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Project and Professionalism (6CS007)

Final Report Web-Based Blood Bank

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Declaration Sheet

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Abstract

Blood Bank Web Application is the topic I chose for the final year project. The main objective to develop this project is to help human kind in emergencies. In this world population is growing day by day and accident, major injuries, illness always happens where blood requirement arises. Therefore, we have to walk with the generation, it is the generation of technologies, this project going to be web based that's why it will help people in easy and quick way in emergencies. This project has lot of scopes, objectives which is made to serve the people but this project has also the limitations like we can't open this application without internet and so on. This project has some features like needy people can request blood and donor can get the info about hospital or needy people to donate the blood and admin can manage data, send information or details to users by matching the request blood, blood availability and nearby location. If we look in to the developing process, I chose scrum methodology to develop the project, the main reason to choose this method is it accepts any changes in any phase therefore we can change feature or add feature in upcoming days. To create this project, I've made Functional Decomposition Diagram and WBS to divide the task to manage time I've created Gantt chart. I'm choosing PHP for backend and MYSQL for database if we talk about technologies.

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1. Introduction

The topic I chose for Final Year Project is Blood Bank. Blood is the most crucial component of the human body, as is common knowledge. As we all know, accidents happen frequently in our nation nowadays and major operations, additionally to illnesses like exhaustion, cancer, internal bleeding, or immune system issues when a critical need for blood occurs. Therefore, victims or patient need blood donations to restore their health. Blood donation is a voluntary practice that can help save lives. It involves giving healthy people's blood to others who are in need of it. So, this project enables needy people to acquire the necessary blood through the blood bank website by requesting blood in it and people who are interested in donating blood will be able to donate blood as a donor through this project. The goal of this project is to develop a system for storing, processing, accessing, and analyzing data related to the stock and administrative management of a blood bank.

1.1 Project Briefing

A web-based blood bank is a web-based platform designed to streamline the process of blood donation and management. It serves as a centralized platform for blood banks to manage their inventory, donors, and donation in real-time. Everyone knows that the most important part of the human body is blood. As we all know, significant procedures, accidents, and illnesses like tiredness, cancer, internal bleeding, or immune system problems commonly occur in our country today when a crucial need for blood. Thus, blood donations are necessary for patients or victims to recover their health. Donating blood is a selfless gesture that has the potential to save lives. It involves donating healthy people's blood to those who require it. Thus, this project makes it possible for those in need to order the blood they need from the blood bank website, and it also makes it possible for those who would like to donate blood to do so. The objective of this project is to provide a system for the storage, processing, access, and analysis of information pertaining to the inventory and operational management of a blood bank.

The web-based blood bank management system also makes it easier for blood banks, hospitals, and donors to communicate with one another. The system will automatically check the inventory for blood availability and recommend the closest blood bank for the request.

In general, web-based blood bank management system is an effective tool for blood banks to manage their business and make sure that those in need of blood always have enough to give. It can facilitate blood donation and management while saving lives.

1.2 Aims

Aims of this project are given below:

- Providing a central database of blood donors: Online blood banks can maintain a database of blood donors with their blood group, contact information, and availability. This can help connect donors with those in need of blood transfusions quickly and efficiently.
- Providing support to patients in need: Online blood banks can help patients and their families find the blood they need, provide information on blood transfusions, and offer emotional support.
- Facilitating the blood donation process: Online blood banks can provide information on blood donation centers, organize blood donation drives, and help people schedule appointments for blood donation.

1.3 Objectives

The objective of this project is to create or develop the blood bank web application to manage the data of the donors and blood stocks. The objectives of this project are.

- To maintain the information and data about donors, blood availability in one organized database
- To make it easier for administrators to search, match, and request blood.
- To provide the ability to email the donor directly with information about their user account, the hospital, and the blood bag's availability

1.4 Problem Statement

Nowadays the main problem is that the people or patients who needs blood has to search every hospital to get appropriate blood. The blood bank now uses an old - fashioned manual system. The old system has trouble remembering the records of the contributors. It's likely that the donor's information wasn't preserved properly or that it vanished due to an accident or a natural disaster. Additionally, mistakes might happen if staff members maintain several records for the same donor. A central database does not include volunteer contributions. As a result, looking for blood in an emergency might be quite exhausting. The only other option is to manually locate and match donors before calling each one separately. Additionally, there is no central database where the donor data are kept. Each bank keeps its own archives of donations. If a donor supplies blood at a different hospital, no previous records may be discovered unless the donor also submits the donation certificate. Therefore, a donor is considered a first-timer if they provide blood at a different place. Without an automated management system, it is challenging to keep care of the actual stock of each blood type in the blood bank. Furthermore, no notification is given when the blood supply drops below the required level or when the blood in the bank has run out of time.

1.5 Project as a solution

The Web-based Blood Bank project is an amazing system that aims to overcome the issues that individuals experience when they need blood in an emergency. The project's goal is to create an internet platform where individuals can simply request blood to blood donors through emails. This will allow patients to receive the necessary information and blood without having to visit every facility. The Web-based Blood Bank project is meant to be user-friendly and open to everybody. The website is simple to use, and users can quickly access the information they require. The platform is also adjustable, so it can be accessed from any device, including smartphones, tablets, and desktop PCs. This allows individuals to easily access the platform when they need it the most, no matter where they are or what device they are using. One of the most important benefits of the Web-based Blood Bank project is the availability of real-time information about hospital blood donors. This allows individuals to easily determine which donors are available to donate. This is especially important in emergency situations when time is of the importance and every second counts. The study will assist to shorten the time it takes patients to find the blood they require, possibly saving lives. Additionally, the project helps improve the safety and quality of blood donations. All blood donors must register their names on the system, which allows the system to add the details of users in database. Furthermore, the Web-based Blood Bank project encourages an increase in the number of blood donors. The initiative can serve to create awareness about the importance of blood donation and encourage more individuals to donate blood by offering a platform where people can quickly register as blood donors. This is especially relevant in locations with low blood donation rates or a high demand for blood. Also, the concept has the potential to reduce the burden on hospitals and healthcare professionals. The idea can help to minimize the effort of hospital workers who would otherwise have to spend time searching for blood donors and organizing blood transfusions by giving real-time information about hospitals and blood donors. This can help to increase healthcare service efficiency and minimize the burden on hospital resources.

1.6 Scopes

It could make it easier to collect accurate management data. In a short amount of time, the collection will be comprehensible and rational. It will help someone properly comprehend the administration of the prior year. It also helps in current all works relative to blood bank management system. It will be also reduced the cost of collecting the management and collection procedure will go on smoothly. Additionally, it aids in all ongoing blood bank management system projects. Additionally, the cost of management will be decreased, and the collection process will run smoothly.

- In computer system, the person has to fill register form and number of copies of the forms can be easily generated at a time.
- It provides information that can be used for various purpose.
- It satisfies the user requirement
- Easy to understand and to operate

1.7 Limitations

Blood Bank is web based application therefore it needs internet to open the application, user who are in remote areas can't use the application, can't donate blood or request blood cause of lack of internet connection. If we look into other limitations, user can't pay money through online because we have to make project in certain duration of time and fairly it takes lot of time make system like that therefore user have to do payments individually or through hospitals.

1.8 Artifacts

1.8.1 Functional Decomposition Diagram

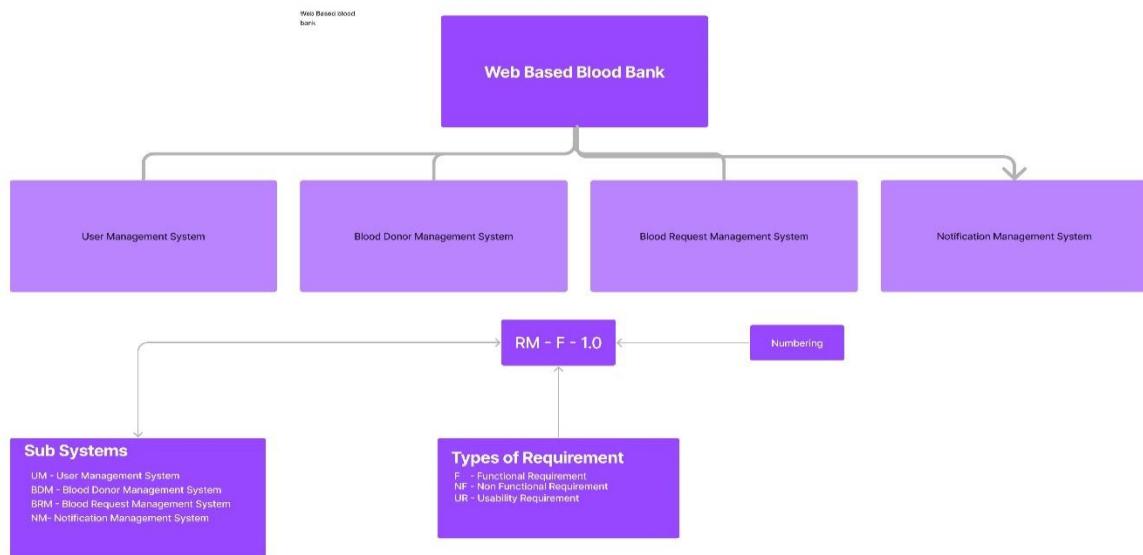


Figure 1 Functional Decomposition Diagram

1.8.2 Web-Based Blood Bank

Web-based blood bank is a web application which made to provide information about donor and seeker. In this system there can be three users (donor, seeker and admin). In this system first you have to register as a donor, this method is used even if you are seeker you can be donor in future days which will help other people to save life. When you got registered you have to login to dive into user home page, users have features to edit their details and update their. As a seeker you can search the donor by matching the blood you and location near you. As a seeker you can send blood request to the donors by submitting details and message to the donor through email. Also you can contact the page administrator through contact us where you ask questions if you have any issues like password forgetting or not getting any mails something like that.

In this system, as an admin you can manage users by adding and deleting. You can also add the blood groups. You can manage queries of the users, update the contact details and manage the pages. Simply this system is user friendly, easy to use and

you can easily access this website if you have the proper internet connection. Simply this system helps people in the vicinity who needs urgent blood, it's main focus is to make life easy for donor, seeker or hospital cause they can see individually see the which donor is perfect for their help because this system shows the list donor by searching their blood group and location.

1.8.3 Sub Systems

Web-based blood bank has four subsystems and they are:-

- User Management System: This is mainly focused to manage the users (donor, seeker and admin). Regarding this system it has the functions like user registration, user login, update user details, update password and in administration part there is admin login, admin forget password and admin update details.
- Blood Donor Management System: In this sub system when users register to the website automatically they became donor and their details and information will added to the donor list so that other donors also become seekers, as a donor you can get the notification and email for blood request. As a donor you can update password and details also you can contact through contact us and you can see the other donors.
- Blood Request Management System: This sub system is for blood seeker who needs blood in urgent situation. As a seeker you can search the blood donor by matching blood and near location.
- Notification Management System: This sub system is mainly focuses to provide information to the donors which contains the details of blood seekers and they can contact immediately in the case of urgency. This process happens when the blood seekers sends request to the matching donors. In case of unavailability donor can explain their situation and seekers can make other request to the other donors.

1.8.4 Work Breakdown Structure

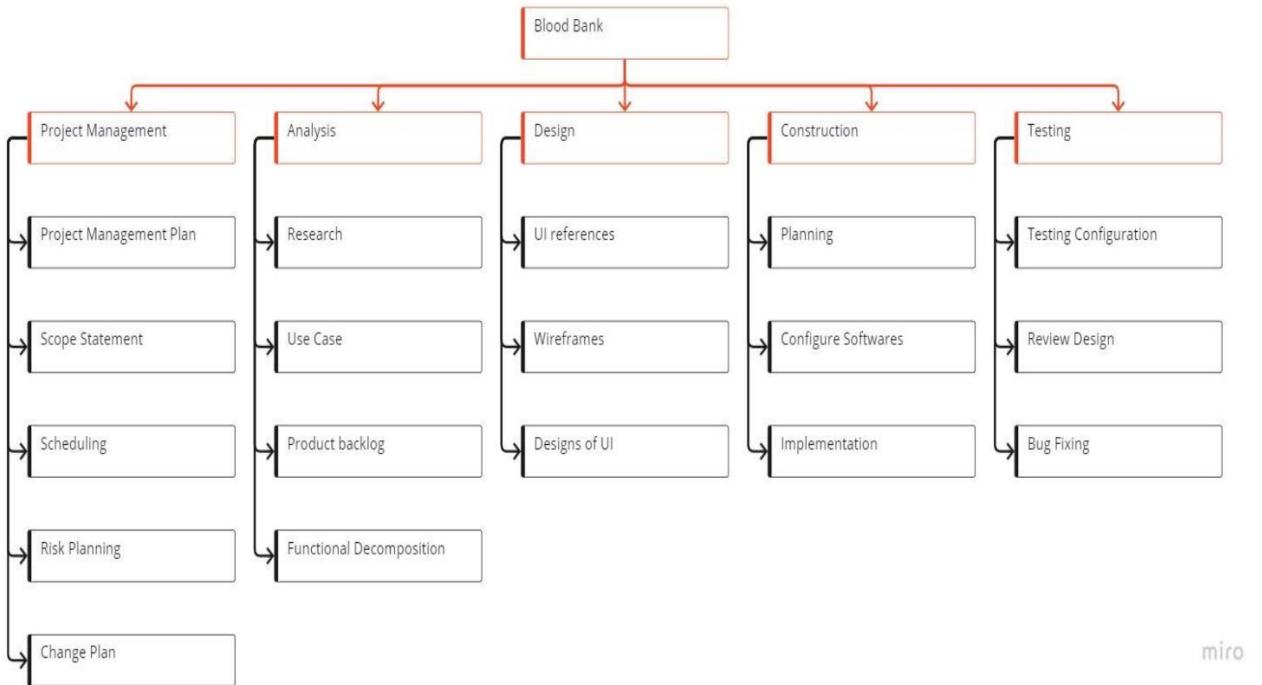


Figure 2 Work Breakdown Structure

- Project management: The most frequent reasons for project management failure include poor planning, poor scheduling, and poor adapting of projects. The creation of an all-encompassing strategy is the first stage in any successful endeavor. When the plan is complete, the project's scope can be made public. The project planning process starts once the scope statement is finished. Following the completion of the schedule, risk planning is the next step, with the exception of the Change plan. Any revisions will be made if the plan is rejected.
- Analysis: An additional breakdown is analysis. The analysis of the project is displayed using diagrams. You must conduct research first. After the research is complete, the project should be examined using use case diagrams and function decomposition diagrams. A thorough requirements analysis is required to ensure the effectiveness of the analysis. Identifying stakeholders and their needs, gathering and documenting requirements, and prioritizing

requirements based on their importance to the project are all part of this process.

- Design: A breakdown task describes the procedure for developing a project. When creating the project's blueprints, some form of design manual should be used as a reference. When all references have been made, the wireframe for the project will start. The user interface design features of Figma are now available. To ensure that the design is effective, it is important to conduct user research to understand the needs and preferences of the target audience. A user-centered design approach can help to ensure that the system is designed with the user in mind and that it is easy to use and meets their needs.
- Construction: Other additional breakdown is construction. To ensure the success of the construction phase, it is critical to utilize a systematic strategy, such as the Agile methodology, which entails breaking the project down into smaller, manageable tasks or user stories. Version control software should also be used by the team to track changes and verify that everyone is working on the most recent version of the code. Code reviews and testing should be done on a regular basis to catch any errors or bugs early on.
- Testing: To ensure that testing is effective, it is critical to create a detailed testing plan that specifies the types of testing to be performed as well as the testing criteria. To maintain neutrality, the testing strategy should be carried out by a distinct testing team from the development team. Before the system is provided to users, any faults or defects discovered during testing should be documented and remedied.

1.9 Academic Questions

- What are the major advantages of web-based blood bank?
- What are the biggest issues while using web-based blood bank?
- What are the benefits and drawbacks of using an online blood bank compared to traditional blood donation centers?
- How effective are online blood banks in increasing the number of blood donors and making treatments more accessible?

1.9.1 Explain Academic Questions

Here is the explanation of academic questions:-

First question asks about the major advantages of the web-based blood banks. The answer of the question will provide the merits of using the web-based blood bank such as its working process, how it is easy to use and how it can provide faster information in real time use.

Second question is about the issues while using this website like internet access, security issues, information communication issues and technical issues regarding the web-based blood bank.

Third question is about the comparison of drawbacks and benefits between traditional blood donation center and web-based online blood bank. The answer should be comparison of drawback and benefits of both side. And should be able to find which method is better in specific situations.

Fourth question asks about the effectiveness of web-based blood bank in increasing number of blood donors and making it more accessible. Answer of this question would give information and evidence on the influence of web-based blood banks on blood donation rates, treatment availability, and other associated factors.

2. Literature Review

2.1 Web Based Online Blood Donation System

“Web Based Online Blood Donation System” journal paper presents a complete method to close the gap between blood donors and those in need of blood. The Online Blood donation Administration Framework application is a method for using the Web to coordinate blood donation facilities with urgent care clinics. It is a web program that registered hospitals may use to verify the availability of the needed blood, send a blood request to a local blood donation facility or to a comparable donor depending on the blood, and manage requests online as necessary. A blood donation facility may also make a request to a blood donation site that is not currently accepting donations. Using the Android Bank the executives Framework, you may locate someone willing to donate blood at the nearby blood bank. Maps can be used to locate blood donation centers. Donors may easily access the Android app to check for blood donations and request that blood donation clinics and centers look up nearby donors and donation centers. This system uses the proposed methodology like (Registration, Login, mange blood banks, manage donors etc.), implements an algorithm for donor eligibility by (blood groups, previous donation, required donation date etc.), there are some implemented modules like Blood Bank Management Module and Security and Admin Module. Therefore, according to the literature this website makes easy to retrieve blood of any group for persons who needs blood by giving information about availability of stock nearby.

2.2 Smart Intelligent Web based Online Blood Donation System

Hospitals are having a lot of trouble obtaining blood donors due to an increase in demand. People are cheerfully willing to donate blood right now, and hospitals need blood. As a result, this research effort recommends a web-based, online blood donation system that provides a place to communicate in an urgent situation, to link the donors and recipients at that moment of need. People who want to donate blood for the sick can access a website called the Web-based Online Blood Donation System. This page contains details on the hospitals, groups, and funders that have signed up. In an emergency, the user puts a warning notification on this website describing the need for blood and the duration restriction. People who want to give will get in touch with the user when the hospitals and organizations learn about the alert message. This system has the vision about blood like constituents of blood and types of blood groups where it donates blood to the user by the availability of blood groups. According to this literature this system solves the problem of not getting blood in emergencies by giving the platform helps the people in a quick way with least effort. Main objective of this system is to encourage the people to donate the blood and serve people in emergencies. If we look into its developing methodology, this system applied waterfall method for the software development which is old 2 method but easy to do where in this methodology it has analysis stage, design stage, implementation stage, testing phase, system integration and maintenance.

2.3 A Systematic Review & Design of Web-Based Blood Management System

Because of its volume, blood acts as both a connective tissue and a fluid that transports oxygen. Now that we are aware of the significance of blood, we can see that through the heart and blood arteries, in addition to bringing oxygen to the tissues, it also makes room for them. On average, each person donates 470ml, or 8% of their adult blood volume. Blood is frequently unavailable when it is required at a hospital, which leads to inconsistencies. Both the donors' patients and their sponsors are unaware that they are being treated at hospitals as a result of a lack of communication and other services. A system like this is necessary to close the communication gap between hospitals, blood banks, donors, and receptors. A webbased blood donation program's primary goal is to make sure that blood stock regulations are followed. When a patient needs a blood type that is not available at their local blood bank, the existing system, which prioritizes the hand system, takes time to process blood from another blood bank. In an emergency, time is of the importance, therefore this might be detrimental to the patient's health. In order to give a location where blood may be retrieved, a web-based blood donation system is a useful place to keep track of whether a specific type of blood is present in a stack or not. What I really like about this system is that this system has the factors to be considered where it has age restriction where people of the age 18 – 60 can only donate the blood, where this system takes information about blood pressure, hemoglobin count, diseases and addiction of the donor. According this journal, it reduces the paperwork and gives advantages to donor, seekers and blood bank. If we talk about it's limitations and scopes, user have to update profile manually like locations and in future it can update address automatically by GPS.

2.4 A Web-based Blood Bank System for Managing Records of Donors and Receipts

According to the researcher “The Online Blood Donation Management System” serves as a link between a person in need of blood, a patient, and a blood donor. The construction of an autonomous blood system has become an essential aspect of saving the lives of people who require blood in various scenarios. Since there are several shortcomings of the existing system, such as donor privacy issues, which are reflected directly on the interface. As a result, we created a strong infrastructure that will connect many hospitals, NGOs, and blood banks to assist the patient in any difficult situation. As a result, the HIPPA (Health Insurance Portability and Accountability Act) model serves as a foundation for security breaches.

The planned interface will be simple to use and easy to access, providing a quick, efficient, and dependable means to obtain lifesaving blood at no cost. Aside from that, data visualization is provided, as is one extra COVID module, which will assist covid and normal patients for plasma donation. The major goal of the article is to eliminate the complications of identifying a blood donor during a panic situation and to offer donors with a high level of security.

If we talk about this systems methodology anyone can register the system with their required details and admin is already registered in NGO, hospital. Then admin fetches the data of user and filters it then manages all overall system. Users can donates the blood and seekers can request the blood. In this system admin work is to provide information to donor, seeker and hospital respectively by matching their requirement. Also their work is to give feedback to the users.

The Online Blood Management System is a platform that can save a person's life in an emergency. It is a platform via which anyone can register as a donor on the website. Those who register will be given a platform to assist others and will learn about blood donation and its advantages. The primary goal is to create an interactive, user-friendly, accessible, and time-saving platform for people in an emergency situation. The patient logs his or her request with some specifics, and the administrator analyzes the details provided with the data in the database to locate a match. (Kaur, et al., 2022)

2.5 Automated Online Blood Bank Database

There are several online blood bank databases accessible, but none of them allow for direct communication between donor and beneficiary. This is a significant disadvantage, especially in circumstances where blood is required immediately. This project intends to break down this communication barrier by implementing a direct call routing approach based on Asterisk hardware. A blood bank database is constructed by collecting information from many sources such as blood banks, NSS, NGO's, hospitals, and via a web interface. The collected data will be stored on a central server. This central server will have a Toll Free number that can be used to connect to it. Before blood transfer, an algorithm will be developed based on the different parameters that must be considered. This algorithm takes into account the donor's willingness as well as the donor's proximity to the location from which the call is coming. The algorithm determines the best qualified donor. The call from the required person is routed to the eligible donor's phone via the server. Such a technique significantly reduces the overheads associated with referring to an online database and then calling donors and verifying their willingness at a time when there is a severe need for blood.

We are all aware that blood is a basic requirement for survival. There are numerous instances in which immediate access to blood can save lives. "Automated Online Blood Bank Database" project is a first step in this direction. An online database supplemented by automatic call routing can be an excellent solution for meeting urgent blood demand. (R, n.d.)

2.6 A Secure Cloud Computing Based Framework for the Blood bank

A blood bank is a bank or storage facility where blood is collected, conserved, and used as needed or requested. Everyone understands that the typical blood bank administration approach entails paperwork. Its working method is insufficiently efficient in emergency conditions. The fundamental goal of developing a cloud-based blood bank system is to make blood available to individuals on time, especially in emergency situations. This project allows the user to access information on any object associated to blood banks, such as hospitals, donors, a location of another blood bank, and so on. The security factor is properly maintained. Every time a new user logs into the system as a donor, he or she must register and give proof of identity, such as a driver's license or a government document stating the person's blood group. This project will include an Android application that can be used on smart phones and will include all of the information about the donor and surrounding hospitals. The app will also have a GPS (Global Positioning System) system that will track the location of neighboring blood banks or hospitals. Every registered user will receive notifications on health checkup drives, blood donation camps in their vicinity, and so on.

This article presented a dependable cloud-based online blood bank system. As the quality of blood bank services increases, the use of cutting-edge technology and information systems becomes increasingly important. The system benefits both the requester and the donor. The system reduces the gap between the donor and the requester, and their communication improves. As a result, when needed, the requested blood is delivered to the requester on time. The system's services will undoubtedly assist the health sector, as patients' safety and lives are regarded valuable[4].The project's goal is that sometimes a patient's life can be endangered if an adequate supply of blood is not made available to him. (Chaudhari, 2018)

2.7 Similar Systems

2.7.1 E-Blood Bank

E-Blood Bank is comprehensive IT system with a workflow-based web-enabled service-centric focus for managing the operations and services of a single blood bank or a blood bank connected to a hospital. Any individual who is interested in donating blood can register through this application, and any organization that wishes to register on this website can also do so. Additionally, this website can be used by any common consumer who wishes to request blood online. The features of this system are Donor Management, Bleeding Entry and screening, Blood Transfusion, Blood Camp Management, Receive and transfer of blood etc.

2.7.2 E-Blood Bank System (Nigeria)

This system ensures that patients have quick access to blood donors of any type, whether they are volunteer donors, replacement donors (family or friends), or paid donors, and that mutual interest is protected in each case. This system is designed to exist even in the most remote areas and is simple for both young and old people to use because it employs the use of Unstructured Supplementary Service Data or USSD code, Short Message Service (SMS), and a free toll line, making the system available for both online and offline database queries.

2.7.3 Smart Blood Query

Blood donors can register for this app via SMS, providing information such as blood group, address, and other pertinent details. When blood is needed, an SMS will be sent to the top 5 search result donors. Donors can click "yes" if they are ready to accept the request and "no" if they are not. When the donor clicks yes, a brief questionnaire will be sent to him to determine his eligibility for blood donation. If the donor is ill, he can change his status to "unavailable" in his profile. This process is time-consuming for the blood requestor and insecure because the donor's health cannot be checked via SMS.

2.7.4 Donate Life America

Donate life America helps people to donate their organ, eye and tissue by registering. You can donate organs no matter in which country you are you can register through nationality it ensures that your donor registration travels all across the world. The main purpose of this site is to provide help to needy people, save people and heal people. This site tell people to save patients whom are waiting to transplant their organs.

Donate life America encourages people to save the life of people who are in their deathbed. You can register when you are 18 years old. Users also can create campaign to help people through their friends and family. It ensures that the user privacy is important so it keeps user details secure and safe.

This organization is founded in 2015. Its main objective is to make donor registration simple easy, secure and user friendly. (Donate Life America, n.d.)

2.7.5 Organ and bone marrow donor networks

Organ and bone marrow donor networks are online programs that connect potential organ and bone marrow donors with transplant recipients. These networks provide vital resources for both donors and recipients, assisting in the provision of life-saving transplants to people in need. Bone marrow donor networks, in particular, aim to connect people who want to donate their bone marrow with persons who need bone marrow transplants. These networks offer a variety of services, including bone marrow donation education, donor and recipient support, and databases that allow medical practitioners to search for potential donors. One of the most important advantages of bone marrow donor networks is that they can assist in increasing the number of possible donors. Many people are afraid to give bone marrow because the process is complex and scary. These networks, on the other hand, can assist to relieve worries and encourage more people to consider becoming donors by giving knowledge and support.

One of the most significant benefits of bone marrow donor networks is that they can help to increase the number of potential donors. Many people are hesitant to donate

bone marrow since the process is complicated and frightening. These networks, on the other hand, can help to alleviate concerns and encourage more people to consider becoming donors by providing information and support. Bone marrow donation networks not only connect donors and recipients, but they also give important assistance to both parties. They may, for example, provide tools to help donors prepare for the donation process, such as information on the different forms of anesthetic used and the recovery period. They may also offer emotional support to recipients and their families, reducing anxiety and stress during a tough time.

Overall, bone marrow donor networks play an important role in making bone marrow transplants available to people in need. These networks can make a big impact in the lives of people who need bone marrow transplants by offering education and support to donors and recipients, as well as assisting in the matching process.

2.7.6 Comparing all above similar system to Web-based blood bank

All above system are similar to the web-based blood bank where they are online platform to donate blood, plasma, organs, medical equipment etc. Where there users can register the user all around the world like my project is undergraduate project which is not very special but in this project user can send request to the donor by matching blood group and location where donor can get information about seekers through the email. This project is to make easy for people who need in emergency which helps to save people and heal people. In other comparisons this web-based blood bank is simple but worthy to save people in urgent cases. The main disadvantage of this website is that it can't be access without the proper internet connection which won't be many help to rural areas. Like other application it can't secure the details of the user properly but I'm sure that the privacy of the user is important. Overall web-based blood bank application is the project where people can register as donors and they request by their blood group and location where info gets deliver to the donor. In this system user can inquiry to the admin on the website by contact us page so if there is any help need you can get connect to the administrator of the page.

3. Project Methodology

I want to use the Scrum software development methodology to build my project web based Blood Bank. Scrum is a project management methodology that typically focuses on teamwork, accountability, and gradual progress toward a specific goal. The key motivation for using Scrum for web development is the fact that my product is based on novel ideas. As a result, the software will go through a number of changes as it is being created, such as the addition of new capabilities, UI adjustments, and the removal of certain old ones. Other methods of software development do not support such modifications. Scrum divided the web development time into sprints. Sprints are focused time periods of labor that last usually more than a month. The Sprint includes every additional Scrum activity. Immediately after the previous Sprint is over, a new Sprint starts. A sprint is divided into four phases: planning, reviews, daily scrum, and retrospective. One of the primary advantages of using Scrum for web development is its adaptability. The Scrum framework enables quick and easy adjustments, which is critical in the fast-paced world of online development. The development team can use Scrum to react to changes in requirements, new technology, and evolving market trends. This ensures that the product is always up to date and competitive in the market. Sprint planning is the process of preparing the activities for the upcoming sprint. Thanks to this strategy, my project could divide or segment duties into periods. A sprint review is an analysis of a sprint's activity. This assessment helps find and correct web flaws, problems, and bugs that might have appeared during development. Daily scrum serves as a gauge for developer progress. Being the developer, it will help me keep track of the program's advancement. These are the justifications for my decision to use Scrum for web development.

Finally, Scrum is useful framework for setting up web development projects. It provides a flexible and evolving strategy that enables for quick and easy changes. It encourages collaboration and accountability, which develops trust among team members and a sense of ownership and pride in the task being done. Therefore, I choose to use Scrum to continuously improve their process and provide high-quality products on a consistent basis.

4. Tools and Technologies

- PHP: I'm using PHP for the backend language. Most often, PHP is used for creating web servers. When using PHP, working with databases is simple. According to my opinion, PHP is quick, versatile, and secure, which is another reason I chose PHP as the system's backend language.
- Database: The database I'll be using for this system is MySQL. One of the most well-known database management systems is MySQL, which offers high levels of data protection and effective workflow management. I am using it to store the data, and I can use it to store a lot of data. While I am using PHP as my backend, working with databases is also simple.
- GitHub: While creating the system, I'll be utilizing GitHub to keep track of modifications. Version control is utilized to do that. I must set up a repository so I'll be able to manage and add files as well as push and pull them.

5. Artifact & Design

5.1 Functional Decomposition Diagram

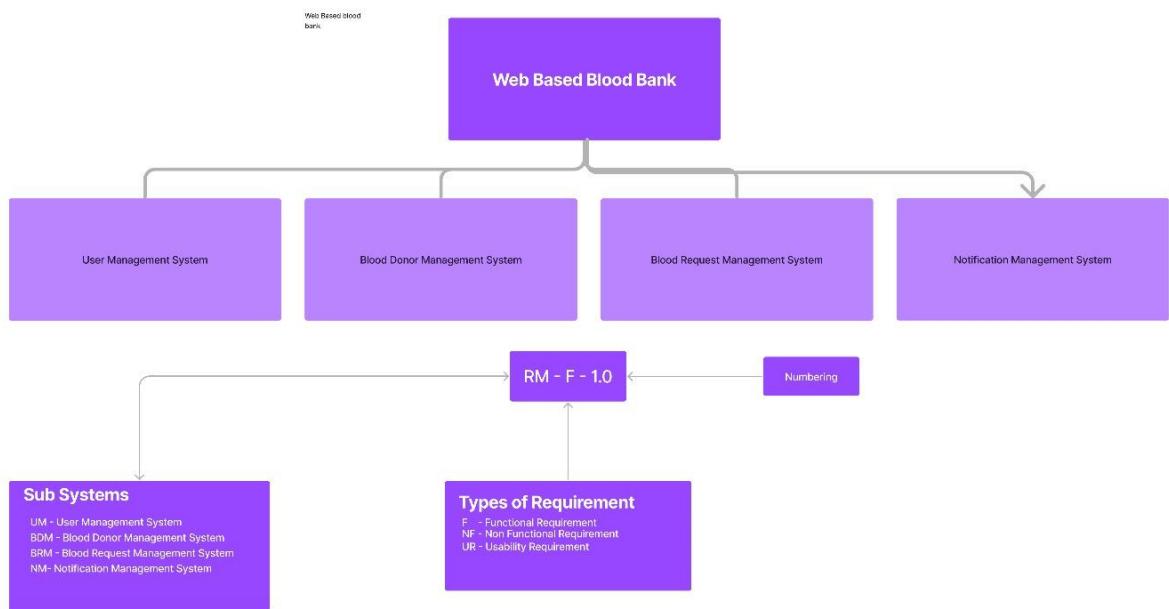


Figure 3 Functional Decomposition Diagram 2

Here are sub systems of the web based blood bank:-

5.2 User Management System SRS

Req. Code	Req. Desc	Use Case
RS-F-1.0	Users and administrators can create accounts on the system and log in.	Create Account
RS-F-1.1	The system's users can update their password	Update Password

RS-NF-1.2	The user should utilize special letters and numbers when creating their password.	Strong Password
RS-NF-1.3	User have to use valid email for registration	Valid Email
RS-UR-1.4	Once you register the account, user does not have to register again, user can use their username and password to log in	Logged in

5.2.1 Activity Diagram

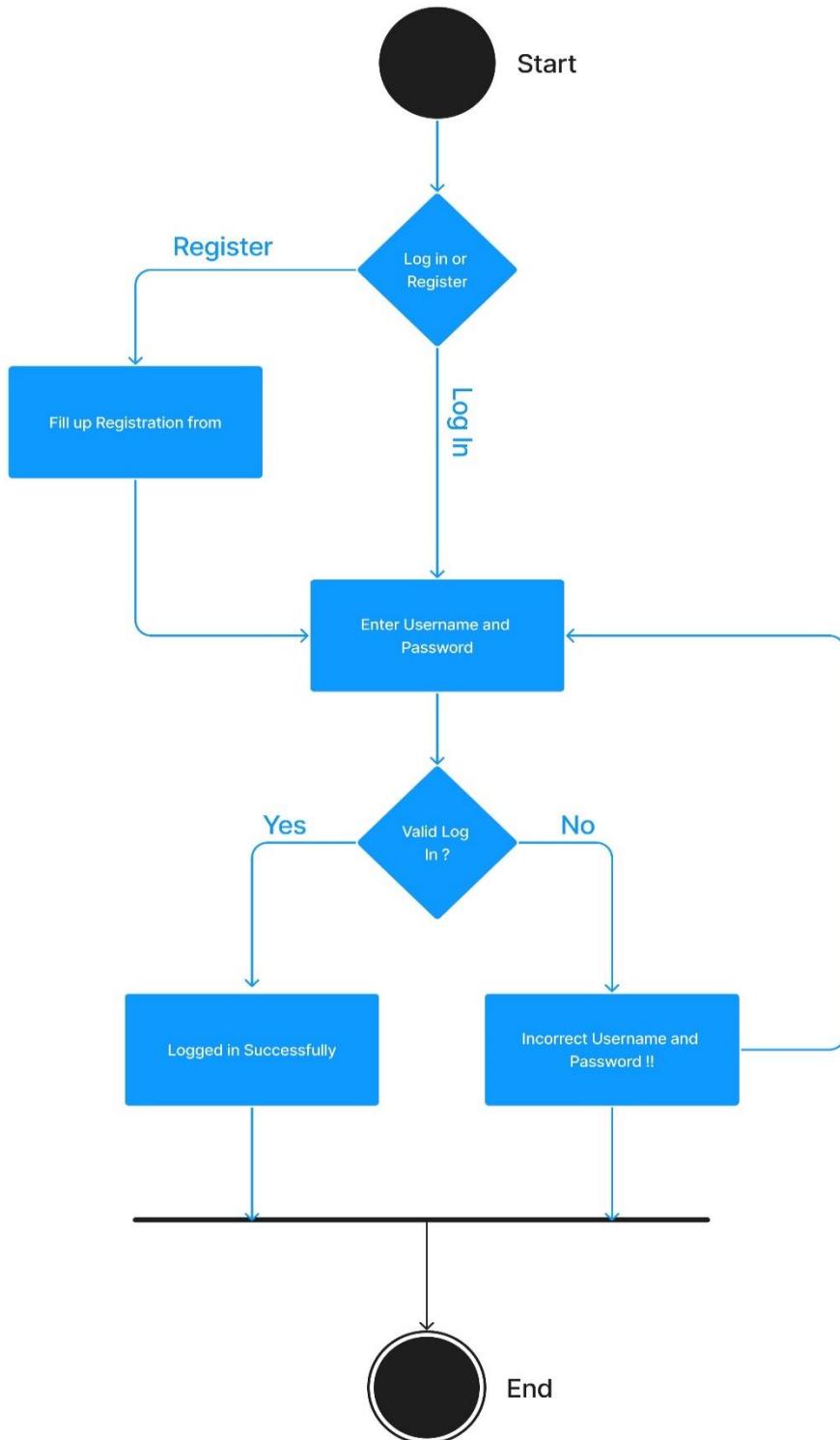


Figure 4 Activity Diagram User Management System

5.2.2 Design

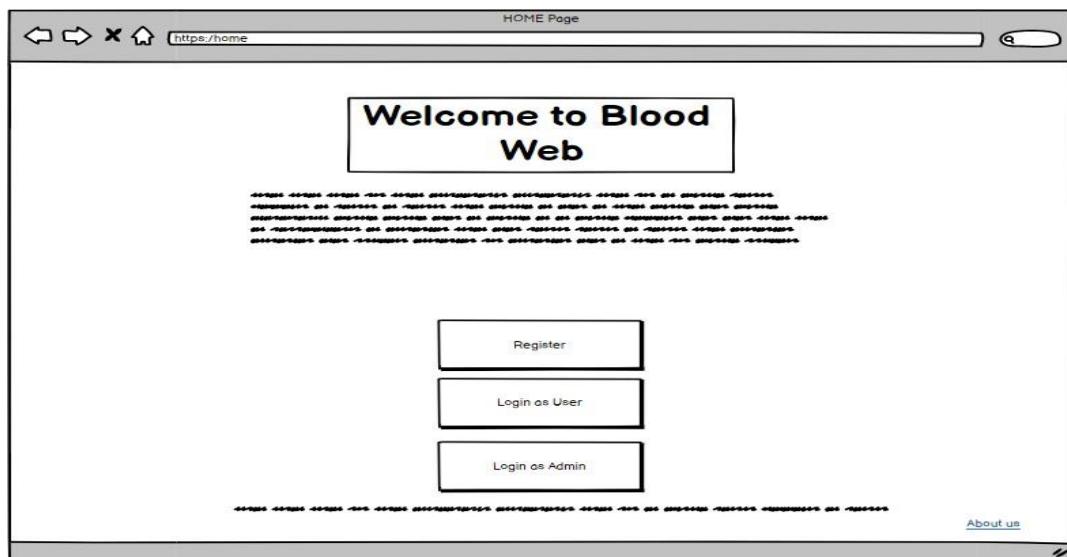


Figure 5 Expected Front Page

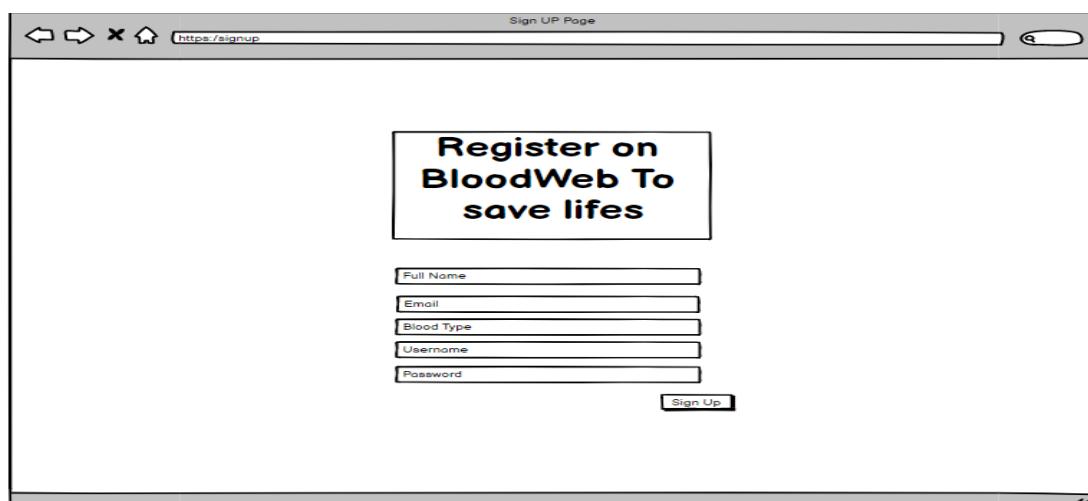


Figure 6 Design of Sign up page

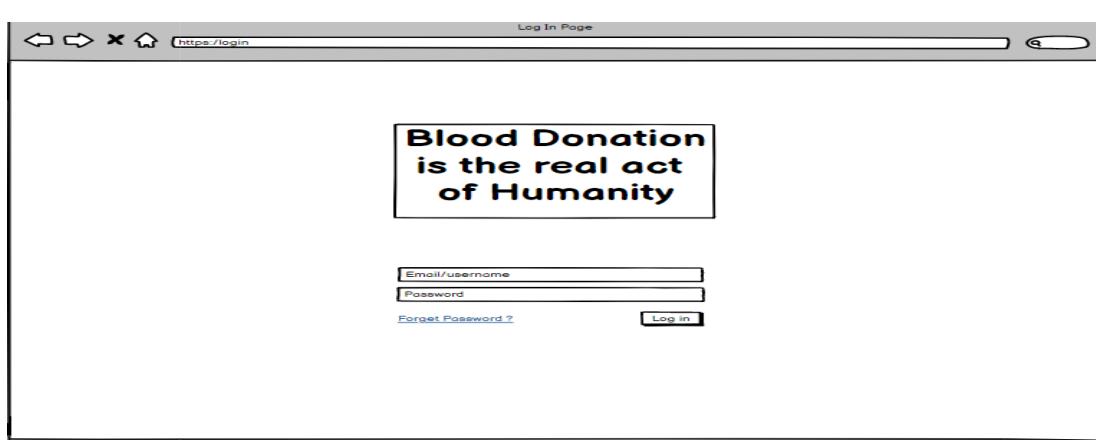


Figure 7 Design of expected log in page

5.2.3 Use Case

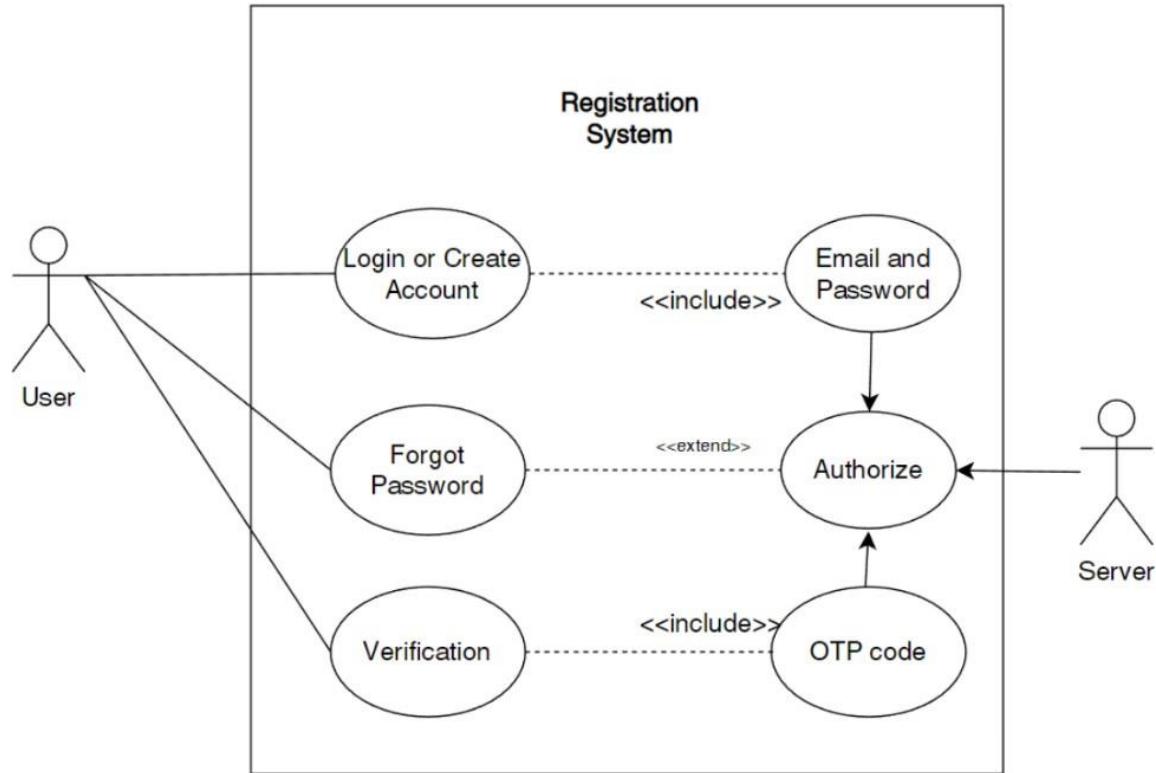
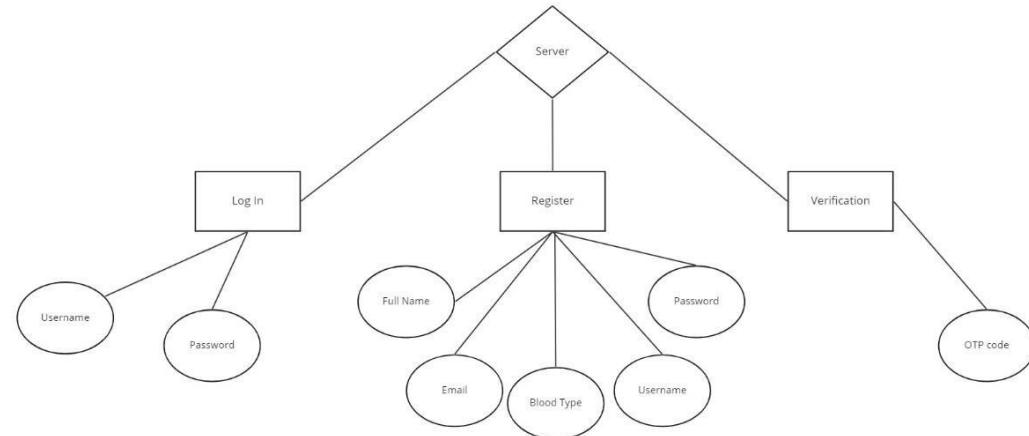


Figure 8 Use Case of User Management System

5.2.4 Entity Relationship Diagram



miro

Figure 9 Entity Relationship Diagram User Management System

5.2.5 Class Diagram

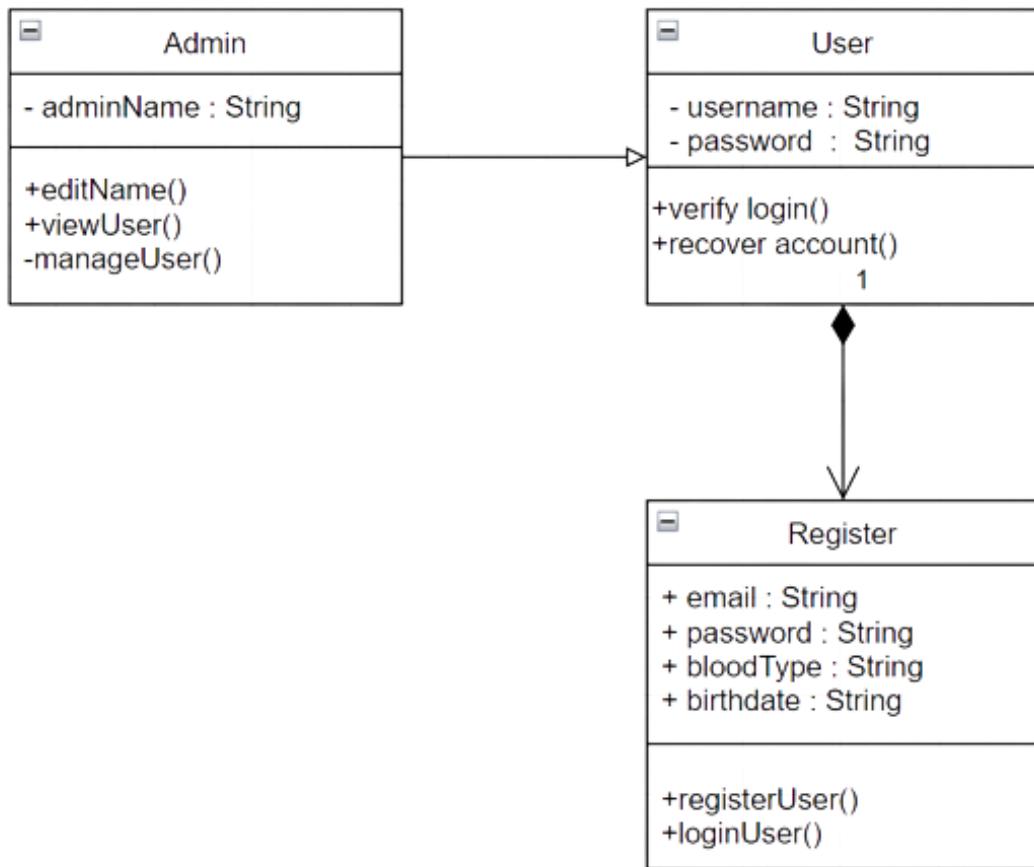


Figure 10 Class Diagram User Management System

5.2.6 Sequence Diagram

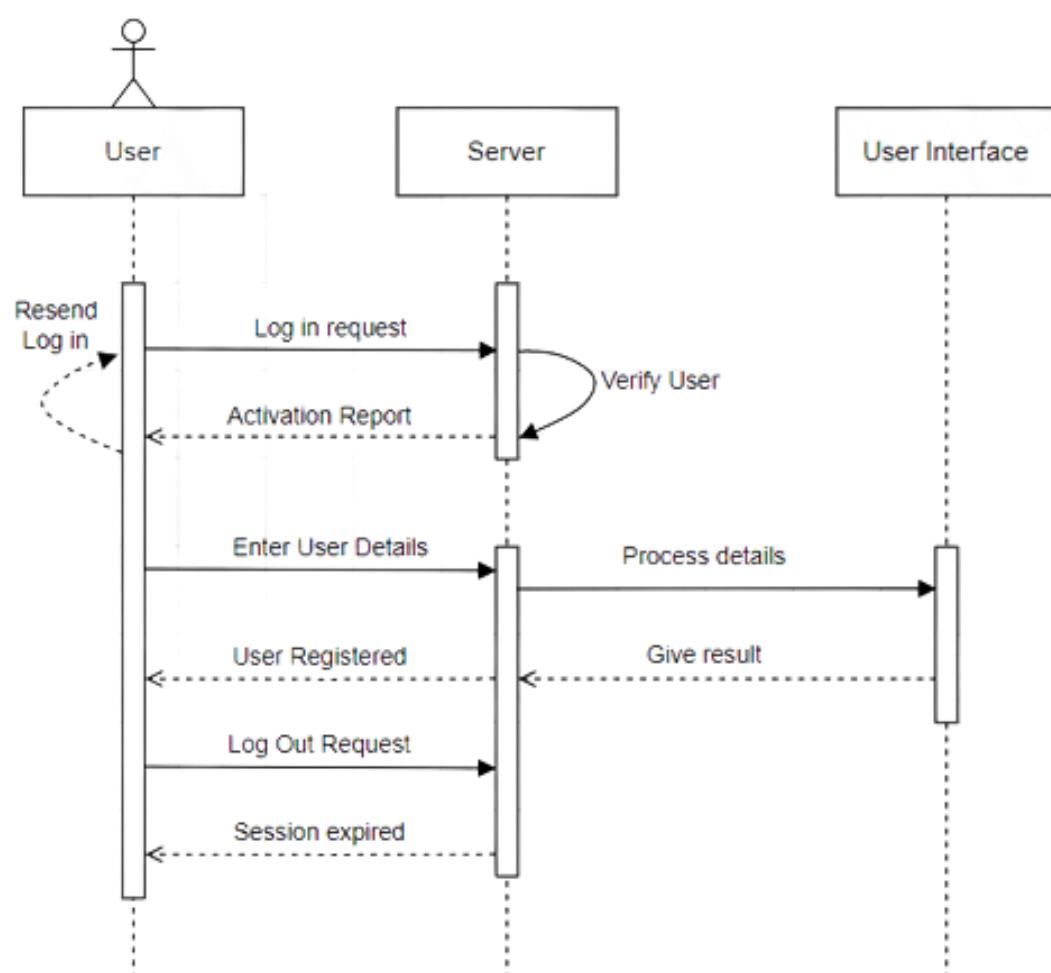


Figure 11 Sequence Diagram of User Management System

5.2.7 Testing

Test Case	Objective	Action	Expected Result	Result
UMS-01	To open registration page	Click on registration page	Navigates to registration page	Success
UMS-02	To check validation of phone number	Input few numbers, register with empty field	Shows error message "put 10 numbers"	Success
UMS-03	To check email field validation	Input special character and incorrect email format	Shows Error message	Success
UMS-04	Check correct email format	Fill the field with valid email format	Takes valid email	Success
UMS-05	Check the password field with incorrect way	Fill the password field with space	Shows error message	Success
UMS-06	Try the password field	Fill the password field with using lower case, upper case and with special character	Gives access to login page	Success
UMS-07	Check Validation of login page	Fill email field and password field with valid process and click on log in	Gives access to home page	Success
UMS-08	Check validation of admin page email field	Input special character and incorrect email format	Shows error message	Success
UMS-09	Check correct email format in admin page	Fill the field with valid email format	Takes valid email	Success
UMS-10	Check validation of password field	Fill with space	Shows incorrect password	Success
UMS-11	Check login button	Fill field with valid email and password	Navigates to admin dashboard	Success
UMS-12	Check logout button	Click on log out button	Navigates to front page	Success

5.3 Blood Donor Management System SRS

Req. Code	Req. Desc	Use Case
BDMS-F-1	This system should allow to donate blood by searching location.	Search Location
BDMS-F-1.1	This system should allow to check user history	Check History
BDMS-NF-1.2	The system should have date of blood donation	Date Selection
BDMS-UR-1.3	User should have option to edit their profile	Edit profile

5.3.1 Activity Diagram

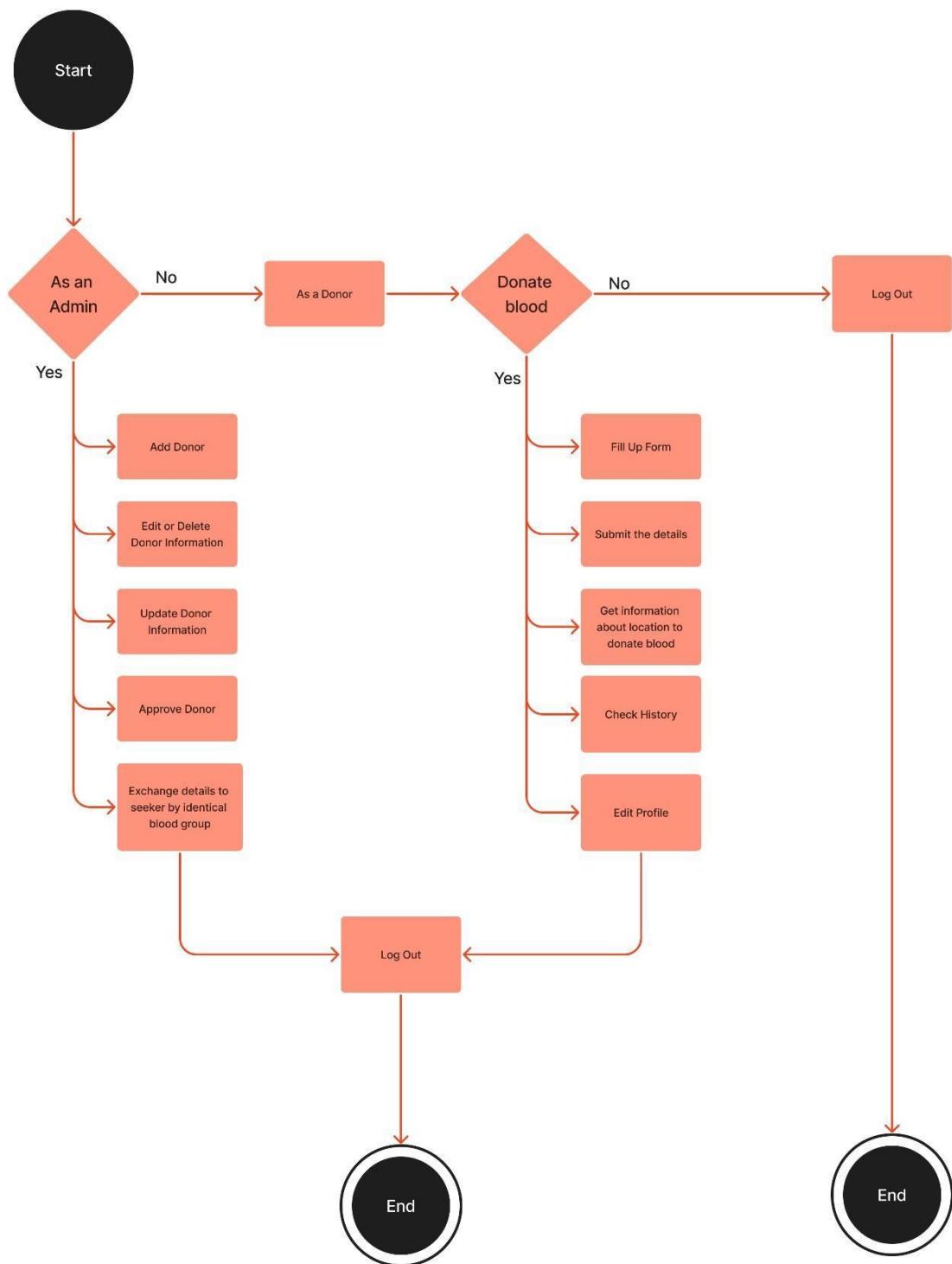


Figure 12 Activity Diagram Of Blood Donor Management System

5.3.2 Design

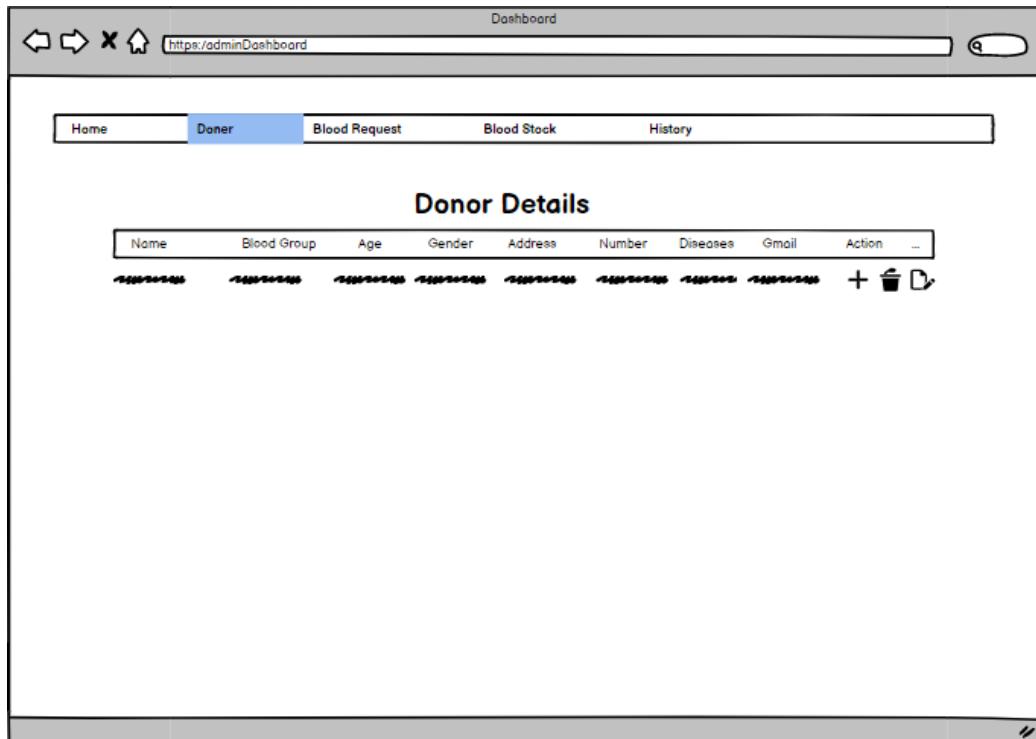


Figure 13 Donor list

The screenshot shows a web browser window titled "Dashboard" with the URL "https://DonateBlood". The main content area contains a form for donor registration. It includes fields for Name, Gender, Blood Group, Age, Diseases, Location, Number, and Gmail. Below these fields is a "Submit" button.

Figure 14 Donor Form

5.3.3 Use Case Diagram

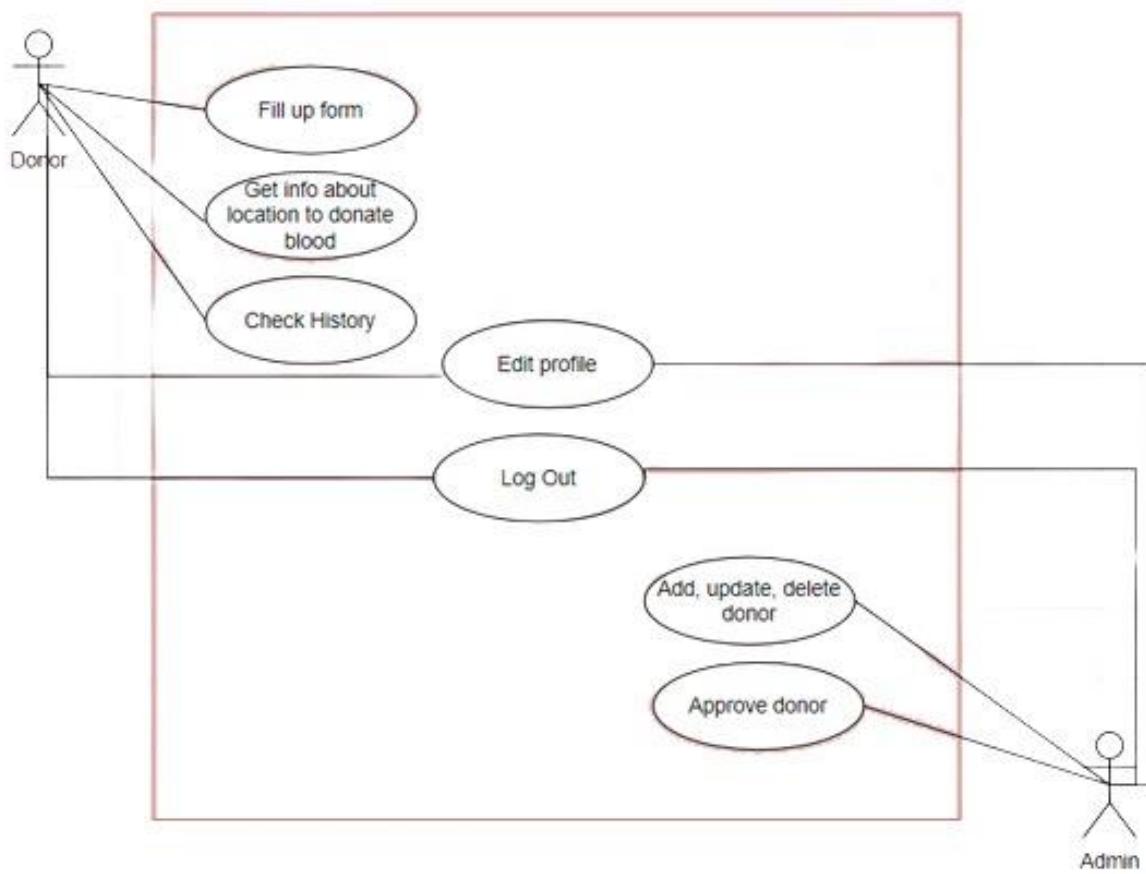


Figure 15 Use case of Blood Donor Management System

5.3.4 Entity Relationship Diagram

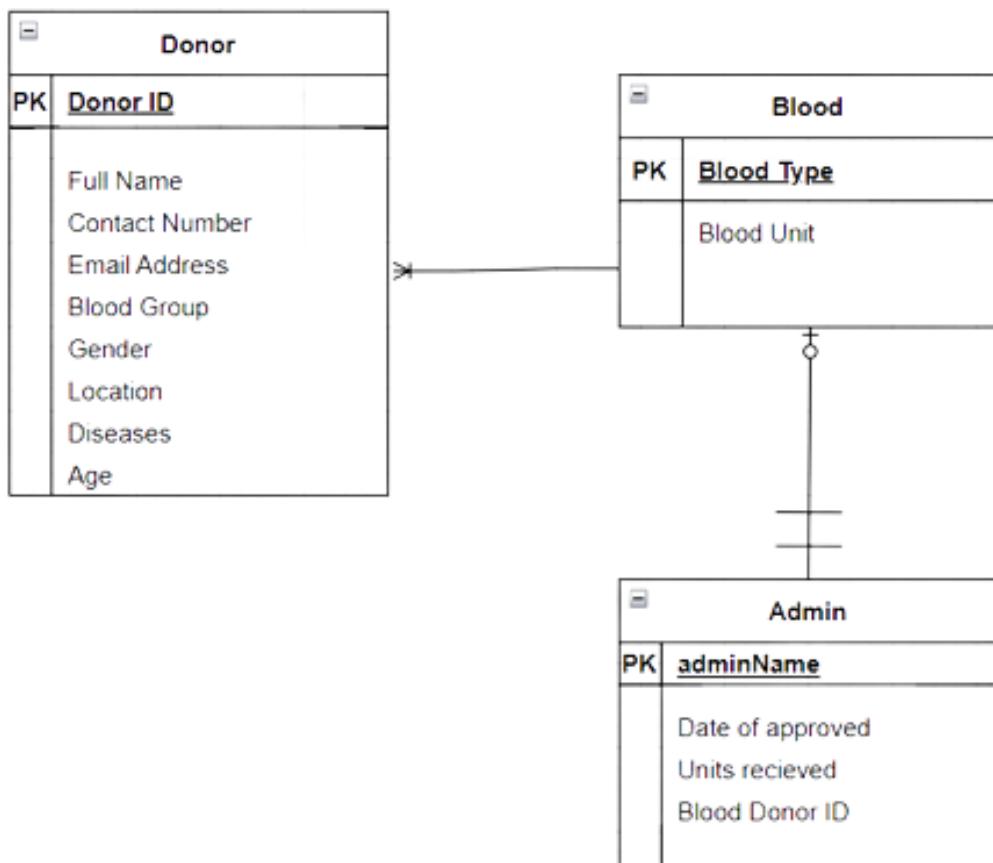


Figure 16 Entity Relationship Diagram Blood Donor Management

5.3.5 Sequence Diagram

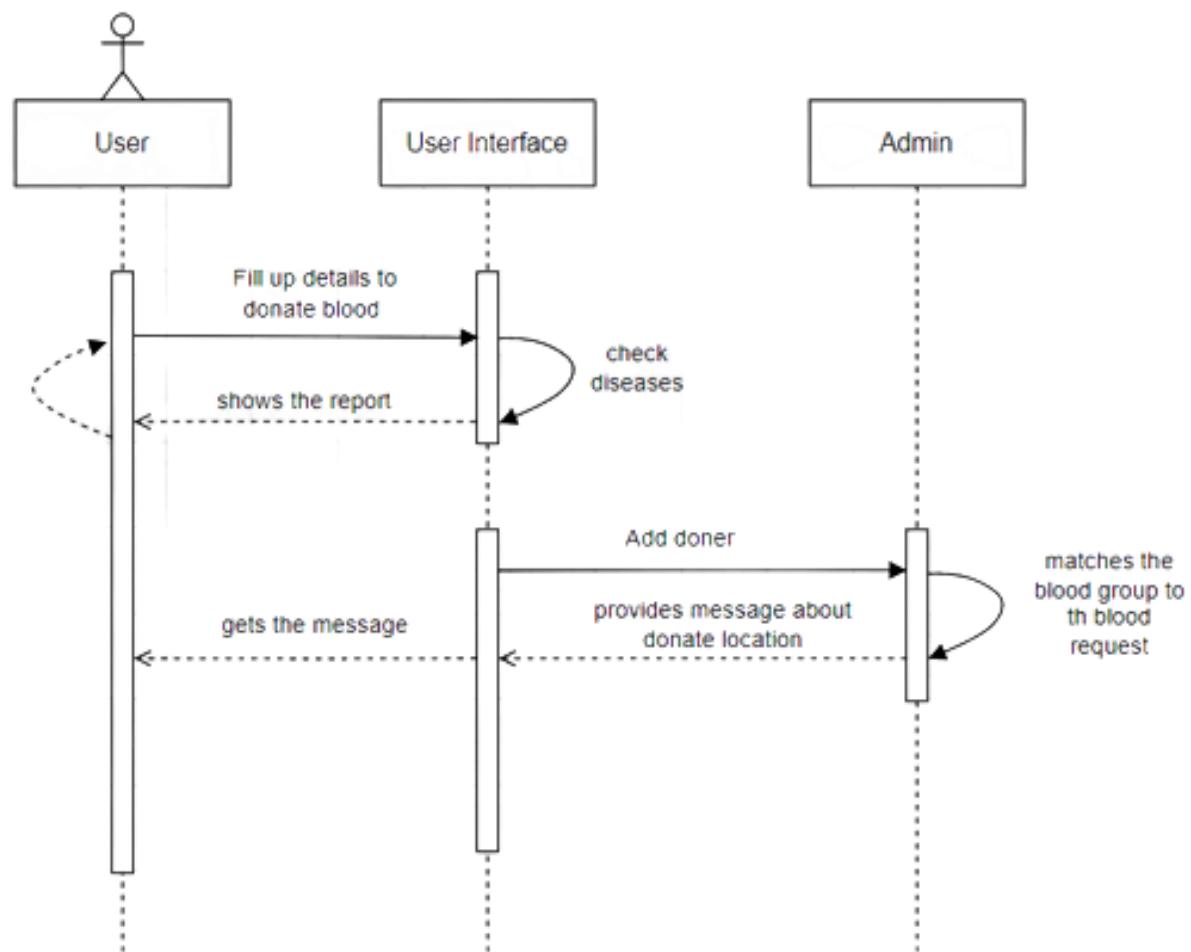


Figure 17 Sequence Diagram of Blood Donor Management System

5.3.6 Testing

Test Case	Objective	Action	Expected Result	Result
BDMS-01	Fill all the forms on registration page	Click on register	Register on donor list	Success
BDMS-02	Check if user can select blood group or not	Select blood group	Blood group selected	Success
BDMS-03	Contact the web-based blood bank	Fill the all the forms on contact us page include you inquiry	Show message "we will contact you later"	Success
BDMS-04	Check your info shows or not in search donor page	Click on blood request on navigation page	Shows your information	Success
BDMS-05	Check My account to make sure if there is blood request or not	Click on my account similarly click on my account	Shows blood request page	Success
BDMS-06	Check you can add donor or not as an admin	Click on add donor button on manage donor page	Shows forms to write details	Success
BDMS-07	Check all fields on add donor field	Input all valid details of the donor	Shows message "successfully added"	Success
BDMS-08	Check you can delete donor or not on admin page	Click on delete icon	Shows message "successfully deleted"	Success

5.4 Blood Request Management System SRS

Req. Code	Req. Desc	Use Case
BRMS-F-1	System should allow user to request blood location wise	Donate Blood
BRMS-F-1.1	System should allow user to view available blood	View Available Blood
BRMS-UR- 1.2	System should allow user to edit profile	Edit profile
BRMS-NF- 1.3	System should allow to check history of user	Check History

5.4.1 Activity Diagram

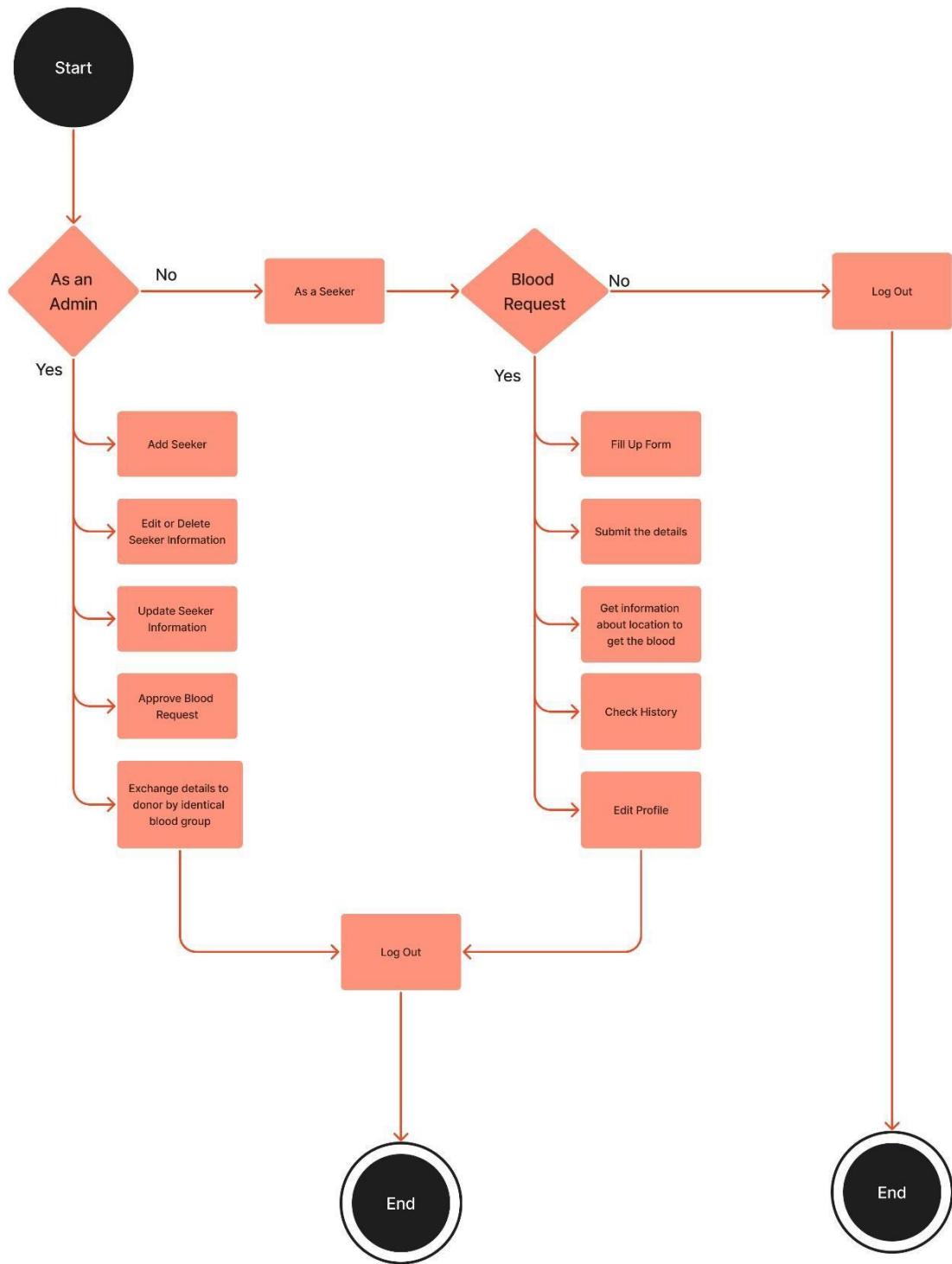
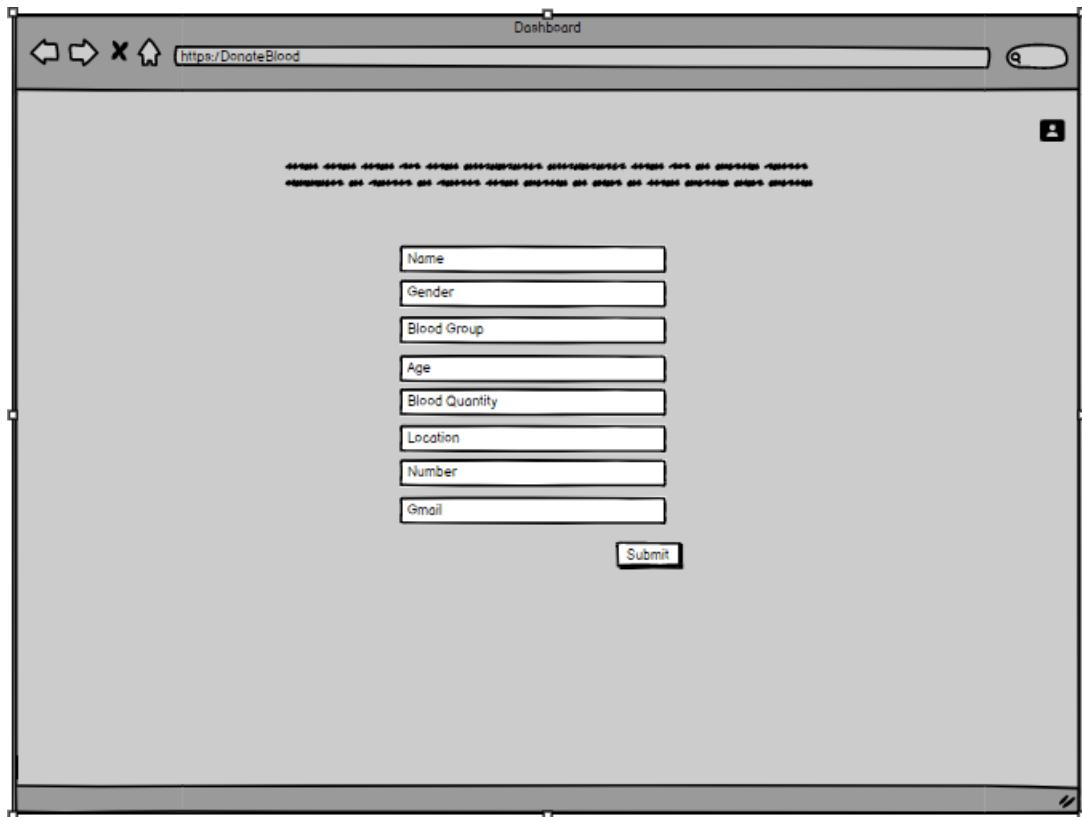


Figure 18 Activity Diagram Blood Request Management System

5.4.2 Design

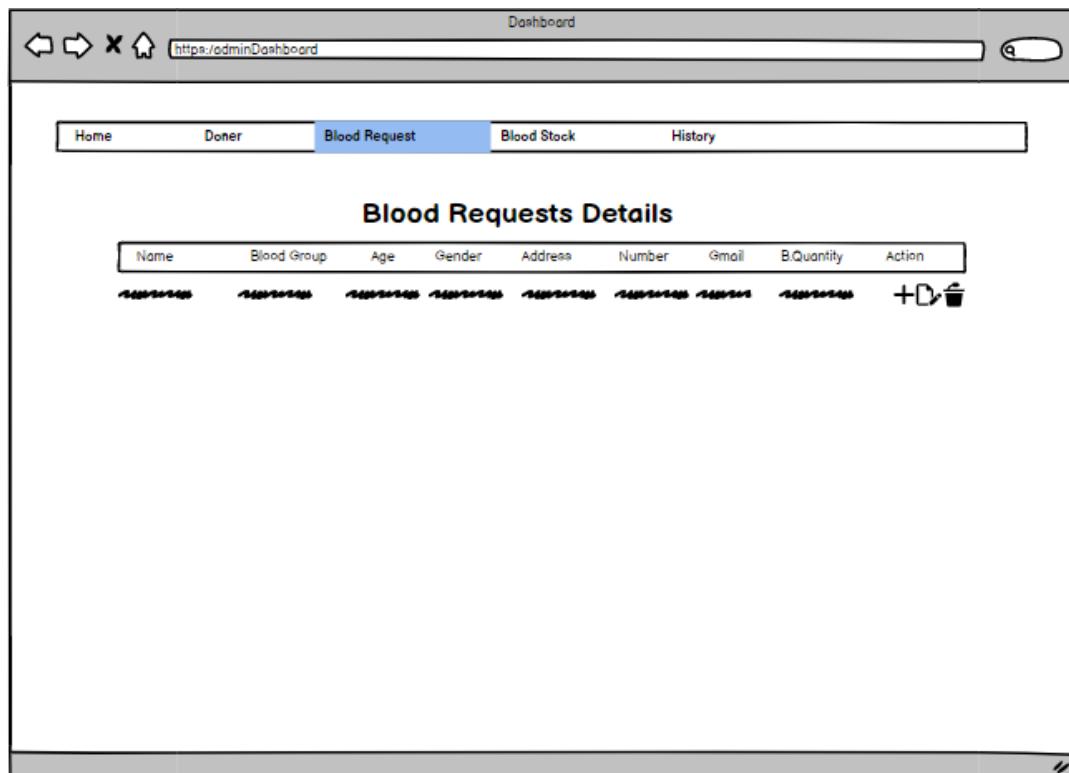


The screenshot shows a web browser window titled "Dashboard" with the URL "https://DonateBlood". The page contains a form for blood donation requests. The form fields are:

- Name
- Gender
- Blood Group
- Age
- Blood Quantity
- Location
- Number
- Gmail

A "Submit" button is located at the bottom right of the form area.

Figure 19 Design of request form



The screenshot shows a web browser window titled "Dashboard" with the URL "https://adminDashboard". The navigation bar includes links for Home, Doner, Blood Request (which is highlighted in blue), Blood Stock, and History. Below the navigation bar, the title "Blood Requests Details" is displayed. A table header row is shown with columns labeled: Name, Blood Group, Age, Gender, Address, Number, Gmail, B.Quantity, and Action. To the right of the table, there are three icons: a plus sign inside a circle, a square with a diagonal line, and a trash can.

Figure 20 Blood Request List

5.4.3 Use Case Diagram

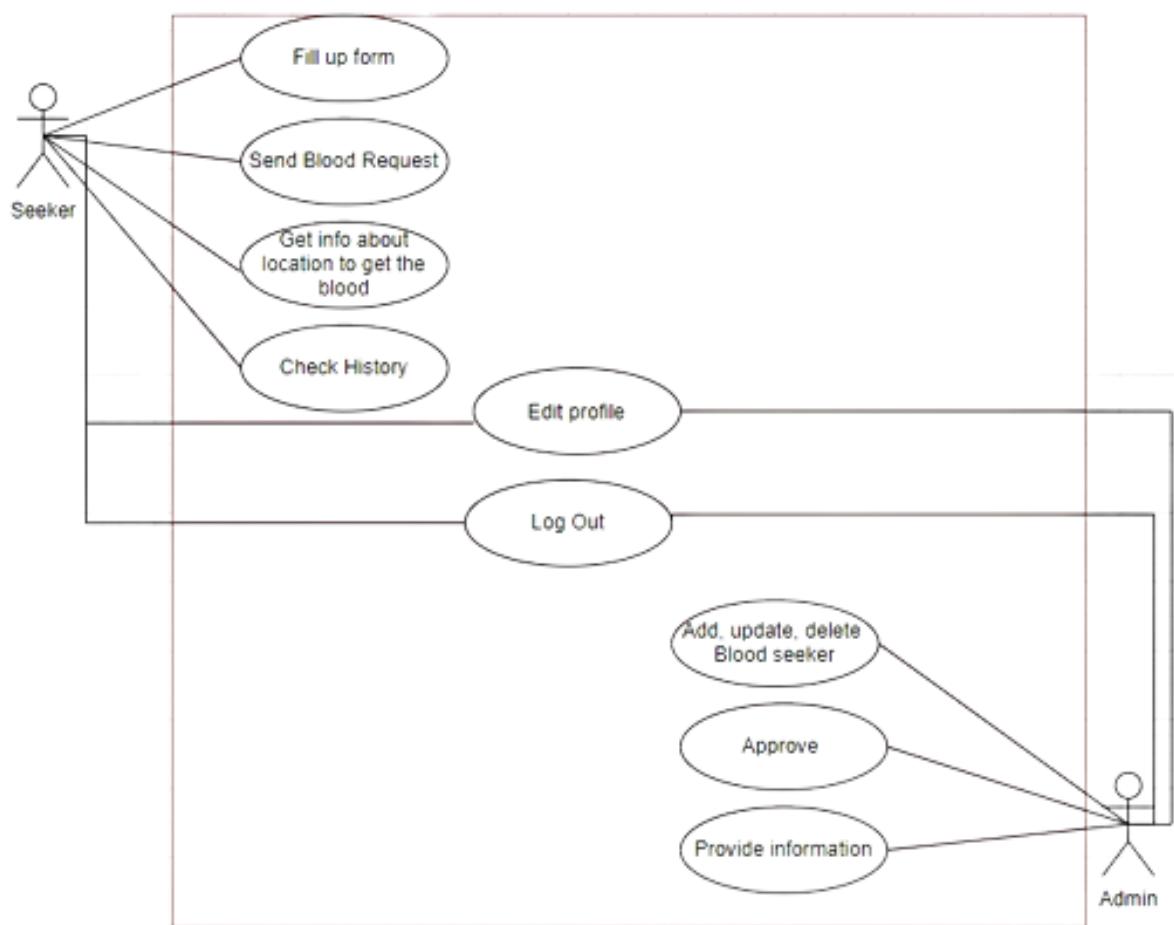


Figure 21 Use Case Diagram of Blood Request Management System

5.4.4 Sequence Diagram

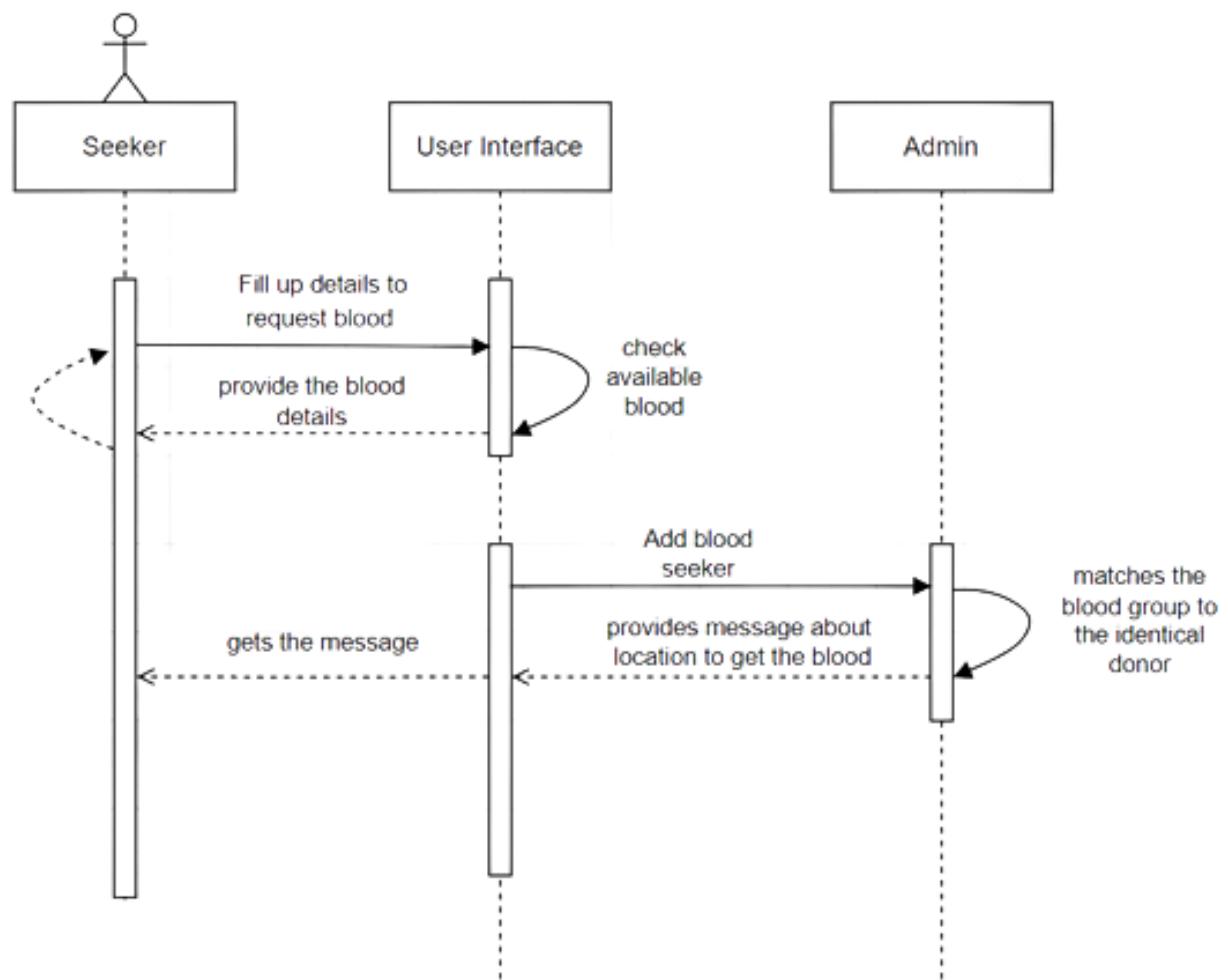


Figure 22 Sequence Diagram of Blood Request Management System

5.4.5 Testing

Test Case	Objective	Action	Expected Result	Result
BRMS-1	Check whether you can send blood request or not	Click on search donor	Navigates to search donor page	Success
BRMS-2	Check you can search donor or not	Select needed blood group and choose location available near you	Show donors by matching your search request	Success
BRMS-3	Check request button works or not	Click on request by selecting donor by matching your blood group and location	Give access to fill your details to request blood	Success
BRMS-4	Check all field works or not	Fill your all details	Shows no error	Success
BRMS-5	Check you can select options whom you blood needed for Like (Father, Brother etc.)	Select the option	Selected	Success
BRMS-6	Check whether you can send request message or not	Click the send request button	Will pop up some success dialogue box	Success

5.5 Notification Management System SRS

Req. Code	Req. Desc	Use Case
NMS-F-1	The system should allow user to notify message about the info about donor and seeker	Send Message
NMS-NF-1.1	Users will get message in mail	Check Message
NMS-UR-1.2	Admin should have the control over sending messages	Write Messages

5.5.1 Activity Diagram

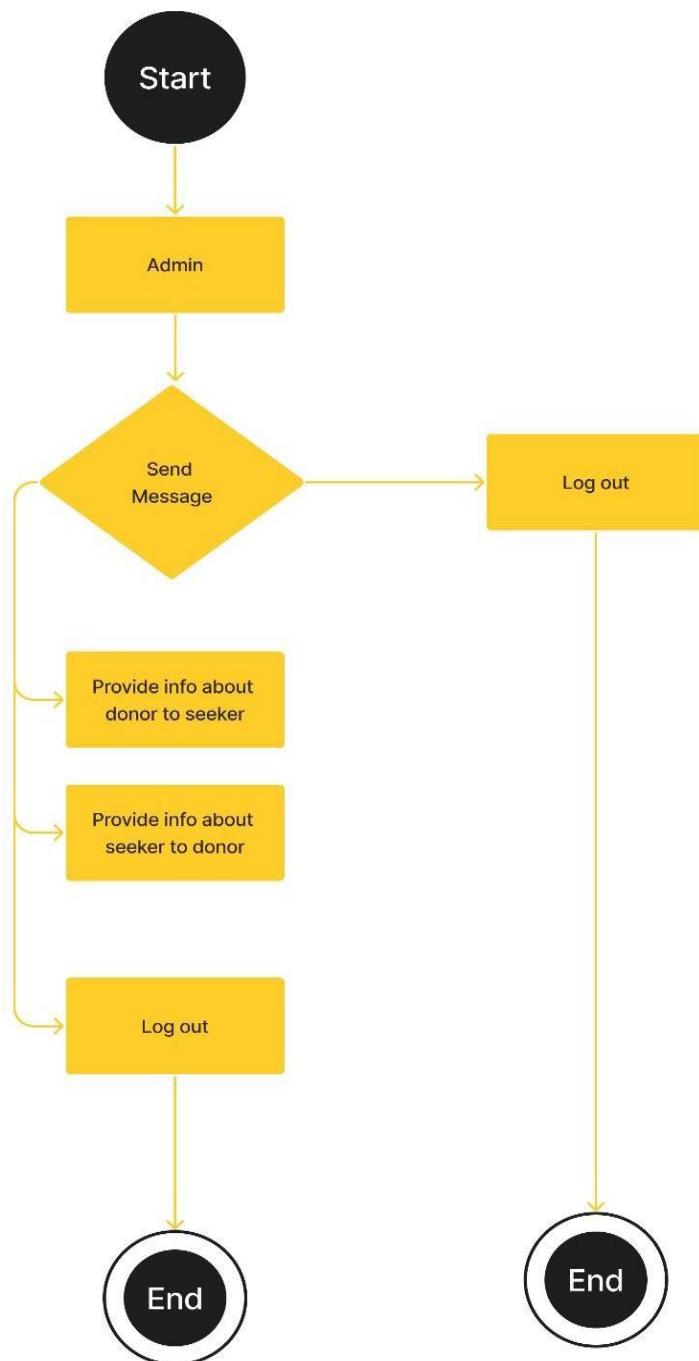


Figure 23 Activity Diagram of Notification Management System

5.5.2 Design

There is no particular design for sending emails like when seeker sends request to donor automatically system sends email to the donors.

5.5.3 Use Case Diagram

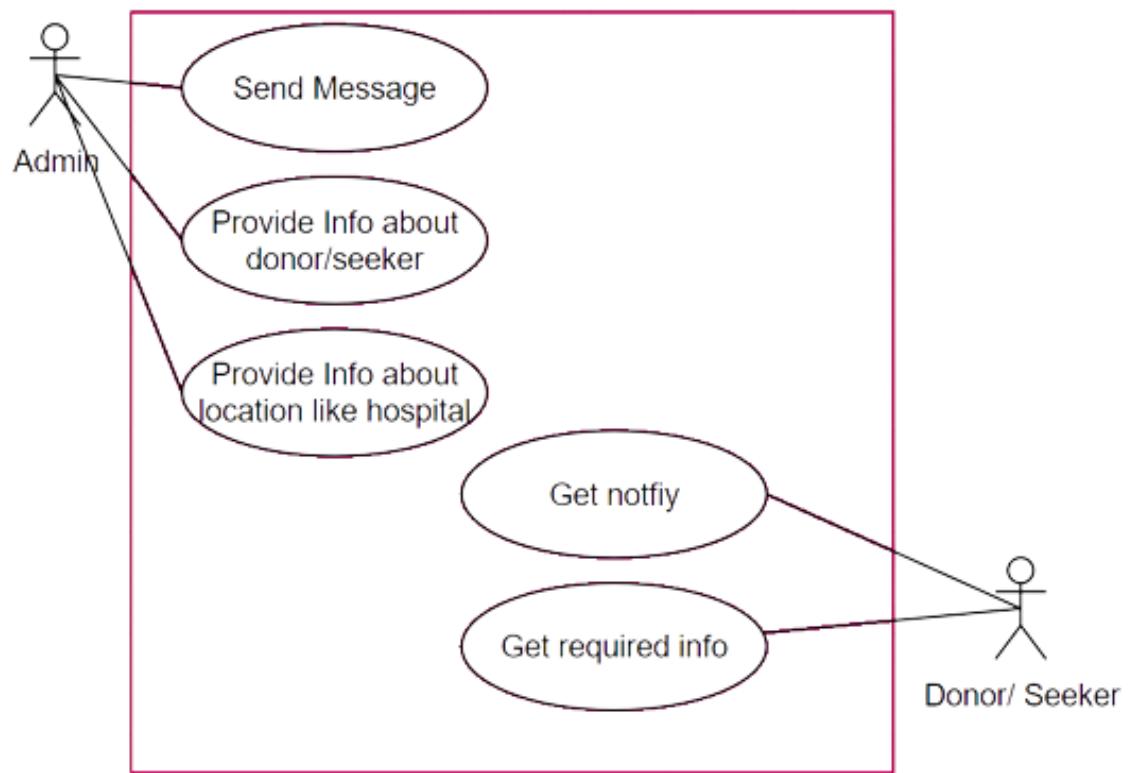


Figure 24 Use Case Diagram of Notification Management System

5.5.4 Sequence Diagram

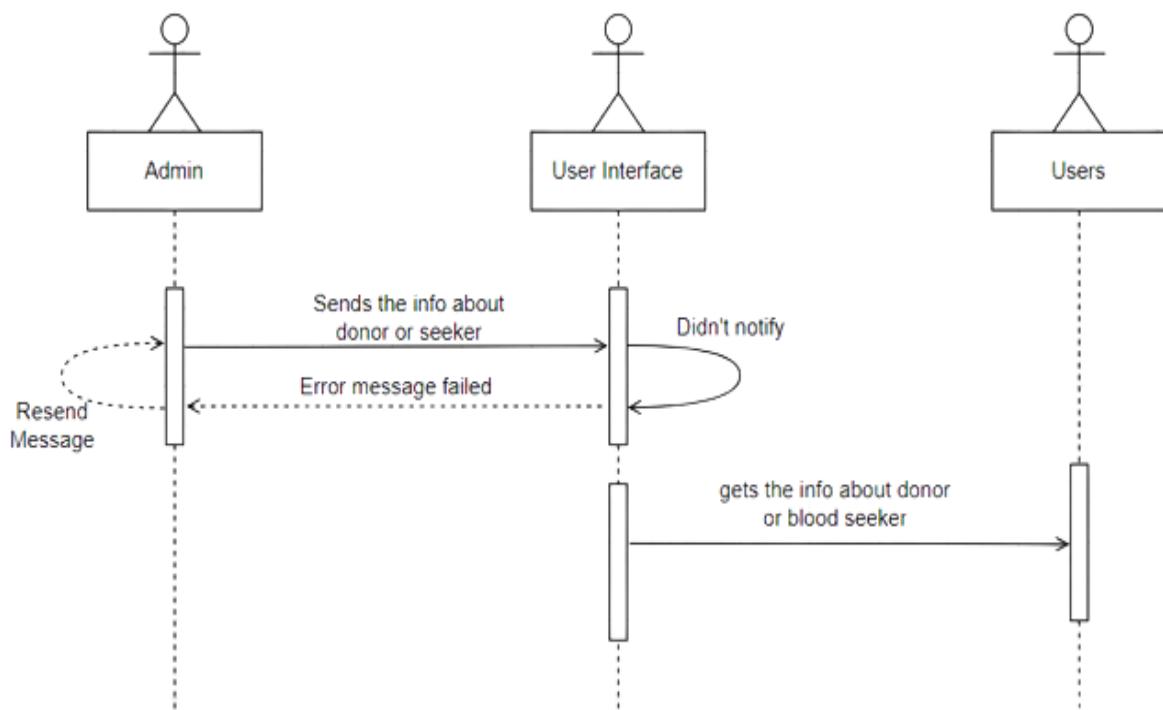


Figure 25 Sequence Diagram Of Notification Management System

5.5.5 Testing

Test Case	Objective	Action	Expected Result	Result
NMS-01	Check donor get request or not	Click on My account, similarly on blood request	Shows information of blood seeker	Success
NMS-02	Check email whether you get mail or not	Check your email inbox by your email which you register on web based blood bank	Shows email by admin email(alistamang00@)	Success
NMS-03	Check the details of blood seeker	Confirm the blood seeker is correct by calling the seeker by given number on email	valid information	Success

5.6 System Entity Relationship Diagram

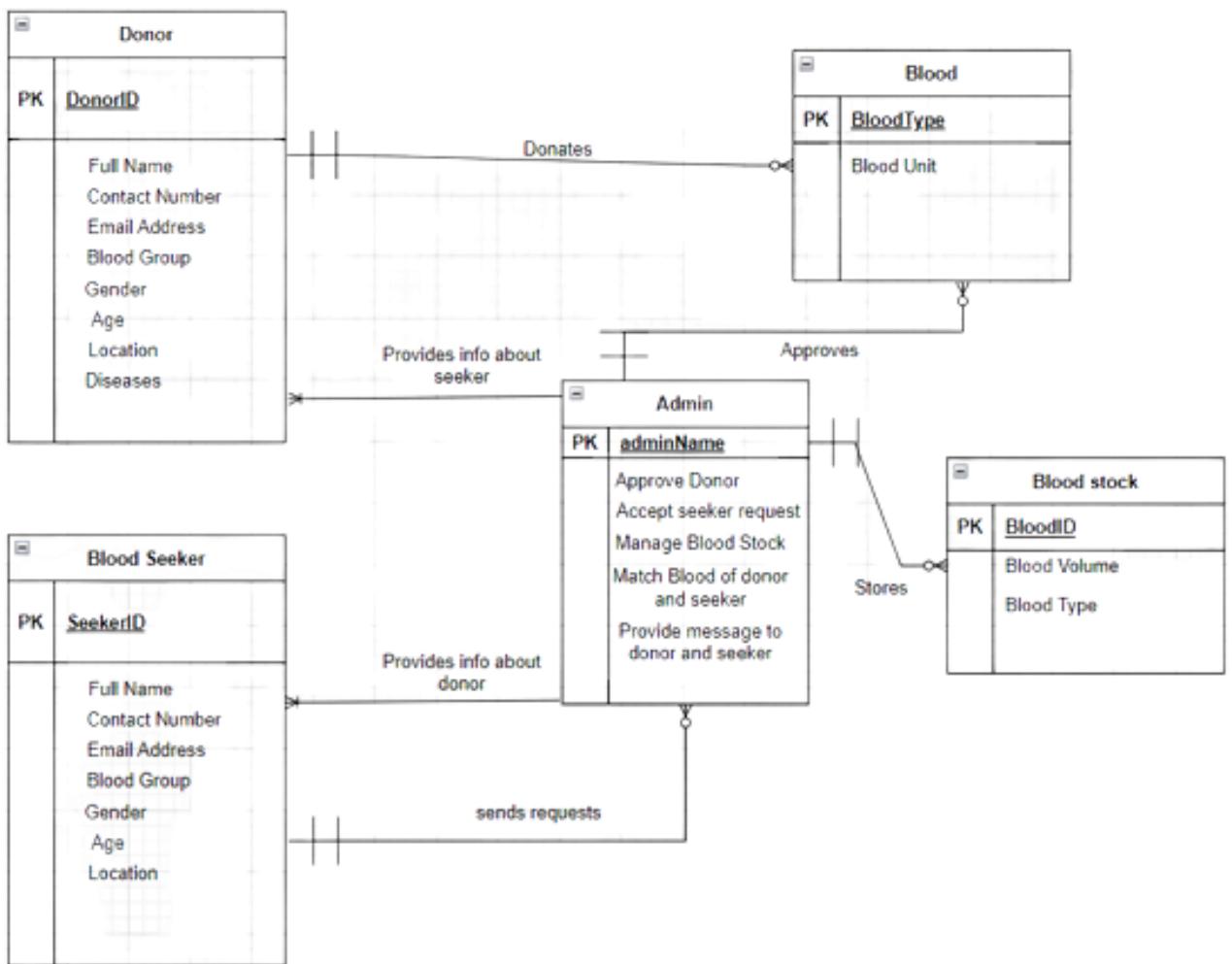


Figure 26 Entity Relationship Diagram of System

5.7 Additional Testing

Objective	Action	Expected Result	Result
Update Password of User	Click on change password through my account and enter the changes you want	Updated Successfully	Success
Update User Details	Enter the changes you want in update profile	Updated Successfully	Success
Check you can inquiry or not	Click on contact us then fill the valid details and relatable inquiry	Submitted Successfully	Success
As an admin check you can add blood group	Click on blood group shows on admin dashboard then create blood group which already exist	Already Exist	Success
As an admin check you can delete contact us query	Click on manage contact us navigator on admin dashboard the click on delete icon	Deleted	Success
Check you can edit pages or not	Click manage pages on dashboard the select on page the edit some few word	Changes on particular page	Success
Check whether contact us info can be changed or not	Click update contact info then fill the fields with valid details	Changes on email and phone numbers on front pages	Success

6. Conclusion

Web-based blood bank is web application which is made to provide information about donors where seekers can send request for blood by matching blood group and location. We all know that nowadays road accidents are happening frequently so in emergency they can use this web for their help. Basically this web is made for the needy people from which we can save lot of people. The aim of this project was to provide information to blood seekers about blood donors and it can be done by this project by providing details of donors through email. Another is it can give support to the patient because it exchanges information in a few seconds, it's easy to use and fast therefore which makes relief to patient's family. This project fulfills its objective by organizing database which contains the details of the donors and it is to search matching blood and location which makes easy for administrator.

Regarding the academic question the major advantages of this project is that is quick, easy to use and there will be no tackles to get the information of the donor for seeker Which will help people whom are in emergency and it will support the seekers family. The biggest issues that this web can't be used in rural area where there is not internet access, to access this website people needs to have proper internet and valid email. Other issue is that this project is made for to provide information so therefore people might not trust this project because it's not happening individually so there will be security issues for user. There will be always be trust issues by thinking their details might or might not leak. Though compared to traditional blood donation center it works immediately. It will be very effective if online blood banks increases and making treatment more accessible which will help the people who are in deathbed. It makes sure to provide blood in every location instantly so people don't have to be in pressure regarding the blood every time.

In conclusion, web-based blood bank is made to help people who needs people. Main theme of this project is to save people. Though journey to make this project was tough there were many things I have to change while doing this project like designs, artifact are not identical to the final result. Though web-based blood bank works properly even it's simple.

7. Critical Evaluation of the project

If I talk about the self-reflection by doing this project I'm disappoint at me because every time I sat to do project it didn't work the way I thought. At least I am able to ready the final product though it's not excellent but it is more or less good. Even while doing report or project I wasn't able to follow the methodology, gannt chart even if I think back that it was pretty good schedule for but I wasn't able to follow the schedule or methodology. Everyone thinks it's easy at first but when deadline hits it's hard to make proper project. There are lot of thing I wasn't able to in this project but it has simple and pretty good features. This highlights the need for effective project management and planning to ensure that the project stays on track and meets its goals.

I also acknowledge that there were things I could have done better in the project, but it has simple and pretty good features. This suggests that I am able to recognize the strengths and weaknesses of the project and am open to learning and improving in the future.

Overall, the critical evaluation shows that while the project may not have been perfect, it was a valuable learning experience for me. The project taught me the importance of effective planning and project management, and provided me with valuable skills and knowledge that I can use in the future.

8. Evidence of Project Management

8.1 Log sheet

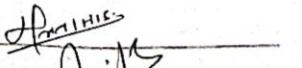
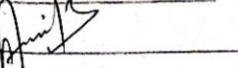
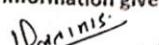
Faculty of Science and Engineering School of Mathematics and Computer Science		UNIVERSITY OF WOLVERHAMPTON	
PROJECT MANAGEMENT LOG			
First Name:	Alic	Surname:	Tamang
Student Number:	2059140	Supervisor:	Amrit Shrestha
Project Title: Web-based Blood Bank Month: September			
What have you done since the last meeting			
What do you aim to complete before the next meeting			
<ul style="list-style-type: none">- Start working on proposal- Research about Blood Bank			
Supervisor comments			
<ul style="list-style-type: none">- Topic Accepted- Analyse artifact regarding blood bank			
We confirm that the information given in this form is true, complete and accurate.			
Student Signature: 		Date: 09/25/2022	
Supervisor Signature: 		Date: 09/25/2022	

Figure 27 Log sheet 1

Faculty of Science and Engineering		UNIVERSITY OF WOLVERHAMPTON
School of Mathematics and Computer Science		
PROJECT MANAGEMENT LOG		
First Name: Ali's	Surname: Tamang	
Student Number: 2059140	Supervisor: Amit Shrestha	
Project Title: Web-based Blood Bank Month: November		
<p>What have you done since the last meeting</p> <p>- Started writing proposal on Blood Bank</p>		
<p>What do you aim to complete before the next meeting</p> <p>- Complete proposal work before submission</p>		
<p>Supervisor comments</p> <p>- Incomplete Report - Research more about literature review</p>		

We confirm that the information given in this form is true, complete and accurate.

Student Signature:  Date: 11/13/2022

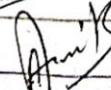
Supervisor Signature:  Date: 11/13/2022

Figure 28 Log Sheet 2

PROJECT MANAGEMENT LOG	
First Name:	Aris
Student Number:	2059140
Project Title:	Month:
What have you done since the last meeting <ul style="list-style-type: none"> - Researched on literature review regarding Blood Bank - Worked on proposal 	
What do you aim to complete before the next meeting <ul style="list-style-type: none"> - To work on supervisor's feedback 	
Supervisor comments <ul style="list-style-type: none"> - Introduction is not enough - Aim and objective should be separate - Reference is not enough on report 	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: Amit Shrestha

Date: 11/18/2022

Supervisor Signature: Amit Shrestha

Date: 11/18/2022

Figure 29 Log Sheet 3

PROJECT MANAGEMENT LOG

First Name: Alis

Surname: Tamang

Student Number: 2059140

Supervisor: Amit Shrestha

Project Title: Web-based Blood Bank Month: December

What have you done since the last meeting

- Coordinated on report writing

What do you aim to complete before the next meeting

- Research on research paper about blood bank

Supervisor comments

- Need more study on research paper

We confirm that the information given in this form is true, complete and accurate.

Student Signature: Alis Tamang

Date: 12/04/2022

Supervisor Signature: Amit Shrestha

Date: 12/04/2022

Figure 30 Log Sheet 4

PROJECT MANAGEMENT LOG	
First Name: Alis	Surname: Tamang
Student Number: 2059140	Supervisor: Amrit Shrestha
Project Title: Web-based Blood Bank Month: December	
What have you done since the last meeting	
<p>- Wrote three similar system</p>	
What do you aim to complete before the next meeting	
<p>- To work on supervisors feedback - Research on artifacts and design</p>	
Supervisor comments	
<p>- Reference not enough in report - Compare and elaborate the similar system</p>	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: _____

Date: 12/18/2022

Supervisor Signature: _____

Date: 12/18/2022

Figure 31 Log Sheet 5

PROJECT MANAGEMENT LOG

First Name: Alis

Surname: Tamang

Student Number: 2059140

Supervisor: Amrit Shrestha

Project Title: Web-based Blood Bank Month: December

What have you done since the last meeting

- Studied about research paper

What do you aim to complete before the next meeting

- To complete the report

Supervisor comments

- Write at least 3 similar system

We confirm that the information given in this form is true, complete and accurate.

Student Signature: Amrit Shrestha

Date: 12/11/2022

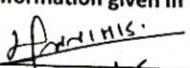
Supervisor Signature: Amrit Shrestha

Date: 12/11/2022

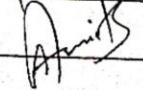
Figure 32 Log Sheet 6

PROJECT MANAGEMENT LOG	
First Name: Alis	Surname: Tamang
Student Number: 2059140	Supervisor: Amrit Shrestha
Project Title: Web-based Blood Bank Month: January	
What have you done since the last meeting	
<ul style="list-style-type: none"> - Completed Report - Completed wireframe 	
What do you aim to complete before the next meeting	
<ul style="list-style-type: none"> - To complete all the designs - Work on development 	
Supervisor comments	
<ul style="list-style-type: none"> - SRS is not complete - Need to complete at least three modules 	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: 

Date: 01/16/2023

Supervisor Signature: 

Date: 01/16/2023

Figure 33 Log sheet 7

PROJECT MANAGEMENT LOG	
First Name: Alis	Surname: Tamang
Student Number: 2059140	Supervisor: Amrit Shrestha
Project Title: Web-based Blood Bank Month: February	
What have you done since the last meeting	
<ul style="list-style-type: none">- Development part of the project- Reconstructed Artifact	
What do you aim to complete before the next meeting	
<ul style="list-style-type: none">- To complete user management system	
Supervisor comments	
<ul style="list-style-type: none">- Speed up development part	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: A. Tamang

Date: 02/26/2023

Supervisor Signature: Amrit Shrestha

Date: 02/26/2023

Figure 34 Log Sheet 8

PROJECT MANAGEMENT LOG	
First Name:	Alis
Surname:	Tamang
Student Number:	2059140
Supervisor:	Amrit Shrestha
Project Title:	Web based blood bank
Month:	April
What have you done since the last meeting	
<ul style="list-style-type: none">- Done all the modules of project	
What do you aim to complete before the next meeting	
<ul style="list-style-type: none">- Work on supervisor's comment	
Supervisor comments	
<ul style="list-style-type: none">- Add 404 page- Add validation and blood group- Send email while requesting	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: A. Tamang

Date: 04/03/2023

Supervisor Signature: A. Shrestha

Date: 04/03/2023

Figure 35 Log Sheet 9

PROJECT MANAGEMENT LOG	
First Name: Alis Tamang	Surname:
Student Number: 2059140	Supervisor: Amrit Shrestha
Project Title: Web-based Blood Bank	Month: January
What have you done since the last meeting	
<ul style="list-style-type: none"> - Done SRS - Completed at least three modules 	
What do you aim to complete before the next meeting	
<ul style="list-style-type: none"> - To complete all modules - To complete sequence diagram of the system 	
Supervisor comments	
<ul style="list-style-type: none"> - Figure Name - Add more SRS - Recreate Sequence Diagram 	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: Amrit Shrestha

Date: January 22 - 2023

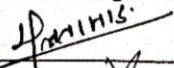
Supervisor Signature: Amrit Shrestha

Date: January 22 - 2023

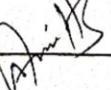
Figure 36 Log Sheet 10

PROJECT MANAGEMENT LOG	
First Name: Alis	Surname: Tamang
Student Number: 2069140	Supervisor: Amrit Shrestha
Project Title: Web Based Blood Bank Month: April	
What have you done since the last meeting	
<ul style="list-style-type: none"> - Created 404 page - Added blood group on admin system 	
What do you aim to complete before the next meeting	
<ul style="list-style-type: none"> - Validations of system - Work on feedback 	
Supervisor comments	
<ul style="list-style-type: none"> - Validation Overall - Work on Email function 	

We confirm that the information given in this form is true, complete and accurate.

Student Signature: 

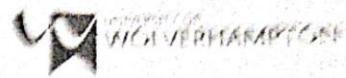
Date: 04/16/2023

Supervisor Signature: 

Date: 04/16/2023

Figure 37 Log Sheet 11

Faculty of Science and Engineering
School of Mathematics and Computer Science



PROJECT MANAGEMENT LOG

First Name:	Ahs	Surname:	Tamang
Student Number:	2050110	Supervisor:	Amrit Chawla
Project title: Web-based Blood Bank Month: April			

What have you done since the last meeting

- Worked on validation
- Worked on email function

What do you aim to complete before the next meeting

- Work on supervisor's feedback

Supervisor comments

- Work on FYP Report

We confirm that the information given in this form is true, complete and accurate.

Student Signature: Hanis

Date: 04/30/2023

Supervisor Signature: Amrit

Date: 04/30/2023

Figure 38 Log Sheet 12

8.2 Gantt Chart

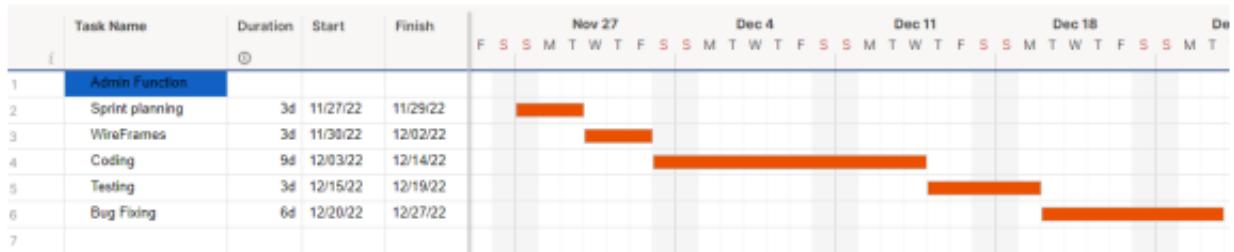


Figure 3 Gantt Chart 1

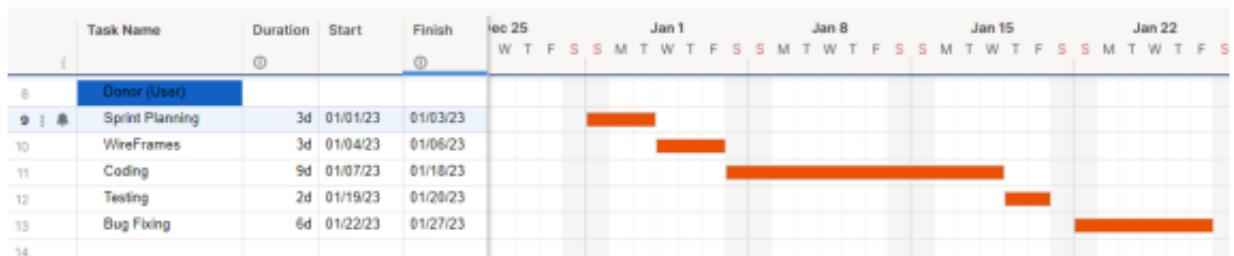


Figure 4 Gantt Chart 2

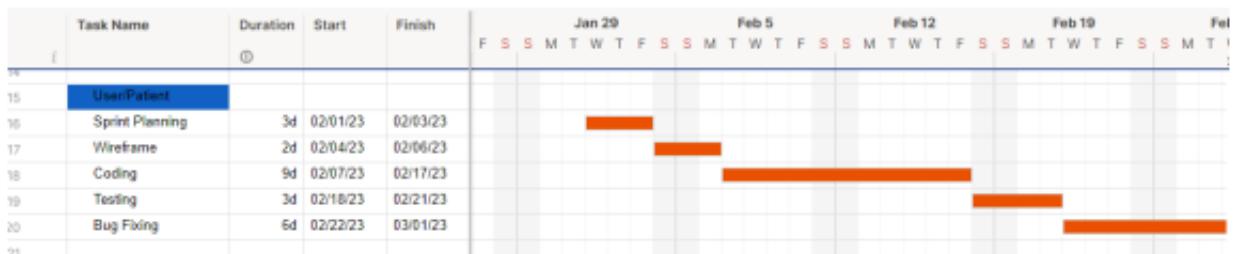


Figure 5 Gantt Chart 3

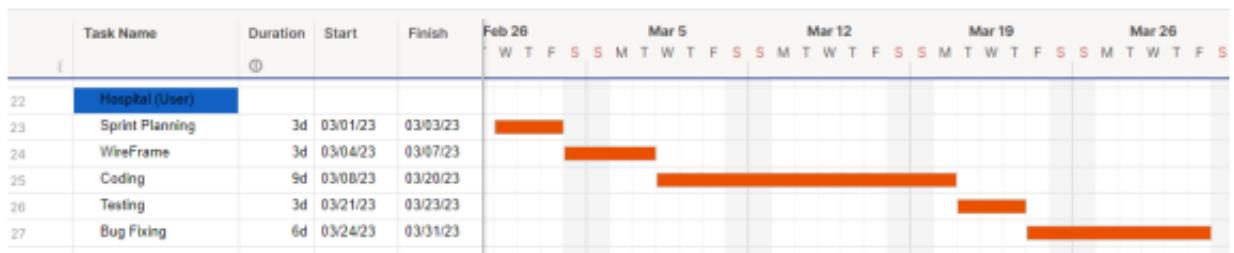


Figure 6 Gantt Chart 4

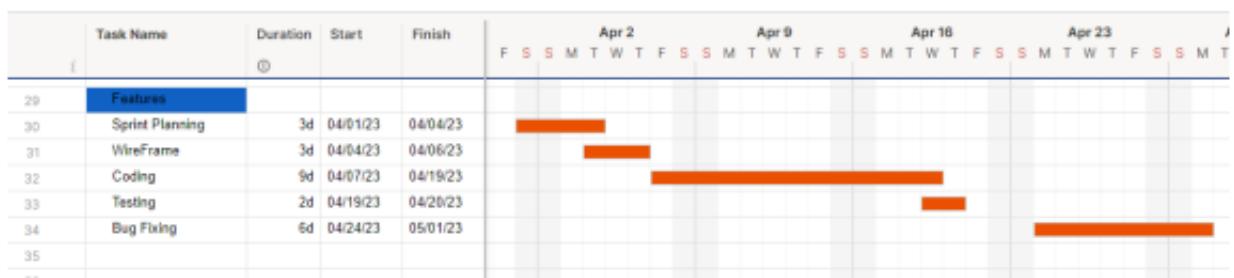


Figure 39 Gantt Chart

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10. Appendices

10.1 User Testing Survey Web-Based Blood Bank

How would you rate your overall experience with our web-based blood bank?

 Copy

5 responses

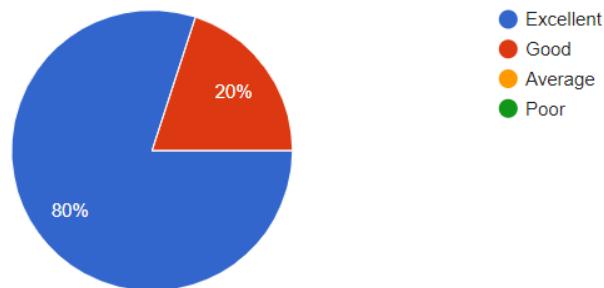


Figure 40 Survey 1

How user-friendly did you find our website?

 Copy

5 responses

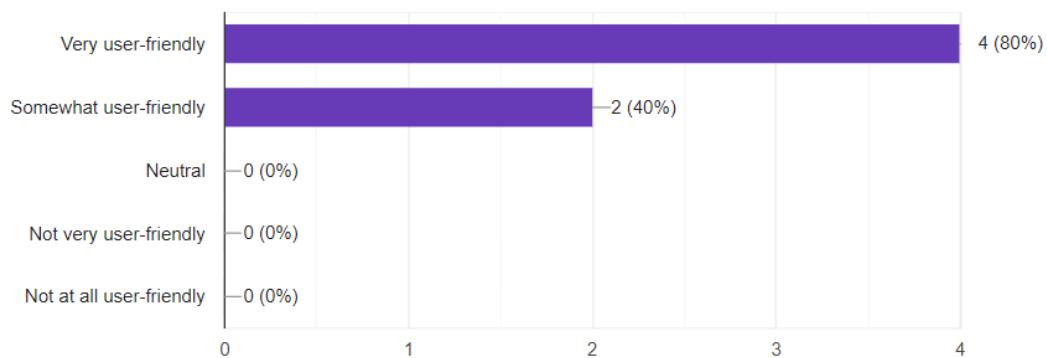


Figure 41 Survey 2

Did you find it easy to navigate through the website?

 Copy

5 responses



Figure 42 Survey 3

How would you rate the design and layout of our website?

 Copy

5 responses

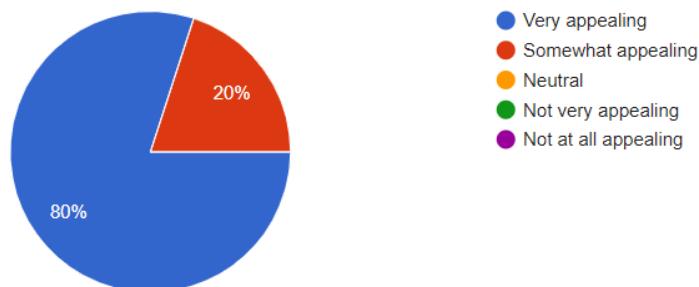


Figure 43 Survey 4

Were you able to find the information you were looking for on our website?

 Copy

5 responses

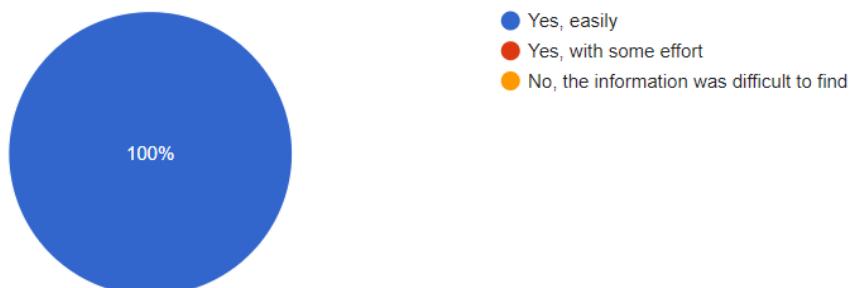


Figure 44 Survey 5

How satisfied were you with the speed and performance of our website?

 Copy

5 responses

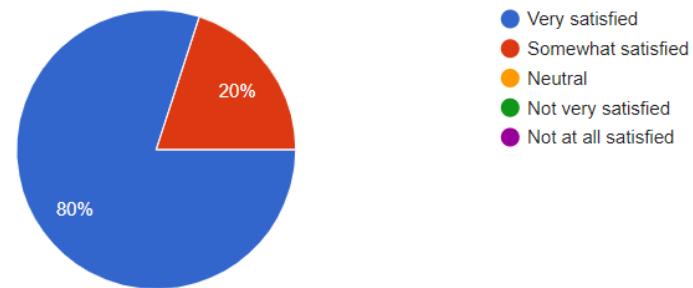


Figure 45 Survey 6

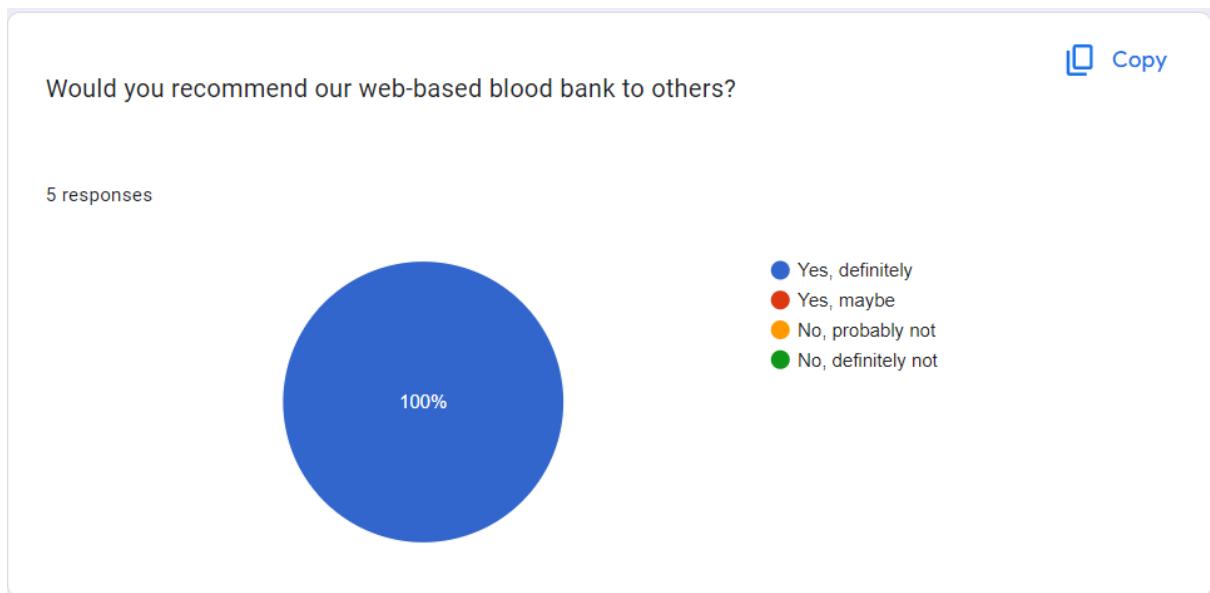


Figure 46 Survey 7

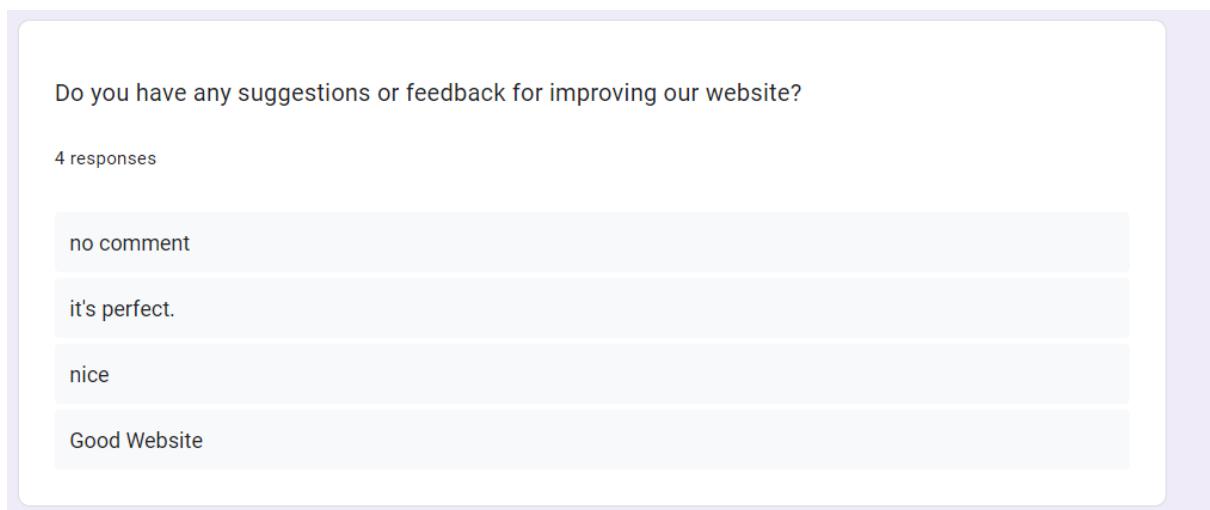


Figure 47 Survey8

10.2 Designs

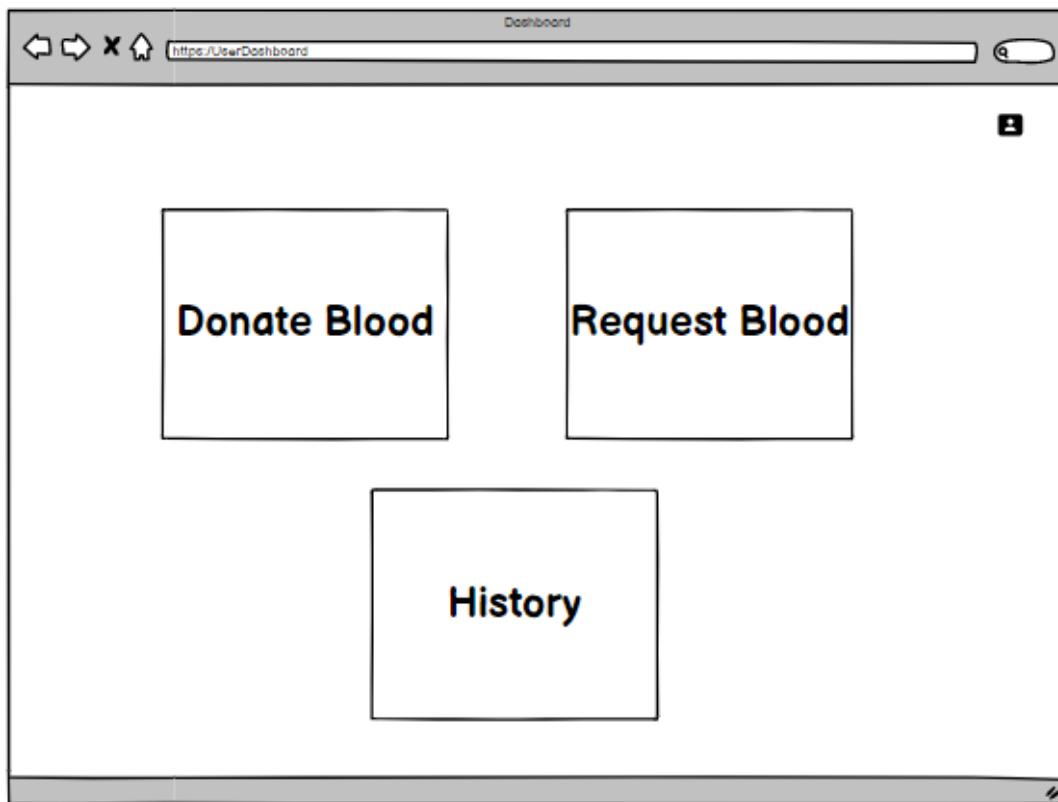


Figure 48 Raw Design 1

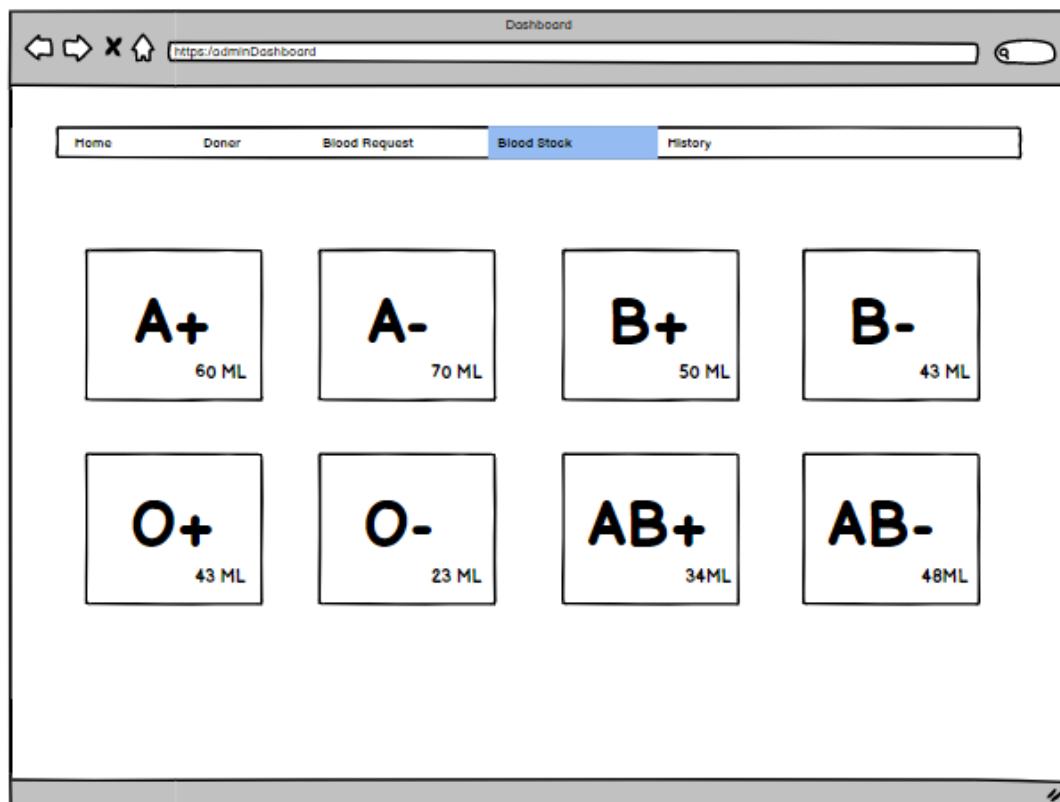


Figure 49 Raw Design 2

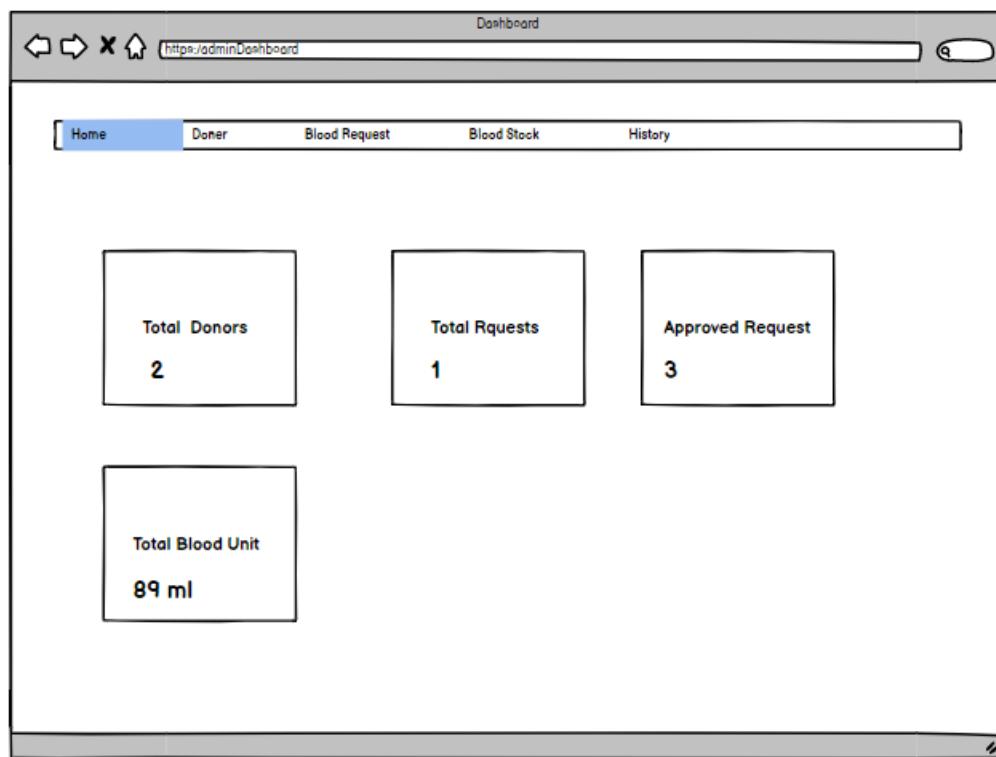


Figure 50 Raw Design 3

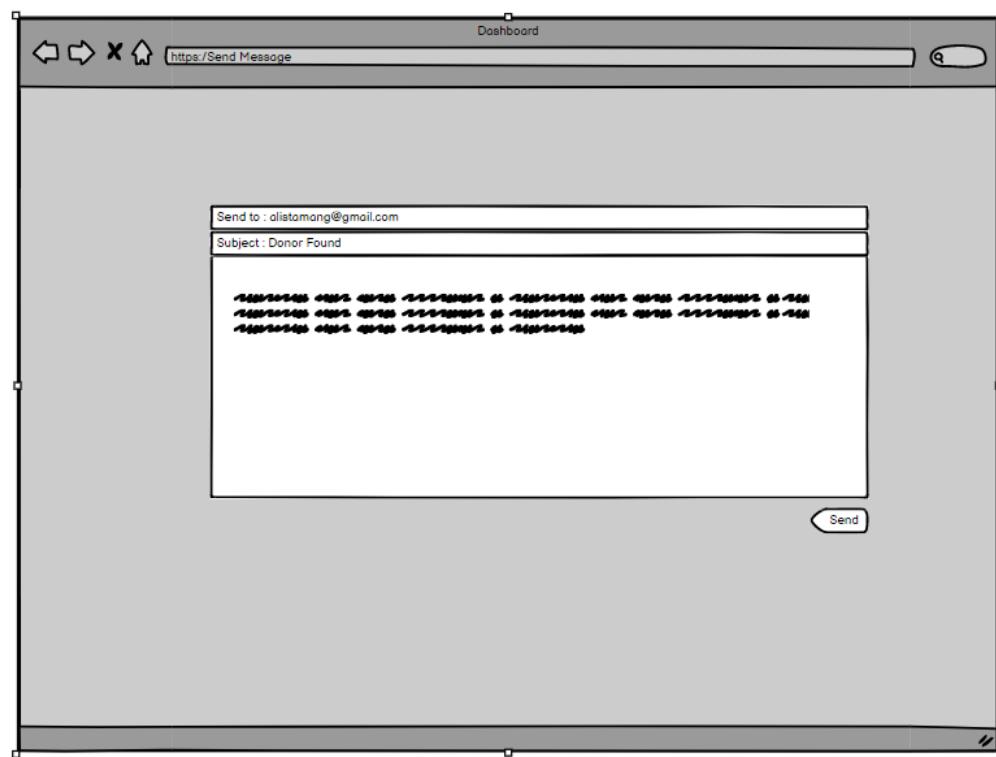


Figure 51 Raw Design 4

The screenshot shows the registration form for the Web Blood Bank. The fields filled are:

- Full Name: Dummy
- Mobile Number: 123
- Email Id: dummy mail (highlighted in blue)
- Age: 20
- Gender: Male
- Blood Group: A+
- Address: Baglung

A validation error message is displayed above the Email Id field: "Please include an '@' in the email address. 'dummy mail' is missing an '@'." There is also a small upward arrow icon next to the Address field.

Figure 52 Registration Validation Test

The screenshot shows the login form for the Web Blood Bank. The fields filled are:

- Email ID: dikchyand
- Password:

A validation error message is displayed above the Email ID field: "Don't have an account? Create one now".

Figure 53 Login Validation test

The screenshot shows an email inbox with two messages:

- Verify your email for Blood Bank** (from noreply@bloodbank-ba7bd.firebaseio.com) - Sent on Sat, May 13, 9:15 PM (3 days ago). The message body is: "Hello, Follow this link to verify your email address. https://bloodbank-ba7bd.firebaseio.com/_/auth/action?mode=verifyEmail&oobCode=UQGuJZl_tYycoDWVxkuCuqmPlz".
- noreply@bloodbank-ba7bd.firebaseio.com to me** (from noreply@bloodbank-ba7bd.firebaseio.com) - Sent on Sat, May 13, 9:17 PM (3 days ago). The message body is: "Hello,
Follow this link to verify your email address.
https://bloodbank-ba7bd.firebaseio.com/_/auth/action?mode=verifyEmail&oobCode=ftxkLCTquaZDqptZQfbgNjNFZYAhwCcbBK5NyG8p5QAAAGIFb2WfA&apiKey=AlzaSyAqsxEVZ_yx0jgJLGRGnBvijPGBb_ipbas&lang=en

At the bottom, there are "Reply" and "Forward" buttons.

Figure 54 Email Verification test