ONLINE BLOOD BANK MANAGEMENT SYSTEM (BBMS)

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A PROJECT WORK
PRESENTED TO THE DEPARTMENT OF PHYSICAL SCIENCES,

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IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR DEGREE OF SCIENCE (B.Sc.) IN COMPUTER SCIENCE

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DECLARATION

I, Inana Oghale Prince hereby declare that the work done in this project titled Online Blood Bank Management System (BBMS) was carried out by me under the supervision of Mrs. Grace Iyawe.

This work has been carried out in the department of physical science, faculty of sciences, in Benson Idahosa University. I further declare that to the best of my knowledge neither the project nor any part thereof has been submitted for any degree whatsoever. All original ideas used are acknowledged.

Signed_____ Date_____

CERTIFICATION PAGE

This is to certify that this project "ONLINE BLOOD BANK MANAGEMENT SYSTEM (BBMS)" was carried out by **INANA OGHALE PRINCE** with matriculation number **SCN/CSC/180375** as meeting the partial requirements for the award of Bachelor of Science (B.Sc.) Degree in Computer Science, BENSON IDAHOSA UNIVERSITY Edo State, Nigeria

_____ _____

MRS. G. O. IYAWE DATE
(Project Supervisor)

_____ _____

DR.(MRS.) DIVINE OJUH DATE
(Head of Department)

DEDICATION

It is of great honor I dedicate this Academic Project to God Almighty for his love mercy and compassion towards my life that guided my pursuit for education and to strive in life. I can write this project because of his grace in my life academically, spiritually, and morally and also pass through challenges and obstacles gracefully.

ACKNOWLEDGEMENT

I would like to ultimately thank God who's helped me reach the position I'm in today, without a doubt I would not be where I am today without the lord almighty who has always and will continue to help me thrive to greater heights.

Also, I would like to thank my parents who have always supported me in all manners of life, because of them I can write this project with their unconditional love and support, and would also like to thank the staffs of this great department and faculty who have impacted in me irreplaceable knowledge. I sincerely express my gratitude to my project supervisor whose guidance made my project work a successful one, my exceptional lecturers and pre-eminent Head of the department of physical science.

ABSTRACT

Online Blood Bank Management System(BBMS) is a web-based system that registers users who could be blood donors , requesters, hospitals or organizations who have the common interest of blood availability for safe transfusion. The blood bank helps in the overall management of the system in the form of recording blood related data collection, analyzing, processing and general management of blood for safe transfusion to those in need. The goal of this Online Blood Bank Management System is to automate the present manual system using computerized equipment and full-featured computer software to meet their needs, so that their vital data/information may be preserved for a longer period of time with easy access and manipulation. A well managed Blood Bank Management System can lead to an error-free, high-quality blood supply management system that is safe, dependable, and quick. However, blood bank management in Nigeria is still paper based, slow and prone to error. There is also information gap amongst blood donors, those in need of blood and hospitals and organizations in charge of blood management. The goal of this project is to automate the process of blood management using computerized equipment and full-fledged computer software to enable donors make blood donations and to help requesters and hospitals to have access to information regarding blood availability in order to make requests for blood. It also gives room for health practitioners to make health and blood related posts about blood donations and gives room for organizations to manage campaign activities to provide proper enlightenment to ensure safe, fast and reliable blood transfusion and blood management system. The project will be implemented using React for the frontend to develop the user interface while Javascript and NodeJs were used for the backend. The database used to store data will be Mysql.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

A blood bank is a center where blood gathered as a result of blood donation is stored and preserved for later use in blood transfusion (SOURCE). The term "blood bank" typically refers to a division of a hospital where the storage of blood product occurs and where proper testing is performed (to reduce the risk of transfusion related adverse events). However, it sometimes refers to a collection center, and indeed some hospitals also perform collection.

Every day, the number of people in need of blood rises dramatically. This is as a result of accidents, illness or medical related emergencies. These people in need of blood would therefore require blood from donors, as quickly as possible as their life would depend on the timely availability of donors. Hence the need for a blood bank. However the crude processes of a blood bank before now is very hectic, difficult and also life threatening. This traditional manual process has a number of drawbacks and because the entire system had to be controlled by hand, the process of saving, filing, and retrieving data was very time-consuming and tiresome. There was never a logical order to the files.

With Online Blood Bank Management System (BBMS), one can be able to successfully receive the details of blood donors who have the same blood group and live in the same city, which may aid those who are in need of blood. People who are thinking about donating can do it easily with the aid of Online Blood Bank Management System. Everyone has access to online blood management systems. Donor registration is very easy as a person who wishes to donate blood provides all of his information, including filling out the registration form and creating a username and password with which he may edit his information if it changes. Donors have to give information like blood group, contact details etc. He then chooses a hospital to make his donation. On the other hand, a person in need of blood is able to access this information and find a donor and in turn have blood made available to him. Using this blood bank system people can search blood group available which they are needed. They check it online using the blood bank management webapp. If in case the blood group needed is not available in the blood bank, they can also get contact numbers of the persons who have the same blood group needed. He can then request the person to donate the blood for saving someone’s life.

Blood transfusion safety remains an important public health concern in Nigeria. The availability of blood pints of all blood types and the provision of its safety ensure public trust of its excellent healthcare system. However, lack of availability of these blood types and provision of unsafe blood samples still impact morbidity and mortality in hospitals. Through the use of online blood bank management system, blood transfusion safety is expected to be enhanced or improved. Risks on improper blood donors' documentation and misplaced records can be minimized or totally avoided. This would mainly be made possible through the Blog section of this project's Online Blood Bank. This is because it gives health officers and practitioners who are registered to the blood bank to make posts related to blood donations, health tips regarding blood, news and general information that would be instrumental to the enlightenment and mobilization of blood donors and requesters in need of blood. Also, processes involving blood bag collection, storage, and inventory will be systematized and organized, hence, improving the healthcare management system in the country.

1.2 STATEMENT OF THE PROBLEM

Blood is a vital component of the body for survival. Medical institutions and establishments are always in need of blood to carry out different operations on patients in order to save life. This is managed by the blood bank unit. Information regarding availability of blood, blood donation and requesting are thus vital in saving lives. However, the old system of blood bank management creates an information gap among potential blood donors, hospitals and patients in need of blood. Also, the manual process is insufficient and inefficient yet also incompatible with modern technologies. Furthermore, the manual system is time consuming and error-prone. There is therefore a need for digitalized process of keeping these records and exchanging data to improve efficiency, reliability, accuracy of data and most importantly to bridge the existing information gap, hence the need for Online Blood Bank Management System (BBMS)

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of this project is to design and implement an online blood bank management system. The objectives of this project are summarized below:

1. To inform and enlighten people about blood donation and blood bank processes.
2. To streamline and optimize operational processes, as well as maintaining all project, administrator, donor, requestor, and blood bank databases.
3. To save time and money by reducing the amount of staff required to keep records online.
4. To integrate data sources and processes through a single function that allows for one-time data entry.
5. To track all the information of donor, patient and blood records
6. To allow the users to express his or her need for blood.

1.5 SCOPE OF THE STUDY

The scope of this research is to create an online Blood bank management system to effectively manage, monitor and carry out effective blood transfusion in patients with ease and efficiency. The blood bank is run using a web-based app.

This research work will concentrate on management of the requirements of the blood bank which include Blog Post section, Blood bank details, Donor Details, Recipient Details, Equipment Details, Blood collection details and Blood Issued Details.

1.6 SIGNIFICANCE OF THE STUDY

The web-based online blood bank will bridge the information gap between medical practitioners, patients and blood donors. It will also ensure proper record keeping of blood banks which makes blood transfusion fast, safe and secure, thus ensuring a better healthcare system in Nigeria.

1.7 DEFINITION OF TERMS

1. **Web Blood Bank** :- Web blood bank keeps the name of the donor who is donating blood, an email as a unique id and password through which the donor can access his account ,

date of birth of the donor, gender status of the donor, blood group of the donor, RH factor of the donor, mobile no, email id, address, city, state, date of last blood donation related information in their MIS when a new blood donor registered himself as a Blood Donor. It provides the criteria of state wise, city wise and blood group wise and Rh factor wise search of the blood(a person who needs blood). A person or a hospital can request the blood from the blood bank when they need. For this the blood bank keeps the name of the patient, a blood group which is needed, number of unit needed, Rh factor type, city in which the blood needed, date and time when the blood will required, contact name, contact email id, contact phone number, address, city, state of the person who needs the blood in their MIS.

2. **Management Information System (MIS):** This is a set of systems and procedures that gather data from a range of sources, compile it and present it in a readable format. Managers use an MIS to create reports that provide them with a comprehensive overview of all the information they need to make decisions ranging from daily minutiae to top-level strategy.

3. **Blood Bank:** A blood bank is a place designed especially for the storage of blood and blood products.
4. **Blood Group:** Blood types are determined by the presence or absence of certain antigens – substances that can trigger an immune response if they are foreign to the body. Since some antigens can trigger a patient's immune system to attack the transfused blood, safe blood transfusions depend on careful blood typing and cross-matching. There are four major blood groups determined by the presence or absence of two antigens – A and B – on the surface of red blood cells. In addition to the A and B antigens, there is a protein called the Rh factor, which can be either present (+) or absent (–), creating the 8 most common blood types (A+, A-, B+, B-, O+, O-, AB+, AB-).

5. **Blood Transfusion:** A blood transfusion is a procedure that replenishes your blood supply after an illness or injury. A transfusion can help supply one or more of the components that make up healthy blood if your body is missing one or more of them.

6. **Blood Donor:** This is the individual who gives out his blood to be use by another who requires it. His or her blood is collected and deposited at the blood bank until when needed by a recipient.
7. **Blood Recipient:** This is person who is in need of blood for transfusion. A recipient's blood of the correct match is retrieved from the blood bank and transfused to the recipient

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTON

2.1 REVIEW OF PAST WORKS

Alexis *et al*., (2006) developed a web-based portal to facilitate the co-ordination between supply and demand of blood. This system ensured blood was conveniently available in good quality, and the safety of blood and other blood components, which can be provided in a sound, ethical and acceptable manner and consistent with the long-term well-being of the community. It actively encouraged voluntary blood donation, motivated and maintained a well-indexed record of blood donors and educated the community on the benefits of blood donation.

According to Teena, Sankar and Kannan (2014) in their study entitled "*A Study on Blood Bank Management*", they defined Blood Bank Information System as an information management system that contributes to the management of donor records and blood bank. Their system allowed an authorized blood bank administrator to sign in with a password to manage easily the records of donors and patients who need blood. The system provided many features including the central database, quick access to the system content through the login, includes the search code to find donors on a given basis, and the ease of adding and updating donor data. The main aim of the system was to complete the process of the blood bank. This system was designed to suit all types of blood banks. Once successful in the implementation of the application, it can be applied and rolled out in several blood banks. This application contains User Login Screen, Blood Management, Menu Form, Blood Stock, Donor Management, Donor Registration, Blood Reservation, Donor Blood Test, Recipient Management and Blood Reservation. In similar manner, the researchers planned in their application to have hospital administrator, doctors, and blood bank receptionists as users. The authors did not mention the research method they used, and failed to provide screenshots of the system prototypes, making difficult for the researchers to visualize their application. No discussion also for their respondents, samples and sampling techniques used.

In their study entitled *"Blood Bank Management System"*, *Kumar,* Singh and Ragavi (2017) developed a web-based blood management which assists the blood donor records management, and provides ease of control in the distribution of blood products in various parts of the country

considering demands of hospitals. The system was designed to be flexible and adaptive to fulfill the diverse demands of a blood bank. According to this study, because the facts about blood donors and associated records were entered manually, tracking blood donation activities was difficult and complicated, and even resulted in erroneous data. Furthermore, the researchers mention that manual-based system can be waste of time, lead to the error-prone results, consumes a lot of manpower, lacks data security, data retrieval requires a lot of time, reports consumes a long time to produce, and there is less precise accuracy on the results. As such, by developing and implementing a web-based blood management information system, there was a quick and timely access to donor records, and the system provided management timely, confidential and secured medical reports. There were three (3) users in the system, namely: Administrator, Donor, and Acceptor. Each user has been given user ID and password to identify their identity. The said application was developed using ASP.NET, C#.NET, and using SqlServer 2000/2005 for the database. The research paper however failed to mention the methods of research used.

According to her study titled "*Blood Bank Management System Using Rule-Based Method*" undertaken by Liyana (2017), it was found out that it is important for every hospital to use an information system to manage data in blood bank. Also, she observed that the manual system has disadvantages for the user and the hospital. One of the disadvantages identified was the blood bank staff would have to enter the donor details in each time he/she donates blood which led to duplication data of the donor and also the data may be lost or missing after period of time. Thus, the author developed a web-based system to help the blood bank to record the donor details fast and easy. The system used rule-based decisions to ensure to have a right decision on right time. Also, system can send messages to donors if any particular blood type is needed. She developed blood bank system based on incremental model.

Sumazly *et al*., (2015) carried out a study on a web-based blood bank management system which was developed to meet the requirements for a hospital. The methodology used to build this system uses the Rational Unified Process (RUP). The technology used in implementing their system used J2EE programming environment with Java and JSP, using MySQL for SQL database and HTML5, CSS and JavaScript for web development. They further carried out enlightenment campaigns to enlighten people on the need to make blood donations. In their app, they made provision for an administrator who had all access and was in charge of the blood bank management system they created.

2.2 AUTOMATION OF BLOOD DONOR DATABASE

There has been some investigation toward automating the database of blood donors. Because numerous aspects must be addressed and different approaches must be taken in order to effectively attract blood donors, hence various parameters were considered in the recruiting process by the researchers.

Few people want to make voluntary blood transfers, and most previous donors had to donate in unavoidable conditions, according to Al Rashdi *et al*., (2018), who examined certain variables that impact the levels of recruitment for blood donations. Angeline R et al., (2019) made use of Data Management System to create a web application called GPS based online blood Bank Management system. The client's location may be tracked using the GPS framework in this app. Finck *et al*., (2016) investigated the factors that influence blood donation motivation and deterrents among high school blood donors.

Ferguson (2015) employed the Mechanism of Altruism (MOA) technique to attract blood donors, claiming that financial incentives in the form of gifts and movie tickets are effective in increasing blood donation. Alfouzan (2014) conducted research to determine the level of knowledge about blood donation, to identify positive and negative attitudes, to identify barriers, and to suggest some motivational factors more over some education program arrangements to increase awareness of the range of people who can donate blood. Bani and Giussani (2014) investigated the causes for the gender discrepancy by sampling donors who had ceased donating at least two years prior to the research and examining contribution frequency. In their study, Getta et al. (2018) employed the last date of blood donation, Body Mass Index (BMI), and the last date of contact between donor and receivers as recruiting variables in an asterisk technology-based automated blood donation system.

Priya and Saranya in 2014 presented a GIS-based (Geographic Information System) blood donor information and management system that is incorporated into an Android mobile application. Vikas Kulshrestha's study discusses the advantages of a management information system in a blood bank. The study is primarily concerned with the management information system for blood banks. It discusses the blood bank management information system's benefits. Ibrahim et al. (2015) introduced the Centralized Blood Bank Repository, a revolutionary blood bank

management solution (CBBR). This new system will consist of a website that will be hosted on an Apache web server. The architecture as a whole is centralized. The system is installed on a central server and is accessed and collected data from browsers on various devices in various locations.

Jeroen Benien and Hein Force (2012) took an intriguing approach to supply chain management for blood and blood products, describing the process as irregular and the demand for blood as stochastic. If blood bank management is to become effective, this has major ramifications.

2.3 IDENTIFICATION OF NEED: THE OLD SYSTEM

A number of flaws plagued the old manual method. The procedure of storing, preserving, and retrieving information was extremely tedious and time-consuming because the entire system needed to be managed by hand. The files were never kept in a logical sequence. It used to be impossible to link a specific transaction to a certain environment.

If any information was to be uncovered, it would have to be gleaned from various registries and papers; there would never be anything comparable to creation of a report. There would always be unnecessary consumption of time while entering and retrieving records. Another issue was that it was really difficult to look for mistakes when entering the data. It was extremely difficult to amend the records once they had been submitted.

A number of studies have been published on the topic of blood bank management systems with the vast majority endorsing computerization as a means of increasing efficiency and efficacy in this area, thereby ignoring the issues the system may encounter as a result of to a lack of or misapplication of functions.

Pah Essah and Said Ab Rahman (2011) suggested the creation of a management information system to manage blood banks based on donor, recipient, and blood information. Their system is divided into three parts: a donor module, a patient module, and a blood module. However, certain critical questions are overlooked in this approach, such as who is accountable for system management. Mailtrey D Gaijjart (2002) suggests the construction of a blood bank data management system as a way to avoid near miss incidents and enhance record retrieval. Their reasoning is that computerization will increase the efficiency of blood bank operations by

allowing for faster retrieval of records. Finally, Ekanayaka and Wimaladharma (2015) created a Blood Bank Management system that automatically gathers all blood donors in one location and informs them about blood donation possibilities by SMS to the donor's cell phone.

2.4 BLOOD DONATION CONDITIONS

According to Vikas and Sharad(2015), Blood Banks accept the donated blood, only if donor satisfy all of the following conditions:

(i) If the donor are between age group of 18-60 years.

(ii) If the donor's weight is 45 kgs or more.

(iii) If the donor's hemoglobin is 12.5 gm% minimum.

(iv)If the donor's last blood donation was 3 or more months earlier.

Blood Bank do not accept donated blood, if donor have any of the following conditions :-

(i) Cold / fever in the past 1 week.

(ii) Under treatment with antibiotics or any other medication.

(iii) Cardiac problems, hypertension, epilepsy, diabetes (on insulin therapy), history of cancer, chronic kidney or liver disease, bleeding tendencies, venereal disease etc.

(iv) Major surgery in the last 6 months.

(v) Vaccination in the last 24 hours.

(vi) Had a miscarriage in the last 6 months or have been pregnant / lactating in the last one year.

(vii) Had fainting attacks during last donation.

(viii) Have regularly received treatment with blood products.

(ix) Shared a needle to inject drugs/ have history of drug addiction.

(x) Had sexual relations with different partners or with a high risk individual.

(xi) Been tested positive for antibodies to HIV.

2.5 BLOOD TYPING

Blood typing helps your doctor determine what type of donor blood is compatible with your own. Some blood types contain antibodies that trigger immune reactions against other blood types. Karl Landsteiner discovered the ABO blood group system (BGS) in 1900, which incited the beginning of modern blood banking and transfusion medicine.

In general:

- If you have type A blood, you should only receive types A or O blood.
- If you have type B blood, you should only receive types B or O blood.
- If you have type AB blood, you can receive types A, B, AB, or O blood.
- If you have type O blood, you should only receive type O blood.
- If you have type AB blood, you're known as a "universal recipient," and can receive any ABO category of donor blood.
- If you have type O blood, you're known as a "universal donor," as anyone can receive type O blood. Type O blood is often used in emergencies when there isn't enough time to perform blood typing tests.

2.6 NEED FOR THIS PROJECT: THE PROPOSED SYSTEM

As a result of the above literature, the focus of this study will be on blood transfusion centers, blood banks, and the many procedures and players engaged in these facilities in order to create a system that would coordinate and enhance the quality of diverse operations and processes. The proposed system will be centralized. This means that it will be a single system that will accommodate different types of users all accessing the same information and a number varying functionalities. The proposed system will be Web-based. It will be developed in HTML 5/CSS on the WWW platform and will be accessed through the HTTP protocol. React will be used to

develop the frontend user interface for the application while Javascript and NodeJs will be used to implement the backend functionalities.

While analyzing the current systems, a number of vital but missing features were discovered. These features describe the procedures that cause blood centers to fall behind in terms of Information and Communication Technology. There was no provision for the enlightenment and information dissemination. This is one of the features the proposed system capitalizes on through the introduction of the Blog Post section to the online blood bank. This will help patient education and donor enlightenment as tips, news, guides and other useful information can be easily passed down to them. Also, on the donor side, the blood bank will have access to donor information, recipient data, and requests, as well as the ability to reply to various requests, schedule donations with donors, and arrange blood donation campaigns to raise awareness and attract additional donors. They will also be able to get a real-time report on the status of their blood bank. The method will also assist them in identifying and correcting problems in donor testing. Donors will have access to vital information such as the method and standards for blood donation, as well as the locations of blood centers and blood donation campaigns. With the new technology, a donor may get all information he needs about a blood center or in only a few clicks.

The proposed system will also help eliminate redundancy of performing group and genotype tests every time a donor is donating. The proposed system would convey vital information to receptors regarding the availability of their necessary blood type, as well as the blood center where it is available. People who want to give blood can register on the web app where their details are stored and accurately kept safe.. The primary goal of this project is to automate the whole blood donation process. Donors' sentiments and views regarding the blood bank's rules and operations might be known as well through this process. Donors and Requesters both have the opportunity to perform their share without difficulty which ensures consistency in handling activities. It also fosters both faith and trust. Personality clashes are further lessened. The proposed system can be accessed by anybody with internet connection and a web browser.

CHAPTER THREE

SYSTEM ANALYSIS AND DESIGN

3.1 INTRODUCTION

In this chapter, the system analysis of the existing system will be discussed and its design methods will be described with the view to enhance it. Also the feasibility studies, architectural design, database design, input and output designs will be analyzed in this chapter. System analysis deals with the breakdown of the existing method's operation and principles of operation, highlighting its flaws and setbacks which will give a clearer picture of the need for the proposed system which will be efficient and effective.

3.2 RESEARCH METHODOLOGY

Methodology refers to the various steps and processes that are used in the development of this project in order to achieve its aims and objectives. The approach lists the stages of the procedures and order in which they were carried out. The methodology used for this Blood Management System is the structured system analysis and design methodology (SSADM). Structured system analysis and design methodology (SSADM) is a systems approach to the analysis and design of information systems. This method develop better quality systems by dividing application development project into modules, stages, steps, and provides a framework for describing project in a fashion suited to manage the project.

3.3 METHOD OF DATA COLLECTION

There are various approaches to data collection depending on the nature of the research being conducted. For this study, the methods of data collection adopted include the following: internet sources, Interviews and references to published and unpublished collection. The data collected for this study can be broadly classified into two types, namely: the primary and secondary data.

3.3.1 Primary Data

Primary data can be defined as data collected directly from respondent relevant to the subject under investigation. According to Dimoji (2009), primary source data collections are sources from firsthand information. The primary data used in this case is observation and interview

method. The tools for gathering the primary source of data collection include; interview, observations, reports and inquiries. In writing this project some persons in the medical field were interviewed based on their experience and knowledge of the area of this study in order to get some insight about blood banks, blood crisis management and general blood donation processes

3.3.2 Secondary Sources

This source of data collection is also known as second hand collection, such that an already made data is been used that is, information that is already printed or published information. Sources of secondary data include textbooks, magazines, journals etc. In the course of this study, most of the data used were gotten from online blood donation journals and blogs.

3.4 ANALYSIS OF EXISTING SYSTEM

The process of blood bank management in Nigeria is manual, crude and inefficient. The system is characterized by the Paper Card System(PCS) which is used to specifically capture personal data and medical history of the blood donors. A file folder is opened for the donor upon arrival and his data is collected. This information will be used to identify and locate existing blood donors, carry out pre-donation counseling and taking blood results. The donor's blood is then drawn, labeled and tested for both infections and categorization. This system involves a lot of record keeping and filing. According to Gerard (2000), the major principles upon which the safe blood policy is based are on the informed consent, confidentiality and secrecy of blood donors. However it is difficult to meet up to the expectations of the policy due to setbacks arising from the existing system. Some of these challenges are described below.

3.4.1 DRAWBACKS OF EXISTING SYSTEM

i. Poor security: With the paper based system, unauthorized persons can easily access the paper system, thereby making it impossible to keep the secrecy and confidentiality expected of medical records

ii. Time consuming: This system is also time-consuming as it takes a lot of time to search and pull out historical records from file cabinets, especially in times of emergencies.

iii. Error prone: There are high chances of error arising from mismatching, incorrect filing and poor labeling resulting from carelessness and fatigue of the blood bank staff. This can lead to death or serious complications on the patient.

iv. Data loss: The old system is characterized by cases of missing files of donor information like contact details, address, and even blood group information. This can be as a result of mix-up in the filing and documentation process. Also cases of fire outbreaks or disaster can lead to permanent loss of records of patients and donors

v. Without having proper information it is very difficult to supply the blood to the required people therefore creating a gap between donors and patient.

vi. Information sharing is not possible among hospitals, blood banks or blood camps about the required blood group in the case of emergency due to no centralized database.

3.5 DESCRIPTION OF PROPOSED SYSTEM.

People in need of blood will benefit from the proposed system since it would provide information about blood group availability and donors of the same blood group. The system will be a web-based responsive database application system that will be used by blood banks or blood centers to publicize blood donation events as well as allow people to make online blood requests. Donors and patients will be able to register and make requests using the system's user-friendly registration module. The database will assist in lowering the risk associated with manual document filing (such as missing files, space consuming, damages, insecurity, access time, and higher cost etc.). In an emergency, the blood donation information management system will speed up the supply of blood. In addition to this, the proposed system comes with an educational site where medical personnel can post informative and educational materials and messages that will be useful to users.

The proposed system will allow blood requesters in the form organizations, hospitals and individuals to register on the platform, thus having information about the availability of blood. Blood donors also get to register and choose where they wish to donate to. Finally, this web-based model has campaign and blog section to encourage blood donations and to provide health guide and safety tips to its users.

3.5.1 ADVANTAGES OF THE PROPOSED SYSTEM

The system developed in this study comes with various advantages over the existing models. The benefits are summarized below;

i. User Enlightenment: The proposed system comes with a blog which serves as an educational platform for enlightenment for first time donors and removes fear, stigma and misinformation on prospective donors.

ii. Speed and accuracy: With just a click, donor information can be taken or retrieved without wasting of time. This reduces to cumbersomeness of information management

iii. Data security: The online blood bank is comes with the password system, hence only granting access to authorized personnel. This helps protect information of donors.

iv. Better storage capacity: This eliminates the problem of missing files and information as data stored in the database can be accessed easily from anywhere.

v. Easy to update information: This new system makes it easy to edit, change and update information without going to long processes.

vi. Information dissemination: The web app makes it easy to upload information, news and tips on blood donation and blood management which can be very useful to users, both staff and, patients and donors.

vii. Easy access to blood: With this system, those in need of blood can easily make requests online without having to go all the way to physical blood banks. Donors can also make requests for donations easily.

viii. This system when implemented will save a lot of lives.

3.6 SYSTEM DESIGN

This is the process of establishing a system's architecture, components or modules, interfaces, and data to meet a set of requirements. This system is especially intended to allow for the entry, processing, and output of blood donor information at any time, removing the need for blood donors during times of emergency. The information and findings collected during the system analysis stage, on the other hand, will be used in building and constructing a new effective and efficient system that will address the issues that the present blood donation information system has.

3.7 DATABASE DESIGN

Identifying the various end-user needs is an important part of database design. Database requirements analysis is to obtain data and create a database that fits a user's or organization's informational needs. This covers the type of data to be kept in the database as well as the circumstances under which that data must be accessible. For this system, MySql was used for its Database

3.7.1 DATABASE TABLE STRUCTURE

This deals with the underlying tables in the database which are used take inputs and to store various user information

3.7.1.1 DONOR TABLE STRUCTURE

This is the table that contains the data for the blood donor.

Table 3.1 Donor Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
Nic	Varchar(15)	NOT NULL	To store the National Identity Card
Password	varchar(255)	NOT NULL	To store user password

Dob	Date	NOT NULL	To store user's date of birth
Bloodgroup	varchar(4)	NOT NULL	To store donor's blood group
First_name	varchar(255)	NOT NULL	To store donor's first name
Last_name	varchar(255)	NOT NULL	To store donor's last name
Gender	varchar(8)	NOT NULL	To store donor's gender
District	varchar(20)	NOT NULL	To store donor's district address
Addressline1	varchar(255)	NOT NULL	To store donor's first addressline
Addressline2	varchar(255)	NULL	To store donor's second addressline
Email	varchar(255)	NOT NULL	To store donor's email
Status	varchar(5000)	NOT NULL	To store donor's health status
Created at	Datetime	NULL	To store the time of donor's account creation
Validation	Int(1)	NOT NULL	To crosscheck and verify information

3.7.1.2 ORGANISATION TABLE STRUCTURE

This table contains the data for organizations who are interested in the blood bank management scheme

Table 3.2 Organization Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
Username	varchar(100)	NOT NULL	To store the name of

			organization’s username
OrganizationName	varchar(200)	NOT NULL	To store the name of the organization
District	varchar(50)	NOT NULL	To store organization’s district location
President	varchar(100)	NOT NULL	To store the name of organization’s president
Password	varchar(255)	NOT NULL	To store the password
Purpose	varchar(500)	NOT NULL	To store organization’s purpose of registration
Created_at	Datetime	NULL	To store time of data creation
Email	varchar(100)	NOT NULL	To store organization’s email address

3.7.1.3 BLOOD REQUESTER TABLE STRUCTURE

This table contains data for patients, individuals and patients who are in need of blood

Table 3.3 Blood Requester Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
NIC	Varchar(15)	NOT NULL	To store the National Identity Card
Password	varchar(255)	NOT NULL	To store requester's password
DateOfBirth	Date	NOT NULL	To store requester's date of birth
Bloodgroup	varchar(4)	NOT NULL	To store donor's blood group
FirstName	varchar(20)	NOT NULL	To store requester's first name
LastName	varchar(20)	NOT NULL	To store requester's last name
Gender	varchar(7)	NOT NULL	To store requester's gender
District	varchar(100)	NOT NULL	To store requester's district address
Lane1	varchar(100)	NOT NULL	To store requester's first addressline
Lane2	varchar(20)	NULL	To store requester's second addressline
Email	varchar(255)	NOT NULL	To store requester's email
Created at	Datetime	NULL	To store the time of requester's account creation

3.7.1.4 NORMAL HOSPITAL TABLE STRUCTURE

This table contains the data for registered Hospitals who plan donors can make their blood donations to.

Table 3.4 Normal Hospital Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
NHospitalID	Int(11)	NOT NULL	To Hospital's Identity Number
Username	varchar(200)	NOT NULL	To store the hospital's username
Name	varchar(200)	NOT NULL	To store the name of the hospital
Address	varchar(200)	NOT NULL	To store the address of the hospital
District	varchar(50)	NOT NULL	To store hospital's district location
Chief	varchar(100)	NOT NULL	To store the name of hospital's chief officer
Password	varchar(100)	NOT NULL	To store the password
Email	varchar(100)	NOT NULL	To store hospital's email address

3.7.1.5 BLOOD BANK ADMIN TABLE STRUCTURE

This table contains data for the blood bank's administrator for manages particular sections of the blood bank.

Table 3.5 Blood Bank Admin table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
BAdminID	Int(10)	NOT NULL	To store blood bank's admin's Identity Number
NIC	varchar(15)	NOT NULL	To store the National Identity Card of the Admin
FirstName	varchar(100)	NOT NULL	To store the Admin's first name
LastName	varchar(100)	NOT NULL	To store the last name of the admin
Password	varchar(255)	NOT NULL	To store the password
Grade	varchar(50)	NOT NULL	To store admin's grade level
BloodBankID	Int(10)	NOT NULL	To store the Blood bank Identification
Email	varchar(100)	NOT NULL	To store the email address

3.7.1.6 BLOOD BANK CAMPAIGN TABLE STRUCTURE

This is a section of the Organization's table which handles data for blood donation campaigns

Table 3.6 Blood Bank Campaign Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
CampaignID	int(10)	NOT NULL	To store the Campaign's Identity Number
Name	varchar(500)	NOT NULL	To store the campaign name
Location	varchar(500)	NOT NULL	To store the location of the campaign
Estimate	varchar(500)	NOT NULL	To store the number of participants in campaign
BHospitalID	int(10)	NOT NULL	To store the ID of participating hospitals
Dates	varchar(12)	NOT NULL	To store the dates for campaigns
Time	Time	NOT NULL	To store the campaign time
OrganizationID	varchar(100)	NOT NULL	To store participating organization's Identity Number
Flag	tinyint(1)	NOT NULL	To store the campaign's flag logo
Email	varchar(255)	NOT NULL	To store emails

3.7.1.7 DONOR SATISFACTION TABLE

This table contains data for the donor's satisfaction experience survey

Table 3.7 Donor Satisfaction Table

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
HospitalID	int(5)	NOT NULL	To store the donor's hospital's Identity Number
DonorID	varchar(15)	NOT NULL	To store the donor's identity number
Satisfaction	int(2)	NOT NULL	To store the donor's satisfaction level
Validation	int(2)	NOT NULL	To crosscheck information

3.7.1.8 PASSWORD RESET TABLE STRUCTURE

This table contains the data arising from when a user forgets his password and wishes to reset it

Table 3.8 Password Reset Table Structure

FIELD NAME	DATA TYPE	CONSTRAINT	DESCRIPTION
Id	int(11)	NOT NULL	To store the user's Identity Number
Email	varchar(255)	NOT NULL	To store the user's email
Token	varchar(255)	NOT NULL	To store the user's recovery token

3.7.2 THE USER INTERFACE DESIGN

This is also known as the homepage. It is the first page the user interacts with in order to access the web-app. It is made up of three major parts; Home, Blog and Login/Registration.

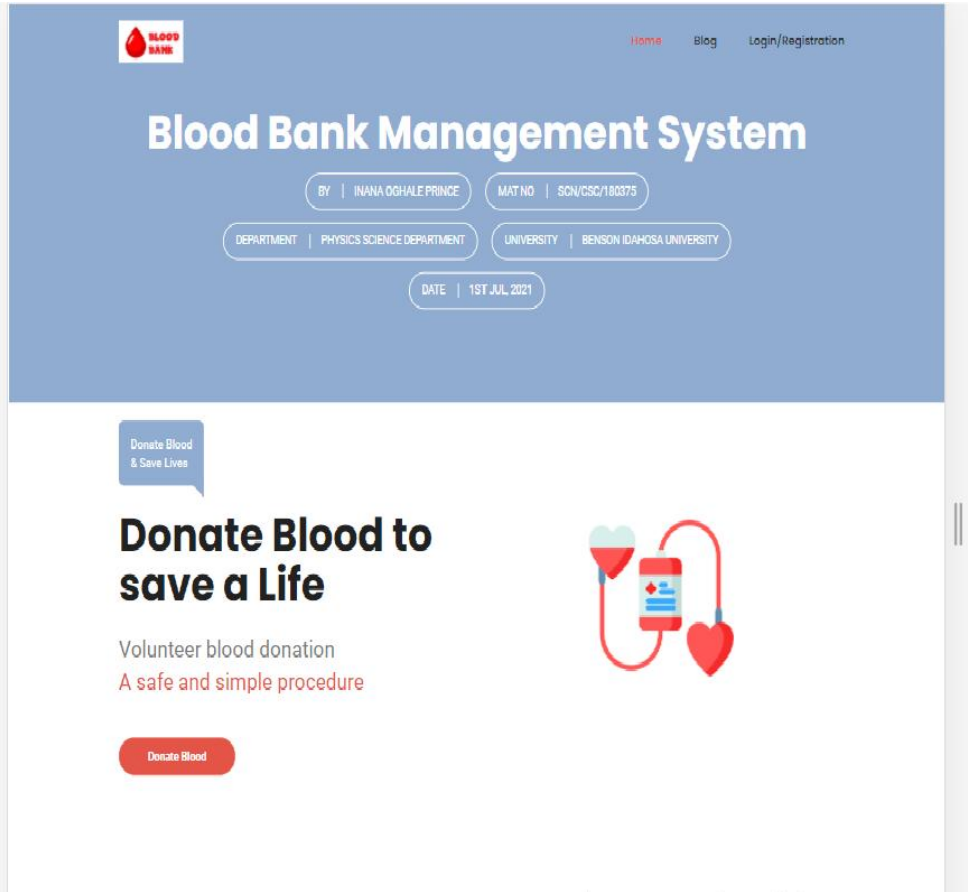

Figure 3.1 Blood Bank HomePage

3.7.3 INPUT DESIGN

It is the link between the software system and the user. It was implemented with React UI design concept. The aim of the design is to make the application easily understood and accepted to the users, so that they can be able to accurately enter the necessary data for processing.

3.7.3.1 LOGIN AND REGISTRATION PAGE

This is where the user fills in his details to access the page and either login as an old user or register if he is a first time user.

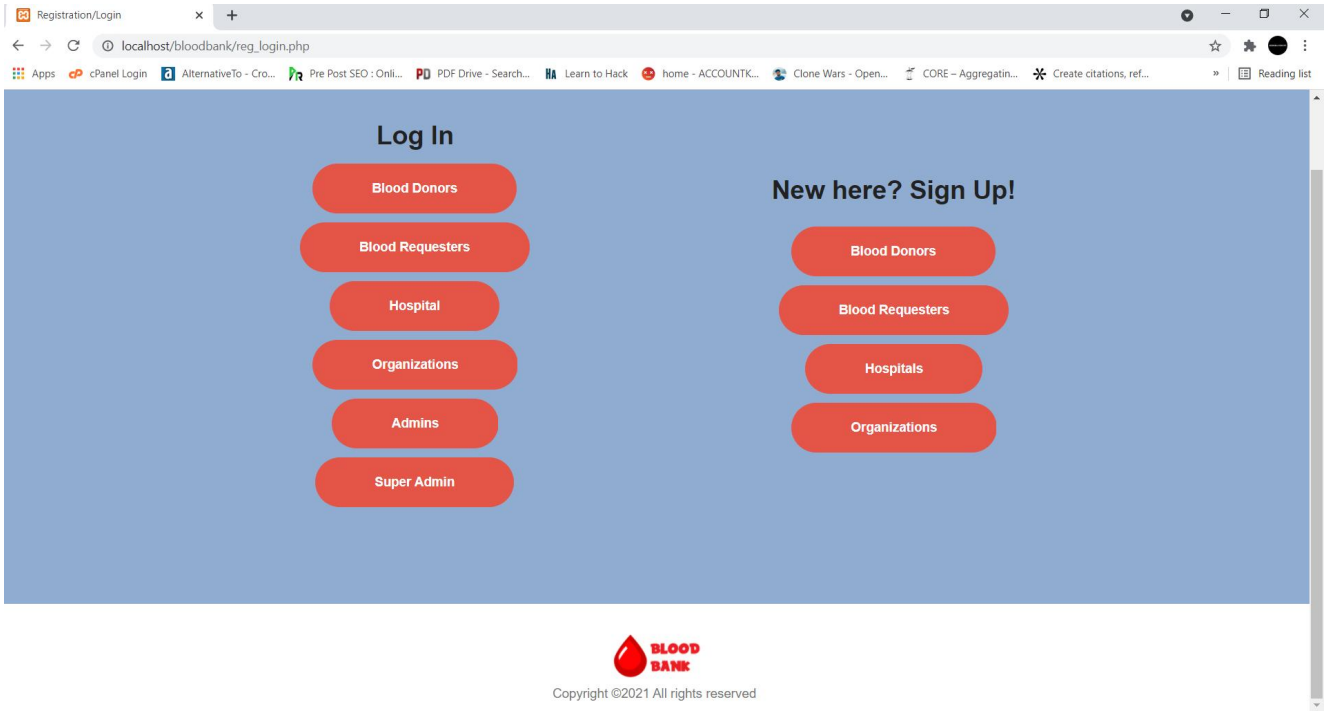

Figure 3.2 User Login And Registration Page

3.7.3.2 DONOR REGISTRATION AND LOGIN PAGES

This is where the potential donor enters his details and gets registered and then login to the blood bank to schedule and make their donations

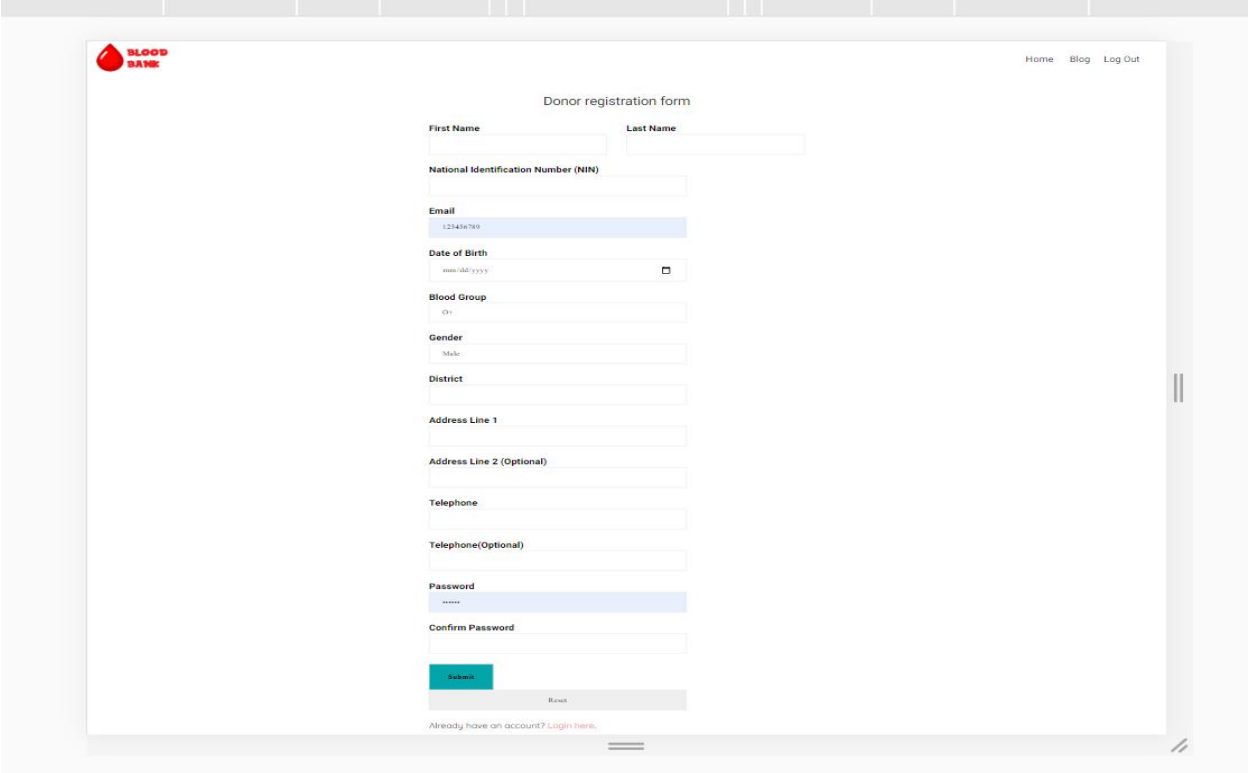

Figure 3.3 Donor registration page

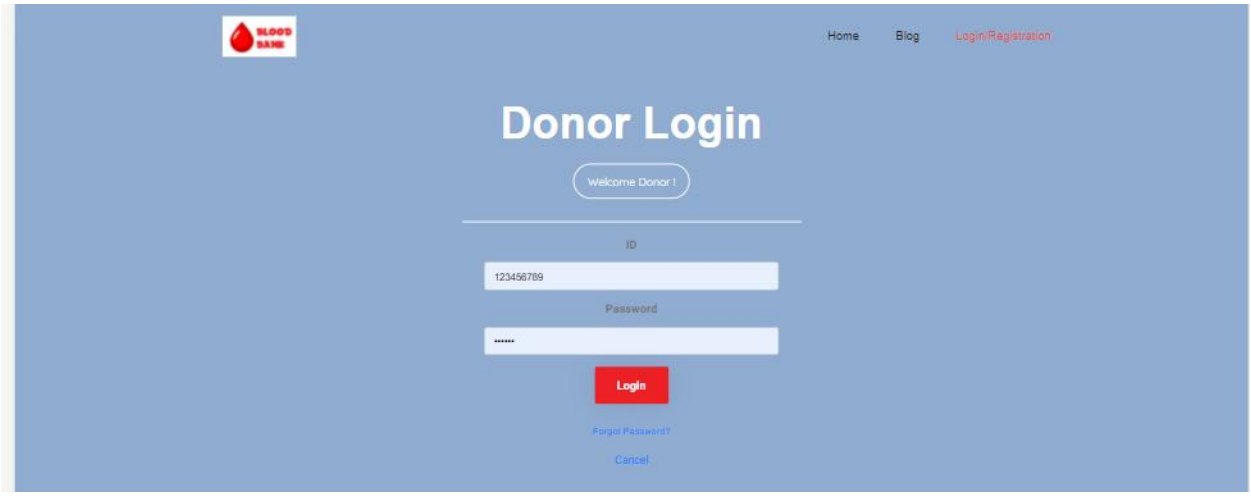

Figure 3.4 Donor Login Page

3.7.3.3 BLOOD REQUESTER REGISTRATION AND LOGIN PAGES

This page allows the blood requester to register and then logon so as to be able to make requests for blood in the future

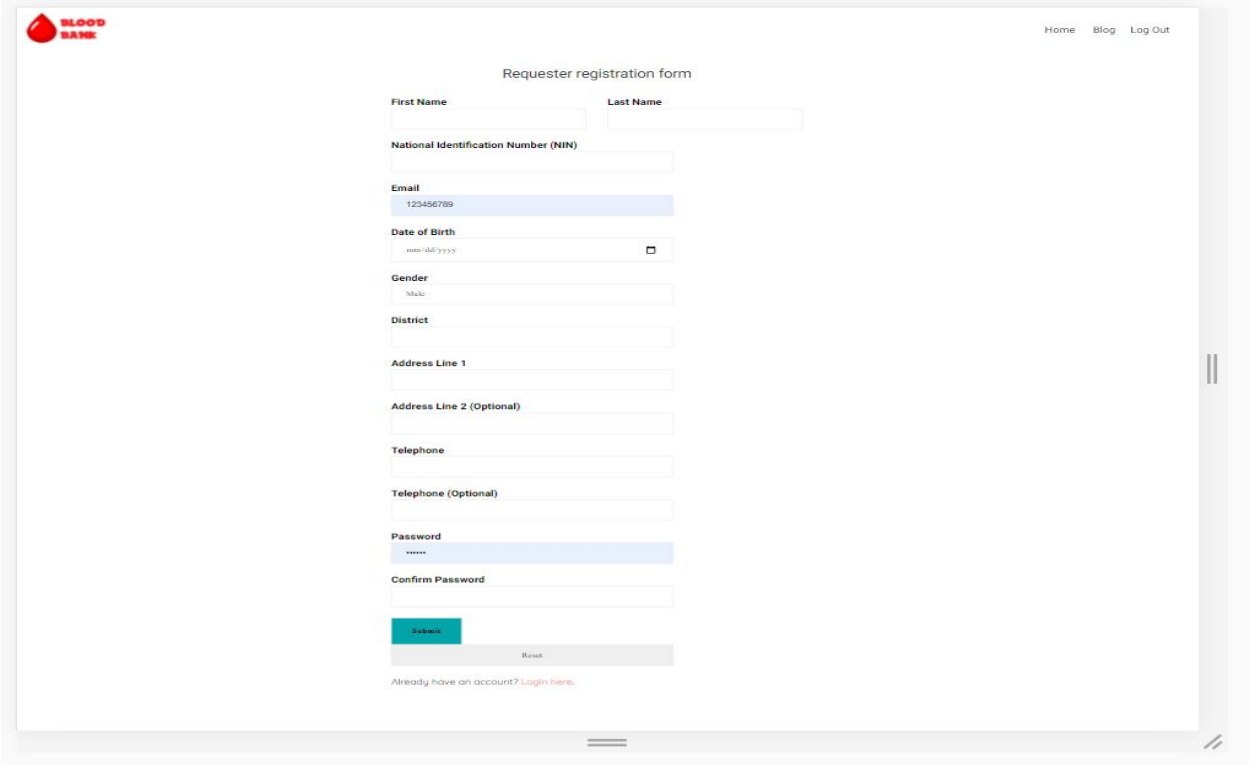

Figure 3.5 Blood Requester Registration Page

Figure 3.6 Blood Requester Login Page

3.7.3.4 HOSPITAL REGISTRATION AND LOGIN PAGES

This page is where hospitals registers to the blood bank. After registration, they can then login to make subsequent request for blood for their patients.

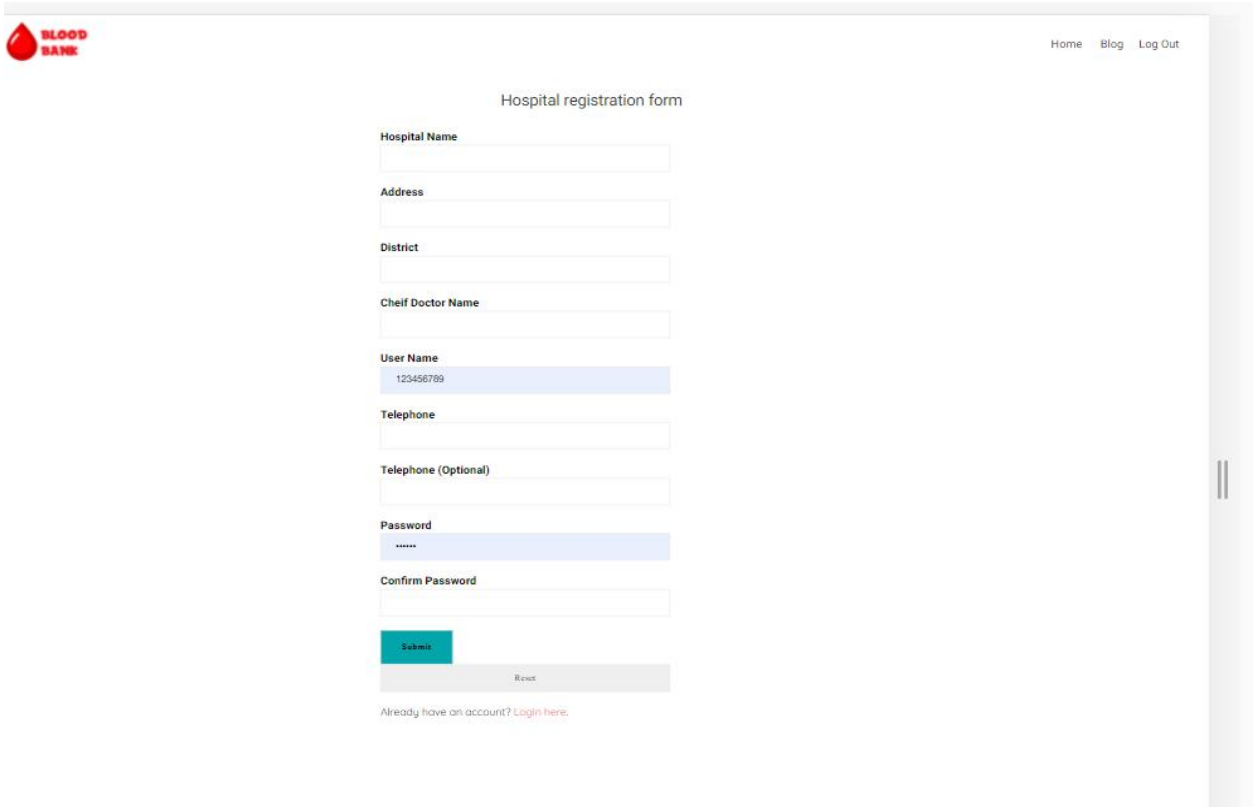

Figure 3.7 Hospital Registration Page

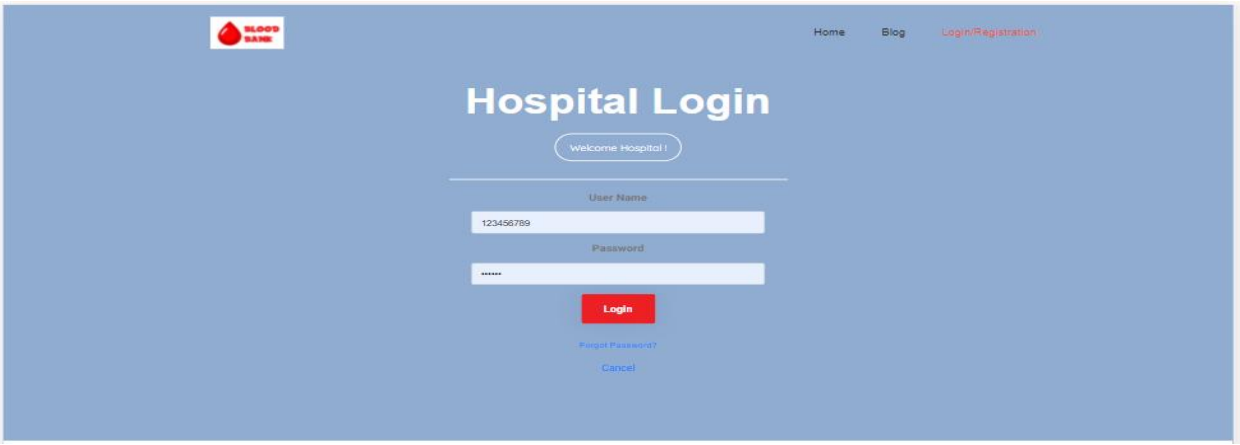

Figure 3.8 Hospital Login Page

3.7.3.5 ORGANISATION REGISTRATION AND LOGIN PAGES

This page allows Organizations and groups to register and login so as to make requests for blood.

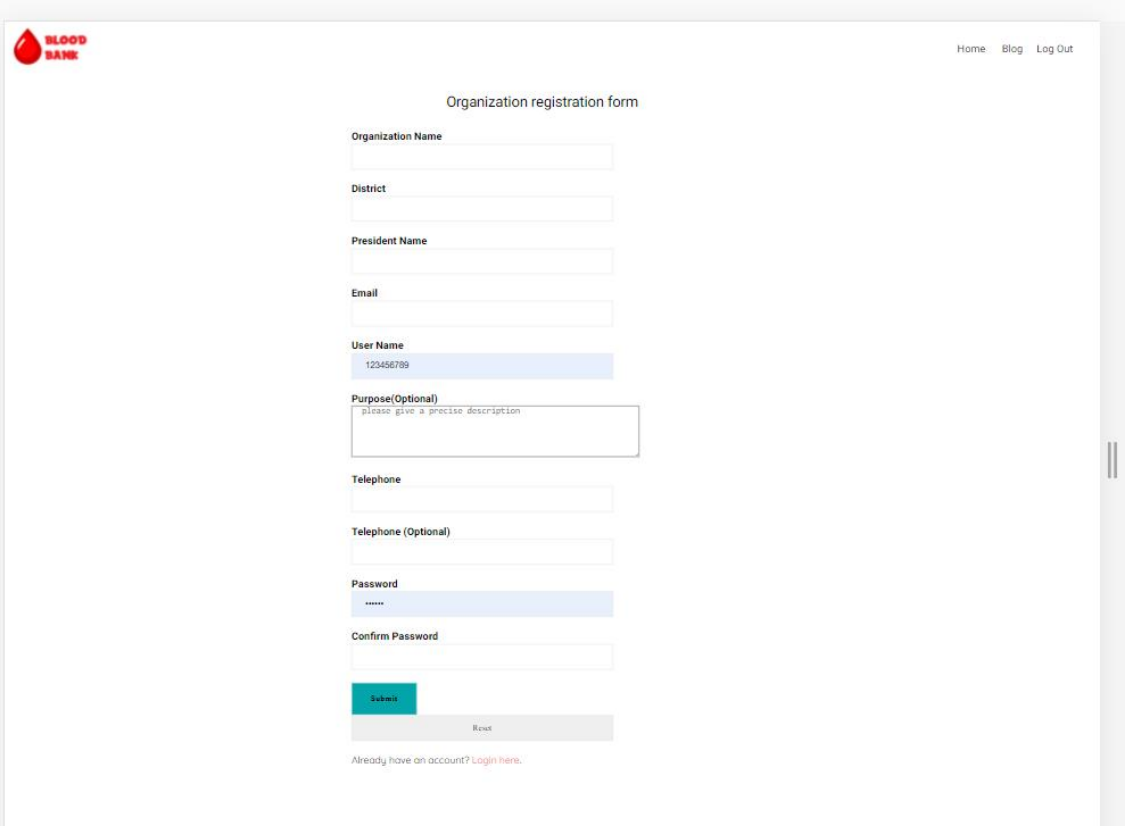

Figure 3.9 Organization Registration Page

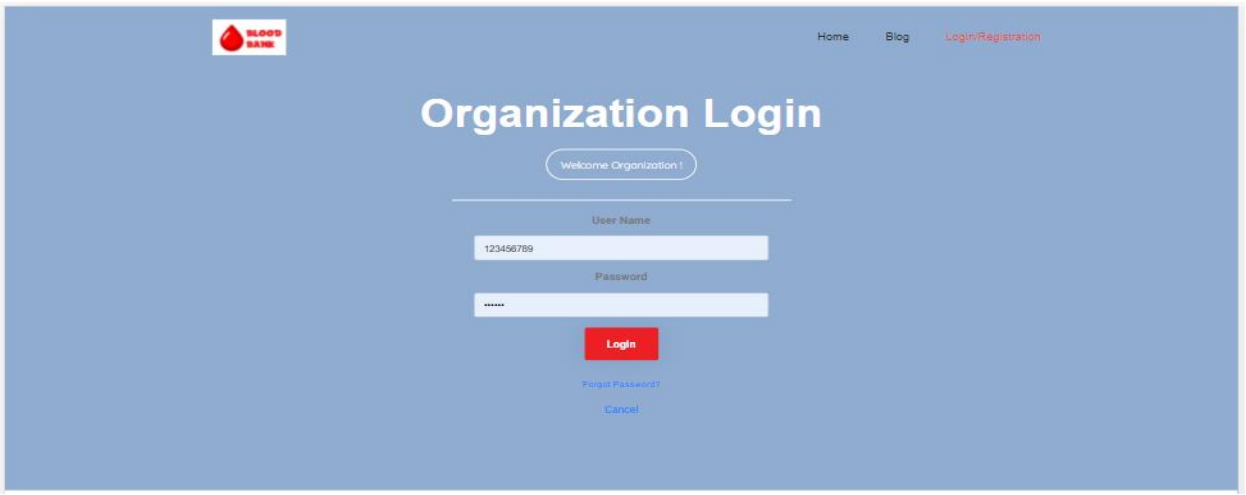

Figure 3.10 Organization Login Page

3.7.3.6 WRITE BLOG SECTION

This is page is only accessed by the Administrators. This is where blog posts about blood donations and health related information are typed and edited before posting to be seen by other users of the blood bank management system. It also comes with a feature for file attachment which can be posted along with write ups

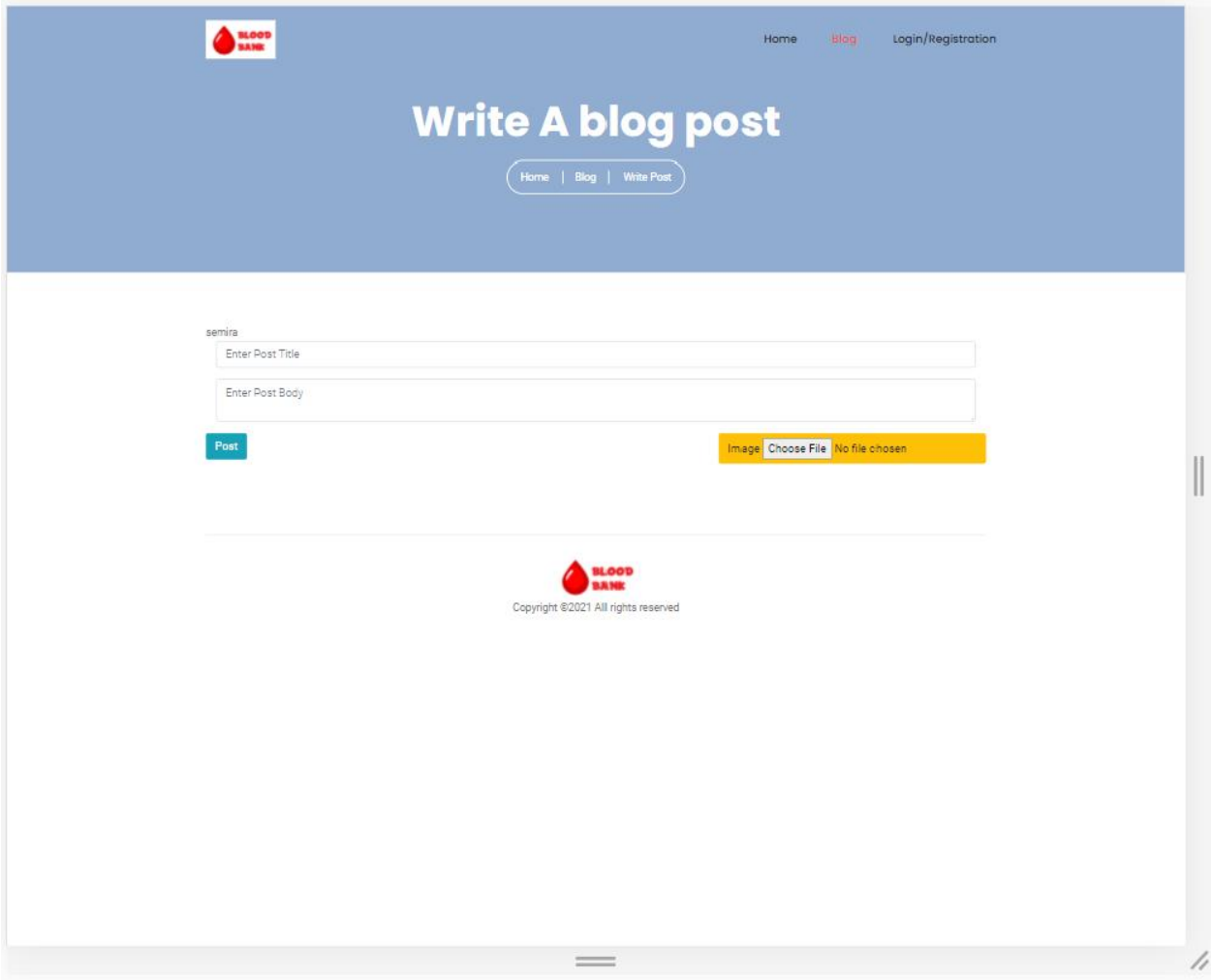

Figure 3.11 Write Blog Post Page

3.7.4 OUTPUT DESIGN

This is the section that displays the result after successfully filling the data in the login design. It is divide into login and signup sections for donors, requesters, organization, campaigns and admins.

3.7.4.1 BLOOD DONOR DASHBOARD

This is the blood donor's home screen. It sectionalized into Home, Donate Blood, Search Blood, Donations, Profile and Questionnaire.

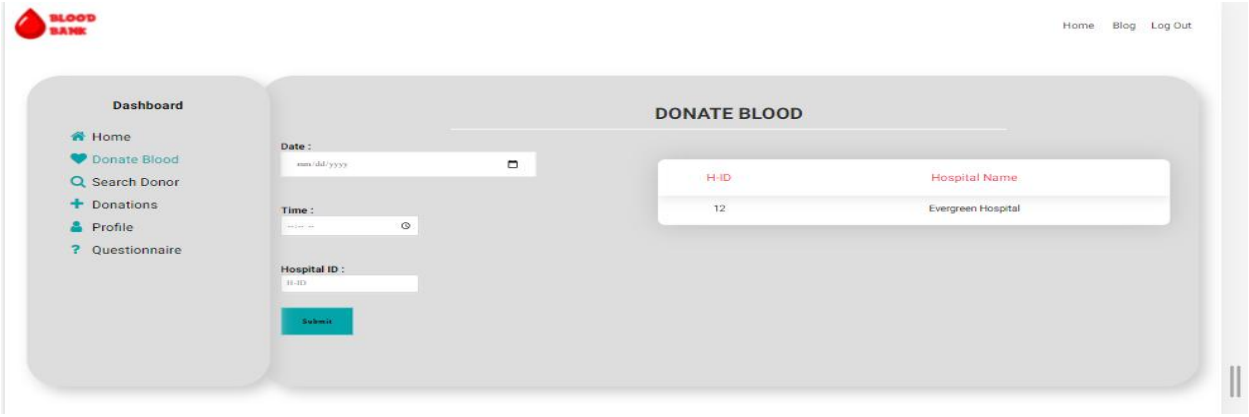

Figure 3.12 Donor Dashboard (Donate Blood)

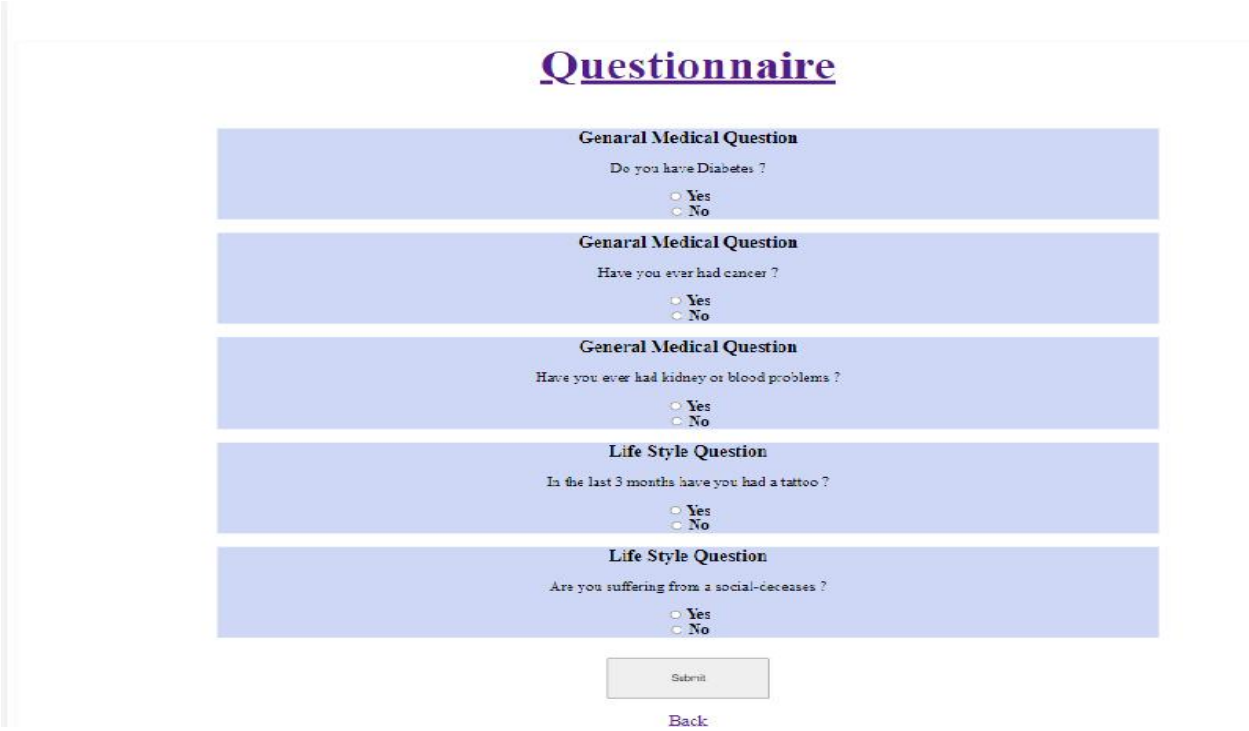

Figure 3.13 Donor Dashboard (Questionnaire)

3.7.4.2 BLOOD REQUESTER DASHBOARD

This is the user interface display page of the Blood requester. It is made up of the following sections; Home, Search Blood, Donations and Profile

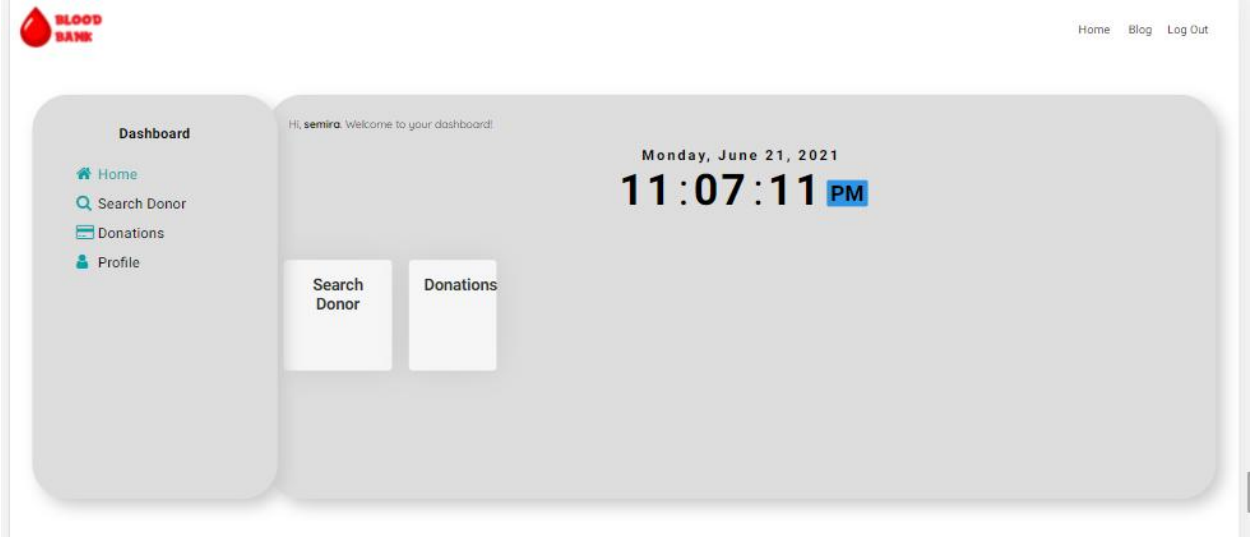

Figure 3.14 Blood Requester Dashboard (Homepage)

3.7.4.3 HOSPITAL DASHBOARD

This is the next page that loads after a hospital's sign in. It is made up of Home, Search Hospital, Profile and View Report sections.

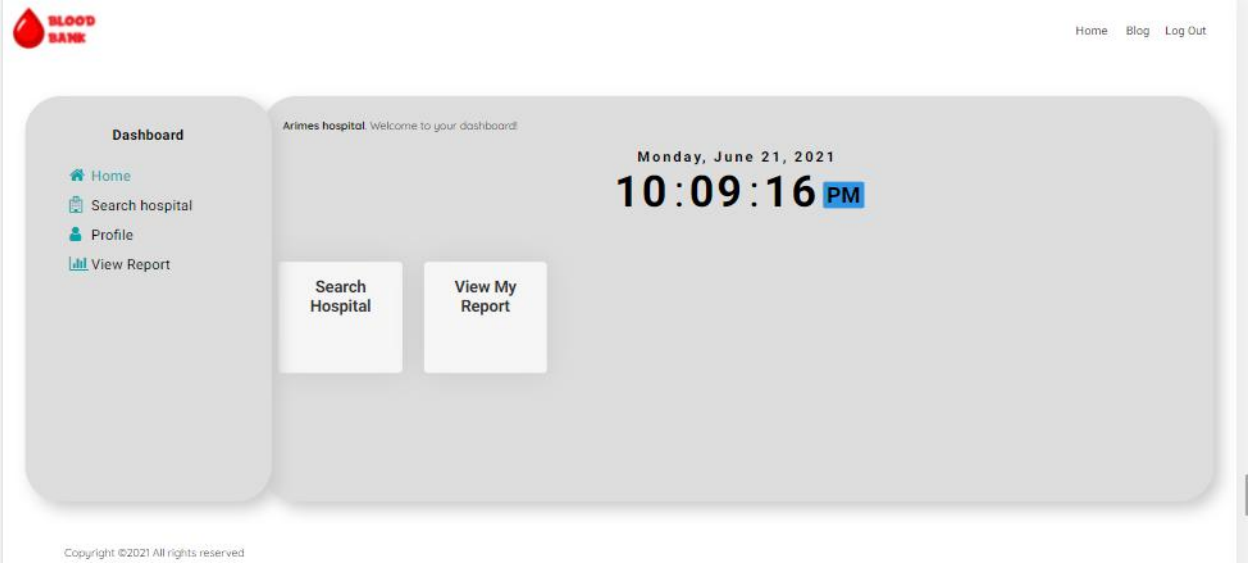

Figure 3.15 Hospital Dashboard (Homepage)

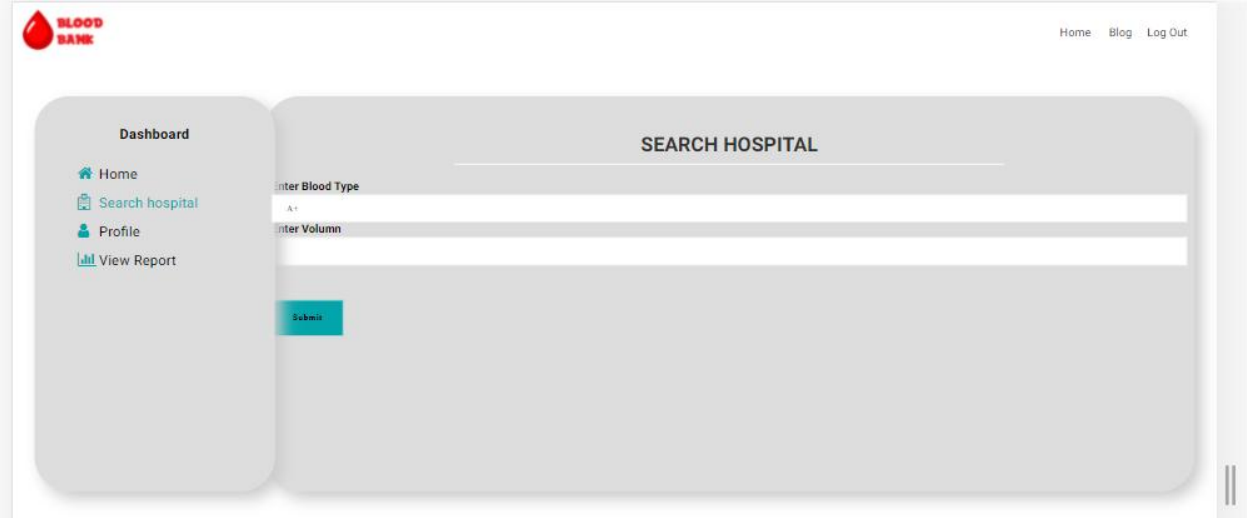

Figure 3.16 Hospital Dashboard (Search Hospital)

3.7.4.4 ORGANIZATION DASHBOARD

This section allows organizations to create and manage campaign events for blood donations, thus encouraging donations and creating awareness about availability of blood. It includes Home, Create Campaign, My Campaigns and Profile.

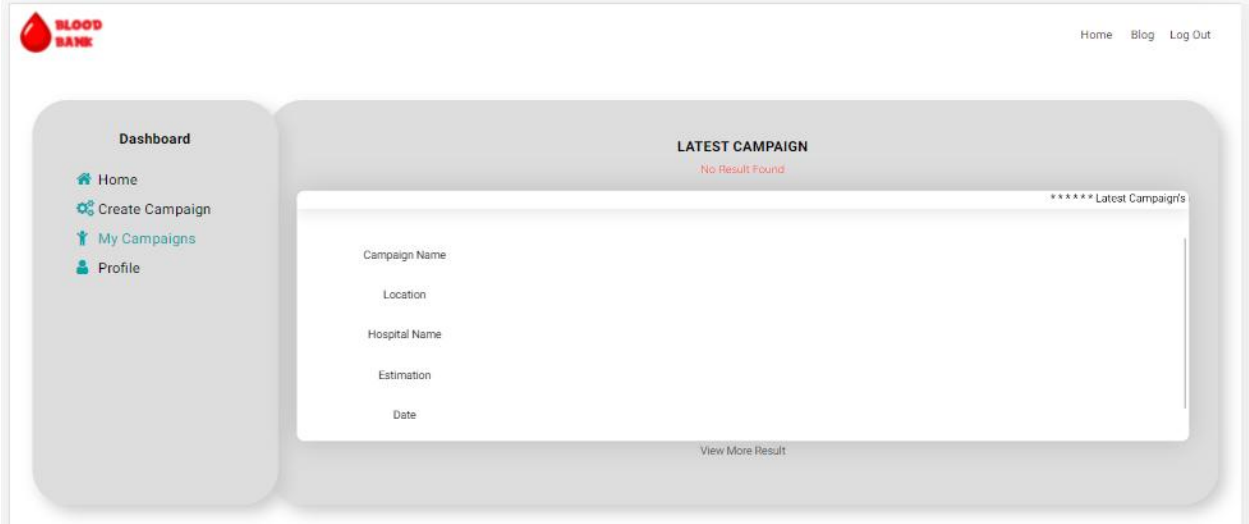

Figure 3.17 Organization Dashboard (My Campaigns)

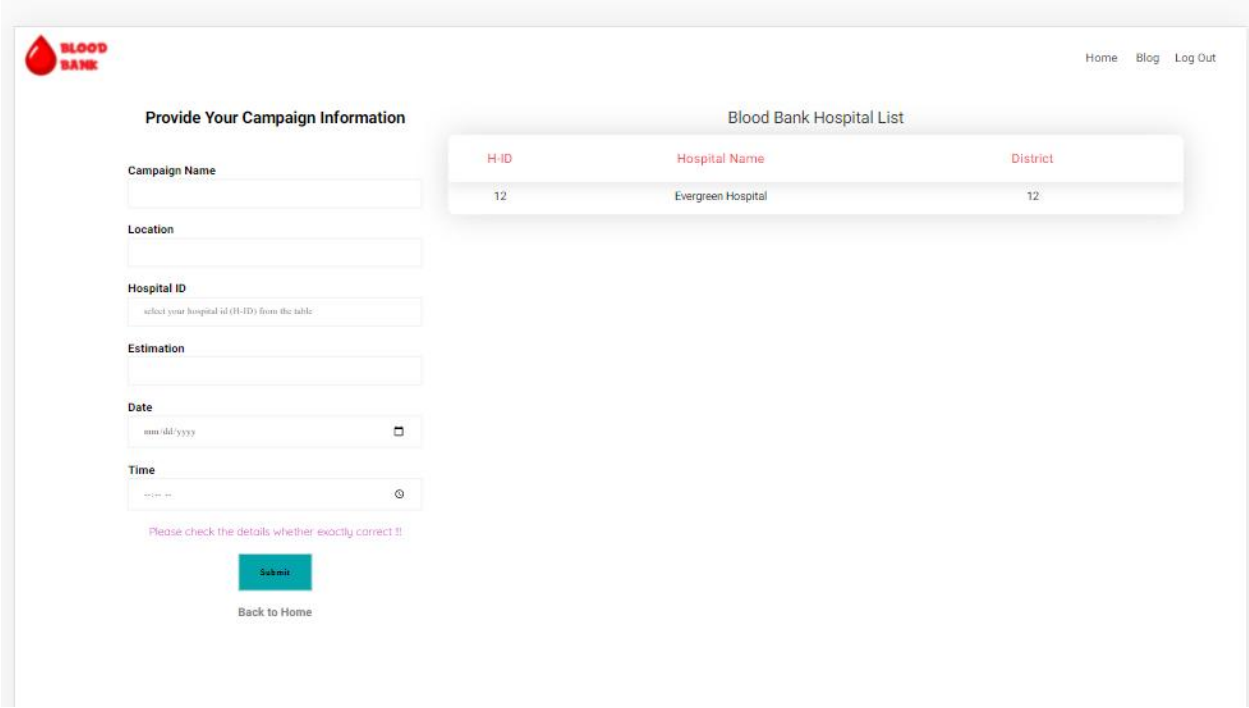

Figure 3.18 Organization Dashboard (Create Campaign)

3.7.4.5 SUPER ADMIN DASHBOARD

The Super Admin manages other admins by granting and revoking their access to the blood bank management system. . The super admin dashboard is made up of Home, Manage Admin, Management Hospitals, View Report and Settings.

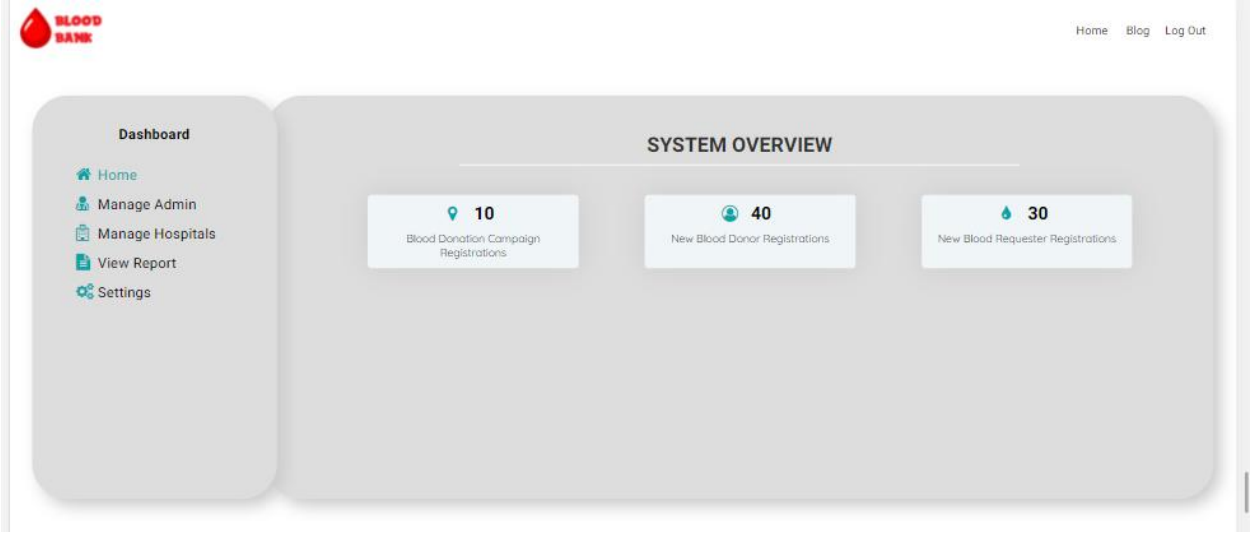

Figure 3.19 Super Admin Dashboard(Homepage)

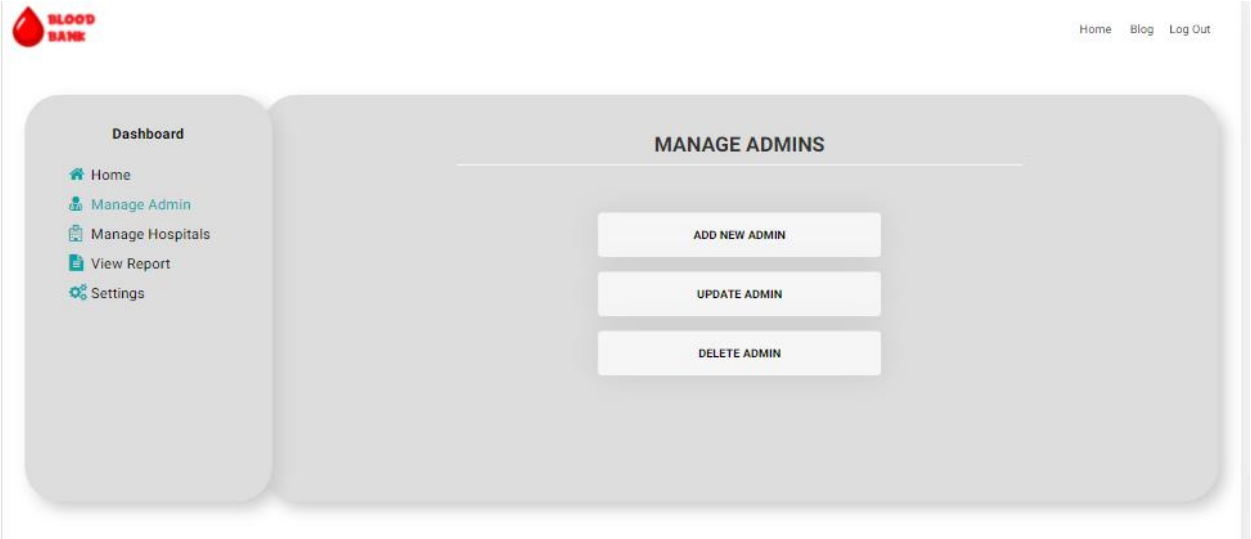

Figure 3.20 Super Admin Dashboard (Manage Admin)

3.7.4.6 BLOG POST PAGE

This is the output display of the blog post made by the admin. It serves as a means of communication and information dissemination to blood donors, requesters and other users of the blood bank.

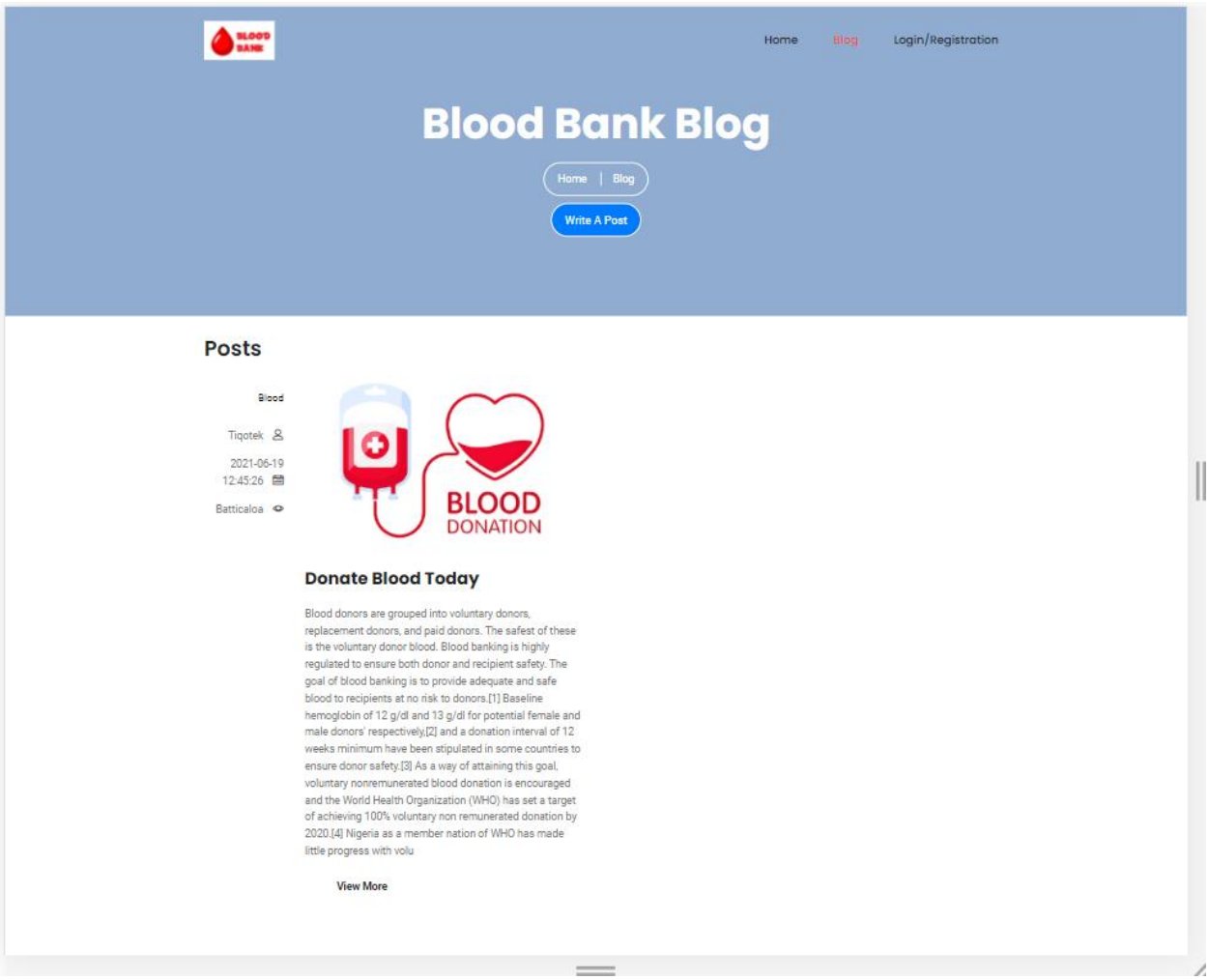

Figure 3.21 Blog Post Page

3.8 DESIGN TOOL

The design tool used in this work is the Unified Modelling Language. It is a standard graphical notation for describing software analysis and designs. UML utilizes symbols to describe and document the application development process. When UML notation is used, it provides an efficient means of communication and detailed explanation of a systems design.

The UML diagram employed in this study is the Use Case diagram. A use case diagram can help you describe the specifics of your system's users (also known as actors) and how they interact with it. The system has only six actors which are Blood Donors, Blood Requesters, Hospitals, Organizations, Admins and a Super Admin who oversees to overall management of the Blood Bank.Admin. The Use Case diagram can be modeled as follows;

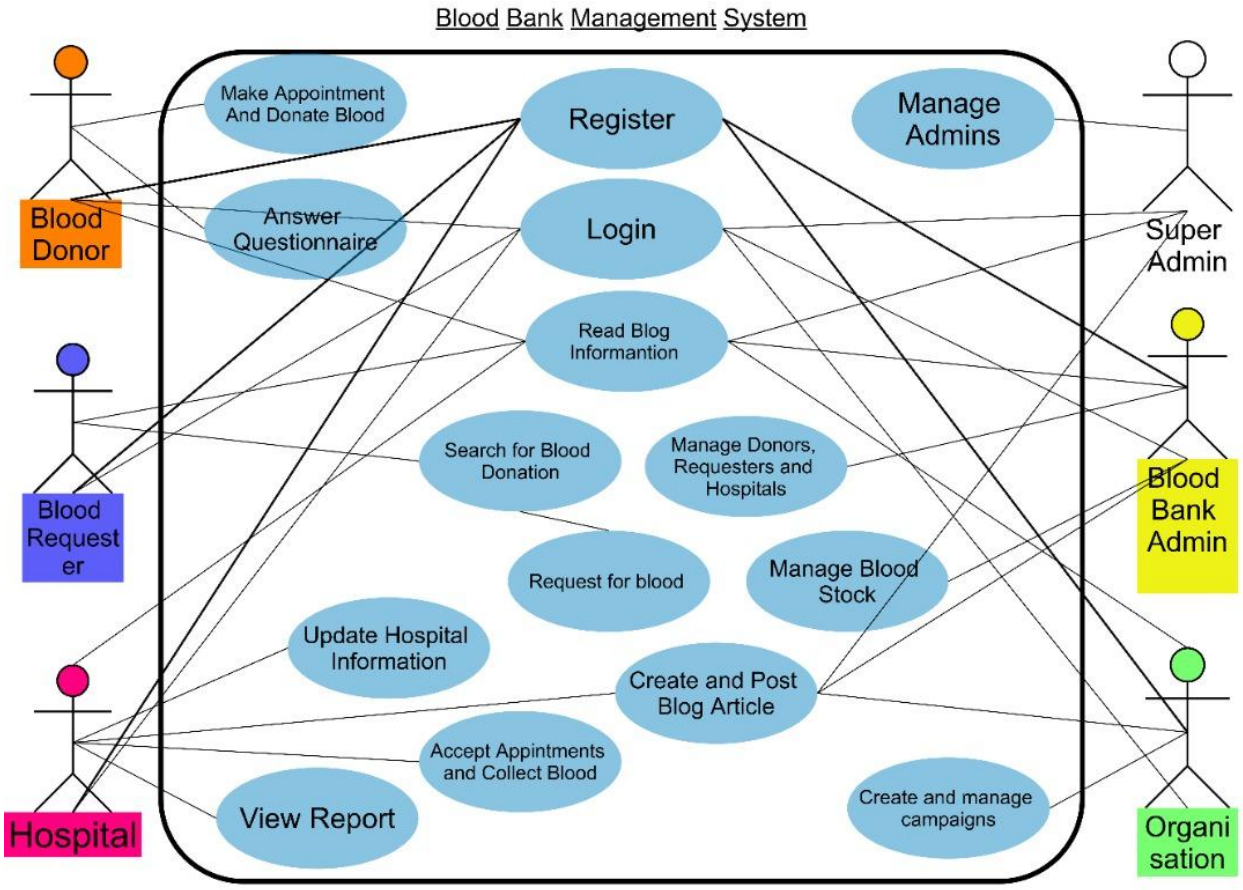

Figure. 3.22 Use Case Diagram of the System

CHAPTER FOUR

PROGRAMMING, IMPLEMENTATION AND DOCUMENTATION

4.1 INTRODUCTION TO THE CONCEPT OF PROGRAMMING

Programming is the process of creating a set of instructions which guide the computer system on how to perform certain tasks. It is the process of designing and constructing an executable computer program in order to achieve specific results. The aim of programming is to establish a sequence of instructions that will automate a task.

The Program development includes the following steps:

i. Problem Definition

ii. Solution Planning

iii. Program Coding

iv. Program Testing and Debugging

v. Program Documentation

vi. Maintenance

i. Problem Definition

This is the first step in the program development process. This stage deals with thorough understanding and clear identification of the problem leading to the program development. All factors such as the Input/output, processing and memory requirements, programming language, etc are all put into consideration.

ii. Solution Planning

After the problem is identified, next is to plan how it will be solved. Here the developer makes use of algorithms and flowcharts to illustrate the path and steps to be taken to achieve a solution. This helps to create a logic pathway which will lead to the development of the program

iii. Program Coding

This is the process of writing the actual computer program. The programming language and tools used will be very instrumental to the achievement of this a good program. Every programming language has its unique syntax and guidelines which have to be followed to write an executable and error-free program.

iv. Program Testing and Debugging

At this stage, the codes are run and their functionality is critically examined for errors and short comings. Apart from faulting and flagging mistakes in the coding lines, this process also helps to see if the program actually does what is was designed to do. Debugging is the process of finding errors and abnormalities in the program and correcting them. The program is also tested on different platforms and under various conditions to see how well it works. The errors when found are taken note of with the aim of making corrections. The testing ensures thorough understanding of the program specifications.

v. Program Documentation

Documentation is a very vital process in program development. Documentation involves writing down all the steps, challenges, solutions and modifications arising from the course of program development. It helps the developers to maintain the program by ensuring that future modifications when needed can be done easily. This is the basis of program updating, redesigning and maintenance

vi. Maintenance

This is the process of updating and correction of the program to make it more suitable for changed conditions. Maintenance becomes essential in situations arising from change in specifications or device. It could also be as a result of errors found during the execution of the program.

4.2 SOFTWARE METHODOLOGY

The software methodology used in this research is System Development Life Cycle (SDLC) method. SDLC consists of a detailed plan describing how to develop, maintain, change and enhance a particular software. It defines a methodology for improving the quality of software and the general development process. There are various models of SDLC like the Waterfall, Spiral and Agile models. However for this research, the Iterative model was used.

4.2.1 ITERATIVE MODEL

In Iterative model you can start with some of the software specifications and develop the first version of the software. Every release of the iterative model finishes in an exact and fixed period that is called iteration. The Iterative Model makes it possible to access the earlier phases in which the changes were made. The various phases of the iterative model are as follows;

4.2.1.1. Requirement gathering and analysis

In this phase, checks are made as to whether the requirements will fulfill or not. Once this is done, it goes to the next stage

4.2.1.2 Design.

In this phase, technical requirements are illustrated using flow chart, activity diagram, class diagram, etc

4.2.1.3 Implementation

Here the requirements are written in the coding language and translated into computer softwares

4.2.1.4 Testing

After coding, software testing is done using various testing methods to find any potential defects that may have come up.

4.2.1.5 Review

Once all phases are done, a review is performed to check the behavior and validity of the developed program. Once there are errors found, the process starts again from the requirement gathering stage

4.2.1.6 Deployment

After all of the steps have been completed, the program is sent to its work setting.

4.2.1.7 Maintenance

After the program has been deployed in the working environment, there may be certain problems, errors, or new upgrades that are necessary during the maintenance phase. Debugging and new addition options are included in maintenance.

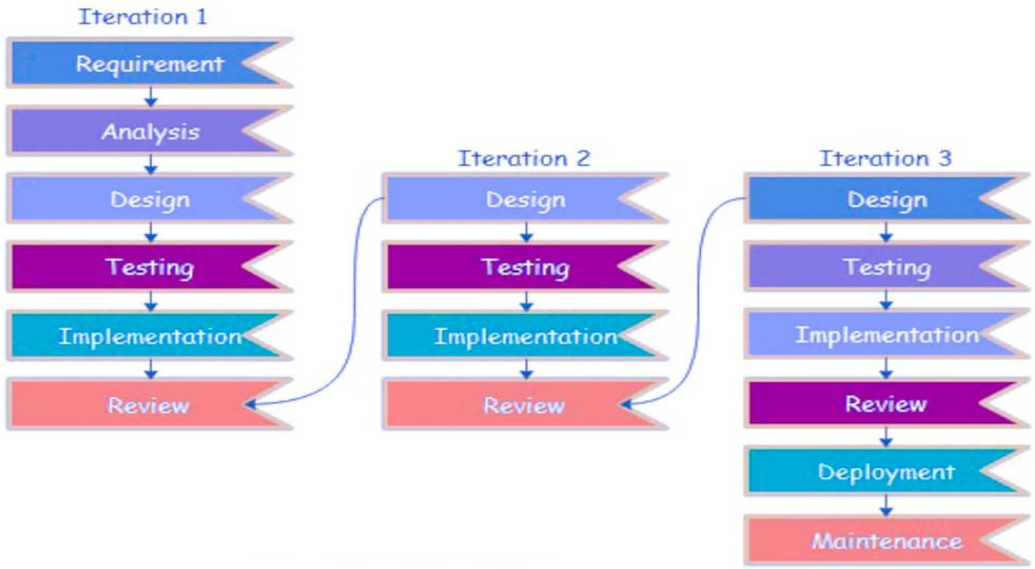

Figure 4.1 Iterative Process.

4.3 JUSTIFICATION OF CHOICE OF ITERATIVE METHOD

i. Testing and debugging during smaller iteration is easy.

ii. It is easily acceptable to ever-changing needs of the project.

iii. Risks are identified and resolved during iteration.

iv. Limited time spent on documentation and extra time on designing.

4.4 JUSTIFICATION OF PROGRAMMING LANGUAGES USED

4.4.1 PHP

PHP stands for Hypertext Preprocessor. It is a server-based programming language used in web development. It is a widely used, open source scripting language that works in conjunction with HTML (Hyper-text markup language). With PHP, you can connect to and manipulate databases. MySQL is the most popular database system used with PHP. The PHP programming language receives that request, makes a call to the MySQL database, obtains the requested information from the database, and then presents the requested information to your visitors through their web browsers.

4.4.2 CSS

Cascading Style Sheets, or CSS, allow you to specify things like the font you want on your page, the size of your text, whether the page is to have 2 columns, whether your text is to be in bold or italics, and so on. In other words, it is the part that lets you control the appearance of your web page. CSS is a style sheet language used for describing the presentation of a document written in a markup language like HTML

4.4.3 HTML

Hypertext Markup Language (HTML) is a computer language that makes up most web pages and online applications. A hypertext is a text that is used to reference other pieces of text, while a markup language is a series of markings that tells web servers the style and structure of a document. HTML is the foundation of all web pages. It is used alongside CSS as it defines the structure of the page, CSS defines its style. HTML was chosen for this project to its efficiency in web development, internet navigation and web documentation

4.4.4 MYSQL DATABASE

MySQL is the most popular Open Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web-based software applications. Because of its data security, on-demand scalability, high performance, and ease of learning and use, MySQL was chosen for the development of this system.

4.4.5 NODEJS

Backend was written in Node JS, which is also in charge of providing backkend content and password protection using JWT (Json Web Token). It also includes web3 as a requirement, allowing us to run core code on the frontend.

4.4.6 REACT

The frontend of the project was developed with and it has the goal of creating a better user interface in the frontend for the end user by offering features such as no page reloading on page transition and quick site loading.

4.5 SYSTEM REQUIREMENTS

This deals with the software and hardware requirements of the system

4.5.1 SOFTWARE REQUIREMENTS

i. Operating system(Windows)

ii. Database (MySql Server)

iii. Internet Browser (Google Chrome, Mozilla, etc)

iv. WAMP Server, XAMP Server or online server that support apache and MySQL

v. Text Editors (Bracket, Notepad++).

4.5.2 HARDWARE REQUIREMENTS

i. A CPU of at least 1.60 GHZ processing speed.

ii. 1GB RAM and hard disk space of at least 250GB.

iii. High-resolution color monitor.

iv. RAM: At least 1GB of RAM

v. USB port enabled.

vi. Keyboard Type: PS2 or USB.

vii. Mouse Type: PS2 or USB.

4.6 SOFTWARE TESTING

The created system, when performed, delivers correct findings on donor, patient and admin actions and generates efficiently results which will assist to decrease the gap between donor and patients in other to save lives. This was done at the software testing phase. Software testing is critical in order to ensure that all components of the system are performing as intended. According to Kenneth (2013), software testing is the process of validating and confirming that a computer program/application fits the criteria that led its design and development, performs as

expected, can be implemented with similar characteristics, and meets the needs of stakeholders. For this project, system method of testing was used.

4.6.1 System Testing

In system testing all segments and units were put into a system after testing of each segment and the entire system was tested for errors and faults

4.7 SYSTEM MAINTENANCE

It is also known as the support phase, and it concentrates on modifications related to mistakes, modifications, and changes as the software background matures, as well as changes owing to upgrades prompted by changing client needs. During this phase, you will experience four different sorts of modifications which are;

i. Preventive: Software declines as a result of change, and preventative maintenance, known as software re-engineering, involves making modifications to software so that it may be more readily rectified, adjusted, and improved, and it aids in the prevention of system failure.

ii. Perfective: As the software is utilized, the user will notice more capabilities that will enhance the software's productivity. Perfective maintenance expands the software's functionality beyond what it was designed to do.

iii. Adaptive: The initial environment in which the program was built, such as the Operating System and Central Processing Unit (CPU), is likely to change with time. As a consequence of adaptive maintenance, software is modified to meet changes in its external environment.

iv. Corrective: Corrective maintenance is the process of correcting or debugging defects or faults identified through the operation of software.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

A Design and Implementation of an Online Blood Bank Management System is presented in this study. The research highlights the different categories of blood and examines the relevance of blood donation as well as timely availability of this blood to patients during crisis and emergency situations. The old system of blood bank management was found not only to be insecure, slow, hectic and time wasting but also very life threatening to patients in dire need of blood transfusion. It was difficult to locate a donor around, which has the same blood components in the shortest possible time in order to save lives. Hence, the need for an Online Blood Bank Management system, which would bridge the gap between blood donors, patients and medical officers. We may easily contact a contributor using this automated method in an urgent or emergency scenario. This computerized system further makes dissemination of news and information easier with its blog post and campaign features where medical officers make blood bank and health related posts that can be seen by both patients and blood donors

The first chapter presented the work, highlighting the fundamentals of what the project entails, while the second chapter reviewed previous works associated with the research topic. The experiment design and implementation of the operational technique are covered in chapter three. The fourth chapter focused on the actual outcome of the system's development.

5.2 CONCLUSION

Blood is the most vital unit of life. Time on the other hand is a life-dependent factor in the blood transfusion process. The main purpose of this work is to reduce the time it takes to find a blood donor and bridges the gap between patients in need of blood and donors willing to donate blood in a flawless and safe manner with minimal effort. This web-based technology represents a modest contribution to society. It can save lives by encouraging individuals to give blood and managing donor and recipient data.

5.3 RECOMMENDATIONS

- This project can be further improved upon through the addition of two-factor authentication system to improve information security.
- Provisions should be made for information matching and data linking using the user's medical ID and health records from their health insurance schemes. This would make processing of blood requests fasters.
- Blood bank ID's can also be generated and integrated into the system which serves as a means of medical identity especially in the time of emergencies to reduce the time of blood matching .

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APPENDIX A

EXCERPT OF PROGRAM SOURCE CODE

INDEX CODE

```
<?php
session_start();
$_SESSION['callfrom']="home";
?>
<!DOCTYPE html>
<html>
<head>

	<title>Home</title>

	<link
href="https://fonts.googleapis.com/css?family=Poppins:100,200,400,300,500,600,700"
rel="stylesheet">
	<link    href="https://fonts.googleapis.com/css?family=Roboto:300,400,500,600,700,900"
rel="stylesheet">
	<!--
			CSS
			============================================= -->
	<link rel="stylesheet" href="css/linearicons.css">
	<link rel="stylesheet" href="css/font-awesome.min.css">
	<link rel="stylesheet" href="css/bootstrap.css">
	<link rel="stylesheet" href="css/magnific-popup.css">
	<link rel="stylesheet" href="css/nice-select.css">
	<link rel="stylesheet" href="css/animate.min.css">
	<link rel="stylesheet" href="css/owl.carousel.css">
	<link rel="stylesheet" href="css/main.css">
</head>
<body>

	<!-- Start Preloader Area -->
	<div class="preloader-area">
		<div class="loader-box">
			<div class="loader"></div>
		</div>
	</div>
```

```
<!-- End Preloader Area -->


<?php
	include 'header.php';
?>

<!--introtext-->
<!-- <div class="introtext">
	<h1>Donate Blood<br>& Save Lives</h1>
	<p><b>Volunteer blood donation</b> is a safe and simple procedure that involves a donor giving one of the following blood products: whole blood, red blood cells, plasma, or platelets. Overview Volunteers donate all blood products used for transfusions performed in the United States to help people who are ill or injured, or who need blood for other reasons.</p>
	<button><a href="https://www.nhlbi.nih.gov/health-topics/blood-donation" target="_blank">Read more</a></button>
</div>  -->


<!-- start banner Area -->
<section class="banner-area relative">
	<div class="container">
		<div class="row d-flex align-items-center justify-content-center">
			<div class="about-content col-lg-12">
				<h1 class="text-white">
					Blood Bank Management System
				</h1>

					<span class="box m-2">
						<a href="#">BY </a>
						<a href="#">INANA OGHALE PRINCE</a>
				</span>

				<span class="box m-2">
						<a href="#">MAT NO </a>
						<a href="#">SCN/CSC/180375</a>
				</span>
				<br/>
				<span class="box m-2">
						<a href="#">DEPARTMENT </a>
```

```
                                        <a href="#">PHYSICS SCIENCE
DEPARTMENT </a>
                                    </span>


                                    <span class="box m-2">
                                        <a href="#">UNIVERSITY </a>
                                        <a href="#">BENSON IDAHOSA
UNIVERSITY </a>
                                    </span>

                                    <br/>
                                    <span class="box m-2">
                                        <a href="#">DATE </a>
                                        <a href="#">1ST JUL, 2021 </a>
                                    </span>



                                </div>
                            </div>
                        </div>
                    </section>
                    <!-- End banner Area -->

                    <!-- start banner Area -->
                    <section class="home-banner-area">
                        <div class="container">
                            <div class="row mt-4 d-flex align-items-center">
                                <div class="banner-content col-lg-6 col-md-12 justify-content-
center ">
                                    <div class="me wow fadeInDown" data-wow-
duration="1s" data-wow-delay="1.2s">Donate Blood<br>& Save Lives</div>
                                    <h1 class="wow fadeInUp" data-wow-duration="1s" data-
wow-delay="1.7s">Donate Blood to save a Life</h1>
                                    <div class="designation mb-50 wow fadeInUp" data-wow-
duration="1s" data-wow-delay="2.1s">
                                    Volunteer blood donation <br/>
                                        <span class="designer">A safe and simple
procedure  </span>

                                    </div>
```

```
                                <a href="#" class="primary-btn" data-text="Donate
Blood">
                                    <span>D</span>
                                    <span>o</span>
                                    <span>n</span>
                                    <span>a</span>
                                    <span>t</span>
                                    <span>e</span>
                                    <span>!</span>
                                </a>
                            </div>
                            <div class="banner-img col-lg-6 col-md-12 align-self-center">
                                <img class="img-fluid" src="images/blood.png" alt="">

                            </div>
                        </div>
                    </div>
                </section>
                <!-- End banner Area -->




                <!-- Start About Area -->
                <section class="about-area section-gap">
                    <div class="container">
                        <div class="row align-items-center justify-content-between">
                            <div class="col-lg-6 about-left">
                                <img class="img-fluid" src="images/donation.png" alt=""
width="400px">
                            </div>
                            <div class="col-lg-5 col-md-12 about-right">
                                <div class="section-title">
                                    <h2>Why You Should Donate Blood</h2>
                                </div>
                                <div class="mb-50 wow fadeIn" data-wow-duration=".8s">
                                    <p>
                                    Blood donation is a safe and simple procedure that
involves a donor giving one of the following blood products: whole blood, red blood cells,
plasma, or platelets.
```

```
                                        </p>
                                    <p>
                                        Volunteers donate all blood products used for transfusions performed  to help people who are ill or injured, or who need blood for other reasons. Most times blood is
                                         not enough for surgeries which is whyblood banks were created. Blood Donated is now stored allowing hospitals to decrease fatalityies caused by lack of blood.

                                        </p>
                                </div>
                                <a href="#" class="primary-btn white" data-text="More Info">
                                        <span>M</span>
                                        <span>o</span>
                                        <span>r</span>
                                        <span>e</span>
                                        <span></span>
                                        <span>I</span>
                                        <span>n</span>
                                        <span>f</span>
                                        <span>o</span>
                                </a>
                                <a href="#" class="primary-btn" data-text="Resume">
                                        <span>R</span>
                                        <span>e</span>
                                        <span>s</span>
                                        <span>u</span>
                                        <span>m</span>
                                        <span>e</span>
                                </a>
                            </div>
                        </div>
                    </div>
                </section>
                <!-- End About Area -->



                <!-- Start Service Area -->
                <section class="service-area section-gap">
                    <div class="container">
```

```
<div class="row">
    <div class="col-lg-12">
        <div class="section-title">
            <h2>Features</h2>
            <p>This Application is a complete management system for blood bank distribution chains.</p>
        </div>
    </div>
</div>
<div class="row">
    <div class="col-lg-3 col-md-6">
        <div class="single-service wow fadeInUp" data-wow-duration="1s">
            <span class="lnrlnr-screen"></span>
            <h4>
                <span>Blood Stock </span>
            </h4>
            <p>The application handles management of blood stock seamlessly</p>
        </div>
    </div>
    <div class="col-lg-3 col-md-6">
        <div class="single-service wow fadeInUp" data-wow-duration="1s" data-wow-delay="0.2s">
            <span class="lnrlnr-laptop-phone"></span>
            <h4><span>Location Of</span> Blood Donors
            </h4>
            <p>The application makes it easy to fing blood donors around a vicinity</p>
        </div>
    </div>
    <div class="col-lg-3 col-md-6">
        <div class="single-service wow fadeInUp" data-wow-duration="1s" data-wow-delay="0.4s">
            <span class="lnrlnr-database"></span>
            <h4><span>Information</span> System
            </h4>
            <p>The information system makes it easy for people to learn about blood donation and tips on the benefits</p>
        </div>
    </div>
    <div class="col-lg-3 col-md-6">
```

```
                                    <div class="single-service wow fadeInUp" data-wow-duration="1s" data-wow-delay="0.6s">
                                        <span class="lnrlnr-chart-bars"></span>
                                        <h4><span>Streamlined</span> Process
                                        </h4>
                                        <p>The application process makes it easy for hospitals and blood requester to get blood for clinical processes and for donors and organisations to donate.</p>
                                    </div>
                                </div>
                            </div>
                        </div>
                    </section>
                    <!-- End Service Area -->


                    <!-- Start Testimonials Area -->
                    <section class="testimonials_area section-gap">
                        <div class="container">
                            <div class="testi_slider owl-carousel">
                                <div class="item">
                                    <div class="testi_item">
                                        <imgsrc="images/quote.png" alt="">
                                        <h4>Obioma John</h4>
                                        <ul class="list">
                                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                                        </ul>
                                        <div class="wow fadeIn" data-wow-duration="1s">
                                            <p>
                                                Donating blood has become a habit of mine, I encourage everyone to donate blood every 6 months
                                            </p>
                                        </div>
```

```
                    </div>
                </div>
                <div class="item">
                    <div class="testi_item">
                        <imgsrc="images/quote.png" alt="">
                        <h4>OlufunkeOluwatobi</h4>
                        <ul class="list">
                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                            <li><a href="#"><i class="fa fa-star"></i></a></li>
                        </ul>
                        <div class="wow fadeIn" data-wow-duration="1s">
                            <p>
                                A lot of people are in need of blood, people should make it a habit to donate blood especially people with rare blood types.
                            </p>
                        </div>
                    </div>
                </div>

            </div>
        </div>
    </section>
    <!-- End Testimonials Area -->


    <!-- Start Contact Area -->
    <section class="contact-area section-gap">
        <div class="container">
            <div class="row">
                <div class="col-lg-12">
                    <div class="contact-title">
                        <h2>Join</h2>

                    </div>
```

```
                    </div>
                </div>

                <div class="row mt-80">
                    <div class="col-lg-3 col-md-3">
                        <div class="contact-box">
                        <a href="login/donor.php" class="primary-btn mt-10">
<div class="m-3">
<p class="title">Blood Donors</p>
</div>
</a>
                        </div>
                    </div>
                    <div class="col-lg-3 col-md-3">
                        <div class="contact-box">
                        <a href="login/requester.php" class="primary-btn mt-10">
<div class="m-3">
<p class="title">Blood Requesters</p>
</div>
</a>
                        </div>
                    </div>
                    <div class="col-lg-3 col-md-3">

                        <a href="login/hospital.php" class="primary-btn mt-10">
<div class="m-3">
<p class="title">Hospital</p>
</div>
</a>

                    </div>
                    <div class="col-lg-3 col-md-3">
                        <div class="contact-box ">
                        <a  href="login/organization.php"  class="primary-btn  mt-
10">
<div class="m-3">
<p class="title">Organizations</p>
</div>
</a>

                        </div>
                    </div>
```

```
                    </div>

                    <div class="row">
                        <div class="col-lg-12 text-center">
                            <a href="#" class="primary-btn mt-50" data-text="Join / Login">
                                <span>Join</span>
                                <span></span>
                                <span>/</span>
                                <span></span>
                                <span>Login </span>

                            </a>
                        </div>
                    </div>
                </div>
            </section>
            <!-- End Contact Area -->


<?php
include('footer.php')
?>

            <!-- ########################## Start Scroll to Top Area ########################## -->
            <div id="back-top">
                <a title="Go to Top" href="#">
                    <i class="lnrlnr-arrow-up"></i>
                </a>
            </div>
            <!-- ########################## End Scroll to Top Area ########################## -->

            <script src="js/vendor/jquery-2.2.4.min.js"></script>
```

```
        <script     src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.9/umd/popper.min.js"
integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUibX39j7fakFPskvXusvfa0b4Q"
        crossorigin="anonymous"></script>
        <script src="js/vendor/bootstrap.min.js"></script>
        <script                                                                    type="text/javascript"
src="https://maps.googleapis.com/maps/api/js?key=AIzaSyBhOdIF3Y9382fqJYt5I_sswSrEw5eihAA"></script>
        <script src="js/easing.min.js"></script>
        <script src="js/hoverIntent.js"></script>
        <script src="js/superfish.min.js"></script>
        <script src="js/mn-accordion.js"></script>
        <script src="js/jquery.ajaxchimp.min.js"></script>
        <script src="js/jquery.magnific-popup.min.js"></script>
        <script src="js/owl.carousel.min.js"></script>
        <script src="js/jquery.nice-select.min.js"></script>
        <script src="js/isotope.pkgd.min.js"></script>
        <script src="js/jquery.circlechart.js"></script>
        <script src="js/mail-script.js"></script>
        <script src="js/wow.min.js"></script>
        <script src="js/main.js"></script>

</body>
</html>
```

REGISTRATION PAGE CODE

```
<?php
session_start();
$_SESSION['callfrom']="login";
?>
<?php


// Check if the user is already logged in, if yes then redirect him to welcome page
if(isset($_SESSION["id-1"])  &&isset($_SESSION["loggedin"])  &&  $_SESSION["loggedin"]
=== true){
  header("location: donor/index");
  exit;
}
```

```
if(isset($_SESSION["id-2"]) &&isset($_SESSION["loggedin"]) && $_SESSION["loggedin"]
=== true){
  header("location: requester/index.php");
  exit;
}
if(isset($_SESSION["id-4"]) &&isset($_SESSION["loggedin"]) && $_SESSION["loggedin"]
=== true){
  header("location: organization/index");
  exit;
}
if(isset($_SESSION["id-5"]) &&isset($_SESSION["loggedin"]) && $_SESSION["loggedin"]
=== true){
  header("location: hospital/index");
  exit;
}
if(isset($_SESSION["id-3"]) &&isset($_SESSION["loggedin"]) && $_SESSION["loggedin"]
=== true){
  header("location: bank_admin/index");
  exit;
}
/*
// Include conFigure file
require_once "conFigure.php";

// Define variables and initialize with empty values
$nic = $password = $name= "";
$nic_err = $password_err = "";

// Processing form data when form is submitted

if($_SERVER["REQUEST_METHOD"] == "POST"){

   if($_POST['donor'] || $_POST['requester'] || $_POST['admins']){

   // Check if NIC is empty
      if(empty(trim($_POST["nic"]))){
         $nic_err = "Please enter nic.";
      }else{
         $nic = trim($_POST["nic"]);
         $id_card= $nic;
      }
```

```
    }else{
    //Check if username is empty"
        if(empty(trim($_POST["username"]))){
            $nic_err = "Please enter username.";
        }else{
            $nic = trim($_POST["username"]);
        }

    }

    // Check if password is empty
    if(empty(trim($_POST["password"]))){
        $password_err = "Please enter your password.";
    } else{
        $password = trim($_POST["password"]);
    }

    // Validate credentials
    if(empty($nic_err) && empty($password_err)){

        // Prepare a select statement
        if($_POST['donor']) {
            $sql = "SELECT nic, first_name, password FROM donor WHERE nic = ?";
        }elseif ($_POST['requester']) {
            $sql = "SELECT NIC, FirstName, Password FROM requestor WHERE NIC = ?";
        }elseif($_POST['admins']){
            $sql = "SELECT BloodBankID, FirstName, Password FROM blood_bank_admin
WHERE NIC = ?";
        }elseif($_POST['organization']) {
            $sql = "SELECT UserName, OrganizationName, Password FROM organization WHERE
UserName = ?";
        }elseif($_POST['hospital']){
            $sql = "SELECT UserName, Name, Password FROM normal_hospital WHERE
UserName = ?";
        }else{
            #
        }


        if($stmt = mysqli_prepare($link, $sql)){
            // Bind variables to the prepared statement as parameters
mysqli_stmt_bind_param($stmt, "s", $param_username);
```

```
        // Set parameters
        $param_username = $nic;

        // Attempt to execute the prepared statement
        if(mysqli_stmt_execute($stmt)){
            // Store result
mysqli_stmt_store_result($stmt);

            // Check if username exists, if yes then verify password
            if(mysqli_stmt_num_rows($stmt) == 1){
                // Bind result variables
mysqli_stmt_bind_result($stmt, $id, $nic, $hashed_password);
                if(mysqli_stmt_fetch($stmt)){

                    if(password_verify($password, $hashed_password)){
                        // Password is correct, so start a new session
session_start();

                        // Store data in session variables
                        $_SESSION["loggedin"] = true;
                        $_SESSION["nic"] = $nic;

                        // Redirect user to welcome page
                        if($_POST['donor']){
                            $_SESSION["id-1"] = $id;
                            $_SESSION["id_card"] = $id_card;
                            header("location: donor/index");
                        }elseif ($_POST['requester']) {
                            $_SESSION["id-2"] = $id;
                            $_SESSION["id_card2"] = $id_card;
                            header("location: requester/index.php");
                        }elseif ($_POST['admins']) {
                            $_SESSION["id-3"] = $id;
                            $_SESSION["id_card3"] = $id_card;
                            header("location: bank_admin/index");
                        }elseif ($_POST['organization']) {
                            $_SESSION["id-4"] = $id;
                            header("location: organization/index");
                        }elseif ($_POST['hospital']) {
                            $_SESSION["id-5"] = $id;
                            header("location: hospital/index");
```

```
                    }else{
                        #
                    }

                } else{
                    // Display an error message if password is not valid
                    $password_err = "The password you entered was not valid.";
                }
            }
        } else{
            // Display an error message if username doesn't exist
            $nic_err = "No account found with that username.";
        }
    } else{
        echo "Oops! Something went wrong. Please try again later.";
    }

    // Close statement
mysqli_stmt_close($stmt);
    }
  }

  // Close connection
mysqli_close($link);
}
*/
  $reg=$del=$out="";
  if ($_SERVER["REQUEST_METHOD"] == "GET" &&isset($_GET['key'])) {
    $del= "Succesfully Deleted !!!";
  }
  if ($_SERVER["REQUEST_METHOD"] == "GET" &&isset($_GET['reg'])) {
    $reg= "Succesfully Created !!!";
  }
  if ($_SERVER["REQUEST_METHOD"] == "GET" &&isset($_GET['logout'])) {
    $out= "Log Out Succesfully !!!";
  }

?>
```

```
<!DOCTYPE html>
<html>
<head>
	<title>Registration/Login</title>
	<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
	<script type="text/javascript" src="js/script.js"></script>
	<link rel="stylesheet" href="css/linearicons.css">
	<link rel="stylesheet" href="css/font-awesome.min.css">
	<link rel="stylesheet" href="css/bootstrap.css">
	<link rel="stylesheet" href="css/magnific-popup.css">
	<link rel="stylesheet" href="css/nice-select.css">
	<link rel="stylesheet" href="css/animate.min.css">
	<link rel="stylesheet" href="css/owl.carousel.css">
	<link rel="stylesheet" href="css/main.css">

</head>
<body>
	<?php
		require('header.php');
	?>

	<section class="banner-area relative">


</section>
<!-- Start Contact Area -->
	<section class="banner-area relative">
<div class="container">
			<div class=" d-flex align-items-center justify-content-center">
				<div class="about-content col-lg-6">

					<div class="contact-title">
						<h2>Log In</h2>

					</div>
<div class="  ">
				<div class="col-lg-12 col-md-12 ">
					<div class="contact-box ">
					<a href="login/donor.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Blood Donors</p>
</div>
```

```
</a>
                                        </div>
                                    </div>
                                    <div class="col-lg-12 col-md-12">
                                        <div class="contact-box">
                                        <a href="login/requester.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Blood Requesters</p>
</div>
</a>
                                        </div>
                                    </div>
                                    <div class="col-lg-12 col-md-12">

                                        <a href="login/hospital.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Hospital</p>
</div>
</a>

                                    </div>
                                    <div class="col-lg-12 col-md-12">
                                        <div class="contact-box ">
                                        <a  href="login/organization.php"  class="primary-btn  mt-
10">
<div class="m-3 ">
<p class="title">Organizations</p>
</div>
</a>

                                        </div>
                                    </div>
<div class="col-lg-12 col-md-12">
                                        <div class="contact-box ">
                                        <a href="login/admin.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Admins</p>
</div>
</a>

                                        </div>
                                    </div>
```

```
<div class="col-lg-12 col-md-12">
                                        <div class="contact-box ">
                                        <a  href="login/superadmin.php"  class="primary-btn  mt-
10">
<div class="m-3 ">
<p class="title">Super Admin</p>
</div>
</a>

                                        </div>
                                    </div>

                                </div>
                                    </div>
<div class="about-content col-lg-6">

<div class="contact-title">
                                                <h2>New here? Sign Up!</h2>

                                        </div>
<div class=" mt-10 ">
                                    <div class="col-lg-12 col-md-12 ">
                                        <div class="contact-box ">
                                        <a href="donor/register.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Blood Donors</p>
</div>
</a>
                                        </div>
                                    </div>
<div class="col-lg-12 col-md-12 ">
                                        <div class="contact-box ">
                                        <a  href="requester/signup.php"  class="primary-btn  mt-
10">
<div class="m-3 ">
<p class="title">Blood  Requesters</p>
</div>
</a>
                                        </div>
                                    </div>
<div class="col-lg-12 col-md-12 ">
                                        <div class="contact-box ">
```

```
                                        <a href="hospital/signup.php" class="primary-btn mt-10">
<div class="m-3 ">
<p class="title">Hospitals</p>
</div>
</a>
                                        </div>
                                    </div>
<div class="col-lg-12 col-md-12 ">
                                        <div class="contact-box ">
                                        <a href="organization/signup.php" class="primary-btn mt-
10">
<div class="m-3 ">
<p class="title">Organizations</p>
</div>
</a>
                                        </div>
                                    </div>



</div>
</div>

</div>
                            </div>

<?php
      echo '<p style="color:red; text-align:center;">'.$del.'</p>';
      echo '<p style="color:red; text-align:center;">'.$out.'</p>';
      echo '<p style="color:green; text-align:center;">'.$reg.'</p>';
      ?>


                </div>
          </section>
          <!-- End Contact Area -->
```

```
                </div>



<?php
require_once "footer.php";
   ?>


</body>

</html>
```

ADMIN LOGIN PAGE

```
<!DOCTYPE html>
<html>
<head>
        <title>Admin Login</title>
        <link rel="stylesheet" type="text/css" href="../css/style.css">
        <script type="text/javascript" src="../js/script.js"></script>

        <link rel="stylesheet" href="../css/linearicons.css">
        <link rel="stylesheet" href="../css/font-awesome.min.css">
        <link rel="stylesheet" href="../css/bootstrap.css">
        <link rel="stylesheet" href="../css/magnific-popup.css">
        <link rel="stylesheet" href="../css/nice-select.css">
        <link rel="stylesheet" href="../css/animate.min.css">
        <link rel="stylesheet" href="../css/owl.carousel.css">
        <link rel="stylesheet" href="../css/main.css">
        <!-- <script type="text/javascript" src="../js/script.js"></script> -->

</head>
<?php
        include 'header.php';
?>
<?php
        $nic_err=$password_err="";
        if ($_SERVER["REQUEST_METHOD"] == "GET") {
```

```
                if (isset($_GET['nic'])) {
                        $nic_err= $_GET['nic'];
                }
                if (isset($_GET['pass'])) {
                        $password_err= $_GET['pass'];
                }
        }
?>
<body>



<!-- start banner Area -->
<section class="banner-area relative">
                <div class="container">
                        <div class="row d-flex align-items-center justify-content-center">
                                <div class="about-content col-lg-12">
                                        <h1 class="text-white">
                                Admin Login
                                        </h1>
                                        <p class="link-nav">
                                                <span class="box">
                                                        <a href="">Welcome Admin! </a>
                                        </span>



                                        <center>
                <div id="SuperAdmin" class="tabcontent">
                        <div class="form-style-2">
                                <div class="form-style-2-heading"></div>
                                        <form action="application/reg_login.php" method="post">
                        <div  class="form-group <?php  echo  (!empty($nic_err))  ?  'has-error'  :
"; ?>">
<label>ID</label>
<input type="text" name="nic" class="form-control">
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
                        <div class="form-group <?php echo (!empty($password_err)) ? 'has-error' :
"; ?>">
<label>Password</label>
```

```
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                                                <label><input type="submit" name="admins" class="btnbtn-primary" value="Login"></label><br>

                                            </form>
                                            <a href="../reset/enter_email.php?type=admin">Forgot Password?</a>
                        </div>
                        <a href="../reg_login">Cancel</a>
                </div>
        </center>

</div>
                                </div>
                        </div>
                </div>
        </section>
</body>
```

DONOR LOGIN PAGE

```
<!DOCTYPE html>
<html>
<head>
        <title>Donor Login</title>
        <link rel="stylesheet" type="text/css" href="../css/style.css">
        <script type="text/javascript" src="../js/script.js"></script>

        <link rel="stylesheet" href="../css/linearicons.css">
        <link rel="stylesheet" href="../css/font-awesome.min.css">
        <link rel="stylesheet" href="../css/bootstrap.css">
        <link rel="stylesheet" href="../css/magnific-popup.css">
        <link rel="stylesheet" href="../css/nice-select.css">
        <link rel="stylesheet" href="../css/animate.min.css">
        <link rel="stylesheet" href="../css/owl.carousel.css">
        <link rel="stylesheet" href="../css/main.css">
        <!-- <script type="text/javascript" src="../js/script.js"></script> -->
```

```
</head>
<?php
include 'header.php';
?>
<?php
	$nic_err=$password_err="";
	if ($_SERVER["REQUEST_METHOD"] == "GET") {
		if (isset($_GET['nic'])) {
			$nic_err= $_GET['nic'];
		}
		if (isset($_GET['pass'])) {
			$password_err= $_GET['pass'];
		}
	}
?>
<body>



<!-- start banner Area -->
<section class="banner-area relative">
		<div class="container">
			<div class="row d-flex align-items-center justify-content-center">
				<div class="about-content col-lg-12">
					<h1 class="text-white">
					Donor Login
					</h1>
					<p class="link-nav">
						<span class="box">
							<a href="">Welcome Donor ! </a>
					</span>


					<center>
		<div id="SuperAdmin" class="tabcontent">
			<div class="form-style-2">
				<div class="form-style-2-heading"></div>
					<form action="application/reg_login.php" method="post">
			<div class="form-group <?php echo (!empty($nic_err)) ? 'has-error' :
"; ?>">
<label>ID</label>
<input type="text" name="nic" class="form-control">
```

```
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
                    <div class="form-group <?php echo (!empty($password_err)) ? 'has-error' :
"; ?>">
<label>Password</label>
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                                        <label><input type="submit" name="donor"
class="btnbtn-primary" value="Login"></label><br>

                                    </form>
                                    <a href="../reset/enter_email.php?type=donor">Forgot
Password?</a>
                    </div>
                    <a href="../reg_login">Cancel</a>
                </div>
        </center>
</div>
                            </div>
                    </div>
                </div>
        </section>

</body>
```

HOSPITAL PAGE

```
<!DOCTYPE html>
<html>
<head>
        <title>Hospital Login</title>
        <link rel="stylesheet" type="text/css" href="../css/style.css">
        <script type="text/javascript" src="../js/script.js"></script>

        <link rel="stylesheet" href="../css/linearicons.css">
        <link rel="stylesheet" href="../css/font-awesome.min.css">
        <link rel="stylesheet" href="../css/bootstrap.css">
        <link rel="stylesheet" href="../css/magnific-popup.css">
        <link rel="stylesheet" href="../css/nice-select.css">
```

```
        <link rel="stylesheet" href="../css/animate.min.css">
        <link rel="stylesheet" href="../css/owl.carousel.css">
        <link rel="stylesheet" href="../css/main.css">
        <!-- <script type="text/javascript" src="../js/script.js"></script> -->

</head>
<?php
        require 'header.php';
?>
<?php
        $nic_err=$password_err="";
        if ($_SERVER["REQUEST_METHOD"] == "GET") {
                if (isset($_GET['nic'])) {
                        $nic_err= $_GET['nic'];
                }
                if (isset($_GET['pass'])) {
                        $password_err= $_GET['pass'];
                }
        }
?>
<body>


<!-- start banner Area -->
<section class="banner-area relative">
                <div class="container">
                        <div class="row d-flex align-items-center justify-content-center">
                                <div class="about-content col-lg-12">
                                        <h1 class="text-white">
                                        Hospital Login
                                        </h1>
                                        <p class="link-nav">
                                                <span class="box">
                                                        <a href="">Welcome Hospital ! </a>
                                        </span>

        <center>
                <div id="SuperAdmin" class="tabcontent">
                        <div class="form-style-2">
                                <div class="form-style-2-heading"></div>
                                        <form action="application/reg_login.php" method="post">
```

```
                    <div class="form-group <?php echo (!empty($nic_err)) ? 'has-error' : ''; ?>">
<label>User Name</label>
<input type="text" name="username" class="form-control">
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
                    <div class="form-group <?php echo (!empty($password_err)) ? 'has-error' : ''; ?>">
<label>Password</label>
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                                        <label><input type="submit" name="hospital" class="btnbtn-primary" value="Login"></label><br>

                                    </form>
                                    <a href="../reset/enter_email.php?type=hospital">Forgot Password?</a>
                    </div>
                    <a href="../reg_login">Cancel</a>
                </div>
        </center>


</div>
                            </div>
                    </div>
                </div>
        </section>
</body>
```

ORGANISATION LOGIN PAGE

```
<!DOCTYPE html>
<html>
<head>
        <title>Organization Login</title>
        <link rel="stylesheet" type="text/css" href="../css/style.css">
        <script type="text/javascript" src="../js/script.js"></script>

        <link rel="stylesheet" href="../css/linearicons.css">
        <link rel="stylesheet" href="../css/font-awesome.min.css">
```

```
        <link rel="stylesheet" href="../css/bootstrap.css">
        <link rel="stylesheet" href="../css/magnific-popup.css">
        <link rel="stylesheet" href="../css/nice-select.css">
        <link rel="stylesheet" href="../css/animate.min.css">
        <link rel="stylesheet" href="../css/owl.carousel.css">
        <link rel="stylesheet" href="../css/main.css">
        <!-- <script type="text/javascript" src="../js/script.js"></script> -->

</head>
<?php
        include 'header.php';
?>
<?php
        $nic_err=$password_err="";
        if ($_SERVER["REQUEST_METHOD"] == "GET") {
                if (isset($_GET['nic'])) {
                        $nic_err= $_GET['nic'];
                }
                if (isset($_GET['pass'])) {
                        $password_err= $_GET['pass'];
                }
        }
?>
<body>



<!-- start banner Area -->
<section class="banner-area relative">
                <div class="container">
                        <div class="row d-flex align-items-center justify-content-center">
                                <div class="about-content col-lg-12">
                                        <h1 class="text-white">
                                        Organization  Login
                                        </h1>
                                        <p class="link-nav">
                                                <span class="box">
                                                        <a href="">Welcome Organization ! </a>
                                        </span>


                                        <center>
```

```
                <div id="SuperAdmin" class="tabcontent">
                        <div class="form-style-2">
                                <div class="form-style-2-heading"></div>
                                        <form action="application/reg_login.php" method="post">
                        <div class="form-group <?php echo (!empty($nic_err)) ? 'has-error' :
"; ?>">
<label>User Name</label>
<input type="text" name="username" class="form-control">
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
                        <div class="form-group <?php echo (!empty($password_err)) ? 'has-error' :
"; ?>">
<label>Password</label>
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                                                <label><input type="submit" name="organization"
class="btnbtn-primary" value="Login"></label><br>

                                        </form>
                                        <a
href="../reset/enter_email.php?type=organization">Forgot Password?</a>
                        </div>
                        <a href="../reg_login">Cancel</a>
                </div>
        </center>

</div>
                                </div>
                        </div>
                </div>
        </section>

</body>
```

REQUESTER LOGIN

```
<html>
<head>
        <title>Requester Login</title>
```

```
        <link rel="stylesheet" href="../css/linearicons.css">
        <link rel="stylesheet" href="../css/font-awesome.min.css">
        <link rel="stylesheet" href="../css/bootstrap.css">
        <link rel="stylesheet" href="../css/magnific-popup.css">
        <link rel="stylesheet" href="../css/nice-select.css">
        <link rel="stylesheet" href="../css/animate.min.css">
        <link rel="stylesheet" href="../css/owl.carousel.css">
        <link rel="stylesheet" href="../css/main.css">
        <!-- <script type="text/javascript" src="../js/script.js"></script> -->

</head>

<?php
        $nic_err=$password_err="";
        if ($_SERVER["REQUEST_METHOD"] == "GET") {
                if (isset($_GET['nic'])) {
                        $nic_err= $_GET['nic'];
                }
                if (isset($_GET['pass'])) {
                        $password_err= $_GET['pass'];
                }
        }
?>
<body>
<?php
        include 'header.php';
?>

<!-- start banner Area -->
<section class="banner-area relative">
                <div class="container">
                        <div class="row d-flex align-items-center justify-content-center">
                                <div class="about-content col-lg-12">
                                        <h1 class="text-white">
                                        Requester Login
                                        </h1>
                                        <p class="link-nav">
                                                <span class="box">
                                                        <a href="">Welcome Requester ! </a>
                                        </span>
```

```
        <center>
                <div id="SuperAdmin" class="container">
                        <div class="form-style-2 col-lg-6">
                                <div class="form-style-2-heading"></div>
                                        <form action="application/reg_login.php" method="post"
class="m-2">
                        <div class="form-group mb-3  <?php echo (!empty($nic_err)) ? 'text-
danger' : ''; ?>">
<label>ID</label>
<input type="text" name="nic" class="form-control">
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
                        <div class="form-group <?php echo (!empty($password_err)) ? 'text-
danger' : ''; ?>">
<label>Password</label>
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                                                <label><input type="submit" name="requester"
class="btnbtn-lgbtn-primary" value="Login"></label>

                                        </form>
                                        <a href="../reset/enter_email.php?type=requester">Forgot
Password?</a>
                        </div>
                        <a href="../reg_login">Cancel</a>
                </div>
        </center>
</div>
                                </div>
                        </div>
                </div>
        </section>
        <!-- End banner Area -->

        <!-- ######################### End Scroll to Top Area ######################### --
>
```

```
</body>
```

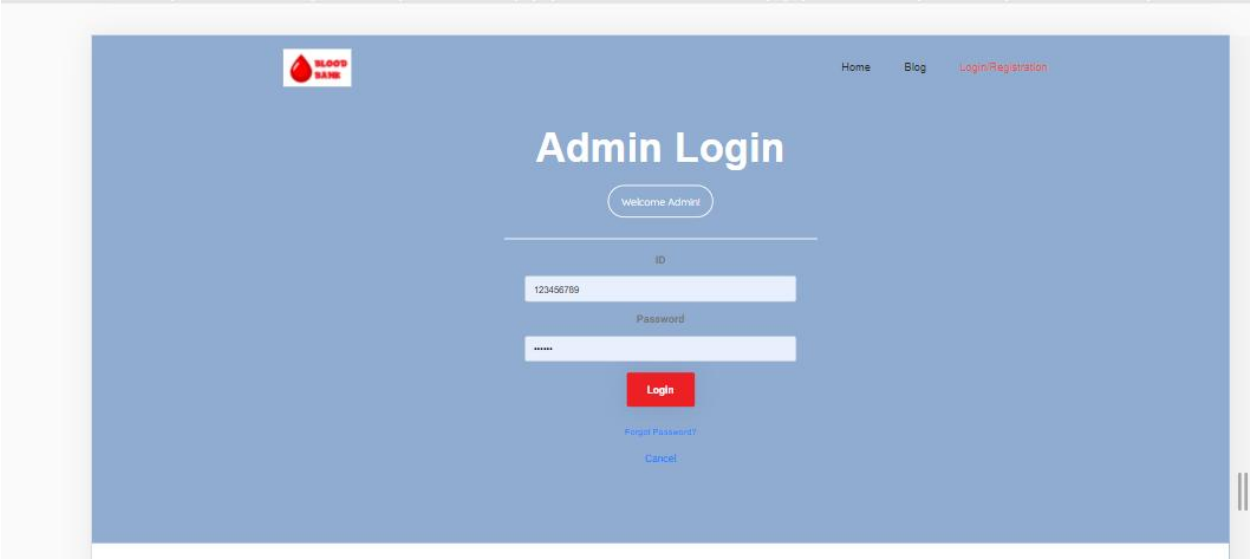
SUPER ADMIN LOGIN

```
<!DOCTYPE html>
<html>
<head>
	<title>Admin Login</title>
	<link rel="stylesheet" type="text/css" href="../css/style.css">
	<script type="text/javascript" src="../js/script.js"></script>

	<link rel="stylesheet" href="../css/linearicons.css">
	<link rel="stylesheet" href="../css/font-awesome.min.css">
	<link rel="stylesheet" href="../css/bootstrap.css">
	<link rel="stylesheet" href="../css/magnific-popup.css">
	<link rel="stylesheet" href="../css/nice-select.css">
	<link rel="stylesheet" href="../css/animate.min.css">
	<link rel="stylesheet" href="../css/owl.carousel.css">
	<link rel="stylesheet" href="../css/main.css">
	<!-- <script type="text/javascript" src="../js/script.js"></script> -->

</head>
<?php
	include 'header.php';
?>
<?php
	$nic_err=$password_err="";
	if ($_SERVER["REQUEST_METHOD"] == "GET") {
		if (isset($_GET['username'])) {
			$nic_err= $_GET['username'];
		}
		if (isset($_GET['pass'])) {
			$password_err= $_GET['pass'];
		}
	}
?>
<body>
```

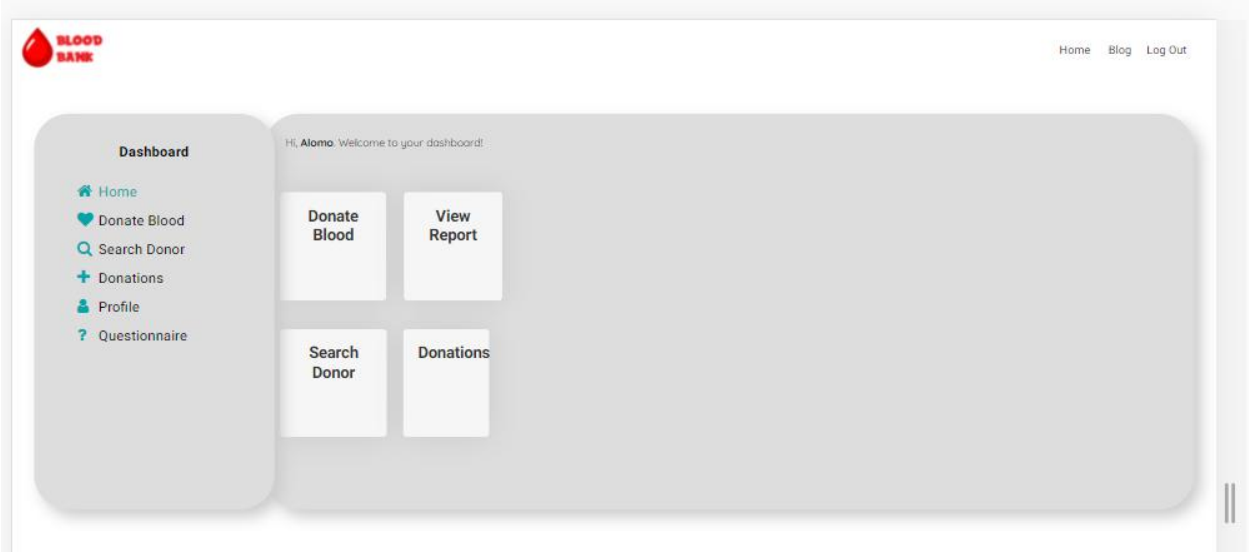
```
<!-- start banner Area -->
<section class="banner-area relative">
        <div class="container">
            <div class="row d-flex align-items-center justify-content-center">
                <div class="about-content col-lg-12">
                    <h1 class="text-white">
                Admin Login
                    </h1>
                    <p class="link-nav">
                        <span class="box">
                            <a href="">Welcome Admin! </a>
                    </span>



                    <center>
        <div id="SuperAdmin" class="tabcontent">
            <div class="form-style-2">
                <div class="form-style-2-heading"></div>
                    <form action="application/reg_login.php" method="post">
            <div class="form-group <?php echo (!empty($nic_err)) ? 'has-error' :
''; ?>">
<label>Username</label>
<input type="text" name="username" class="form-control">
<span class="help-block "><?php echo $nic_err; ?></span>
</div>
            <div class="form-group <?php echo (!empty($password_err)) ? 'has-error' :
''; ?>">
<label>Password</label>
<input type="password" name="password" class="form-control">
<span class="help-block "><?php echo $password_err; ?></span>
</div>

                        <label><input type="submit" name="admin"
class="btnbtn-primary" value="Login"></label><br>

                    </form>
                    <a href="../reset/enter_email.php?type=admin">Forgot
Password?</a>
            </div>
            <a href="../reg_login">Cancel</a>
        </div>
```

```
        </center>

</div>
                                    </div>
                                </div>
                            </div>
        </section>
</body>
```

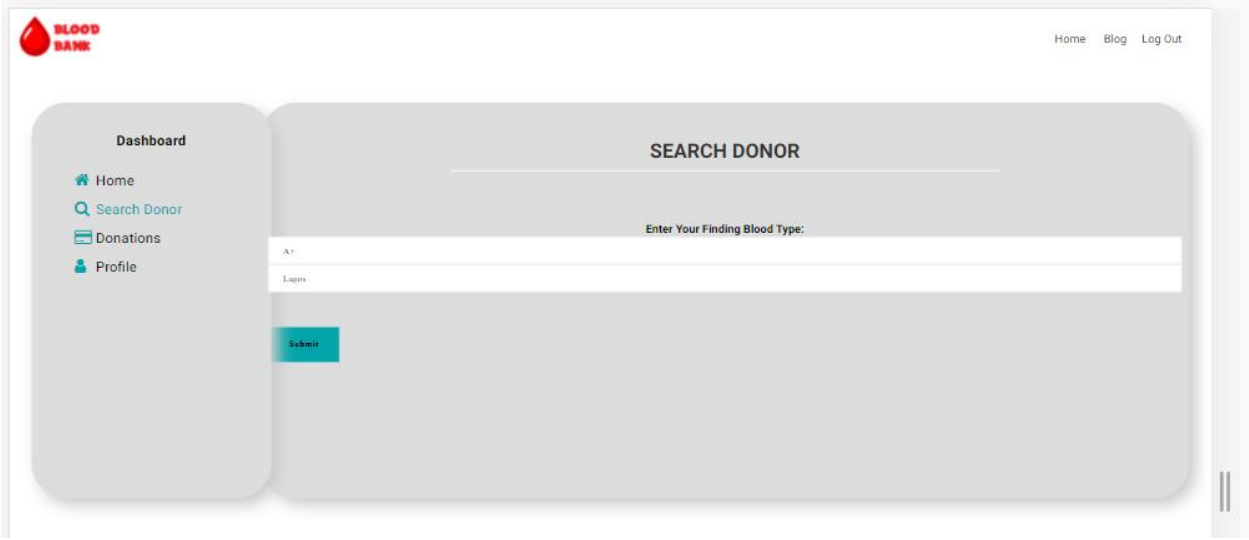
APPENDIX B
PROGRAM SAMPLE OUTPUT



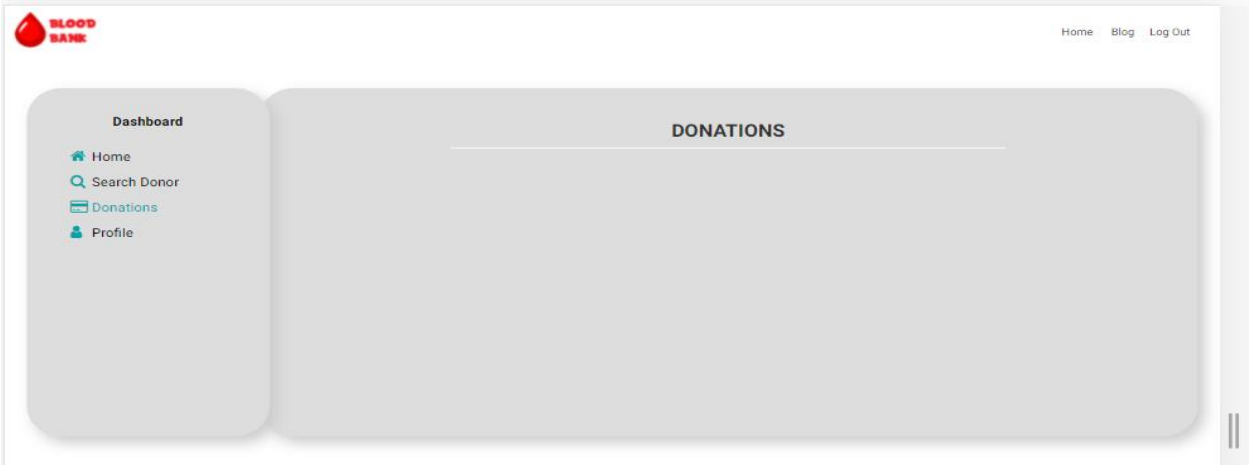
ADMIN LOGIN PAGE



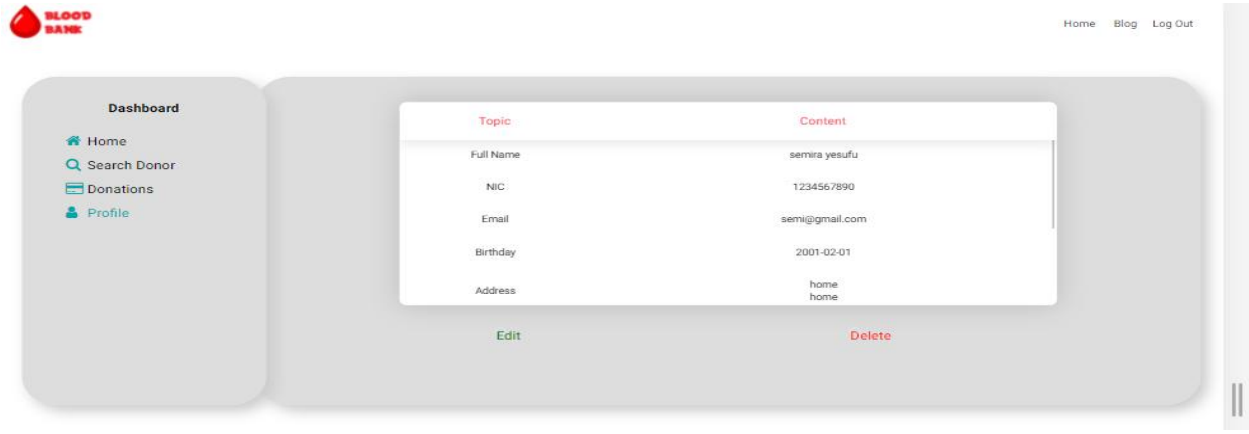
BLOOD DONOR PAGE



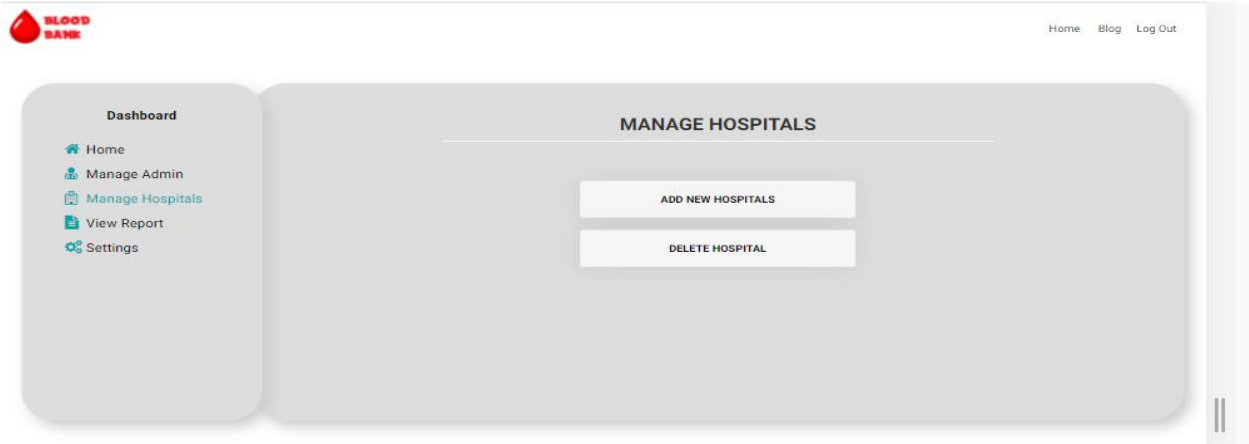
SEARCH DONOR PAGE



DONATIONS PAGE



DONOR PROFILE PAGE



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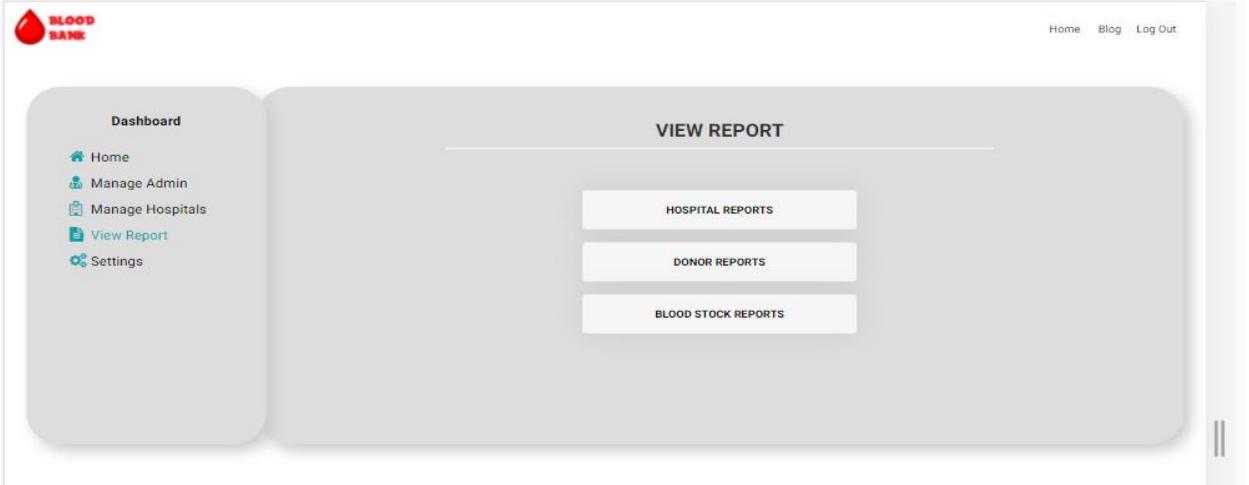
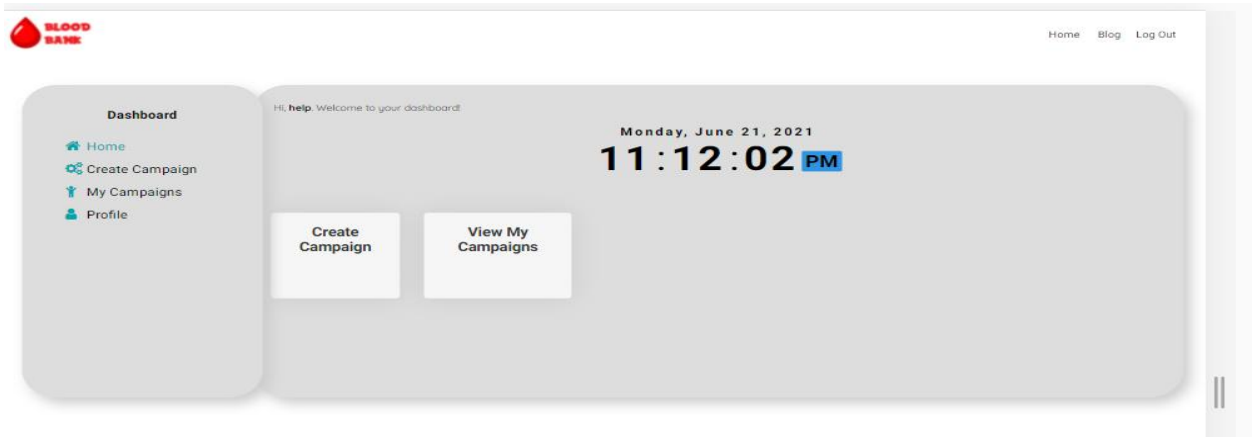
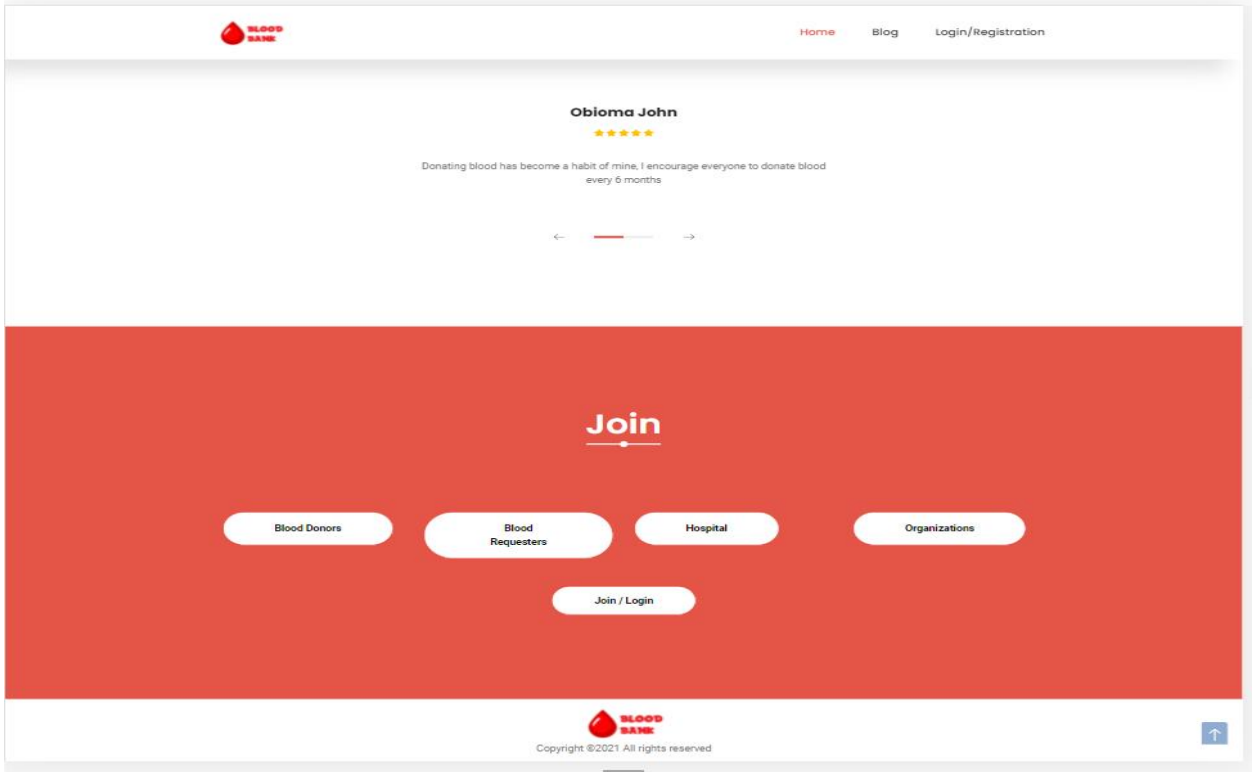


VIEW REPORT PAGE

ADMIN SETTINGS PAGE



CAMPAIGN HOME PAGE



FOOTER PAGE