
Blood Aid

Automated Blood Donation Management System

By

Safi Ul Sahid ID: 011151289
Abu Khalid Ahmed ID: 011151334
Md Sohel Rana ID: 011151284
Dawoodul Islam ID: 011151350
Farzana Afrose ID: 011152007
Razia Sultana ID: 011152158

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Abstract

This project is designed to develop online blood donation management system. The main goal of our project is to ensure receivers to get response for blood from donors.

There are many existing blood donation systems but those are not working in desired level. Some of them are manual system which are time consuming and complicated. Some of them are online based but less informative and not as user friendly, as expected.

Hence we proposed a system where we can avoid the problems of existing systems.

In this system the information of donors are stored with their present address. When a receiver requests for blood his/her nearby donors will show. Not only that user can contact with blood banks, social organizations, hospitals by our proposed project but also users can get their desired blood earlier.

Acknowledgements

This work would have not been possible without the input and support of many people over the last two trimesters. We would like to express my gratitude to everyone who contributed to it in some way or other.

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Chapter 1

Introduction

Millions of lives are saved with blood in a variety of situations. A needy can save his valuable life by receiving blood. When there is need of blood, the information of blood donor is required. As the necessity of blood donation is very important now-a-days, we propose a web based blood donation management system. All users who are systems members can see donors and patient's data and information. The web based application is aided human beings. The system blood aid can help donors and patients to get the best service.

1.1 Project Overview

Blood donation management system is a web based automated application. This web application can help a person to give an e-information about the donor that is related to donating blood. A person who is interested in donating blood can register himself through this system. The system will notify the receiver when an interested donor response the request of the receiver. The admin of the system can do deletion and addition if the system required.

1.2 Motivation

In human body blood is a fluid that has an incomparable medical value. The organs of the body could not get oxygen and nutrients without blood. Human body needs blood for many reasons. A person can be suffered with various kinds of diseases. When blood is not always available, a patient may die for want of blood. Sometimes a pregnant mother may need blood in emergency situations. Blood donation is one of the most valuable contributions that a person can make. Blood donating is not harmful for a person. Within a few months a donor's body can regenerate blood naturally.

The best way to get blood is through voluntary donation. About 500,000 units of blood are required annually from an estimation of 2011. Only 25 percent can be found from

voluntary donation, 20 to 25 percent from paid donors, and 50 to 55 percent with each other communication for a specific patient [1].

We have become motivated to help the people via donation of blood. It's a great contribution to the society. Huge number of people can be brought under the shades of blood donation process. A web based blood donation management system gives us the opportunity to save huge number of lives.

Currently most blood donation organizations use a manual system. They are writing all the details about the blood donors in a ledger given to the donors when they donate blood for the first time. Only organizational staffs can add and update their donation details. The organizations will also register the new donors and save all their personal information manually. This is a very time consuming process. It is difficult to arrange the particular type of blood in emergency situation. A web based system is a system that will replace a manual system into the computerized automated system.

We can improve the clarity as well as simplicity of the task by using web based system. It will save the data of the donor and amount of blood they donate, time and location details about the donor. Besides that, it will allow user to check the next blood donation event around any area also.

A web based blood donation management system which is very useful for checking whether a particular blood is available or not. It maintains the centralized database of users.

We propose an automated blood donation management system named "Blood Aid". Our goal is to arrange the blood donors and manage blood donation process. The patients or relatives of their patients use the system to notify their desired blood. The system checks for the available donors in the neighborhood location when the blood request is assigned into the system. In order to ensure data exchange easily between the organizations, the infrastructure of "Blood Aid" is designed as flexible as possible. Directly Service Oriented Architecture principles [2] are adopted in infrastructure architecture as well as process designs.

1.3 Objectives

The objective of the blood donation management system is to achieve a computerized system to erase the complexity of manual system. To create a huge online blood donation community who will able to donate and receive blood as quickly as possible is also a goal of this system.

All the information related to the donor and their donated blood will be kept in the

system safely. We want through this system, no one will suffer from lacking of blood. The donor and receiver find each other via this web application

1.4 Methodology

We have developed a unique web application system to collect the requirement for the system. To develop the system, we use analytical method. In this method we read journals and publications to analyze them to come up with requirement of the system.

To develop the system, we research some manual existing system and some web-based system to collect the requirement for our system.

1.5 Project Outcome

Our development project is a fully automated web-based application. A receiver can find his desired donor through this system. A donor can also find an online platform to donate blood.

1.6 Organization of the Report

The explanation of our project has been done to understand the project by writing this report. The contribution of this thesis is, a location-based blood donation management system. The system helps a person who is in need of blood can find required type of donors available in his required area through location detection technology. So any seeker can find his required type of donor within a moment.

The system also provides a common platform for individual donors, receivers, blood banks, hospitals, organizations and events. This system contributes an active blood donation community all over the country. It also contributes the recovery of any manual system. And non-profitable charity organization may get any kind of blood donation related help from this system.

Chapter 2

Background

A large number of people rarely find desired blood through existing systems. Our automated system can be a better system to find blood.

2.1 Preliminaries

Storing and updating the information of a donor is very important. We cannot store and update information about donor as the existing system is manual. Our automated system stores a lot of information about the donor. Our developed system is very user friendly and flexible.

2.2 Literature Review

We proposed a system which is suitable for reserving and searching donor information. It saves money and time also. The details of the entire blood donation are automated. The system can be faster and accurate. By providing the necessary information about the donor, this application serves the users. The information from the system can be accessed by the user effortlessly. The features of the blood donation management system are:

1. User registration
2. Centralized database architecture
3. SMS alert
4. Search facility for finding blood donors
5. Security to protect donor's potential information

There is information consistency, data integrity, reliability issues in most of the system. Algorithm is defined to provide a direct link between the donor and recipient in automated blood donation management system. Algorithm also includes donor willingness and the proximity of the donor with other parameters. The developed system proved most effectiveness in accessibility and security [3] [4].

We can shortly say that the automated blood donation management online web based application, which helps the user to find blood. Admin can check the database of the system. It is very flexible for the blood banks, hospitals, charity organizations and blood donation program.

2.3 Summary

We can shortly say that the automated blood donation management online web-based application, which helps the user to find blood. It is very flexible for the blood banks, hospitals, charity organizations and blood donation program.

Chapter 3

Project Design

Users can create their own profile, can update and delete their information. Users can also post request for blood. Donors can response request by clicking response button and also can view the details of the request.

3.1 Requirement Analysis

3.1.1 Introduction

Investigating existing system is required in order to implement the new system. Producing an accurate and complete set of client and user requirements determine the characteristics of an acceptable solution.

3.1.2 Objectives of Requirement Analysis

The goal of requirement analysis is described below:

1. User needs.
2. Get the needs of the user met.
3. What type of functional requirement is needed to develop a new system?

3.1.3 Functional Areas of Current System

Thorough study on the existing system has been completed and the following areas of the system are found:

1. Donors and receivers information records and archive.
2. Donor details.

3. Receiver details.
4. Registered user profile.

Procedure of Existing System

1. First a receiver has to go to the organization for blood.
2. Then the members of the organization have to find the required donor from their record book.
3. If they find any donor for the specific blood in specific area, then they have to contact with the donor.
4. Then the specific donor has to confirm for the specific request.

Input to Current System

1. Donor related data: Data is used when receivers search for blood.
2. Request related data: request data is kept to find donor.

Use of Input Data

These data are used for various purposes. The main uses are to produce donors and receivers information file.

3.1.4 Requirement Specification

After analyzing the existing manual system and interviewing the people, blood banks and charity organization, we came to know the following facilities of the system have been required:

1. Save time.
2. Require less men power.
3. Help to provide better and quicker service to users.
4. Provide proper security to the data.

3.1.5 Proposed Solution to Meet the Requirements

So considering the requirements of manual existing system we propose for a computerized system for Automated Blood Donation Management System.

3.1.6 Functional Areas of Proposed System

Developing and improving the performance of the current system is the main theme of the proposed system through simplifying and modifying it. The main functional areas are not much different between the current system and our proposed system. These functional areas are given below:

1. Donors and receivers information records and archive.
2. Donor details.
3. Receiver details.
4. Registered user profile.

3.1.7 Proposed Method

The goal of this paper is to develop web based automated blood donation management system. The system stores the information of donor and receiver, which are related to donating blood. Any person who is interested in donating blood can register himself as a donor through the system. A person who wants to find blood can request for blood with the help of this site. We are adopting a methodology of participatory collaboration development by three sides of developers, users, experts for increasing the number of the first time donors [5]. We have planned the work with the centralized storage of the database. The application is accessed by the users from any device that has browsing capabilities and internet connection. When a user requests any type of blood then only available donors are displayed to the receiver. User can enter the system with correct username and password.

We studied some existing system related to our purpose. Then we take decision to modify methodology of existing system. In observed system the methods are used for individual purpose. But in our proposed method the purpose is not only for individuals but also for charity organizations, blood banks, hospitals. User performance measurement is not available in existing systems. We propose a method that will measure the performance of individual user by their positive and negative activity.

Common Platform

We proposed a system that is not only for individual users but also for charity organizations and blood banks where the existing system are for only individual users .We will develop a system that is the common platform for all kind of users like- donors, receiver, blood bank,organization. Users can get information of blood banks, organizations, hospitals. When anyone cannot find his/her required blood in our proposed system they can find from the organizations or blood banks.

Recipient Location driven

The proposed method is to create a website where receivers can get earlier response from donors. The donors who are all registered in the website are show while searching for blood donation. Receivers can see their nearby donors of their desired blood. Donors address are given when they get register in the website. When receiver will post for blood with location, the system will show donors who lives near him or his given location.

Automated system

It would be an automated system. All activities of users will be done in an automatic way. Information of registered users will be updated in an automated way. The system will keep records of each donor, in order to keep track of donors. Donor's age, rank will be updated automatically. A donor's availability will be updated by his last donation date.

3.1.8 Functional Requirements

Name	FR-1: blood request
Summary	Functionalities of existing manual system are covered.
Rationale	This project has been developed for managing the donor in the Automated Blood Donation Management System. Details of the blood are entered into the project to handle blood information. Donor details are stored and maintained in the database.
Requirements	<ol style="list-style-type: none">1. User registration (Donor)2. Login of admin.3. User login/logout/update profile4. Change the login password of admin.5. Register the donor by himself.6. Login of the donor7. Change the login password of the donor.8. Change contact, personal details by the donor himself.9. Change contact, personal details by system admin.10 Send blood donation details to the relevant donor.
References	Vision and scope document

Table 3.1: Functional Requirements

3.1.9 Non Functional Requirements

Name	NF-1: Performance constraint in blood request
Summary	Description of Functional requirements of a system are unified in the SRS, Coverage of the non-functional requirements are also described in SRS.
Rationale	This project provides details of availability, security, performance and reliability..
Requirements	<p>Availability:</p> <ol style="list-style-type: none"> 1. User can access this system any time as the system is available. 2. A replacement page will be shown, in case of a of a hardware or database failure. 3. 24 x 7 availability. <p>Security:</p> <ol style="list-style-type: none"> 1. The system use SSL (secured socket layer). <p>Performance:</p> <ol style="list-style-type: none"> 1. Interactive and less delays. 2. 20 seconds for sake of good communication. <p>Reliability:</p> <ol style="list-style-type: none"> 1. The right tools of the system for solving problems is used to secure the sensitive details.
References	Vision and scope document

Table 3.2: Non Functional Requirements

3.2 Methodology and Design

To develop the system, we use agile methodology. The system is focused on users and allow any changes, quality can be improved any time. The functionality of this system is clearly visible.

3.2.1 Context Diagram

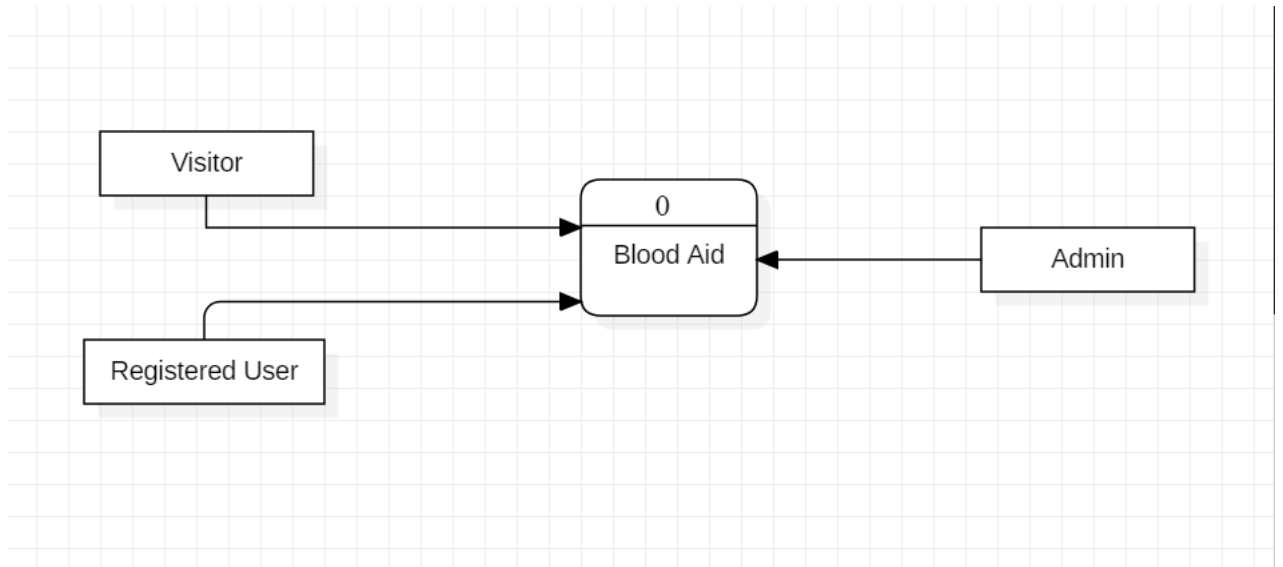


Figure 3.1: Context Diagram

3.2.2 Use case Diagram

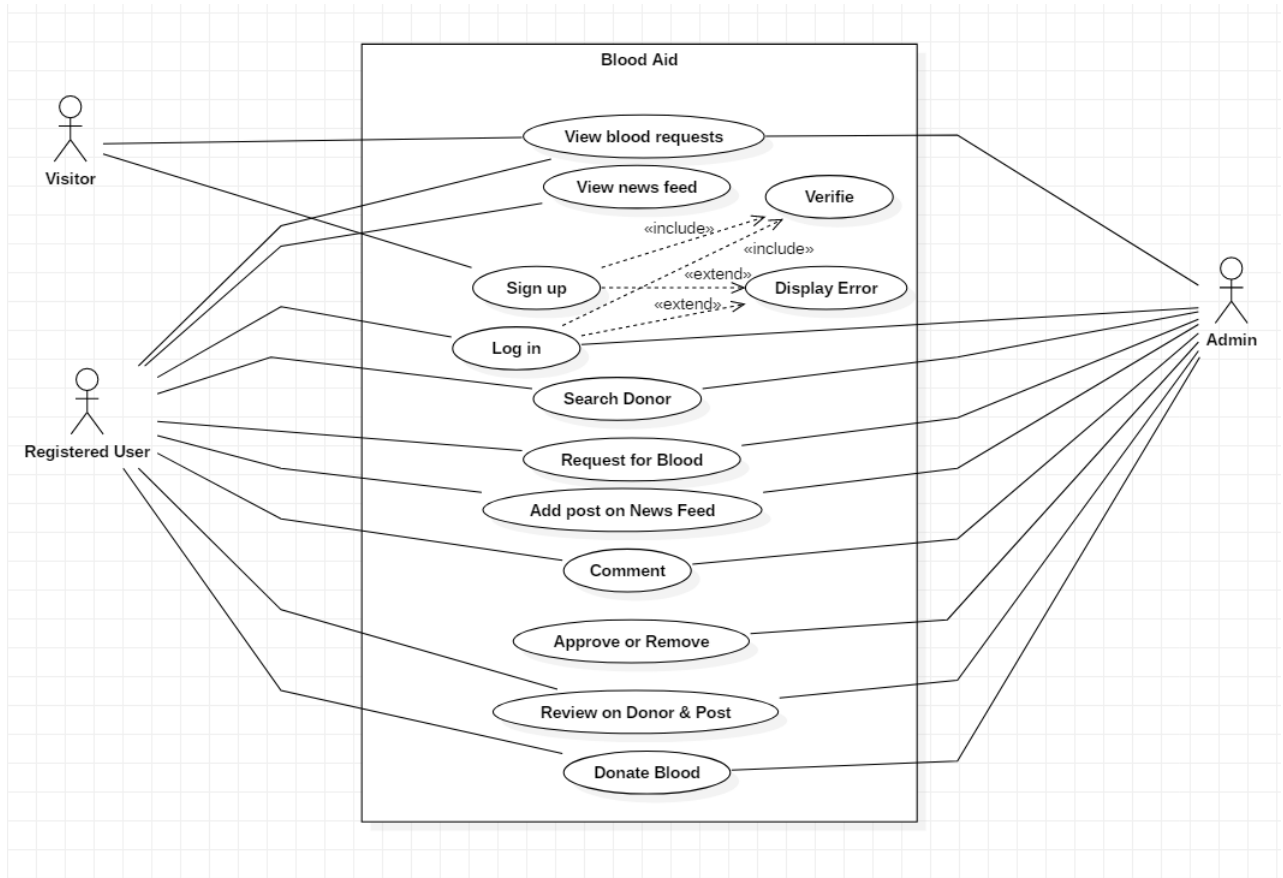


Figure 3.2: Use Case Diagram

Use Case 01: Give blood request post.

Primary Actor: User.

Stakeholders and Interests:

1. Visitor: Wants to view blood request posts successfully.
2. Registered User: Wants to give blood request posts successfully.
3. Admin: Needs to make sure that.

Pre Conditions:

1. User should be a registered user.
2. Registered user should know the username and password for logging in.

Post Conditions:

1. The changes are made in the database

Main Success Scenario:

1. User go to the website.
2. User sign up/log in into the system using the username and password.
3. Click to request button their home details.
4. User have to fill up the text request upload form with required information.

Alternate Scenario:

1. The system may not respond.

Solution : Wait for the system.

Use Case 02: Search donor

Primary Actor: Registered User

Stakeholders and Interests:

1. Registered User : Want to search for blood donor.
2. Admin : Needs to make sure that.

Pre Conditions:

1. User should be a registered user.
2. Registered user should fill up search text fields.

Post Conditions:

Search result will show from Database.

Main Success Scenario:

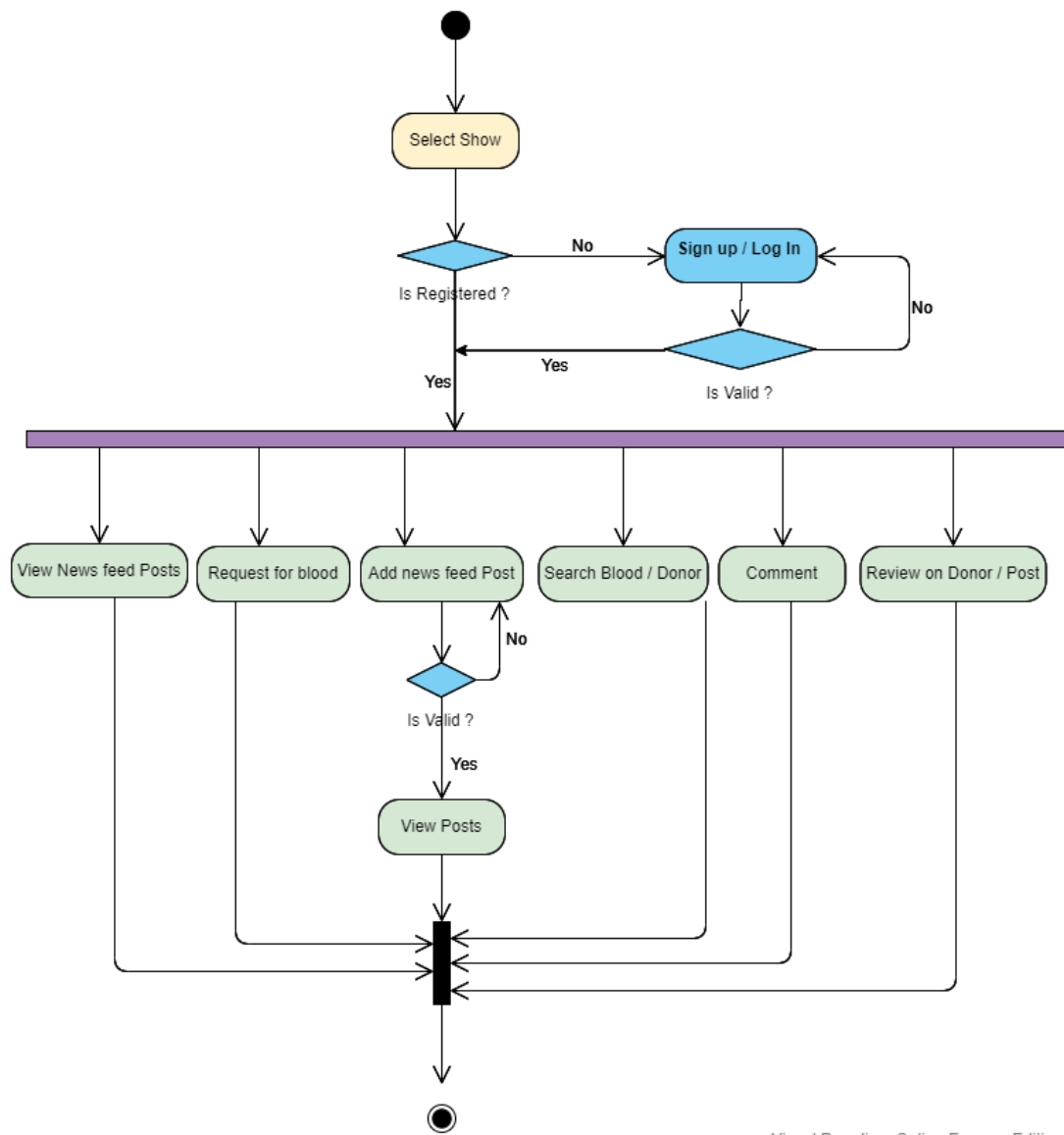
1. User sign up/log in into the system using the username and password.
2. Fill up text field for searching donor properly.

Alternate Scenario:

1. The system may not respond.

Solution: Wait for the system.

3.2.3 Activity Diagram



Visual Paradigm Online Express Edition

Figure 3.3: Activity Diagram

3.2.4 Data Flow Diagram

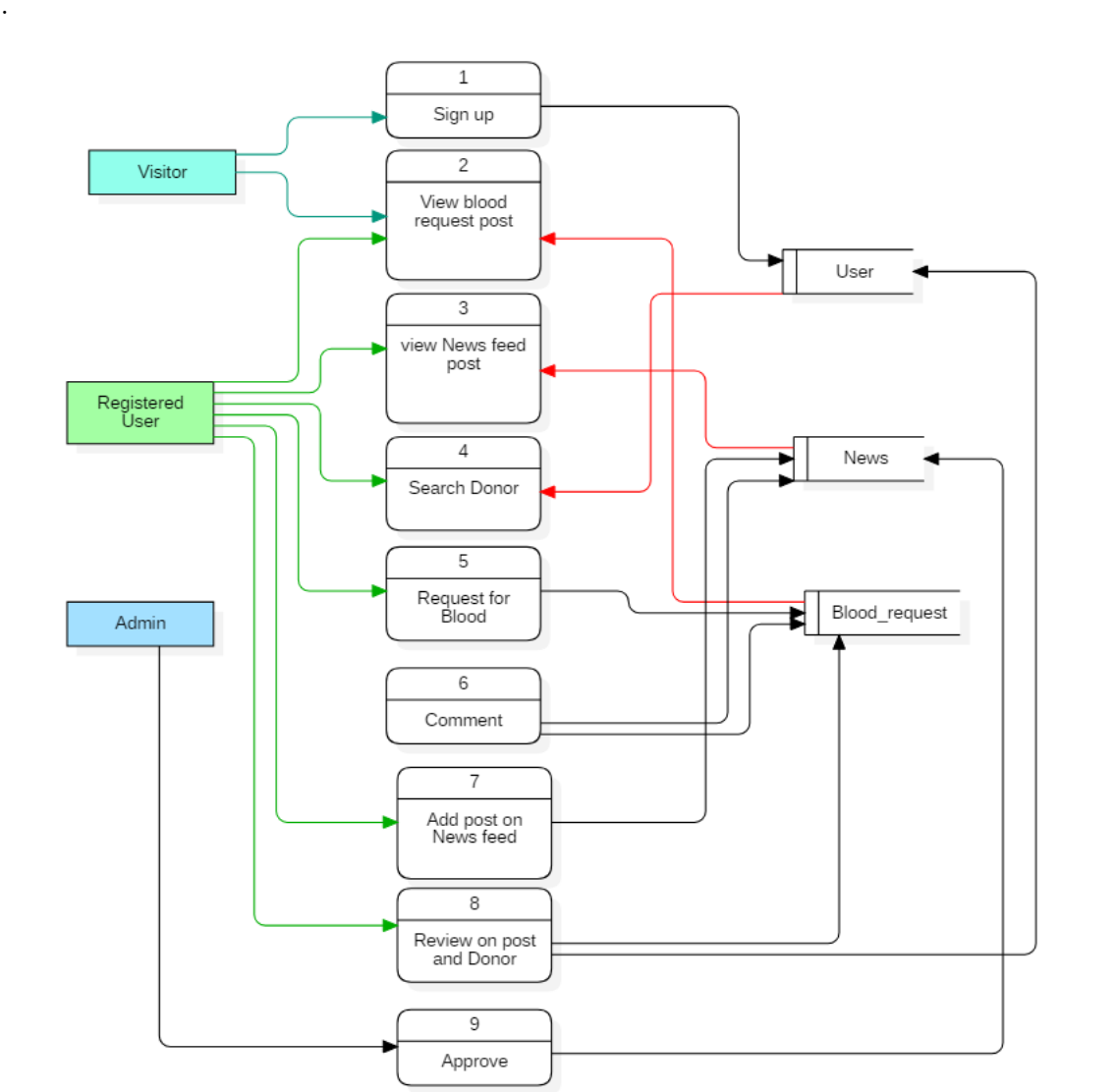


Figure 3.4: Dataflow Diagram

3.2.5 Scheme Diagram

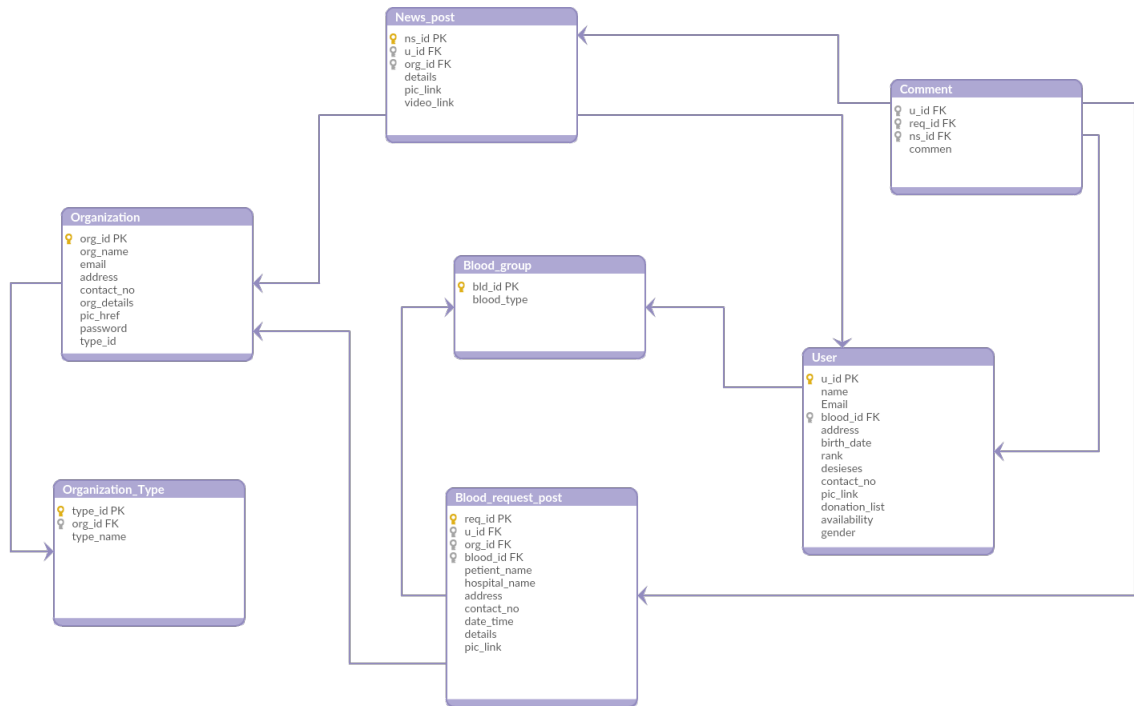


Figure 3.5: Scheme Diagram

3.2.6 Class Diagram

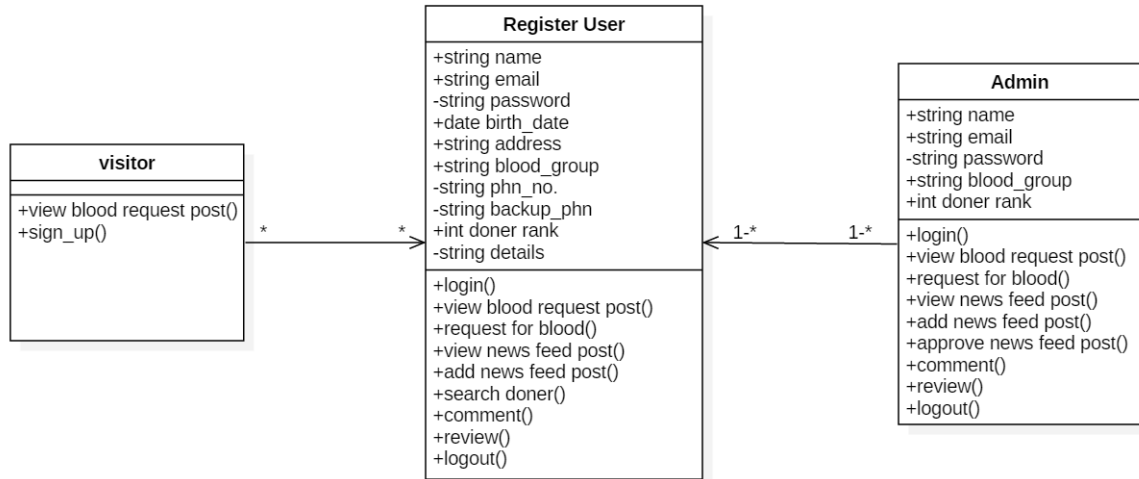


Figure 3.6: Class Diagram

3.2.7 Sequence Diagram

Blood Request Post:

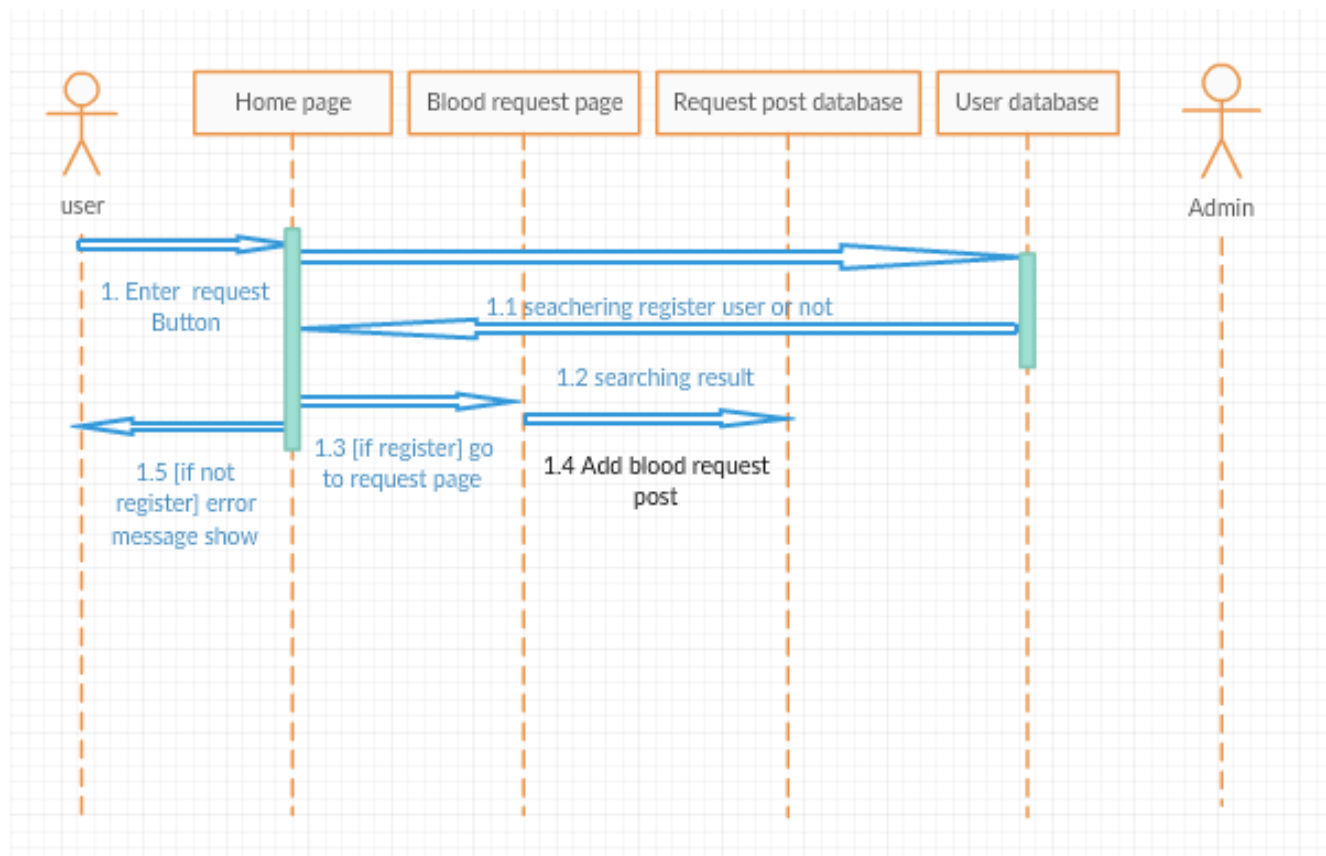


Figure 3.7: Blood Request Sequence Diagram

Donor Search:

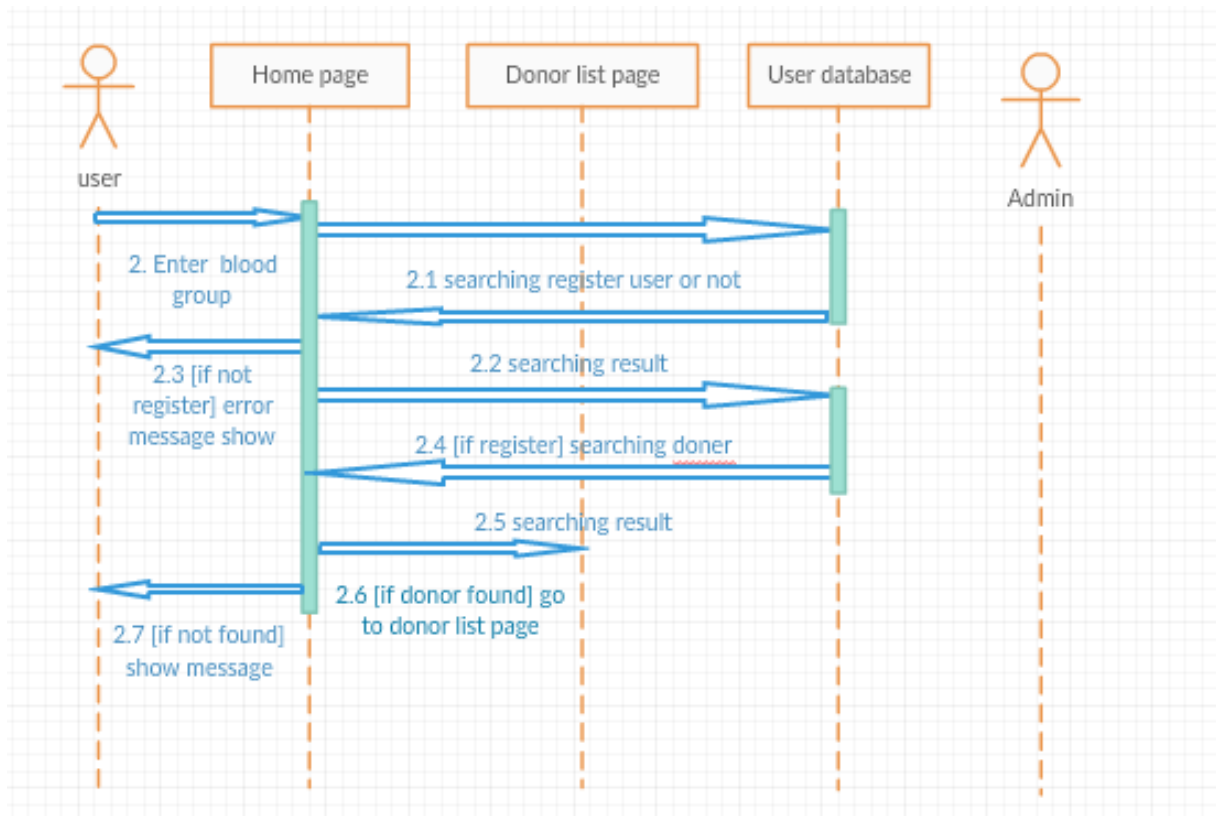


Figure 3.8: Donor Search Sequence Diagram

Sign Up or Login:

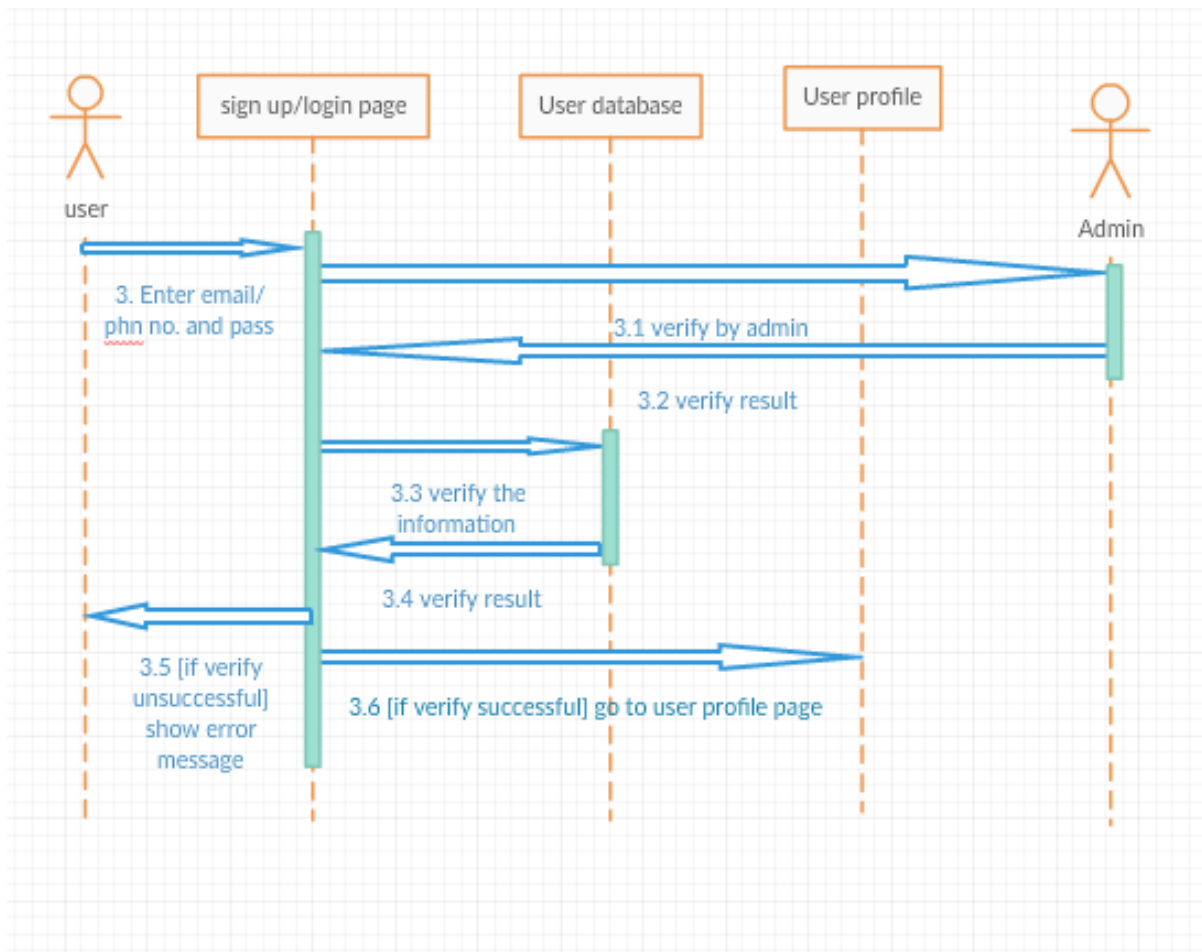


Figure 3.9: Sign Up or Login Sequence Diagram

Post in News Feed:

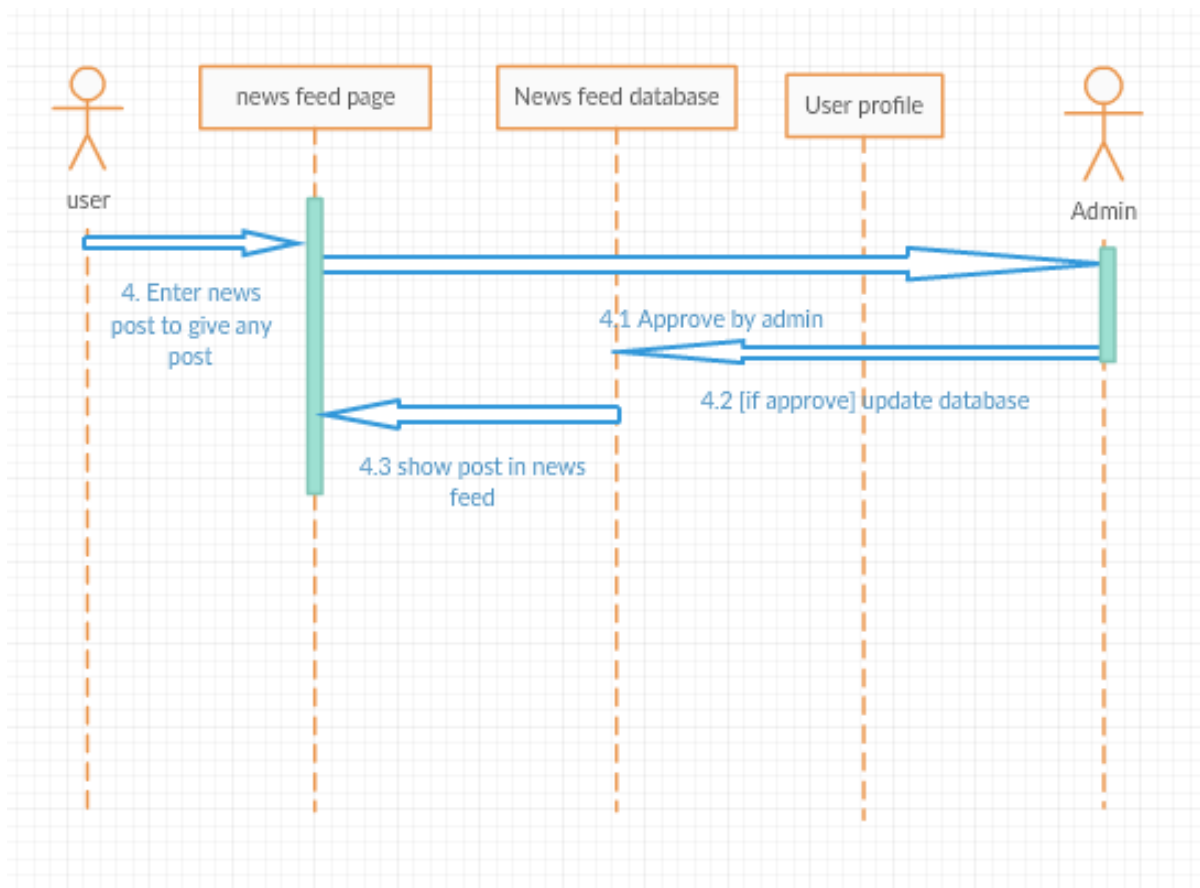


Figure 3.10: News Feed Sequence Diagram

3.2.8 User Interface Design

User Registration:




The screenshot displays a web application for donor registration. At the top, a red navigation bar contains links: Home, Donor SignUp, Log In, Send Blood Request, Camps, Search, Admin Login, Contact Us, and About. The main content area features a central registration form titled "Donor Registration" in a large, stylized red font. To the left of the form is a vertical red banner with the text "I WANT TO BECOME A DONOR" in white and yellow. The form itself is set against a light beige background and includes the following fields: Donor Name (text input), Gender (radio buttons for Male and Female, with Male selected), Age (text input), Mobile No (text input), Address (text input), Select Blood Group (dropdown menu showing "Select"), E-Mail (text input), Password (text input), Confirm Password (text input), and Upload Pic (a "Choose File" button and "No file chosen" text). A red "Resitred" button is positioned at the bottom of the form.

User Login:

[Home](#) [Donor SignUp](#) [Log In](#) [Send Blood Request](#) [Camps](#) [Search](#) [Admin Login](#) [Contact Us](#) [About](#)

Donor Login



E-Mail

Password

Log In

Not A DONOR? [Click here](#) to REGISTER.

Send Request:

[Home](#) [Send Blood Request](#) [View Blood Request](#) [Profile](#) [News Feed](#) [Camps](#) [Log Out](#)

Request for Blood

Name:

Gender ☒ Male ☐ Female

Age

Mobile No

Blood Group

Address

Quantity

E-Mail

Till Required Date

Detail

3.3 Summary

We have designed context, use case, activity, data flow, scheme, and class diagram. Agile methodology is used to develop the project.

Chapter 4

Implementation and Results

To implement the system, we follow different types of software, diagram tool, programming language and markup language.

4.1 Environment Setup

We use some computers like ASUS, acer, Lenovo and we also use some operating system like windows 8 and windows 10 to deploy the project.

Software	Xampp Brackets Notepad++ Sublime
Diagram Tool	StarUML Creately Lucidchart
programming Language	HTML CSS PHP JavaScript Ajax
Markup language	Latex

Table 4.1: Environment Setup

4.2 Evaluation

4.2.1 Test Information

Test Type

☒ Full Test ☐ Regression Test

System Under Test

System Name: Blood Aid Staple the recorder listing

Version: 1.0 of the configuration here

Test Personal

Name	Date	Time/Hour
Safi Ul Sahid	03/09/19	11:15 AM
Abu Khalid Ahmed	05/09/19	9:00 AM
Md Sohel Rana	12/09/19	3:30 PM
Dawoodul Islam	27/09/19	8:00 PM
Farzana Afrose	18/09/19	7:00 AM
Razia Sultana	01/10/19	2:00 PM

Table 4.2: Test Personal

4.2.2 Test Summary

Results

Conclusion of the Test: PASS

Identifiers of the Observations Recorded:

Number of Cases Failed: 0

Tester: Dawoodul Islam Date: 03/10/19

4.3 Results and Discussion

4.3.1 Results

The different pages of the project is described in this chapter which have been implemented.



Figure 4.1: donar registration

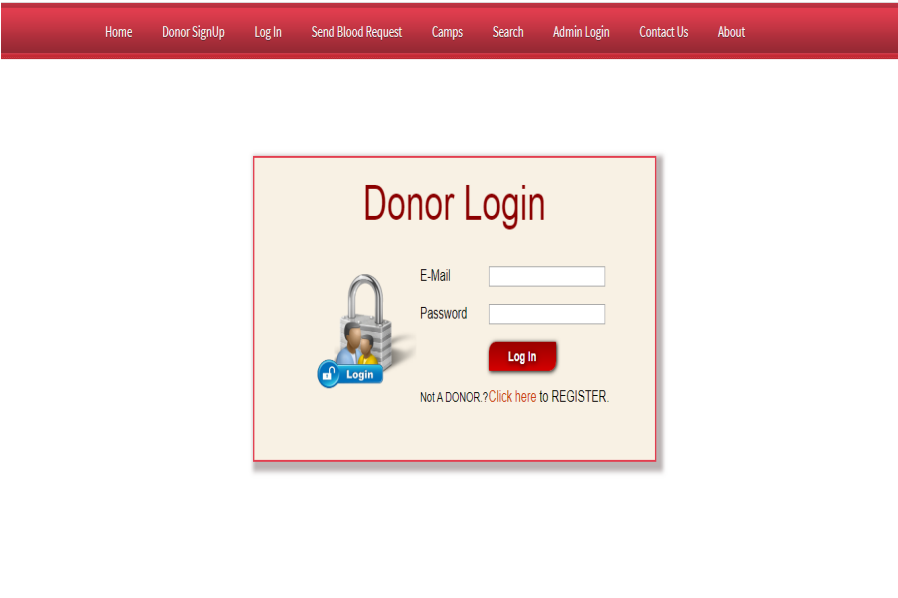


Figure 4.2: Login Page



Figure 4.3: Verification Page

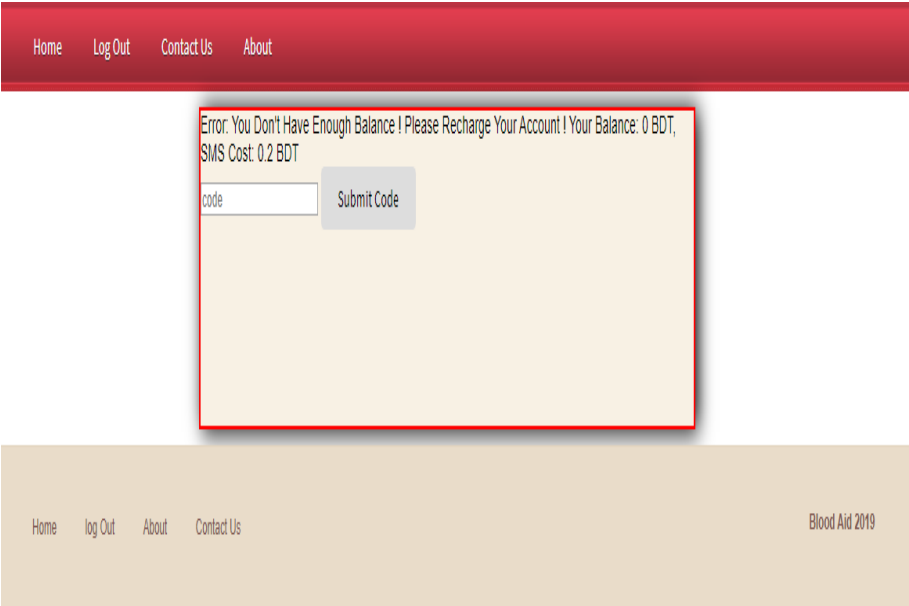


Figure 4.4: Verification No Balance

HomeSend Blood RequestView Blood RequestProfileNews FeedCampsLog Out

Request for Blood

Name:

Gender

Male

Female

Age

Mobile No

Blood Group

Select

Address

Quantity

E-Mail

Till Required Date

JAN

Detail

Submit

Figure 4.5: Send Request Page

HomeSend Blood RequestView Blood RequestProfileNews FeedCampsLog Out

Requests For Blood

Name:davood
Blood Group:A+
Quantity:2
Mobile No:017893787
Address:Puran dhaka
Email:acd@gmail.com
Till Required Date:2015-01-15
Response:10Bag20Bag
Resposed by:

Name:ranaa
Blood Group:O+
Quantity:1
Mobile No:01743736483
Address:Azimpur
Email:rana@gmail.com
Till Required Date:2019-01-12
Response:10Bag20Bag
Resposed by:

Figure 4.6: View Request Page

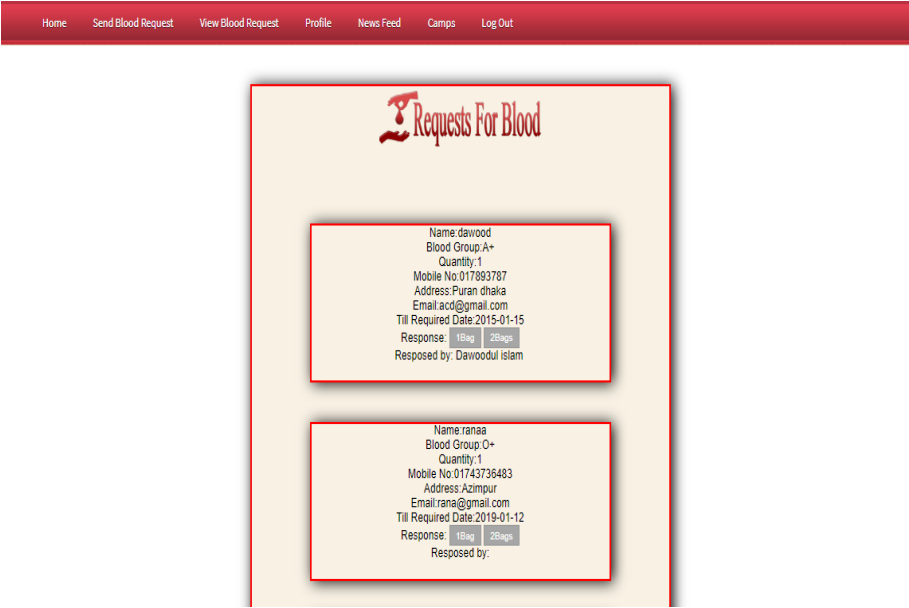


Figure 4.7: View Request After Response

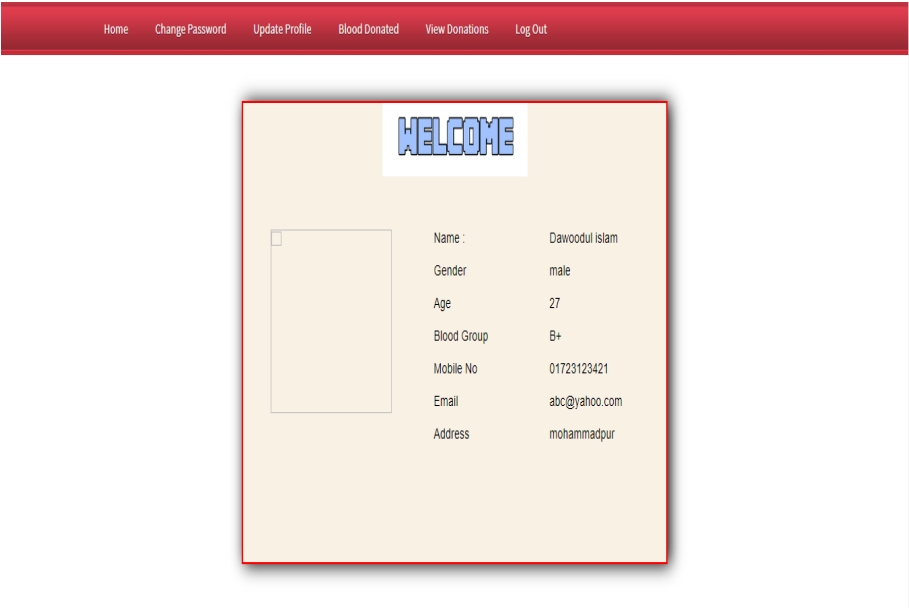


Figure 4.8: Profile Page

Home Change Password Update Profile Blood Donated View Donations Log Out

Change Password

Old Password

New Password:

Confirm Password

Password matched

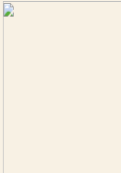
Change

Blood Aid 2019

Figure 4.9: Change Password Page

Home Change Password Update Profile Blood Donated View Donations Log Out

Profile Update



Name

Gender ☒ Male ☐ Female

Age

Mobile No

Address

Blood Group

Update

Figure 4.10: Update Profile Page

HomeChange PasswordUpdate ProfileBlood DonatedView DonationsLog Out

Blood Donated

Select campSelect

DateJAN1

No Of Units

Other Detail

Save

Blood Aid 2019

Figure 4.11: Donation Entry Page

HomeChange PasswordUpdate ProfileBlood DonatedView DonationsLog Out

View Blood Donation

Camp Name	Date of Donation	No. of Units	Email Id
Dhaka medical college	2019-03-05 00:00:00	1	abc@yahoo.com
Dhaka medical college	2019-09-20 00:00:00	1	abc@yahoo.com

Blood Aid 2019

Figure 4.12: Donation History Page

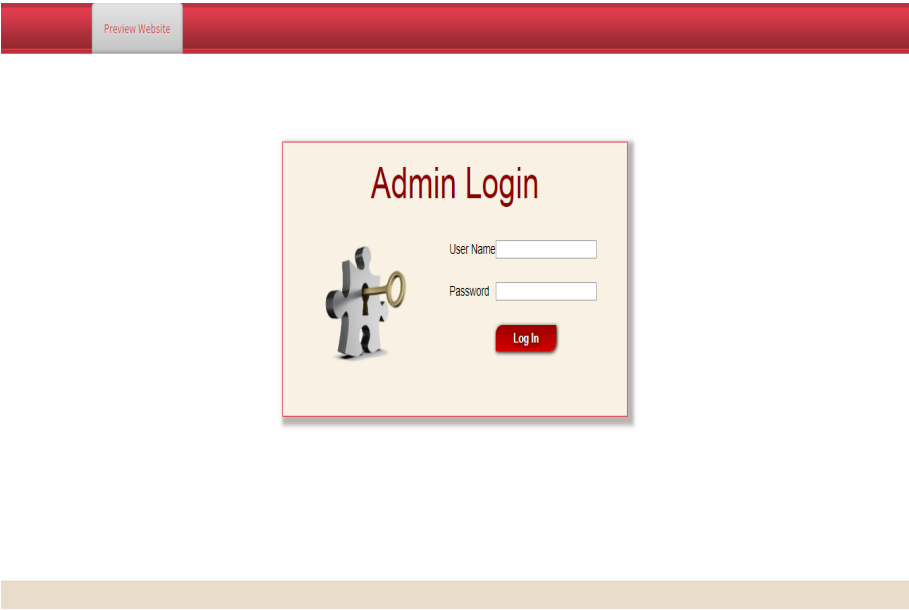


Figure 4.13: Admin Login Page



Figure 4.14: Admin Home Page

4.3.2 Discussions

The project begins with home page. The donor registration page is scene as shown in figure 4.1. Some important field are screened in this page. User has to fill up this field to complete the registration.

The next screen is login page which is shown in figure 4.2. A registered user will do login using email and password to go to next page. When a user use invalid email and password, the system will send user's password is incorrect. Verification page is also shown in figure 4.3

The send request page can be scene as shown in figure 4.5. Receivers must have to filled up some fields for blood request. Receiver will click submit button for blood request.

The next screen is view request page. This is scene as shown in figure 4.6. In this screen all blood request will be scene. View Request After Response page is scene as shown figure 4.7. This page will show name of respondent user.

Some important page like Profile Page, Change Password page, Profile Update page, Donation Entry page, Donation History page, Admin Login page and Admin Home page is also given in result subsection.

4.4 Summary

Our Automated Blood Donation Management System has been finally completed successfully after using different types of software tools, programming languages and API. Software testing is also passed successfully.

Chapter 5

Standards and Design Constraints

To develop the project, we face some challenges. Some standards have been strictly maintained.

5.1 Standards

To secure our website we will use “w3af” which can create a framework by exploiting and finding all web application vulnerabilities. The risk of any access can be also managed while external access is available by using “Web Application Proxy” under Microsoft.

IEEE/ ACM software engineering code of ethics which will be followed is honest, trustworthy and avoids harm. This standard does not develop any device or application that might harm humans, animals, the environment in any harmful manner. Professional standard is also maintained.

5.2 Impacts

The impacts of blood donation management system will be discussed in different perspective in this part.

5.2.1 Economic Impact

A lot of time and money is saved through the online blood donation management system. A receiver can save money in different ways. For example, a receiver does not have to buy blood from any blood bank.

5.2.2 Ethical Impact

Blood donation campaign is promoted through this site. Due to being fully automated, a user can post fake request. In spite of accepting request of a receiver a donor can betray with him by not donating blood. A user can harass another user by unnecessary texting

or call. With proper rules and regulations these incidences can be avoided. Otherwise, there is no ethical impact.

5.2.3 Health and Safety Impact

Various kinds of patients need blood. A patient may die for want of blood. A person can suffer from various kinds of diseases like anaemia, cancer, kidney diseases, liver diseases. Blood is also needed for accidental cases and emergency operations. Donation of blood saves lives. It does not have any adverse effect on health.

5.2.4 Social Impact

A person can make help society by donating blood. This site can create a huge community of people through donating blood. A good relationship is made between different community of the society.

5.2.5 Political Impact

Government encourages this kind of online blood donation management system because it helps people. There is no law preventing to build such a system because it increases health index of a country.

5.3 Challenges

If enough time is given this project can be developed. It is recommended to develop in phases.

Our project will be sustainable and durable. The design will not take into account accidental inputs. The expected age is as long as get help from our project. If new technology or new idea will come, we will update our project.

We have faced some technical challenges during implementation.

5.4 Summary

It is a fully automated system, there will not be any human interaction. As long as the system is sponsored to be deployed in web application server and a periodical system update until it faces maturity, the project is sustainable.

Chapter 6

Conclusion

In this paper, we conducted a survey analysis focusing on the promotion-publicity media of blood donation in the blood donation promotion policy toward securing and increasing blood donors and developed a blood donation promotion application based on the survey results [6].

6.1 Summary

The proposed web application provides interaction between blood donors, blood requester and blood bank [7]. Blood donors update their information and requester shows their requests to the donors through the system.

6.2 Limitation

There are some limitations of our system. A receiver cannot get notification by e-mail or cell phone when a donor response his request.

When a requester post for blood, then available donor cannot get notified by the system.

No one can post for blood without registration. No donor can donate blood more than one bag within a month. A user must have internet connection in is device.

6.3 Future Work

With outbound technologies, we will develop the system by adding more features in future. We will develop notification of request and response so that a user can be notified easily without browsing the site. We will also add a feature to find nearest donor using Dijkstra algorithm. Donors and receivers can track each other who are connected to via request post by location detection technology. We will develop an android application based on this automated blood donation management system.

References

- [1] Sadia Diba. *Blood donation application with implementation of machine learning*. PhD thesis, BRAC University, 2018.
- [2] T Erl. Soa: Principles of service design prentice hall. *Upper Saddle River, NJ*, 2008.
- [3] Rai Selvamani and Kumar. A novel technique for online blood bank management. *Procedia Computer Science*, 48:568–573, 2015.
- [4] Pushpalatha MP Shashikala, BM and Vijaya. Web based blood donation management system (bdms) and notifications. In *International Conference on Cognitive Computing and Information Processing*, pages 118–129. Springer, 2017.
- [5] Hidehiko Toshiko, Yuta. *Development of Blood Donation Activity Support System on Service Design Thinking*. PhD thesis, 2017.
- [6] Yuta Hidehiko Hayate, Toshiko. *Development of Blood Donation Activity Support System on Service Design Thinking*. PhD thesis, 2017.
- [7] B. Vijaya B. M. Shashikala, M. P. Pushpalatha. *Web Based Blood Donation Management System (BDMS) and Notifications*. PhD thesis, 2018.