



Daffodil
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Hema-Track: Smart Blood Bank Administration

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A thesis submitted in partial fulfillment of the requirement for the degree of

Bachelor of Science in Software Engineering

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APPROVAL

APPROVAL

This Project titled on "Hema-Track: Smart Blood Bank Administration" submitted by **Masfikur Rahaman (ID: 202-35-3118)** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

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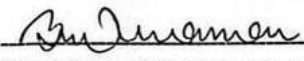
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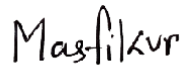


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DECLARATION

I declare that I have completed this project under the guidance of Mr. Khalid Been Badruzzaman Biplob, Senior Lecturer in the Department of Software Engineering at Daffodil International University. I also confirm that I have not submitted this project, or any portion of it, for any other degree.



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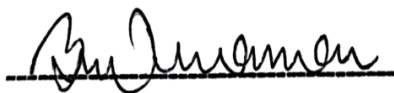
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Abstraction

Hema-Track will provide scientifically backed agricultural information to Blood Donors, empowering them to produce high-quality crops. By exercising a bit of caution, Blood Donors can safeguard their goals and build confidence. This system aims to enhance the agricultural lives of Blood Donors.

Hema-Track offers comprehensive blood-related data in both static and dynamic formats. The platform is designed to help Blood Donors become more knowledgeable and efficient in their practices. Its services are categorized into various areas, including Pre-Cultivation, Cultivation, Post-Cultivation, Weather Forecasting, Crop Information, Knowledge Bank, Blood Donor Chatting System, and Extension Access. Blood Donors can gain insights into agricultural practices and crop cultivation. This app is particularly useful as it allows Blood Donors to ask questions and receive answers.

Chapter 1. Introduction

Experts suggest that blood constitutes approximately 7 to 8% of a person's body weight. Traditionally, blood donation services and blood banks across the global medical sector collect blood in a standard manner. A blood bank is defined as a facility where blood, collected from donation drives, is processed and stored for up to four weeks before it is used for transfusions. However, in Bangladesh, blood banks are still unable to connect to stored blood supplies and donors in real time. In contrast, Bangladesh sees a substantial number of blood units donated annually on average.

A Software Requirements Specification (SRS) is a document that outlines what the software will do and how it is expected to perform. It details the functionality needed to meet the requirements of all stakeholders, including both business and user needs. The introduction of the SRS provides an overview of the document, including its purpose, scope, definitions, acronyms, abbreviations, references, and a summary of the SRS contents. The primary goal of this document is to collect, analyze, and offer a comprehensive understanding of the blood management system by thoroughly defining the problem statement. Additionally, it focuses on the capabilities required by stakeholders and their specific needs, while also outlining the high-level features of the product. This document provides the detailed requirements necessary for the system. Over time, there has been a steady improvement in blood collection.

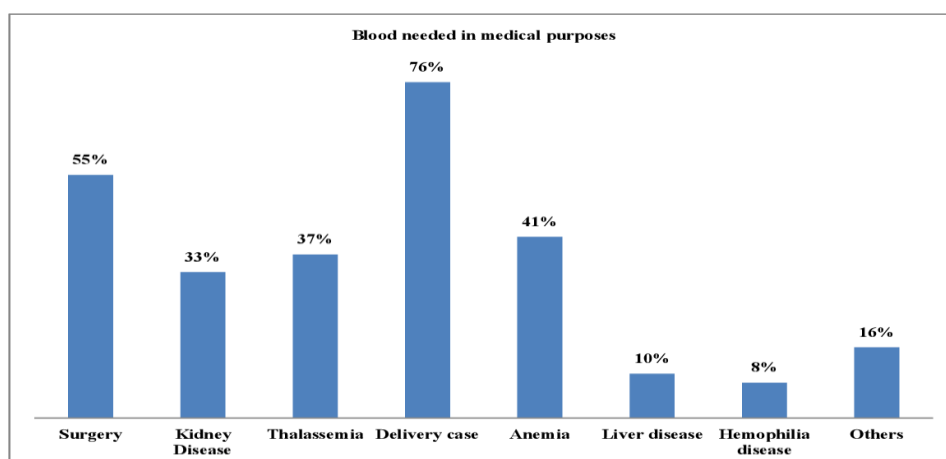
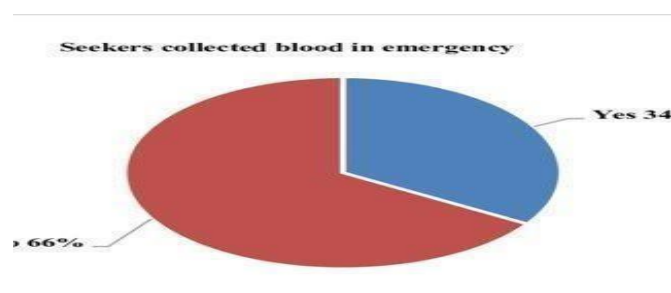


Figure 5. Blood needed in different medical purposes

An analysis of blood donation differences



Annual enhancement of blood donation

To efficiently manage data related to blood donors, recipients, donation programs, and blood inventories, a blood donation management system could be developed. This system aims to streamline the process of locating blood in emergencies through automation. It will allow potential recipients to quickly find available donors and make blood requests. The system will feature a centralized database for donors and blood stocks, provide real-time data storage and retrieval, and support the promotion of blood donation programs.

The development of this visually appealing web application will utilize HTML, CSS, Bootstrap, PHP, and Laravel, with MySQL as the database management system. Additionally, the Headwind SMS Communicator will enable blood donors to receive notifications via text message when their blood is needed or when their donation has been used to save a life. The capability to send and receive SMS through a PC with a gateway device adds to the system's functionality. This management system not only attracts new donors but also keeps current donors engaged, potentially saving many lives in the future. It can be employed by Blood Banks to monitor donors and manage blood supplies during emergencies.

An adult donor does not suffer any harm from giving blood, as the human body can regenerate blood within a few days, and this process does not affect metabolism. Blood is crucial for patients in various situations, including emergencies, and it is essential for those with specific needs, such as pregnant women. Because blood is not always readily available, patients need to have their blood type on hand, as a lack of it can be life-threatening.

Blood is categorized into four groups: O, AB, B, and A. For successful transfusions, it is critical that the donor's blood type matches the recipients. Mismatched blood types can lead to treatment failure and potentially fatal consequences. The O blood group is known as the universal donor type because it can be given to any blood type, while the AB blood group is considered the universal receiver as it can accept blood from any type.

Blood has a limited storage life, and the traditional method of manually matching and contacting donors is inefficient and prone to errors. Without a centralized database, tracking donor information is challenging, and records can be lost or corrupted due to accidental deletions or disasters. Inconsistent records can lead to mistakes, and if a donor has given blood elsewhere, there is no way to verify their donation history without a certificate. Consequently, donors are treated as new when they donate at a different facility.

Keeping accurate records of blood types in a bank is difficult without an automated management system. Additionally, there is no system to alert when blood supplies are insufficient or depleted. Blood cannot be stored indefinitely, making continuous donations vital. Despite the encouragement to donate blood, many blood banks lack necessary resources. It is crucial for authorities to ensure that blood is properly screened before collection. Donating blood is a moral responsibility, and it is essential to contribute without hesitation to support those in need.

Problem statement

In 2014, the Blood Bank Management service was operated manually and collected 300,000 units of blood. This marked the beginning of blood collection management. By 2018, the volume of collected data had nearly doubled, according to statistics from the Bangladesh Ministry of Health. This significant increase underscores the challenges of managing such a large volume of data manually, as existing methods are not sufficiently effective or efficient for healthcare delivery.

As a result, the need arose to develop a more efficient digital solution to replace outdated manual processes in blood transfusion management. The manual approach presents several issues, including the potential for improper storage of donor data due to human error or natural disasters. Multiple records for the same donor can lead to inaccuracies, and there is no centralized database for voluntary donors.

Finding blood in emergencies remains challenging, as the current system relies on manually contacting and verifying each donor. Without a centralized database, blood banks maintain separate donor registries, and if a donor contributes to multiple institutions, their history is not easily accessible unless they carry a donation certificate. Accurate tracking of blood types and quantities is hindered by the lack of an automated management system.

To address these challenges, we developed the Blood Bank and Donor System project, which operates online. Leveraging the Internet for connectivity, this platform offers an efficient solution for managing blood donation and supply. The goal of the Blood Bank and Supplier Program is to ensure public welfare by providing access to all blood types and connecting willing donors with those in need. By registering on our website, potential donors can contribute when needed, helping to improve the management and availability of blood supplies.

We propose developing a blood donor management system to streamline and automate the process of locating blood during emergencies, while consistently safeguarding the information of blood donors, recipients, donation programs, and blood stock levels in the blood bank. The objectives of this system include:

1. **Quick Donor and Recipient Matching:** Enable rapid identification of available donors, potential recipients, and submission of blood requests.
2. **Platform Development:** Create a platform for promoting and marketing blood donation campaigns through various channels, including social media.
3. **Centralized Database:** Establish an integrated, synchronized database for blood stock and donors across the entire region, enhanced by dashboard displays for participating physicians.
4. **Efficient Management:** Provide effective management of donor and bloodstock information to the blood bank, ensuring proper tracking and utilization.

Finding the required blood in an emergency is often challenging and burdensome. The current method of advertising on television and in newspapers is inefficient, leading to significant difficulties in locating the necessary blood. This inefficiency is due to the limitations of the existing system and highlights the need for improvement.

Blood banks currently lack a centralized database, complicating the manual management of donor records. Tracking the exact quantity of each blood type without an automated system is problematic. In the manual process, donors must be manually searched for, matched, and contacted via phone, with no centralized record-keeping. Donor information may be insecure, prone to loss or misplacement due to human error or natural disasters, and multiple records for the same donor can lead to mistakes.

If a donor contributes blood at a different hospital without carrying their donation certificate, no prior records are available, and they are treated as new donors. Furthermore, there is no system to alert relevant parties when blood supplies are insufficient or when blood is nearing expiration. Additionally, there is currently no effective way to promote blood donation programs within the community.

To efficiently manage and quickly access information for blood transfusions during emergencies and address key donor management challenges, this system provides the following user access points:

1. **Emergency Blood Retrieval:** Streamlines and speeds up the process of locating blood in urgent situations.
2. **Donor and Recipient Management:** Monitors and manages data for blood donors and recipients.
3. **Program and Stock Information:** Supplies details about blood donation programs, current blood stock levels, and quantities available in the blood bank.

This system functions as an integrated blood bank and donor management tool, designed to enhance the efficiency of emergency blood searches and improve oversight of blood-related data.

The dashboard, which is part of the system above, is showing the following data.

1. Total Contributors
2. Total Number of Women Contributors
3. All Male Donors
4. Total Unfinished Business (A+)
5. Complete Awaiting Requests (A-)
6. Total Unfinished Business (B+)
7. Complete Awaiting Requests (B-)
8. Pending Requests Total (AB+)
9. All Unfinished Requests (AB-)
10. Total Unfinished Business (O+)
11. Complete Awaiting Requests (O-)
12. Level of blood count for every blood type

The dashboard provides a comprehensive summary of all the data that is gathered by the system. Requests can be sent to all donors simultaneously by the administration if the blood count level drops below the preset level. A real-time inventory monitoring solution for the blood system may be developed using the dashboard, giving all stakeholders visibility into the amounts of blood components .

The web system includes the primary pages and features. ****Provider:**** New donors can sign up using the registration form provided on our platform. Once registered, a user's information is promptly stored in the database. Users can update their registration details anytime to reflect changes in their personal information or their decision regarding blood donation, such as moving or opting out.

Find a donor

With the help of this technology, potential receivers may swiftly locate willing donors and submit requests for blood.

With Text It message Communicator, blood donors can receive text messages anytime their contribution saves a life or when blood is needed. It is an application that lets you use a phone to send and receive messages on a PC.

The system offers camp details and instructions to hold blood camps inside this page in order to increase blood collection.

The system administrator has the ability to log in and make modifications to the system. One administrator will be in charge of this system, and they will promptly manage the blood request-response procedure and update donors' accounts.

About donation :

Donors will receive information from it. People are able to learn more about the gifts. Additionally, it will enable the user to gain insight prior to registering on the system.

Through Us

Anyone requiring assistance in organizing a blood donation event can do so by submitting a request through this link.

Contact Us

Using this form, donors and recipients of blood products can share their thoughts and experiences. Giving additional information will be beneficial in encouraging contributors to sign up for the system. Compatibility with a variety of web browsers and operating systems is limited. primarily concentrated on the Windows operating system and the Chrome browser.

Chapter 2. Background

Blood is still a scarce resource that is required for a number of procedures and therapies. Bangladesh requires over 500,000 units of blood annually. Moreover, insufficient and ineffective blood product supplies continue to be a major cause of death in a few other Asian nations. Blood thus plays a crucial function in healthcare systems striving to guarantee that there is an adequate supply of blood to meet demand and preserve lives. The Rhesus factor is used to classify blood into different groups, and it's essential to ensure that donors and recipients are properly matched. Additionally, blood must be tested before use to prevent the transmission of diseases. Blood donation generally occurs in two ways: apheresis, where specific components are collected using a machine that separates blood components into a plastic bag, or whole blood donation. Blood has a limited shelf life from donation to use, which requires a continuous supply system. Therefore, meticulous care is needed during collection and storage. A successful blood donation (BD) supply chain must meet daily blood needs and adhere to a strict schedule. The key stages of a blood bag's lifecycle include inventory storage, distribution, screening and assessment, blood collection, and donor registration. These stages help categorize and address the management challenges within the BD supply chain.

This chapter will include a selection of the observations and discoveries made by eminent academics about blood donation bank management systems. The reading appears to be strengthened by the researched, obtained data pertaining to the primary topic of my focus.

In the global health care system, there is a general need for new strategies that connect healthcare administration and logistics to better, faster, more precise, and space-efficient ways of managing blood supply systems.

In addition, the subject of medical management techniques is still very new and undeveloped. On the other hand, a multitude of studies in the field of management research offer a richness of pertinent examples from the literature. In particular, the main themes that are often available in print and digital media are: donors; location of the facility; personnel roster; patient allocation; and transportation of medical supplies. A number of healthcare-related challenges, from hospital resource management to the provision of care services within an area, have been shown to be feasible and successful solutions through a number of closely related but unrelated research. Nevertheless, optimization techniques can also enhance other health system functions that have just recently received sporadic attention. Among these is the Blood Donation system, which attempts to give hospitals and transfusion centers a sufficient supply of blood. The issue of blood donation management systems may still be very relevant today in an emergency, such as a car accident or bomb explosion, among other dire circumstances.

Similar to other countries, Bangladesh's National Blood Transfusion System collects blood from consenting donors nationwide, ranging between 6,000 and 10,500 units. However, from January to April each year, there is typically a decline in blood supplies at hospital blood banks and the National Blood Centre in Dhaka. This issue, which emerged early this year as it did last year, has led to a noticeable drop in available blood supplies. Additionally, the Bangladeshi Health Ministry has noted the absence of a comprehensive dashboard system to promptly provide critical information, such as blood bank supply levels. The management system handling data for the ministry faces significant challenges. For example, during dengue outbreaks or major transfusion needs, there is an increased urgency for blood and other supplies.

Therefore, a basic minimum of each blood type should be maintained at all blood banks. Consequently, doctors, nurses, and public health inspectors face difficulties in locating donors during the January to April period.

Every employee at blood banks nationwide is prepared to assist any organization or group willing to donate blood. Identifying these supply and demand patterns in blood donor management systems has historically taken considerable time, both nationally and internationally.

- ❖ The literature acknowledges several studies on blood management systems that utilize modern information and communication technologies. One study, titled *Blood Bank Information System* [6], defines an information management system designed to support the administration of donor data and blood banks. This system enables a blood bank administrator to efficiently manage donor and patient information through a secure login, with features including central database management, quick access to system data, and a search function for donors based on specific criteria.
- ❖ The primary objective of this system is to streamline the blood bank's operations, making it compatible with various blood banks. Once implemented, it can be used and shared across multiple blood banks. The system includes several components such as the User Login Screen, Blood Management, Menu Form, Blood Stock, Donor Management, Donor Registration, Donor Blood Test, Recipient Management, and Blood Reservation. The intended users of this program include blood bankers, doctors, receptionists, and hospital administrators.
- ❖ However, the study lacks screenshots of system prototypes and does not detail the research methodology, making it difficult to assess its applicability. There is no information on sampling methods, respondents, or study samples. The researchers plan to provide system explanation figures, prototype images, and diagrams to help future researchers visualize the development of an online blood bank management system. They also intend to elaborate on sampling plans, statistical techniques, and research methodologies used in data analysis.
- ❖ Another study examined a different web-based blood management system that helps maintain blood donor information and manages the distribution of

blood products nationwide while considering hospital requests [9]. This system was designed to be scalable and flexible to meet various needs of blood banks. The study highlighted challenges in tracking blood donation activities due to manual data entry, which led to inaccuracies and complications.

- ❖ The researchers noted that manual systems are often time-consuming, prone to errors, labor-intensive, lack data security, and are slow to generate accurate reports. In contrast, the web-based blood management system developed and implemented provided a more efficient and secure method for managing donor data, offering timely and private medical reports. There are three types of users in this information management system, just as in any other: the administrator, the prospective donor, and the needy recipient (acceptor). To prove their identity, each user is assigned a password and user email. Angular Bootstrap was used in the development of the program, while MY SQL Server was used as the database. When compared to comparable programs that were previously utilized by several similar apps, such as Laravel and PHP, which appropriate programming languages for web-based applications, these programs are chosen since they are the most recent in the business. This has further ramifications since the study discovered that in order to guarantee correct and easily accessible data for blood transfusion services, it is crucial to establish a web-based blood bank administration system for managing records for blood donors and blood donation operations. The public is, in fact, given superior healthcare services by institutions that use information technology. It was discovered in the study named [7] that using an For all hospitals, an information system to manage data in the blood bank is essential. It was also noted that both the hospital and the user suffered from the manual system. A drawback that was noted was that blood bank employees had to enter the donor's information each time they donated blood, which resulted in duplicate donor data and increased the risk of data loss or disappearance over time. As a result, the author created a web-based system to assist the blood bank in quickly and easily recording donor information. To guarantee the appropriate decision at the right moment, the system employed rule-based decision making. Additionally, the system may notify donors if a

certain blood type is required. She created an incremental model-based blood bank system. She had selected this model due to its merits and the fact that the system may be created using a phased approach. Understanding how the phases flow is simple.

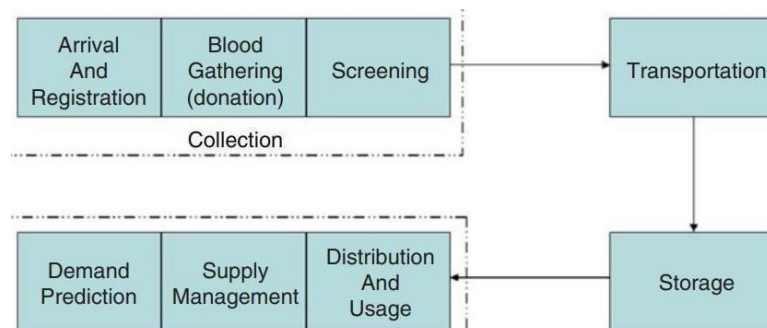
- ❖ Any phase can experience changes in the middle.
- ❖ Even if there is a mistake in the middle, the system can still be built and fixed during testing.

Researcher noted that system's creator neglected to incorporate a feature that would have allowed users to verify the availability of blood bags as well as the items' expiration date or shelf life. Consequently, these will be incorporated by the researchers into the system they designed to improve blood transfusion safety. To sum up, the aim of the aforementioned literature studies was to gather data about the ways in which an information system aided in the administration of blood banks. Review data revealed that, in comparison to manual methods, web based blood bank management provide hospitals and system users use easier, efficiency, and security.

Overall, it is made clear that blood donor management systems are an essential and crucial component of any nation's health care administration. The literature studies provide evidence that blood donor information management, along with additional communication channels and controls, may effectively address complex issues related to blood supply during emergencies. The aforementioned cases demonstrate this point. All things considered, it is evident that blood donor management systems are a vital and indispensable part of every country's health care system. The literature reviews show that blood supply-related complicated challenges may be successfully addressed by blood donor information management in conjunction with extra channels of communication . The situations given above illustrate this idea.

As illustrated in Figure 2, the blood transfusion supply chain is divided into four primary stages: collection, testing, storage, and distribution.

1. Collection: Blood is initially gathered from donors who must be verified as eligible at blood collection facilities.
2. Testing: After collection, each unit of blood undergoes individual testing to screen for infectious diseases.



Blood management cycle

3. Storage: The tested blood is then transported and stored appropriately.
4. Distribution: Hospitals receive the blood components based on their inventory needs and subsequently distribute them to the final recipients for transfusion..

Traditional blood donation management encompasses several key areas: supply management, demand forecasting for arrivals and registration, and usage control. This includes processes for donor blood collection, screening, transportation, storage, and tracking of utilization.

The stages of a blood bag's lifecycle are depicted in Figure 2.1. For more information, you can refer to the article at [NCBI](#).

In Bangladesh, the services provided through blood donation management systems include collecting blood via mobile blood drives, conducted both within the community and on hospital blood bank premises.

- Separating whole blood into its component parts, processing blood into components, and storing blood and blood components in an ideal environment are all steps in the transfusion safety process.
- Blood banks supply and distribute blood as well as blood components, and they also provide efficient inventory control.
- Promotion of the proper clinical use of blood and blood components by means of ongoing educational initiatives and hospital transfusion committees
- The medical services section mentions the immunohematology laboratory, therapeutic plasma exchange, HLA typing, and the provision of HLA- matched commodities upon request.
- producing red blood cells and laboratory reagents
- holding courses in hematology and transfusion medicine for postgraduate trainees

In today's world, it can be rather challenging to locate the necessary blood quickly in an emergency situation where someone requires it. Needy individuals suffer greatly as a consequence. To find the requisite blood, people must place advertising in newspapers or on television. The method is not effective. This makes looking for blood in an emergency rather time-consuming. It happens as a result of the existing setup. That is what the blood bank is for. The blood bank does not maintain a centralized database, including records of its donors. Thus, maintaining the donor data is problematic using the manual method. Without an automated management system, there are problems keeping track of the exact amount of each blood type in the blood bank.

Chapter 3. Methodology

The System Requirements Specification (SRS) is a comprehensive document detailing the functionalities and requirements of the software. It outlines what the software will do and how it should meet the needs of all stakeholders. The introduction section of the SRS provides a summary of the document, including its purpose, scope, definitions, acronyms, abbreviations, references, and an overview.

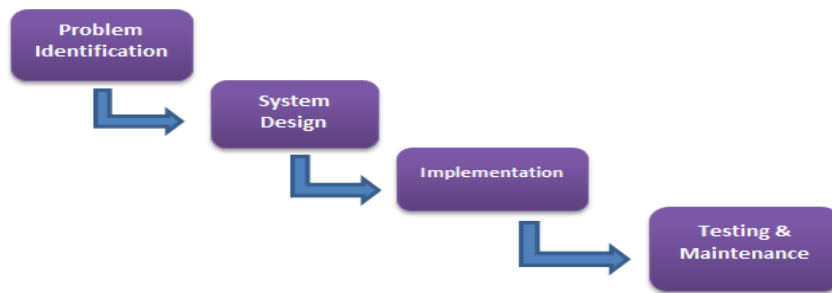
The objective of the SRS is to collect, analyze, and provide a thorough understanding of the blood management system by clearly defining the problem statement. It also highlights the high-level features required and the specific capabilities needed by stakeholders.

For developing an engaging web-based system, Angular.js, CSS, PHP, HTML, and Bootstrap have been selected as the development languages. PHP is used to build interactive web components, while CSS, HTML, and Bootstrap are utilized for designing web page presentation, including color schemes, font styles, and layouts.

The chosen programming languages for creating a visually appealing web application include PHP, CSS, and Laravel. PHP aids in developing interactive features, and CSS describes the presentation of web pages, such as their colors, layouts, and fonts. The MySQL database management system is employed for managing data.

Blood donors will also receive notifications via Text its Communicator, which uses a GSM handset to send and receive messages on a PC whenever their blood is needed or when their donation saves a life. The development lifecycle and system architecture follow the V model and service-oriented architecture.

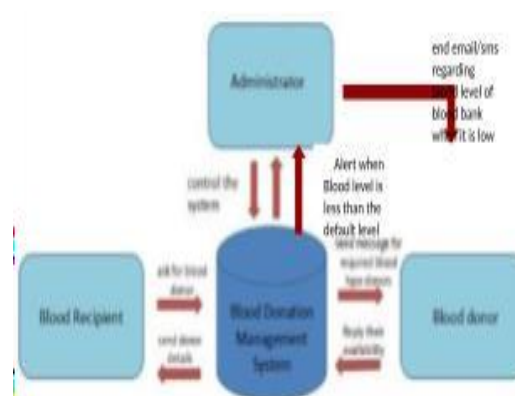
The document includes an analysis of various approaches, supported by relevant diagrams, and presents an argument for the chosen approach.



Process of Study

One of the essential steps in database design is modeling the data that will be stored in the database. Data model is a representation of the database architecture for explains, records the structure of the data. The system overview and user interfaces made with Bootstrap, CSS, and Laravel are depicted in the following figures.

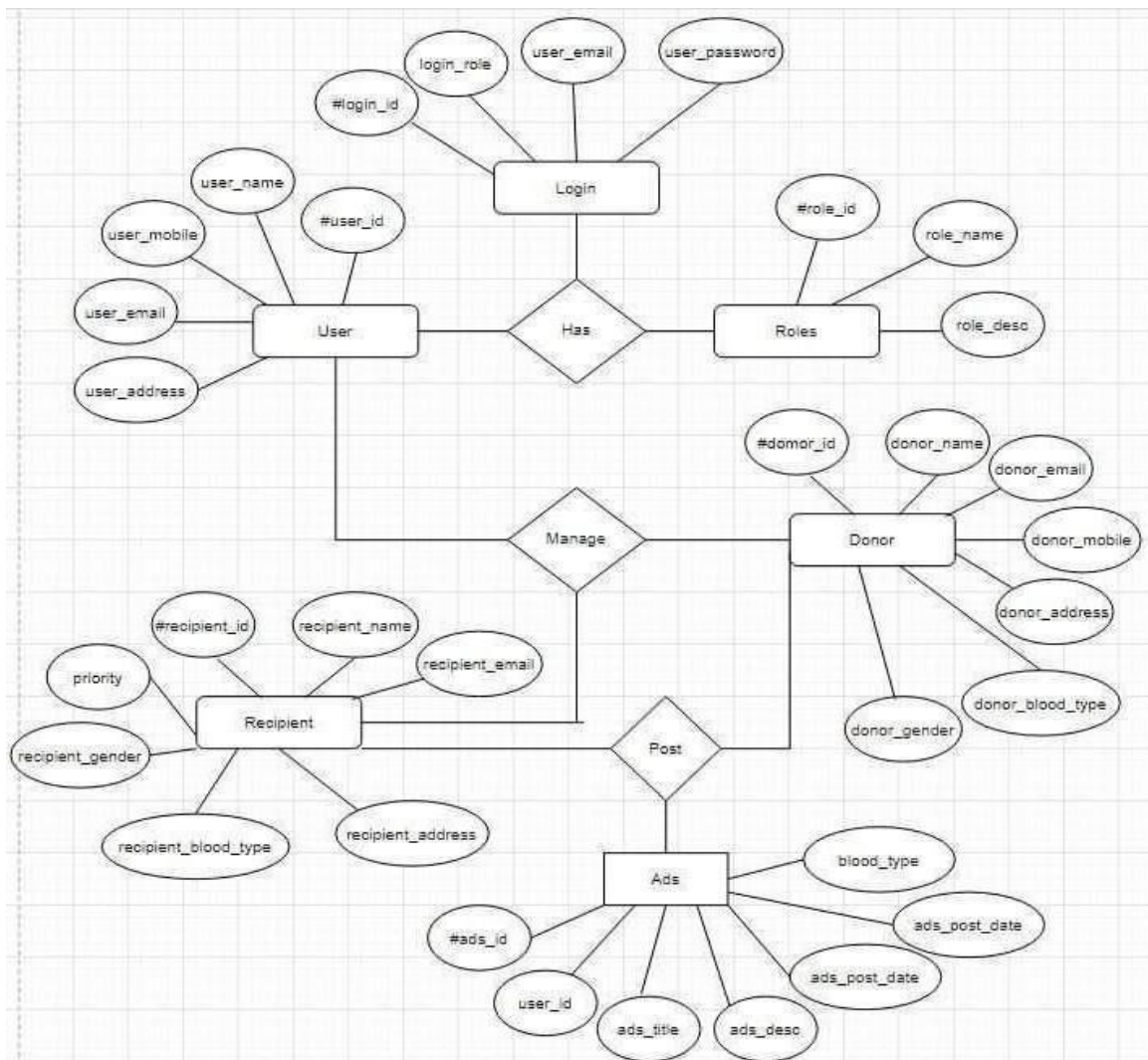
System Architecture



System Modeling

Systems can be depicted as a collection of components and their interconnections during the requirements and design phases. System architecture models often use graphics to provide an overview of the system's structure and organization. These graphical representations make it easier to understand detailed system requirements and the issues that need addressing.

System modeling aids in visualizing and clarifying the system to be developed or the problems to be solved. Because graphical models often convey information more intuitively than detailed textual descriptions, they are commonly used in system design. Common modeling tools include use case diagrams, entity-relationship diagrams (ERDs), and other similar diagrams.



.ER-Diagram

Diagram of Use Case



Admin User Case Diagram

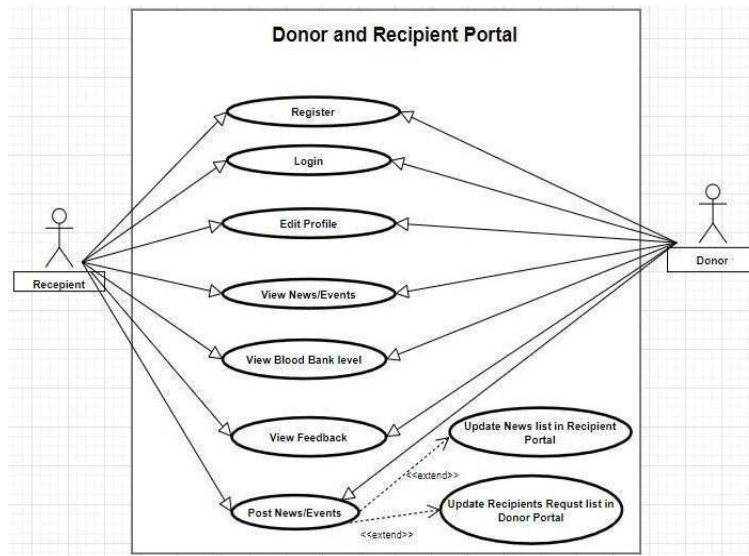


Figure 7. User Case Diagram For Donor and Recipient

Web technologies have primarily used in the project's development. Angular was used to write the functions that carried out the activities in the system, enabling the creation of dynamic and interactive Web sites. Basically, HTML, CSS, and Laravel were used to style the online. Bootstrap was utilized to create a responsive design for website. Relevant data has been stored in a MySQL database. This database is centrally located. The PHI API has been used to link the system's frontend and backend.

Interfaces of the System.

Interfaces for Users The primary modules of this program are Delivery Agent, Admin, Donor, and Receiver. Once contributors and searchers have successfully registered, the system will offer a platform.

Requirements for Function

The Functional Requirements Specification is designed to be read by a general audience. Readers should understand the system, but no particular technical knowledge should be required to understand the document.

Stakeholders

- Blood Donors
- Blood Receivers
- Admin

FR-001	Signup
Description	Blood Donor , Blood receiver , Admin will be able to signup through the system by providing email, phone number and password.
Stakeholder	Blood Donor , Blood receiver , Admin

FR-002	Login
Description	Blood Donor , Blood receiver , Admin have to sign up first to login then he will be able to access into the full services.
Stakeholder	Blood Donor , Blood receiver , Admin

FR-003	Create Profile
Description	Admin Blood Donors Blood receiver can create their profile with their details.
Stakeholder	Blood Donor , Blood receiver , Admin

FR-004	Update Profile
Description	Admin Blood Donors and Blood Receiver can update their profile's basic information.
Stakeholder	Blood Donor , Admin, Blood Receiver
FR-005	Searching Blood
Description	This module will help the Blood Recovers to find the blood donors against their blood group and address
Stakeholder	Blood Receivers

Stakeholder	Admin

FR-007	Search Blood Donor And Blood Receivers Information,
Description	The admin can search any kind of information about Blood Donors And Blood Receivers like Address, Contact number, Blood Group, Donation date.

FR-006	View Blood Donors Profile
Description	Blood receiver can see the Donors Profile which would help them to find out their blood group, address, contact number and their recent blood donation date,
Stakeholder	Blood Receiver

FR-009	Time line Post
Description	This module would help the both Bloods Donors and Receivers to express their needs.
Stakeholder	Admin , Blood Donor, Blood Receivers

FR-010	Notification
Description	Every one will be notified when a post is published
Stakeholder	Blood donors and blood recipients

FR-011	Multiple Language
--------	-------------------

Description	Multiple languages are supported for a smooth user experience
Stakeholder	Blood Donor

FR-012	Activities per month
Description	This module will help the admin to gather Blood Donors and Blood receivers related information
Stakeholder	Admin

FR-013	Chatting System
Description	With this functionality, the Donor and Blood receiver will be able to directly chat with each other for any information
Stakeholder	Blood Donor and Blood Receiver

Requirements For Performance:

A performance attribute, such as speed, precision, or frequency, that a system or system component must have been specified by a requirement.

Latency Requirements and Speed:

The system requires a fair amount of especially, speed while browsing games lists to place a bet on a posted game.

PR-01	In a moment, the landing page will react.
Descriptions	As the user navigates the system, the landing page will appear.
Stakeholders	Blood Donor, Blood Receiver and Admin

Needs for Accuracy and Precision:

There are no specific measurements or standards for accuracy.

Capacity Requirements:

The system is able to manage all the information of passed out people.

PR-02	Initially the system will store 50,000 People information
Descriptions	The landing page will appear while the user is navigating the system. It also depends on the user's internet connection and can vary within a second.

Stakeholder	Admin

Because existing frameworks are flexible, system architects are encouraged to allow reconfiguration processes, which instead of over-provisioning to create a fail-proof system, redirect available, safe resources to serve the most vital services. Consequently, these prerequisites are crucial..

Reliability/Availability

To ensure seamless global operations, the system must be accessible 24/7. However, most of the services provided are not mission-critical. Users often interact with highly available third-party websites, allowing the system to tolerate temporary outages. Once the system is restored, it will be capable of synchronizing and updating any missed data.

DR01	The system must be accessible 24/7
Descriptions	• The system must be available 24 hours in a day • The system must be updated regularly • The system must publish the notice, events and update these regularly.
Stakeholder	Blood Donor, Blood Receiver

Requirements For Fault Tolerance

The technique practically guarantees 0% crash in the event of even a small inaccuracy and does not produce incorrect calculations.

Requirements For Safety and Critical

DR-02	Over access and system failures are handled by the system.
Description	Occasionally, more than one user may have access to this system. The framework is capable of supporting numerous users.
Stakeholder	N/A

There are no specific safety critical requirements

Support

Supportability refers to how well the planned logistical resources and system design meet the system requirements. It encompasses the system's capacity to effectively support operational and readiness needs throughout its entire lifecycle.

Requirements For Maintenances

MS-01	facilitates updating information at any time.
Description	while the user is navigating the system
Stakeholder	Blood Donor, Admin

Requirements For Supportability:

To understand the system's behavior and the technical support needed by the Blood Receiver, it is important to review any incidents where the system's security might have been breached by an attacker. The Blood Receiver needs to comprehend these events to address potential security issues effectively.

Adaptability Requirements: No specific adaptability requirements are defined.

Security Requirements: There are no specific access requirements..

Requirements For Access:

Access to the system requires authorization and authentication. The system is comprised of several modules.

SR-01	The system implements security strategies.
Description	The system is designed to enable all modules to access a shared resource. mechanism that offers security services.
Stakeholder	Blood Donor Admin

Requirements For Integrity's:

To protect user credentials from being compromised, all passwords are encrypted and securely stored. This approach reduces the value of stolen credentials and makes password decryption challenging.

Chapter 4 - Evaluation

Recursive testing and assessment of the system was carried out during system implementation. Measuring the system's functionality and degree of user acceptability of the project's finished product was the primary goal of the testing and assessment process. The website underwent testing to verify that the program meets all functional criteria and has the functionality that has been described. The table below lists the essential information about the test environment.

Operating-Systems	Windows-11
Web browsers	Mozilla Firefox, Internet Explorer, Opera, Google Chrome
Computer	HP Laptop
Resolution	1,366x768 pixels

Environment test

The critical test cases conducted at this stage to ensure the quality of the web-based system are outlined in the test plan below.

Test Area Form	Test Case No.	Effort(hrs.)	Executed by	Status test
Register Form	test-1 test -2 test -3 test -4	1h	Masum	Pass
Login-Form	Login-1Login-2 Login-3	2h	Masum	Pass
Post News- Form	Post News test - 1 Post News test -2 Post News test -3	2.4h	Masum	Pass

View News	View News test -1	1.5h	Masum	Pass
Post Events test	Post Events test -1 Post Events test -2 Post Events test -3	2h	Masum	Pass
View Events test	View Events test 1	2h	Masum	Pass
Managing Donors and Recipients test	Delete Donor test -1 Delete Recipient test -1	1.5h	Masum	Pass
Search test	Search Donors test	1.5h	Masum	Pass

	Search Recipients			
Profile Edit	Edit Profile-1	1.5h	Masum	Pass
News Delete	Delete News -1	1.5h	Masum	Pass
Events Delete	Delete Events-1	1.3h	Masum	Pass
Ads Delete	Delete Ads-1	1.2h	Masum	Pass
smstoDonors by Admin	Sendsms toDonors-1	1.1h	Masum	Pass

Table-3 Test Plan

Registers

Test Case: ID: Register-1

Test Priority: High

Applicable Users: Admin, Donor, Recipient

Test-Title: Check to see if the user can register using accurate information.

Pre conditions

The user needs a valid email address

Navigate to the Login page through Main Menu, Admin Login. ”

Assumptions/Dependencies:

Test-Step	Test-Data	Expected-Results	Statuses
Select (Sign up)option. Provide-valid username. Provide validpassword. Click (Register button)	Name: Masfikur Email : masfikur35-3118@diu.edu.bd Mobile: 01784937696 Address: 03/73 03/73 AdaborDhaka Gender-Male Passwords:2548 Confirms Passwords:2548	It should be possible for the user to access the-Registration form.	Passed

Register of Test Cases

#Post-conditions Following database validation, the user is successfully registered as an administrator/donor.

Test Priority: High

Test Title: Verify that registration fails with an incorrect email address

Preconditions:

Go to the home page.

- Access the login page via the Admin Login section in the main menu.
- Select the (Donor) or (Recipient) panel. Assumptions/Dependencies:

Step of the Test	Data	Expected Outcomes	Statuses
Choose the "Sign up" option.- Give accurate information - Give a bogus email. Press the "Register" buttons.	Names: Email kasssssmal@gmail.com Mobiles 01890982227 Addresses: No 23/892,Kurunegala Genders: Male Password:54321 Confirm Password:54321	It should not be possible for the user to successfully register. It should show the error notice below. The email address is invalid.	Pass

Register_2 of Test Cases

Post-conditions:

- The user's credentials are validated against the database.
- The user should not be present in the database if the registration attempt fails..

Test Priority: High

Test Title: Verify that registration fails with an invalid cellphone number.

Prerequisites:

Go to the home page.

Use the Admin Login main menu to access the login

page. Select the "Donor" or "Recipient" panel.

Premises/Requirements:

Step of the Test	Data	Expected Outcomes	Statuses
Select “Sign up” option. Provide valid information Provide an invalid mobile number.	Name: Saman <u>Email :</u> Samfasfasdfa@gmail.com Mobiles: 018f909822	Ensure that registration is unsuccessful with an invalid cellphone number. . It should show the error notice below.	Pass

4. Click “Register” button.	Address: 23/322,Kuril Males Passwords:54sf321 Confirms Passwordd:54344421	No “Invalid Mobile Number found.”	
-----------------------------	--	-----------------------------------	--

Register of Test Cases

#Post-conditions: The user should not be accessible in the database since they have been validated there.

ID of the test case: Register-4

Test Priority: High

Test Title: Verify that registration fails if there is a discrepancy between "Password" and "Confirm Password."

Pre-conditions:

1. Go to the Home page.
2. Access the Login page through the main menu by selecting "Admin Login."
3. Click on the "Donor" or "Recipient" Panel..

Assumptions/Dependencies:

Tests Steps	Expecteds Resultes	Data	Statuses
Test Steps: 1. Choose the "Sign Up" option. 2. Enter valid information in the required fields. 3. Enter different passwords in the "Password" and "Confirm Password" fields. 4. Click the "Register" button.	The user should not be able to complete the registration process. An error message stating, "Password mismatch found," should be displayed.	Names: Samanaaa Emails : Sam@gmail.com Mobiles: 0189256098 Address: No 232/3622,Kumarpukur Gender:Male Password:55543 Confirmer Passwords5435521	Pass

Test Cases Register-4 Table 7.

#Post-conditions: has been verified in the database, and they should not be accessible there.

Login For all users: Admin/Donor/Recipient

Test Priority: High

Test Title: Verify login with valid username and password

Pre-conditions: The user possesses a valid username and password.

1. Go to the Home page.
2. Access the Login page via the main menu, Admin Login.
3. Select the Donor/Recipient panel.

Dependencies /Assumptionss:

Test Step	Test Data	Expected Results	Statuses
1. Navigate to the login screen. 2. Enter a valid username. 3. Input a secure password. 4. Click the Login button.	Username:Samdd.l@gmail Password=11119911	The user ought to be successful in logging in.	Pass

Test Cases for Login-1 in Table 8

#Post conditions: The user is successfully verified against the database and is able to log in to their account.

Test Priority: High

Test Title: Verify login attempt with a valid password and an incorrect username.

Prerequisites: The user has a valid password and an incorrect username.

1. Navigate to the home page.
 2. Access the login page through the Admin Login main menu.
 3. Choose the "Donor" or "Recipient" panel.
- Dependencies /Assumptions:

Test No	Data	Results	Statuses
Go to the login screen. Enter an incorrect username. Give a legitimate password. Press the "Login".	Ussername=kassmalaaaa@gmail.com Password=11211111	The system must display an error message stating, "Username or Password is incorrect."	Pass

Test Cases Login-2 Table 9.

ID for Test Case: Login_3s

Test Priority: High

Test Title: Verify login attempt with a valid username and an incorrect password.

Pre-conditions: The user has a valid username but provides an incorrect password.

1. Navigate to the home page.
 2. Access the login page via the Admin Login main menu.
 3. Choose the "Donor" or "Recipient" panel.
- Dependencies /Assumptionss:

Final Test Step	Final Test Data	Final Results	Statuses
Go the logins screen. Give a legitimate username. Give a faulty password Press the logins buttons.	Usesrname=kaddm al@gamail.com Password=11ddfdsf	The system should display the error message: "The username or password is incorrect." ..	Pass

Test Cases Login-3 Table 10.

Test Priority: High

Test Title: Validate login with incorrect username and incorrect password

Pre-conditions:

- User has an invalid username and an invalid password.
- Navigate to the Home page.
- Access the Login page through the main menu, Admin Login.
- Select the "Donor" or "Recipient"

Panel. Assumptionss/Dependenciess:

Tests-Steps	Data	Results	Status
Navigate to the login page.	Username=kam	The error notice appear on	Pass
Enter an incorrect username.	a@gamsail.com	the system.	
Provide an invalid password.	Passwords=115	"The password or username	
Click the "Login" button.	55	is invalid."	

Test Cases Login-4 Table 11

Test Case ID:

Post News Test Priority:

High

Test Title: Verify Successful Submission of a News Story

Preconditions:

- User has valid and up-to-date username and password.
- Access to the home page is

available. Dependencies/Assumptions:

Test-Steps	Datas	Results	Statuss
1. Choose the "Post News" option.	Titles= "DONATE	The news should be posted successfully.	Pass
2. Enter the title of the news story.	BLOOD-DONATE	The news should be posted successfully.	
3. Provide a detailed explanation.	LIFE" camps postponeds		
4. Click the "Submit" button.	.		
5. Click the "Close" button.	Descriptions = "DONATE		
1. Choose the "Post News" option.	BLOOD- DONATE		
2. Enter the title of the news story.	LIFE" camps		
3. Provide a detailed explanation.	postponeds to May		
4. Click the "Submit" button.	12/05/2024		
5. Click the "Close" button.			

Test Cases Post-News-1 Table 12.

Test Priority: High

Test Title: Verify if the user is unable to submit a news story with only a title and no description.

Preconditions

- User has a valid username and password.
- Navigate to the home page.
- Access the Admin/Donor/Recipient portal and log in.

Dependencies/ Assumptions: N/A

Test-Step-no	Data	Results	Statuss
Choose the "Post News". Give the. Leave the "Description" unfilled. Press the "Submit" : button. Press the "Close".	Title: "DONATE BLOOD-DONATE LIFE" has been rescheduled.	Posting news is not appropriate. It should show the error notice below. "A description is necessary."	Pass

Test Cases Table 13 Post-News-2

Test Case ID: Post News-3

Test Priority: High

Test Title: Verify that the user cannot upload a news article with only a title and no description.

Preconditions:

- User has valid username and password.
- Navigate to the main page.
- Enter the login credentials for the admin portal.

Dependencies/Assumptions:

Test-Step-No	Data	Results	Statuss
1. Select the "Post News" option.	Title: "DONATE BLOOD-	Posting news is not permitted.	Pass
2. Enter a title.	DONATE	The following error	
3. Leave the "Description" field empty.	LIFE" Camp Rescheduled	message should appear: "News Title is required."	
4. Click the "Submit" button.	Description: The "DONATE BLOOD-		
5. Click the "Close" button.	DONATE LIFE" camp has been rescheduled to May 12, 2024.		

Table 14. Post-News-3 Test Cases

View News For Users: Admin, Donor, and Recipient

Test Case ID: View News_1

Test Priority: High

Test Title: Verify that the user can successfully view a posted news article.

Preconditions:

The user must have valid login credentials (username and password).

A news article must have been posted.

Dependencies/ Assumptions:

Test-Step-No	Data	Resultss	Statuss
Steps: 1. Click the "View News" option. 2. Click the "Close" button.		The newly added news should be visible in the "View News" panel. Additionally, the pop-up window should close successfully.	Pass

Table 15: View News-1 Test Cases

Test Case ID: Post Events

Test Priority: High

Test Title: Verify if the user can successfully upload events.

Pre-conditions: The user has valid password and username credentials.

1. Navigate to the home page.
 2. Access the admin portal and log in.
- Dependencies /Assumptions:N/A

Test-Step-No	Data	Results	Status
1. Click on the "Post Events" menu item.	Title: July's "DONATE BLOOD, DONATE LIFE" camp.	The event should be successfully posted.	Pass
2. Enter the event title.	The camp "DONATE BLOOD, DONATE LIFE" will take place on February 30, 2024.		
3. Provide a brief description.	Title: July's "DONATE BLOOD, DONATE LIFE" camp.		
4. Click the "Submit" button.	The camp "DONATE BLOOD, DONATE LIFE" will take place on February 30, 2024.		
5. Click the "Close" button.	Title: July's "DONATE BLOOD, DONATE LIFE" camp.		
1. Click on the "Post Events" menu item.			

Test Cases Post Events-1 Table 16

Test Case ID: Post Events_2

Test Priority High

Test-Title: Check to see if the user is unable to submit Evan's event title and blank description.

Pre-conditions: User's password and username are both valid.

Dependencies / Assumptions:

Test-Step-No	Data	Results	Status
Go to the "Post Events" menu. Give the title. Leave the "Description" field unfilled. Press the "Submit" button. Press the "Close" button.	Title: The camp "DONATE BLOOD, DONATE LIFE" took place in may. Descriptions	The event should not be posted, and an error message should appear stating: "Description is required."	Pass

Test Cases Following Events

ID of Test Case: Post Events #3

Test Case ID: Post Events-3

Test Priority: High

Test Title: Verify that an event cannot be posted if no description is provided.

Pre-conditions: The user must have a valid username and password.

Dependencies / Assumptions:

Test-Step-No	Data	Resultss	Statuss
Post Events" menu. Give the title. Leave the "Description" field unfilled. Press the "Submit" button. Press the "Close" button.	Title: The camp "DONATE BLOOD- DONATE LIFE" took place on July 30, 2020.	Posting events is not recommended. The error message that follows ought to appear. "The events title is necessary."	Pass

Test Cases Post Events-3

ID for Test Case: See Events

Test Case ID: View Events-1

Test Priority: High

Test Title: Verify that the user can successfully view a posted event.

Preconditions: The user must have a valid username and password.

Assumptionss/Dependenciess

Test-Step-No	Data	Resultss	Statuss
Select the "View Events". Press the "Close".		The "View Events" panel ought to display recently added events. Closing the pop-Case successful.	Pass

Views Events-1 Tests Casess

Delete Donors-Admin

ID of the Test Case: Delete Donors_1

Test Priority: High

Test Title: Verify if the user can successfully remove donors.

Pre-conditions: The user must have a valid username and password.

Dependencies/ Assumptions: N/A

Test-Step-No	Data	Resultss	Statuss
--------------	------	----------	---------

Press the "Donors" . Select the "Delete" located at the donor card's bottom. Press the "Close" button.		A list of donors ought should load into the pop-up window. donor Cases: ought to be effectively erased.	Pass
---	--	---	------

Test Cases Delete Donors-1

Test Case ID: Delete Recipients_1

Test Priority: High

Test Title: Confirm Successful Removal of Registered Recipients

Pre-conditions:

- The user must have a valid username and password.
- Navigate to the home page.
- Access the admin portal and log

in. Dependencies/Assumptions:

Tests-Steps-No	Data	Results	Statuss
Press "Recipients." Select the "Delete" button located at the donor card's bottom. Press the "Close" button.		A pop-up window containing the recipient list ought to appear. The recipient ought to be successfully erased.	Pass

Test Cases Delete Recipients

Test Case Number: Lookup Donors-1

Test Priority: High

Test Title: Verify User's Ability to Search for Donors Successfully

Pre-conditions:

The user must have a valid username and password. Navigate to the home page.

Dependencies / Assumptions:

Tests- Step-No	Data	Results	Status
Locate yourself at the bottom of the Donors interface. Give the blood type and the district. Press Enter to search	Find yourself at the Donors interface at the bottom. Provide the district and the blood type. To search, hit Enter.	The search parameters should be used to filter the user's results.	Pass

Search Donors-1 is the Test Case ID.

Test Case Number: Recipients-1 Search

Test Priority: High

Test Title: Verify Whether the User Can Successfully Search Recipients

Pre-conditions:

The user must have a valid username and password. Navigate to the home page.

Dependencies/ Assumptions:

Tests-Step-No	Data	Resultss	Statuss
Navigate to the interface's bottom section. Give the blood type and the district. Press Enter to search.	Region: Colombia Blood Type: A+	The search parameters should be used to filter the user's results.	Pass

Test Cases: Recipients to Search

ID of Test Case: Modify User Profiles -1

Test Priority: High

Test Title: Verify Whether the User Can Successfully Edit Their Profile

Pre-conditions:

The user must have a valid username and password.

Navigate to the home page.

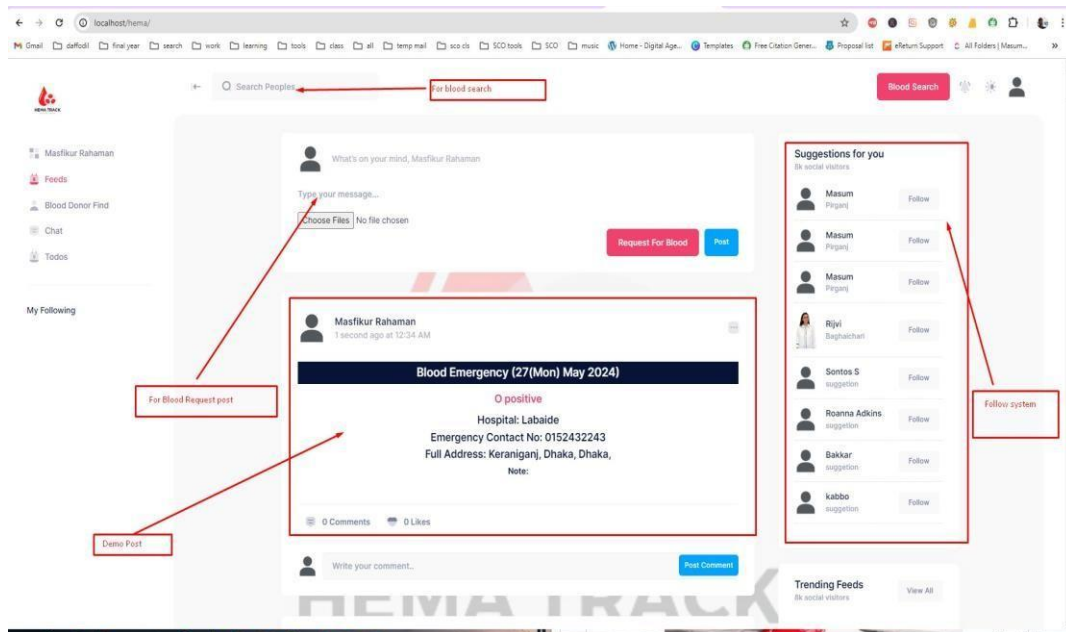
Dependencies/Assumptions:

Test Step	Test Data	Expected Results	Status
Press the "Profile" Edit Your and Press Send	The address is 234/12 Bingiririya.	Updates of new data ought to be accomplished successfully.	Pass

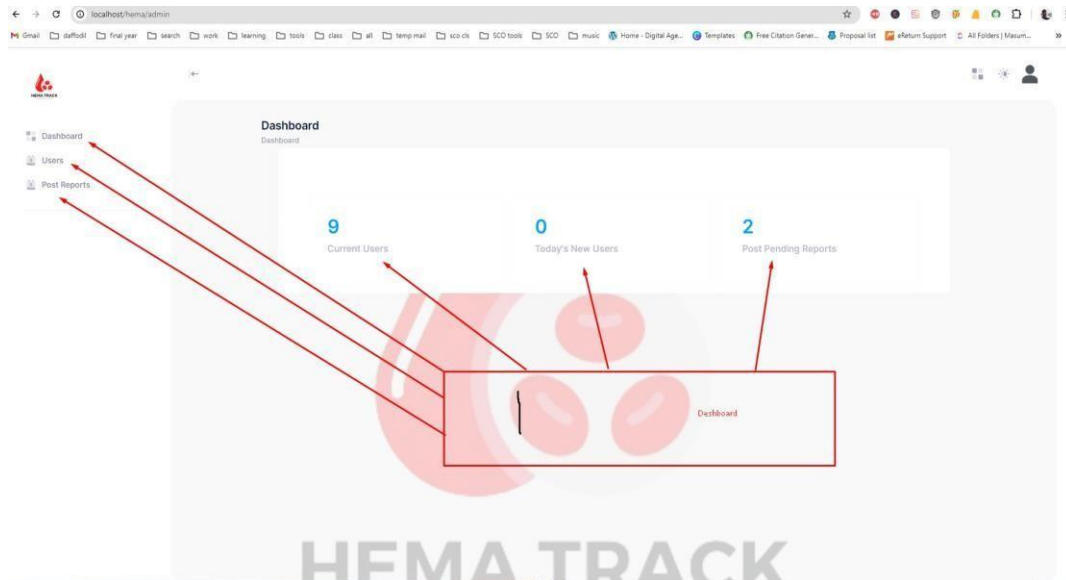
Table 24 Test Cases Edit User Profile

1. Interface Testing: Confirm that the interface functions correctly and data flows accurately between systems.
2. Usability Testing: Assess whether the application is user-friendly.
 - a) Evaluate navigation and controls.
 - b) Review content for accuracy and relevance.
 - c) Test the intuitiveness of the user interface.
 - d) Ensure that the interfaces are easy to use.
3. Compatibility Testing: Ensure the application works across different environments.
 - a) Test browser compatibility, including Google Chrome.
 - b) Verify compatibility with operating systems, such as Windows.
 - c) Check compatibility with various devices, including mobile phones and tablets.
4. Performance Testing: Assess server response times and throughput under different conditions to ensure reliability and efficiency.

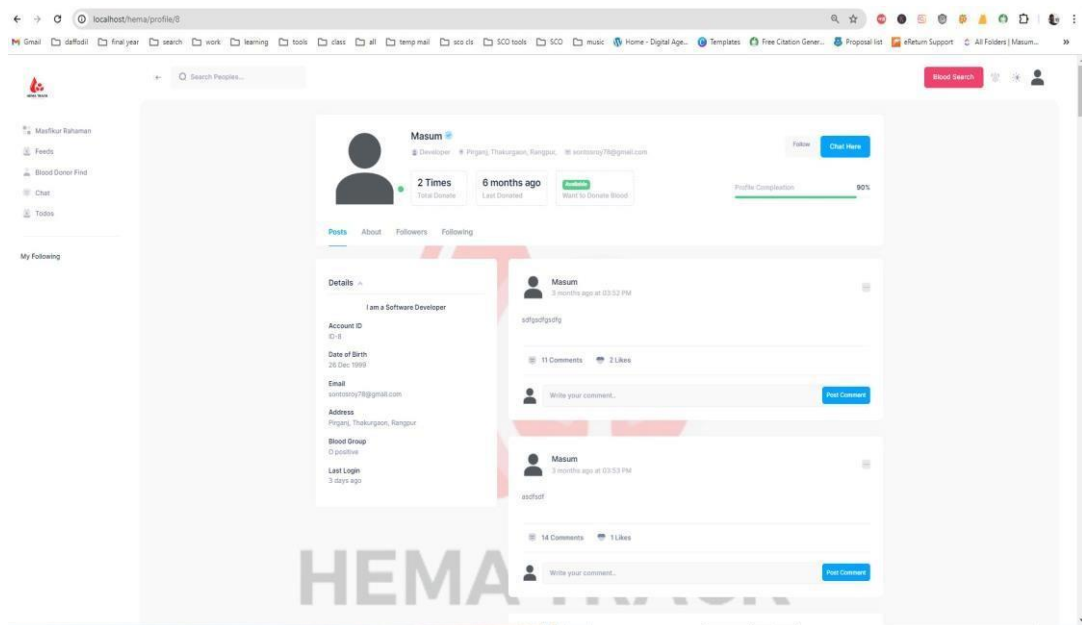
-



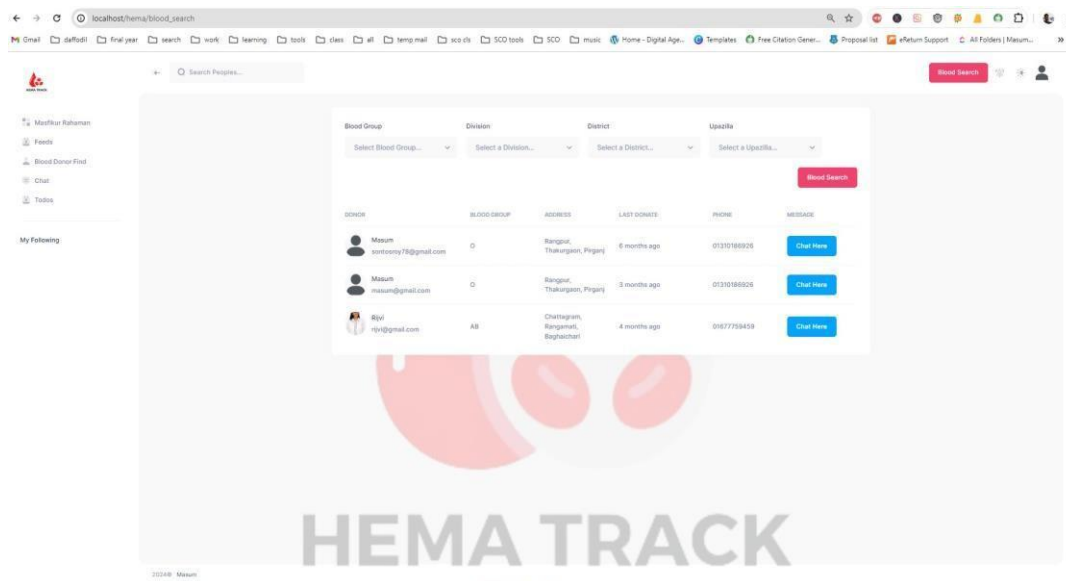
Home-Page



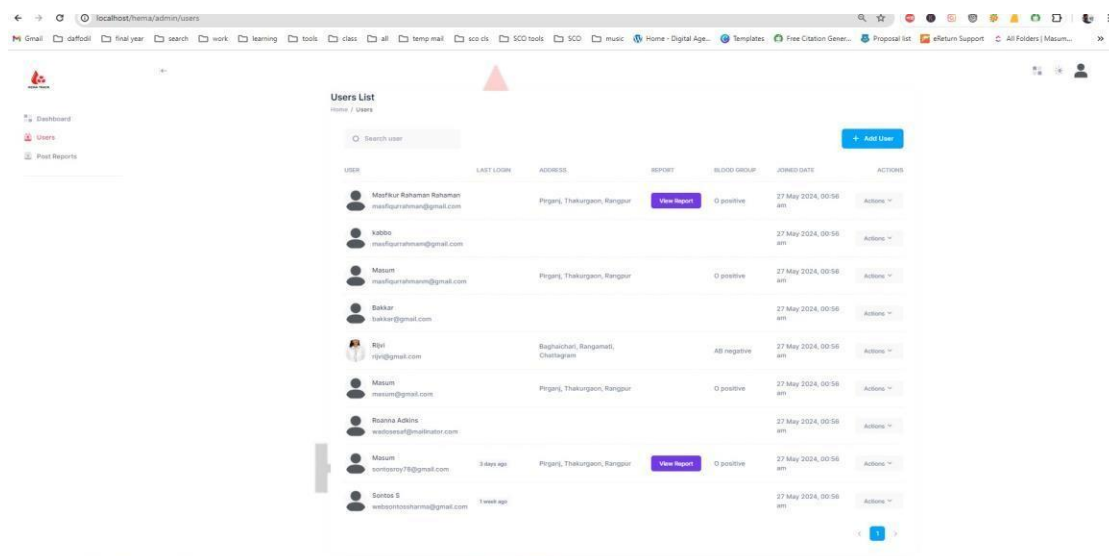
Admin-Interface



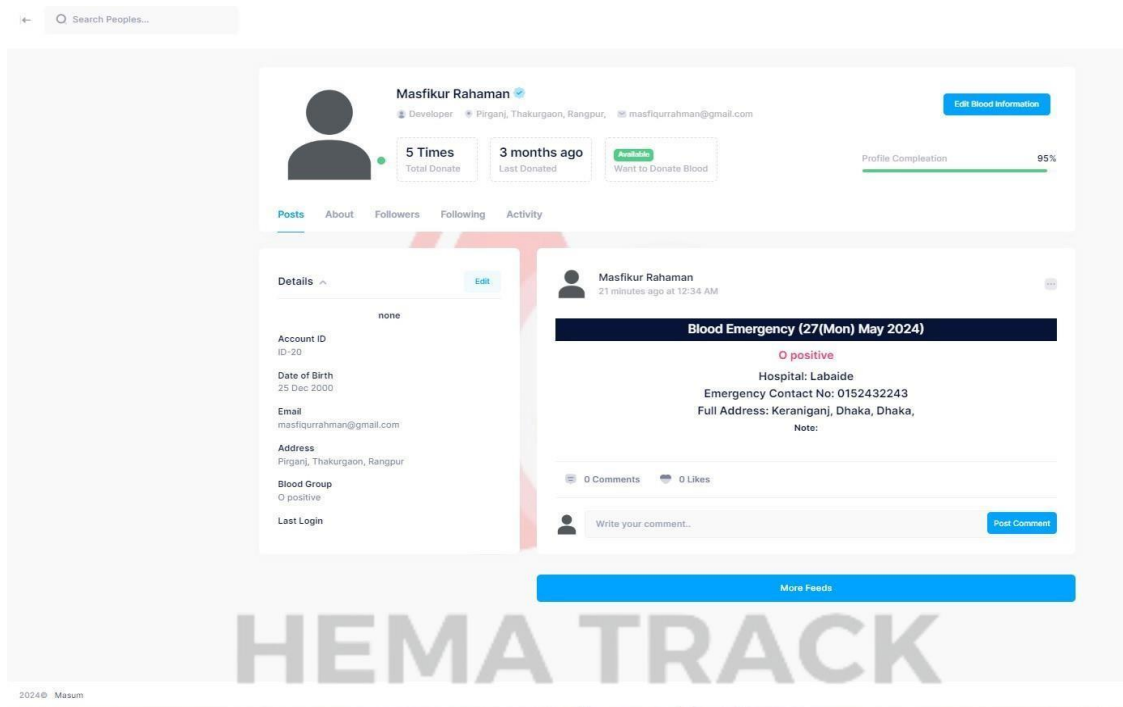
Section I: Donor-Interface



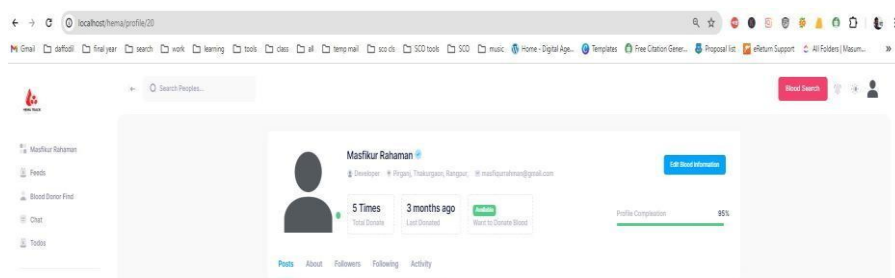
Part 2 of the Donor Interface



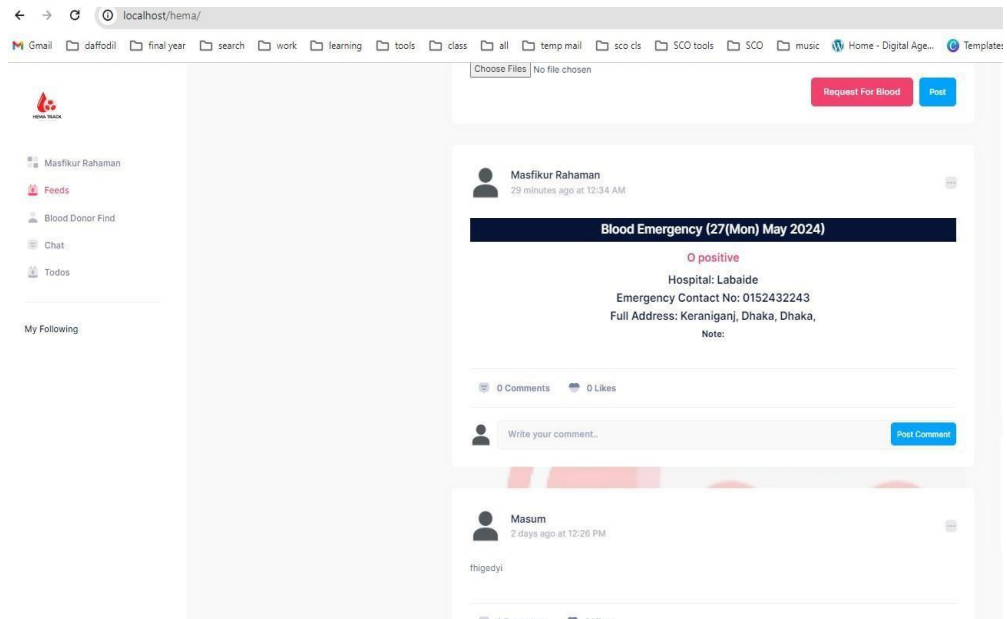
Donors-List



Recipient Interface



Recipient-Interface



View-Event



View-News

User Statistics

Home / Users

Search user

+ Add User

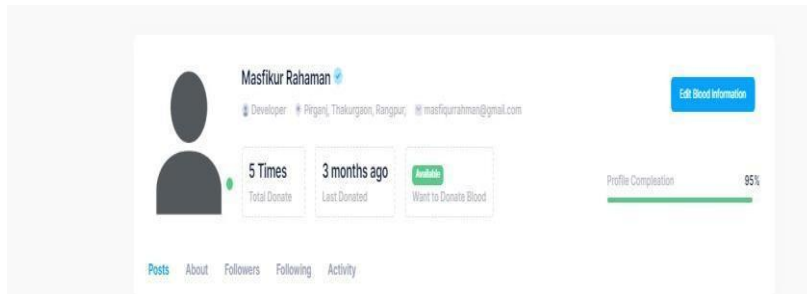
USER	LAST LOGIN	ADDRESS	REPORT	BLOOD GROUP	JOINED DATE	ACTIONS
Masfukur Rahaman Rahman masfukurahaman@gmail.com		Pirganj, Thakurgaon, Rangpur	View Report	O positive	27 May 2024, 01:06 am	Actions
Masum masfukurahaman@gmail.com		Pirganj, Thakurgaon, Rangpur		O positive	27 May 2024, 01:06 am	Actions
Masum masum@gmail.com		Pirganj, Thakurgaon, Rangpur		O positive	27 May 2024, 01:06 am	Actions
Mazum sontosroy78@gmail.com	3 days ago	Pirganj, Thakurgaon, Rangpur	View Report	O positive	27 May 2024, 01:06 am	Actions
Rijvi rijvi@gmail.com		Baghaichari, Rangamati, Chattagram		A&B negative	27 May 2024, 01:06 am	Actions
kabba masfukurahaman@gmail.com					27 May 2024, 01:06 am	Actions
Bakkar bakkar@gmail.com					27 May 2024, 01:06 am	Actions
Roanna Adkins wadosesaf@mailinator.com					27 May 2024, 01:06 am	Actions
Sontos S websontossharma@gmail.com	1 week ago				27 May 2024, 01:06 am	Actions

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1

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Statistics of Users

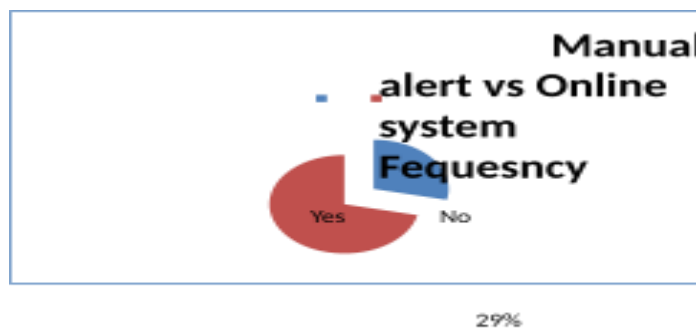


Post an **advertisement**.

Survey Questionnaire

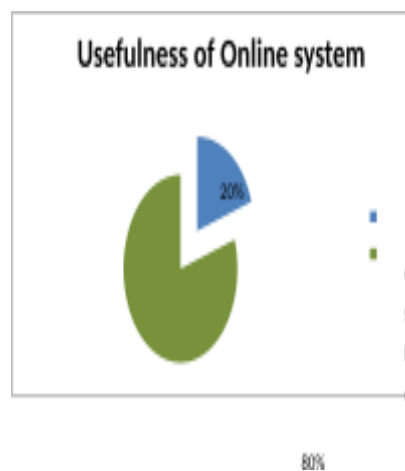
Analysis of survey results

1. The responses to the question, "Were you able to donate at the same frequency before the introduction of the online system?" are illustrated in the following graphic. It shows that 81% of donors did not receive notifications about blood donations through the online system, relying instead on manual methods. Conversely, only 29% of donors were able to maintain their regular donation schedule and receive notifications about their contributions



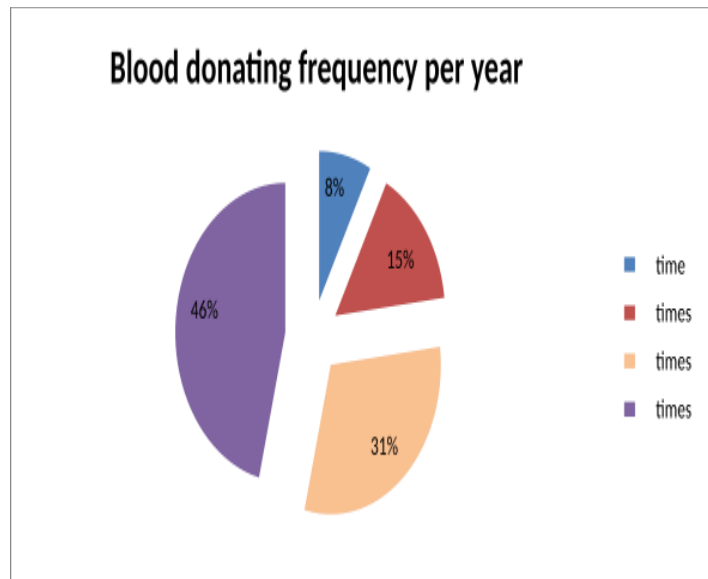
Alert frequency regarding blood donation events

2. The answers to the sample question, "Do you think that an online blood donor management system is useful for Bangladesh?" are displayed in the graphic that follows. Eighty percent of participants agreed that online systems are more beneficial than manual ones in the context of Bangladesh. Twenty percent of the participants experienced various issues with devices, networks, and other necessities. because Bangladesh contains certain rural places.



The Online System's Utility

3. The answers to the sample question, "Are you able to find donors readily through the internet system?" are displayed in diagram below. 58 percent found donors more quickly and easily than they could have by calling or asking acquaintances. Twenty-two percent had network issues and donors' delayed responses.



Donor ease of access

4. The answers to the question, "If the answer is 'Donor the Above,' how many accept the requests from receivers for the year?" are displayed in the diagram that follows. Based on the example. A donor may give blood up to four times annually. Every donor should wait three months between donations. Thus, 9% of donors make a single annual donation. Additionally, 15% of donors are willing to give blood twice a year., compared to 51% who are willing to donate three times annually.

Annual Blood Donation Frequency

In conclusion, this chapter centers on the evaluation and testing of the "Blood Bank and Donor Management" system. The initial section provides details about the test plan developed for the system, which includes test cases designed to validate the system's inputs and outputs. In the final phase, the system was assessed with feedback from users who completed a questionnaire. The results of this questionnaire were thoroughly analyzed and presented. The feedback and recommendations from participants are crucial for the overall assessment of the system.

Chapters 5

Conclusion

The main objectives of the research were to create a blood donation management system that supports the administration of donor information and utilizes modern technology to quickly locate blood donors in emergency situations. The conditions listed below are met by this system.

- Immediately locate willing donors and submit blood requests in order to identify potential recipients.

- Programs for blood donation are to be promoted and advertised via social media and other channels using the system.

- To provide participating clinicians with access to a centralized and synchronized donor and bloodstock database across the entire island, enhanced by dashboard displays.
- To maintain records on donors and blood information in order to give the blood bank effective donor and bloodstock management services.

- Create a mobile app to improve usability.
- Create an iOS app for Apple products.
- Expand your social media marketing efforts to better serve funders and recipients.

.

Chapman J., elucidating the fundamentals of efficient blood inventory control [1].
2007, Transfusion, 47:190–96S.

[2] Australian Health Provinces' Guidelines for Managing Blood and Blood Product Inventory. Australian National Blood Authority. April 2013, www.blood.gov.au.

[3] Classification of Blood Donors Using Data Mining, Shyam Sundaram and T. Santhanam, Proceedings of the Semantic E-Business and Enterprise Computing Conference, pp. 145-147, 2009.

[4]]An automated system for bedside verification of the match between patient identification and blood unit identification was developed by N.J. Jensen and J.T. Crosson, MD, in March 1996.

[5] National Blood Transfusion Service, Bangladeshi Procedure.
PMC2920470 can be found at <https://www.ncbi.nlm.nih.gov/pmc/articles/> (retrieved February 20, 2015).

[6] A Study on Blood Bank Management, Teena, C.A., Sankar, K., and Kannan, S. (2014)

A. Survey

1. Name (optional):

2. Appointment:

3. Establishment (Optional)

4. Years of Age

5. What Kind of User Am I?

a. Donor

b. Affected Party

6. How many times a year, if the response to question number six is "Donor," do you accept requests from recipients?

1 a. 1 b. 2 c. 3 d. 4

7. Before the internet system was implemented, were you able to donate as frequently?

A. In agreement

B. in disagreement

8. How many times a year do you seek blood if the response to question eight is "Recipient"?

9. Is it easy for you to locate Donors via the web system?

a. In agreement,

b. in disagreement

10. Do you believe Sri Lanka may benefit from an online blood donor management system?

a. In agreement,

b. in disagreement

11. Why is an online blood management system necessary or not?

12. How would you like to be informed about fundraising campaigns?

1. Using the web-based platform 2. Manually

13. What are your expectations from an online Blood management system?

14. Do you believe that this web-based approach effectively addresses every possible case pertaining to giving or receiving blood?

a. Strongly concur; b. accept. Not in agreement nor disagreement

15. Additional remarks. Differ b. Strongly Differ

Introduction

- The item is “Hema-Track: Smart Blood Bank Administration.”

The Bank and Donor Management System automates and expedites the process of finding blood in an emergency, in addition to monitoring blood donors and recipients and offering details on blood donation programs, blood stock levels in the bank, and blood amount levels in the blood bank.

Scope

The receiver can submit a request to find donors for a specific blood type, and donors who are willing to give and reside around the recipient's city can contact the recipient at the number provided. The donor dashboard will display the posted request.

Required conditions

Requirements for the system

1. The following web browser is required to access the website:
2. Google Chrome: upgraded from Internet versions 55.0 (32/64 bit) and up.
3. Upgrading from Version 48.0 (32/64 bit) of Firefox
4. Explorer: a more recent version (32/64 bit) from 11.0

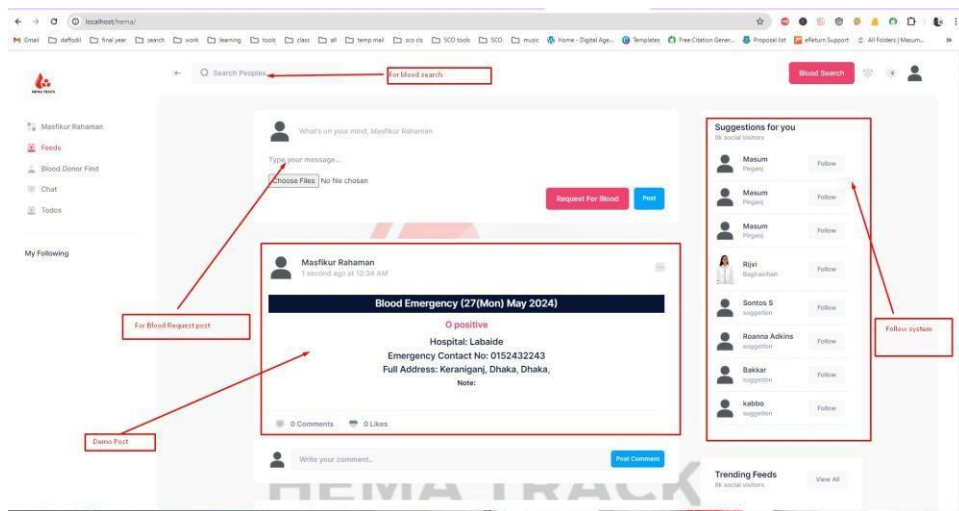
Support for Platforms

Windows, which includes the aforementioned web browsers, can visit the website without any problems.

Using the website

How to carry out the necessary actions

Sign-in for the Admin, Donor, and Recipient



The system's admin, donor, and home page

Sign-Up Form for Admin, Donor, and Recipient

Sign-Up



Create an Account

Already have an account? [Sign in here](#)

Name

Email

Password

Use 8 or more characters with a mix of letters, numbers & symbols.

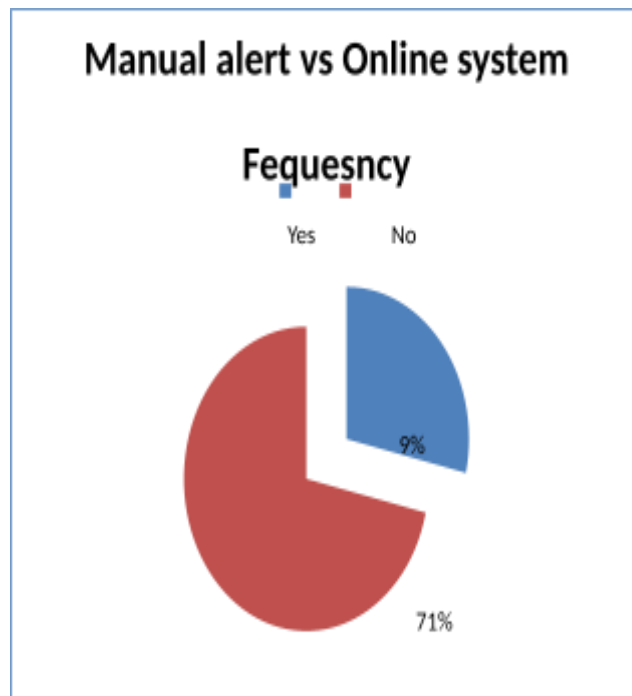
Confirm Password

☐ I Agree [Terms and conditions.](#)

In order to log in, the user must click the donor or recipient card. The user must register using the "Sign In" option, which is located on the bottom of the login form, if he does not already have an account. This is the donor login page that displays when the user selects the login button. After that, the user must log in using their password and username. It is the end user's responsibility to protect their personal information. Verify that you have logged out of all sites. To safely exit the system, always click the logout button.

Questionnaire Results

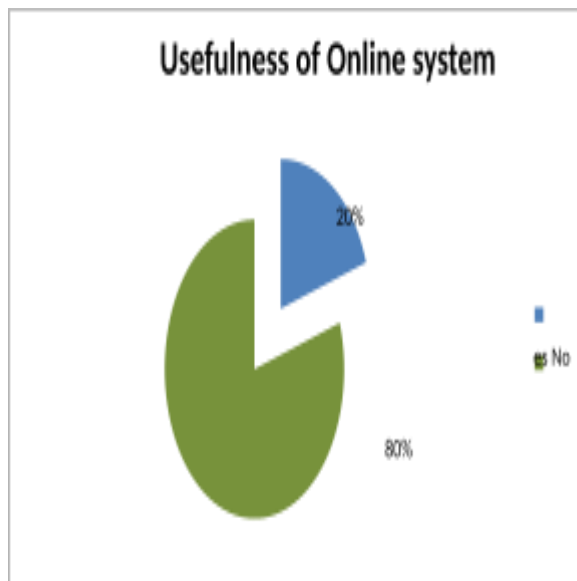
1. The findings of the sample's "Were you able to donate at the same frequency before introducing the online system?" are displayed in the graphic that follows. 71% of participants were unable to get notifications about blood donations via the internet system in addition to manual methods. Merely 29% of the contributors were able to receive donation alerts and continue to donate on a regular basis.



2

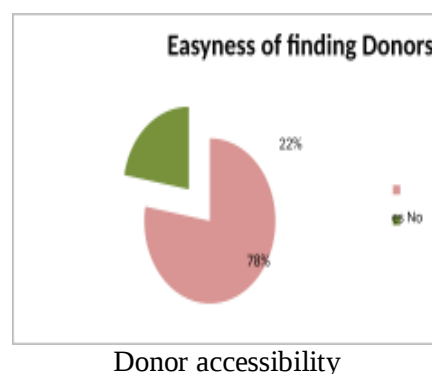
Alert frequency regarding blood donation events

1. The flowchart below shows the responses to the sample question, "Do you think that online blood donor management system is useful for Sri Lanka?" Eighty percent of participants concurred that, in the Bangladeshi context, the online system is more advantageous than the manual methods. Twenty percent of participants said they have encountered several requirements-related problems, like network and device connectivity. because there are some rural places in Bangladesh.



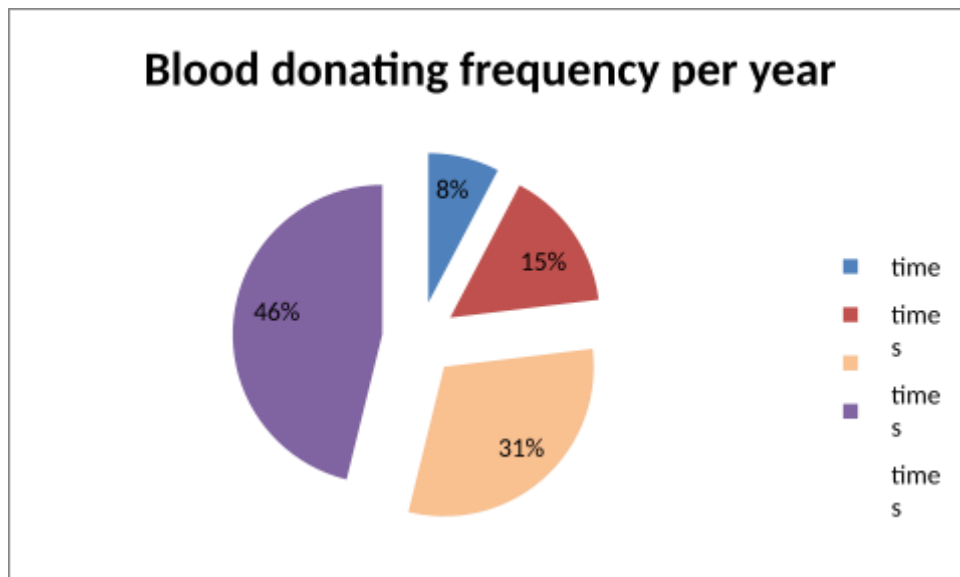
The Online System's Utility

1. The flowchart below shows the responses to the sample question, "Are you able to discover donors readily through the internet system?" 78 percent of people discovered donations easily and rapidly rather than calling or approaching friends for assistance. Twenty-two percent reported delayed answers from donors and network problems.



Donor accessibility

1. The answer, "If the response is 'Donor for the above, how many times u accept the requests from receivers for the year?," are displayed in the graphic below. based on the example. A donor up blood up to four times annually. Every donor should wait three months between donations. Thus, 8% of donors make a single gift each year. Additionally, 15% of donors are willing to give blood twice a year. compared to 31% who are willing to donate three times annually.



Blood Donating Frequency per year

Hema-Track_ Smart Blood Bank Administration

ORIGINALITY REPORT

8%	7%	0%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	dl.ucsc.cmb.ac.lk Internet Source	2%
2	Submitted to University of Colombo Student Paper	2%
3	Submitted to University of Wales Institute, Cardiff Student Paper	2%
4	www.coursehero.com Internet Source	1%
5	123dok.com Internet Source	<1%
6	Submitted to Manav Rachna International University Student Paper	<1%
7	Submitted to Middlesex University Student Paper	<1%
8	Submitted to University of Greenwich Student Paper	<1%

9	Submitted to Asia Pacific University College of Technology and Innovation (UCTI) Student Paper	<1 %
10	Submitted to Gulf College Oman Student Paper	<1 %
11	Submitted to Higher Education Commission Pakistan Student Paper	<1 %
12	Submitted to University of Westminster Student Paper	<1 %
13	Submitted to Softwarica College Of IT & E-Commerce Student Paper	<1 %
14	Submitted to QA Learning Student Paper	<1 %
15	www.slideshare.net Internet Source	<1 %

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