Where donoid is the primary key, bg and status are varchar datatype and all other attributes are int datatype.

Attribute	Data type	constraints	description
donoid	int	Primary key	Donor id
rid	int	Foreign Key	Receiver id
hid	int	Foreign Key	Hospital id
bg	varchar		Blood group
status	varchar		Accepted/Rejected

Table 3.31 Blood donate

In table 3.32 id, aemail, apassword, aphone and acity are the five attributes, Where id is the primary key, id is int data type and all other attributes are varchar data type.

Attribute	Datatype	Constraints	Description
id	int	Primary key	Admin id
aemail	varchar		Admin email
apassword	varchar		Admin password
aphone	varchar		Admin phone number
acity	varchar		Admin city

**Table 3.32 Admins** 

In table 3.33 bid, Rid, bg are the three attributes where bid is the primary key, Bg is varchar data type Bid and Rid is int data type.

Attribute	Datatype	Constraints	Description
reqid	int	Primary key	Request id
Hid	int	Foreign key	Hospital id
Rid	int	Foreign Key	Receiver id
Bg	varchar		Blood group
status	varchar		Accepted/Rejected

Table 3.33 Bloodinfo

In table 3.34 reqid, Hid, Rid, Bg, status are the five attributes, where eqid is the primary key, Bg and status are varchar data type and all other attributes are int datatype.

Attribute	Datatype	Constraints	Description
reqid	int	Primary key	Request id
Hid	int	Foreign key	Hospital id
Rid	int	Foreign Key	Receiver id
Bg	varchar		blood group
status	varchar		Accepted/rejected

**Table 3.34 Blood request** 

In table 3.35 id, hname, hemail, hpassword, hphone and heity are the six attributes where id is the primary key, id is int data type and all the other attributes are varchar datatype.

Attribute	Datatype	Constraints	Description
id	int	Primary key	Hospital id
hname	varchar		Hospital name
hemail	varchar		Hospital email
hpassword	varchar		Hospital password
hphone	varchar		Hospital phone number
hcity	varchar		Hospital city

Table3.35 Hospital

In table 3.36 id, cname, cemail, oname, clocation, cdate are the six attributes where id is int data type and all the other attributes are varchar datatype.

Attribute	Datatype	Constraints	Description
id	int	Primary key	Campaign id
cname	varchar		Campaign name
cemail	varchar		Campaign email
oname	varchar		Organization name
clocation	varchar		Campaign loaction
cdate	varchar		Campaign date

**Table 3.36 Campaigns** 

In table 3.36 id, dname, demail, dob, gender, bodyw are the six attributes, where id and bodyw are int data type and all the others are varchar data types.

Attribute	Datatype	Constraints	Description
id	int	Primary key	Donor id
dname	varchar		Donor name
demail	varchar		Donor email
dob	varchar		Date of birth
gender	varchar		Male/female
bodyw	int		Body weight
rbg	varchar		Blood group

**Table 3.37 Donors** 

In table 3.37 id, rname, remail, rpassword, rphone, rbg, rcity are the seven attributes, where id is the primary key, id is int data type and all the other attributes are varchar datatype.

Attribute	Datatype	Constraints	Description
id	int	Primary key	Receiver id
rname	varchar		Receiver name
remail	varchar		Receiver email
rpassword	varchar		Receiver password
rphone	varchar		Receiver phone no.
rbg	varchar		Receiver blood group
reity	varchar		Receiver city

**Table 3.38 Receivers** 

#### **CHAPTER 4**

#### **IMPLEMENTATION**

Implementation is defined as specific set of activities designed to put into practice an activity or program of known dimensions. Implementation processes are purposeful and are described in sufficient details such that independent can detect the presence and strength of the "specific set of activities" related to implementation.

## 4.1 Details of the Language

Our project is implemented using PHP programming. The reason we chose PHP is because it is absolutely simple to comprehend than other programming languages. Since it is an easy and powerful language, it has been widely used for creating web based applications that requires utmost functionality with minimal coding. In addition, PHP based web applications are extremely secure as compared to applications of various other programming languages. The applications written using this PHP can run consistently across multiple platforms. The applications developed using PHP can run on various devices such as Desktop Computers, Mobile Phones etc.

We have also used JSS and CSS for some front end pages. For the backend we have used the SQL. We have used SQL for the backend we have created various tables and inserts attributes and values to that.

#### 4.1.1 PHP

PHP is mainly focused on server-side scripting ant it enables to do anything on CGI program such as collect form data, generate dynamic page content, or send and receive cookies.

PHP can be on all major operating systems, including Linux, many UNIX variants (including HP-UX, Solaris and Open BSD), Microsoft Windows, Mac OS X, RISC OS, and probably others. PHP also has support for most of the web servers today. By using PHP can access the PHP program output with a web browser, viewing the PHP page through the server. This includes Apache, IIS, and many others. And this includes any web server that can utilize the Fast CGI PHP binary, like light tpd and nginx. PHP works as either a module, or as a CGI processor. PHP also has support for talking to other services using protocols such as LDAP, IMAP, SNMP, NNTP, POP3, HTTP, COM (on Windows) and countless others. You can also open raw network sockets and interact using any other protocol. PHP has support for the

WDDX complex data exchange between virtually all Web programming languages. Talking about interconnection, PHP has support for instantiation of Java objects and using them transparently as PHP objects. PHP has useful text processing features, which includes the Perl compatible regular expressions (PCRE), and many extensions and tools to parse and access XML documents. PHP standardizes all of the XML extensions on the solid base of libxml2, and extends the feature set adding Simple XML, XML Reader and XML Writer support.

#### 4.1.2 CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of content and presentation, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate. CSS file, which reduces complexity and repetition in the structural content; and enable the. CSS file to be cached to improve the page load speed between the pages that share the file and its formatting.

Separation of formatting and content also makes it feasible to present the same markup page in different styles for different rendering methods, such as on-screen, in print, by voice (via speech-based browser or screen reader), and on Braille-based tactile devices. CSS also has rules for alternate formatting if the content is accessed on a mobile device.

## 4.1.3 Java Script

Java Script is one of the core technologies of the WWW which is used by over 97% of the websites on the client side for web page behaviour, often incorporating third-party libraries. It helps to execute the code on user's devices through its engine. It is high-level, often just-in-time compiled language that conforms to the ECMA Script standard. It had dynamic typing, prototype-based object-orientation and first-class functions.

# **4.1.4 MySQL**

Structured Query Language, commonly known as SQL, is a standard programming language for relational databases. Despite being older than many other types of code, it is the most widely implemented database language. Because SQL is so common, knowing it is valuable to anyone involved in computer programming or who uses databases to collect and organize information. Learn more about what SQL is and career opportunities in the field.

#### 4.1.5 HTML

HTML or Hypertext Markup Language is the standard markup language used to create web pages.

HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>). HTML tags most commonly come in pairs like <h1> and </hl>, although some tags represent empty elements and so are unpaired, for example <img>. The first tag in a pair is the start tag, and the second tag is the end tag (they are also called opening tags and closing tags).

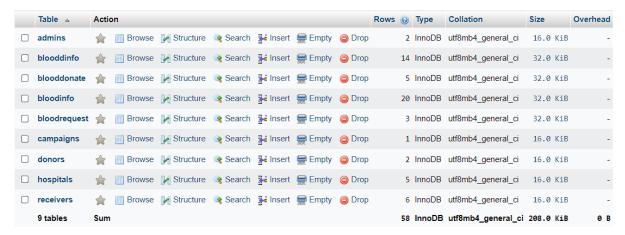
# **CHAPTER 5**

# **SCREENSHOTS**

#### **Back-End Screenshots**

The following database mainly contains 9 tables as shown in the figure namely blood donate, admins, bloodinfo, bloodrequest, hospital, campaigns, donors, receivers. The description of each table is shown below.

The Fig 5.11 shows the database table



The Fig 5.12 shows the admins table



The Fig 5.13 shows the blooddonate table



The Fig 5.14 shows the bloodinfo table



The Fig 5.15 shows the bloodrequest table



The Fig 5.16 shows the hospital table



The Fig 5.17 shows the campaigns table

id	cname	cemail	oname	clocation	ctime	cdate
0	donation1	lionsclub1@gmail.com	lionsclub	mangalore	10:00:00	2023-01-28
28	udupi	lionsclub@gmail.com	lions club	udupi	10:30:00	0000-00-00
28	udupi	lionsclub@gmail.com	lions club	udupi	10:30:00	0000-00-00

The Fig 5.18 shows the donors table

id	dname	demail	dob	gender	bodyw	rbg
0	test2	test@gmail.com	2023-01-24	male	52	B+
0	test2	test5@gmail.com	2023-01-24	male	52	B+

The Fig 5.19 shows the receivers table



The Fig 5.20 shows the blooddinfo table



# **Front-End Screenshots**

This is the representation of how our front-end looks like when someone uses this project.

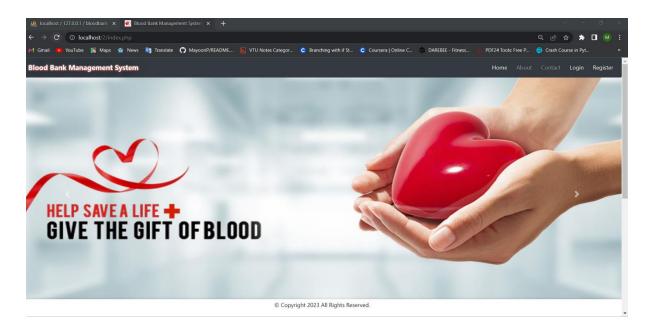


Fig. 5.21: Home Page

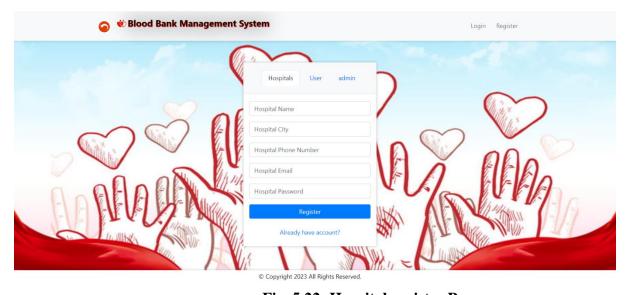


Fig. 5.22: Hospital register Page

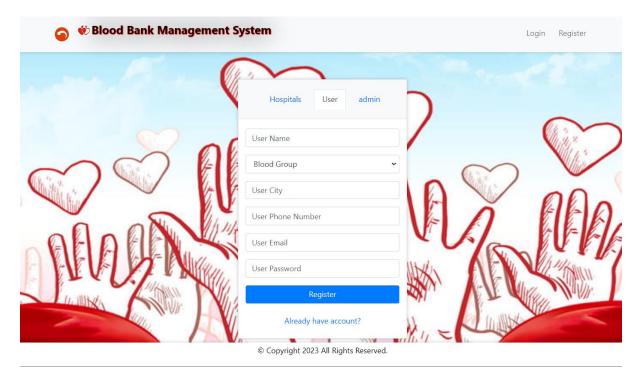


Fig. 5.23: User register Page

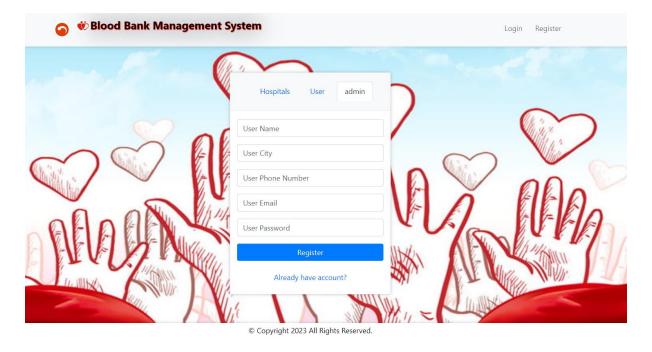
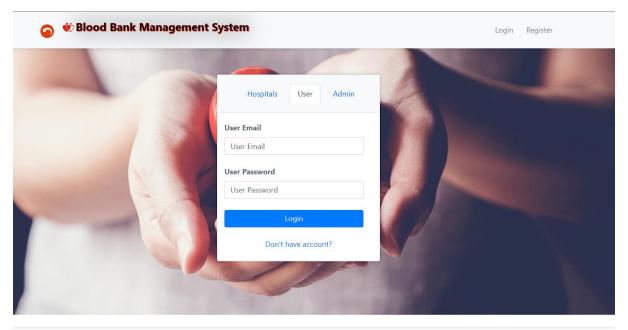


Fig. 5.24: Admin register Page



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Fig. 5.25: Hospital login Page



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Fig. 5.26: User login Page



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Fig. 5.27: Admin login Page

# About Us BLOOD - "I'm here to save you!" We believe Every life counts!, Every life matters. Time is the thing we have and don't. Our goal is to make blood available in less time and save your precious life! Contact Us

Fig. 5.28: About Us and Contact Us Page

Mail: ajenggcollege@gmail.com Phone number: + 91 (824) 286 2200 © Copyright 2023 All Rights Reserved.



Fig. 5.29: Hospital Dashboard

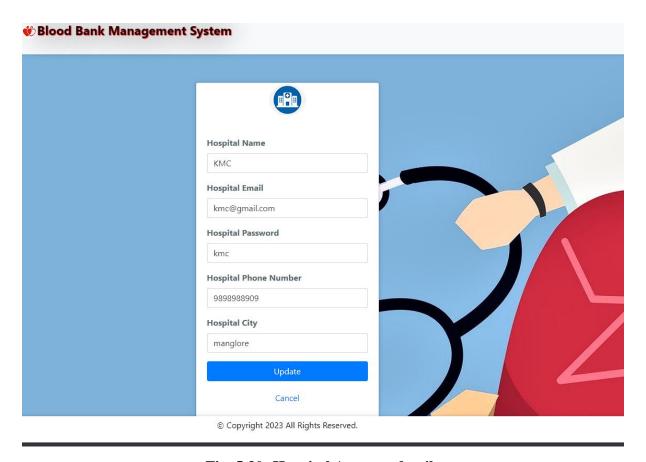
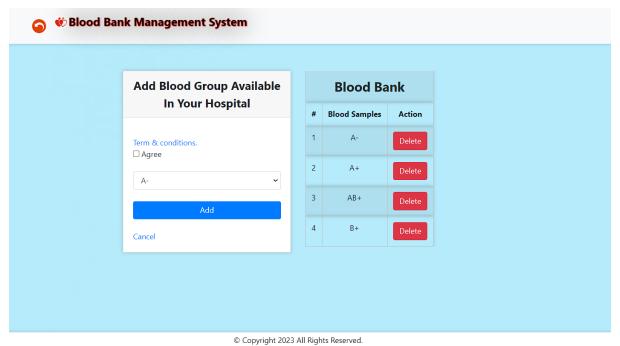


Fig. 5.30: Hospital Account details

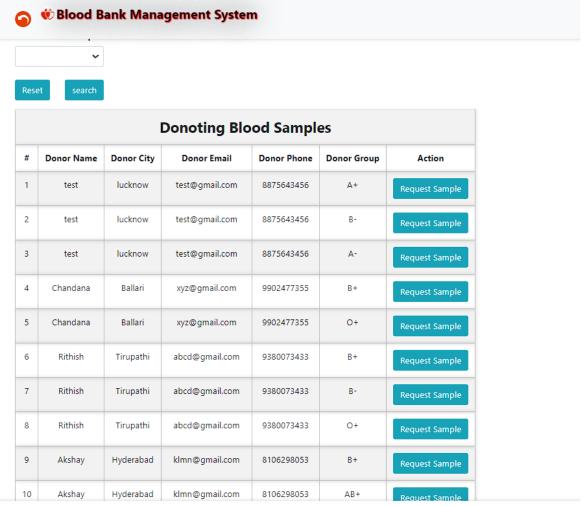


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Fig. 5.31: Hospital stock entry



Fig. 5.32: Hospital Blood request Approval



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Fig. 5.33: Hospital Blood request

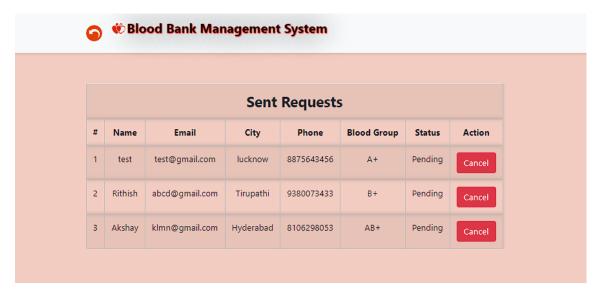


Fig. 5.34: Hospital Blood request Status

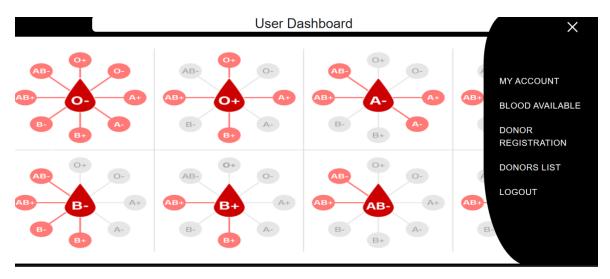


Fig. 5.35: User dashboard

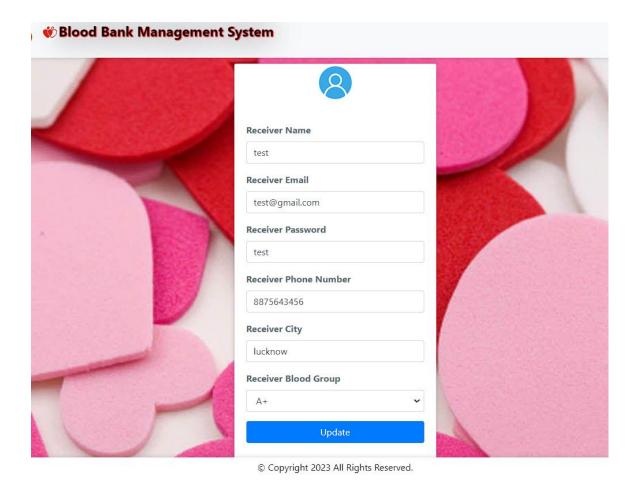


Fig. 5.36: My Account for User

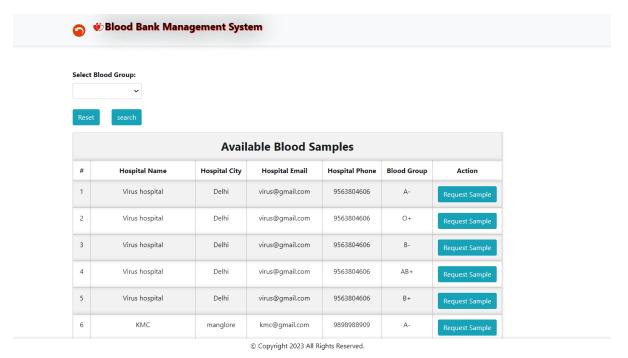


Fig. 5.37: Available blood for the User

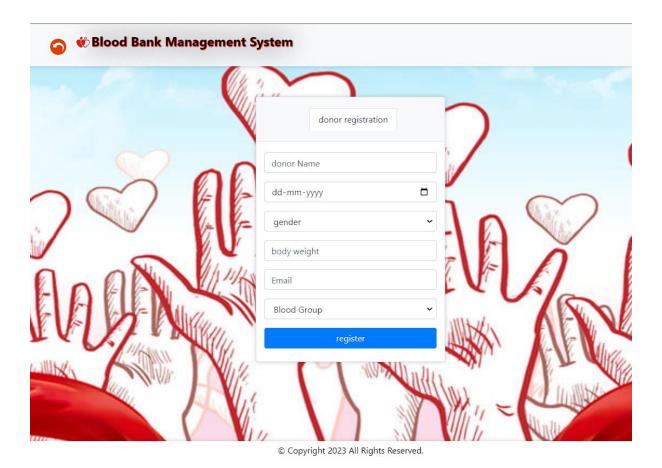


Fig. 5.38: Donor Registration



Fig. 5.39: Blood available for Users



Fig. 5.40: Admin Dashboard

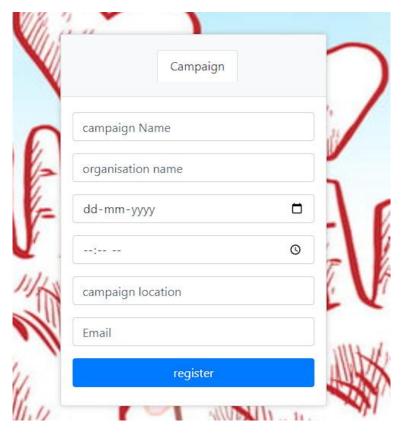
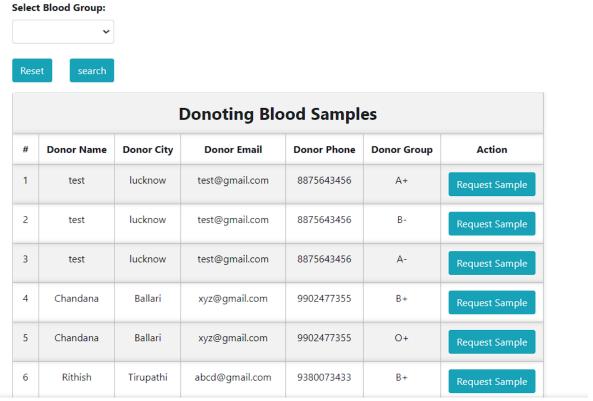


Fig. 5.41: Campaign register



Fig. 5.42: Campaigns registered



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Fig. 5.43: Available blood stocks

## **CHAPTER 6**

#### CONCLUSION AND FUTURE WORK

#### 6.1 Conclusion

The development of Blood bank management system involved many phases. The approach used is a top-down one concentrating on what first and steps for moving to successive levels of details. In primary phase, the system is designed at block level. The blocks are created on the basis of analysis done during the problem identification phase. Different blocks are created for different functions emphasis is put on minimizing the information flow between blocks.

#### **6.2 Future Work**

As a part of future enhancement,

- We can add the more information on the blood donors, like last donated date.
- Android application can be made so that all type of users can access the page.
- Further add the details of the campaigns in the home page.
- Add the quantity of the blood remaining.

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