Blood Donation System - Blood Hub

BY

EKRAMUL HAQUE RUBEL

ID: 142-15-3972

FATMI OUBAIDUTE TOHRA

ID: 142-15-3649

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

Naziour Rahaman

Lecturer

Department of CSE

Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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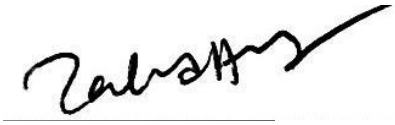
APPROVAL

This Project titled "**Blood donation system - Blood Hub**," submitted by Ekramul Haque Rubel, ID: 142-15-3972 and Fatmi Oubaidute Tohra**,** ID: 142-15-3649 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 5th May 2018.

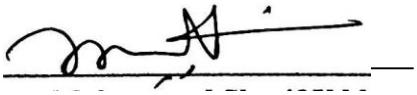
BOARD OF EXAMINERS

Dr. Syed Akhter Hossain — **Chairman**
Professor and Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Dr. Sheak Rashed Haider Noori — **Internal Examiner**
Associate Professor and Associate Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



Md. Zahid Hasan — **Internal Examiner**
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

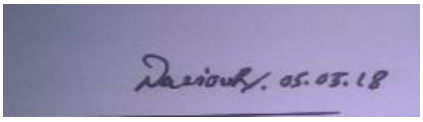


Dr. Mohammad Shorif Uddin — **External Examiner**
Professor
Department of Computer Science and Engineering

DECLARATION

We hereby declare that this project has been done by under the supervision of **Naziour Rahaman, Lecturer, Department of CSE,** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Naziour Rahaman
Lecturer
Department of CSE
Daffodil International University

Submitted by:

Ekramul Haque Rubel
ID: 142-15-3972
Department of CSE
Daffodil International University

Fatmi Oubaidute Tohra
ID: 142-15-3649
Department of CSE
Daffodil International University

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Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

This project is goal to developing an online Blood Donation System. This project is to build a web-based, online blood donation system, named B**lood donation system-Blood Hub**. This system provides an online platform for a quick access to the required donor. It is helpful for any people. By this system person who are interested in donating the blood can register and help to the urgent need of blood. Any general consumer can send request for blood through online and he can also take the help of this system. To develop this web application we used PHP OOP, which helps us to build this application faster. We also used HTML, CSS, Bootstrap, and JavaScript for better web design and make this application user friendly. After implementation of all functions, the system is tested in different stages and it works successfully as a prototype.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

Our project is based on blood donation field. Every three seconds there is someone around the world needs blood. Our project will decrease the death rate of human in lack of blood. Our main goal is to help people in collecting blood in an easy & early way. With This application any person who is interested in donating the blood can register and help to the urgent need for blood. By using our project people will be able to find blood donor so early. Users can communicate with blood donor directly and at the same time, they send request to many blood donors for blood.

1.2 Motivation

- Blood is a priceless life sustaining fluid that no human can survive without it.
- Every three seconds there is someone around the world needs blood.
- One of ten patients in the hospital needs blood transfusion.
- Blood donor is not available all the time.
- Blood bank is not available to all.
- Though blood donor is available but many times we can't contact with them, as a result emergency blood can't be managed when needed.

1.3 Objectives

Objectives of our web application are mentioned below:

- The main objective of this project is to connect people who are interested to donate blood or to receive blood in an emergency situation.
- All registered members will get the opportunity to share their request through this application.

- To receive blood, people will be able to search the donor by his location and blood group. After that people will send a request to their nearest persons who have the same blood group.
- This Application will help to notify important request by mobile email notification to the nearest blood donors.
- Based on request, each donor will have the option to accept or reject the request.
- Donor's big database with location & blood group.
- Every donors have a personal profile.

1.4 Expected Outcome

- This project will help people to find emergency blood.
- This will raise public awareness about blood donation.
- There will be exact location of donors so anyone can easily collect blood.
- No people will suffer from searching blood.

CHAPTER 2

BACKGROUND

2.1: Introduction

Our system will be an interactive website that can be operated by computer, smartphones, tablet etc. Different user will have different user to deal with. In need of urgent blood, sometimes we can't collect blood or blood donor. Our project with help people in this trouble situation by searching blood donor in the nearest place. Our project will help for getting all information of blood donor.

2.2: Related Works

We have Research plenty of documents related with blood donation. We have monitored the functionalities of some blood donation website. This application is highly decorated with functionalities. They are equipped with many technical features. Some applications are as follows:

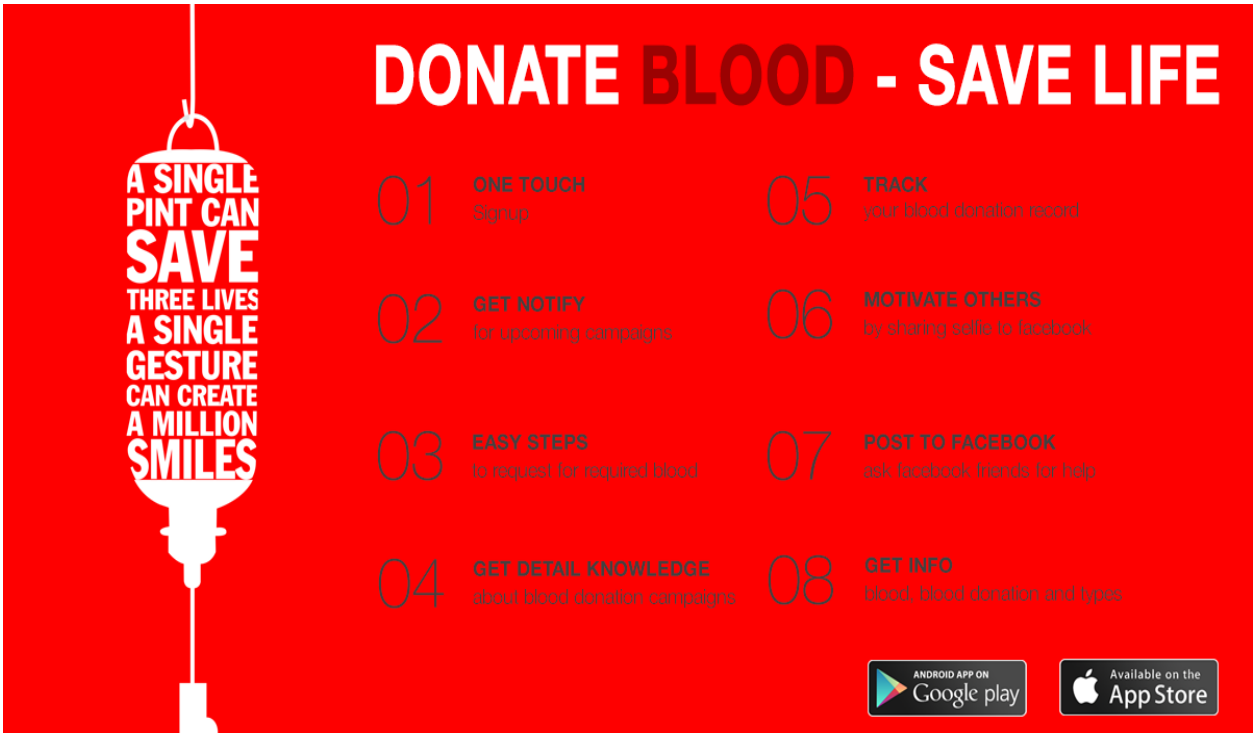


Figure 2.1: Blood donation system list.

2.2.1 Common features of these application are:

- Register as Donor
- Search Donor
- Request Blood

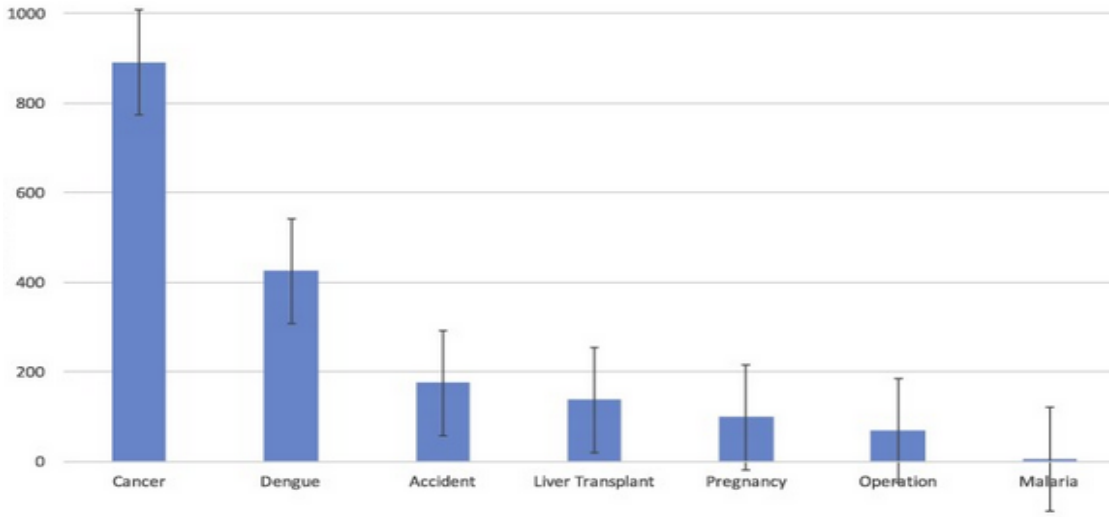


Figure 2.2: The reason for the need of blood.

2.2.1.1 Register as Donor

The registration is maintained with a data processing system. Any person can register in this system. The login of register information requires that each user enters the defined usernames and passwords. Email must be unique.

The following data is entered into the register, as applicable:

Name

Email Address

Phone Number

Gender

Blood Group

Location

Figure 2.3: Donor registration demo.

2.2.1.2 Search Donor

The search results are intended for quick searching of multiple entity types. When a people need urgent blood then user search the blood in this application system.

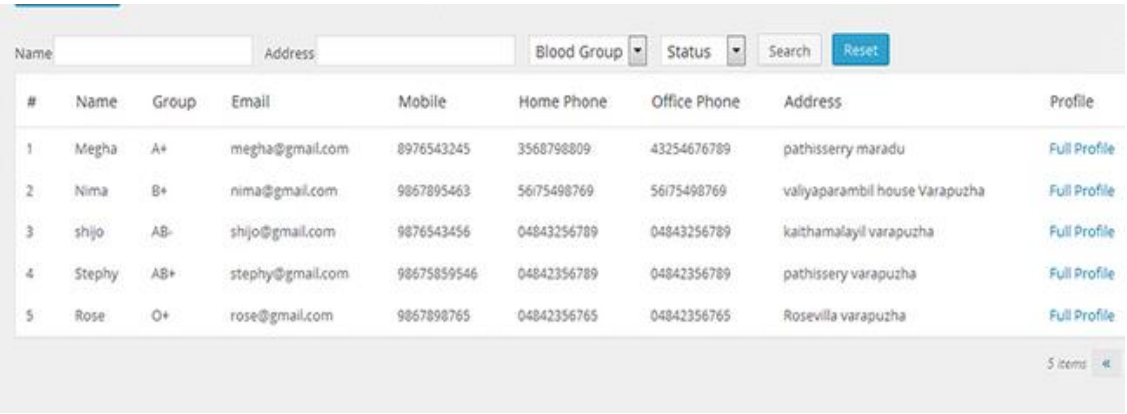


Figure2.4: Donor search box.

2.2.1.3 Request Blood

This always the probable recipients to make online request to the donor. In urgent situation when need the blood then search donor. There has been filed donors are matched and the request is sent via SMS with necessary details.

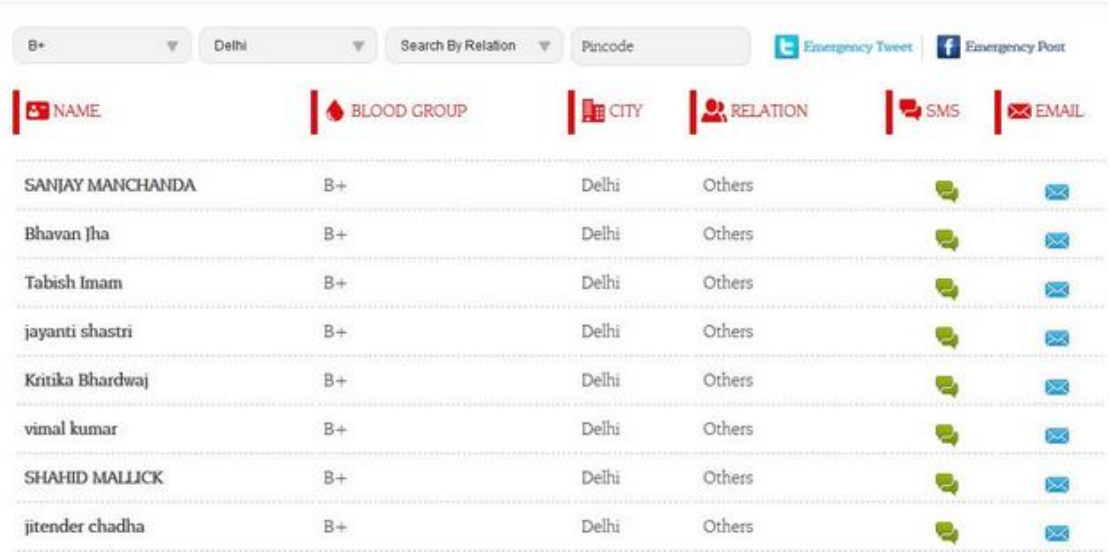


Figure 2.5: Request SMS sent system.

2.3 Comparative Studies

Our implemented application is different from the existing application. Without registration user can find out the blood donor. All authenticated registered members will get the opportunity to share their request through this application. This Application will help to notify important request by mobile SMS/email notification to the nearest blood donors or receivers.

2.4 Challenges

- User must update profile after registration
- Send notification to the donor
- Must register to send a message to the blood

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business process modeling (BPM) is an engineering system and the mobility of the representing method of an enterprise, and the running process explore and raised. It emblematically accomplished by the business analysts, who provide the expertise modeling system. Other was it process model may be grow directly from event's log by using process mining tools.

3.2 Requirement Collection & Analysis

Here some requirements are given that collected when implementation of software or the data collections. The requirement collections are given below:

- To collect the users problem to find blood.
- Must need the user information.
- Needed to edit the account profile settings.
- Needed to be registered for using the app.
- Must needed a valid email to reset the password and further actions.
- Must be needed a valid mobile number for login the user profile.
- Collect the locations for send the SMS.
- Needed to collect the personal opinion of user.

3.3 Use Case Diagram

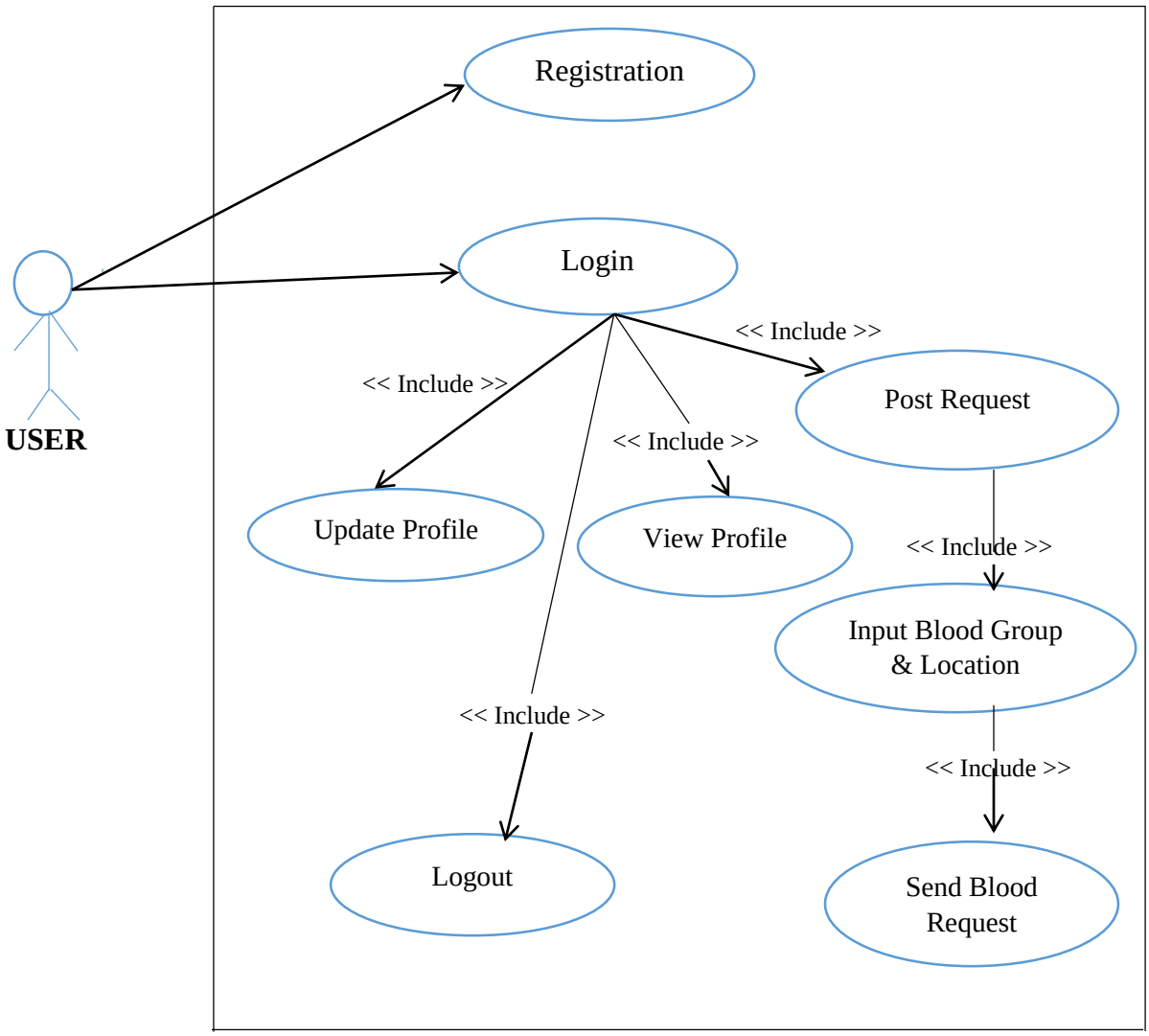


Figure 3.1: User Use Case diagram.

3.4 Detailed Use Case

The details use case diagram from our use case diagram figure:

Table 3.1: Use case description of Registration.

Use Case #01	Register
Primary Actor	User, donor
Secondary Actor	System
Pre-Condition	Go to the website
Scenario	1. Enter valid name. 2. Enter valid and active email. 3. Enter password. 4. Confirm password. 5. Click “Register” button.
Post-Condition	1. Registration successfully completed or failed.

Table 3.2: Use case description of Login

Use Case #02	Login
Primary Actor	User, Donor
Secondary Actor	System
Pre-Condition	Complete registration before
Scenario	1. Enter valid Mobile number 2. Enter correct password. 3. Click “Login” button.
Post-Condition	1. Login successful or failed. 2. Display main page

Table 3.3: Use case description of search blood.

Use Case #03	Search Donor
Primary Actor	User
Secondary Actor	System
Pre-Condition	Search Blood group and address
Scenario	1. Login into the website. 2. Search Blood and Location. 3. Click “Sent email” button.
Post-Condition	1. Confirmation message need to be shown. 2. A notification should be sent to the user mobile.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

Front end design is very necessary for every web application or software. Because front- end design is the sector that interacts with user. We are going to create a web application. So for a better user service the front end design is very important for an application.

Here is some of front-end design of our software given below.

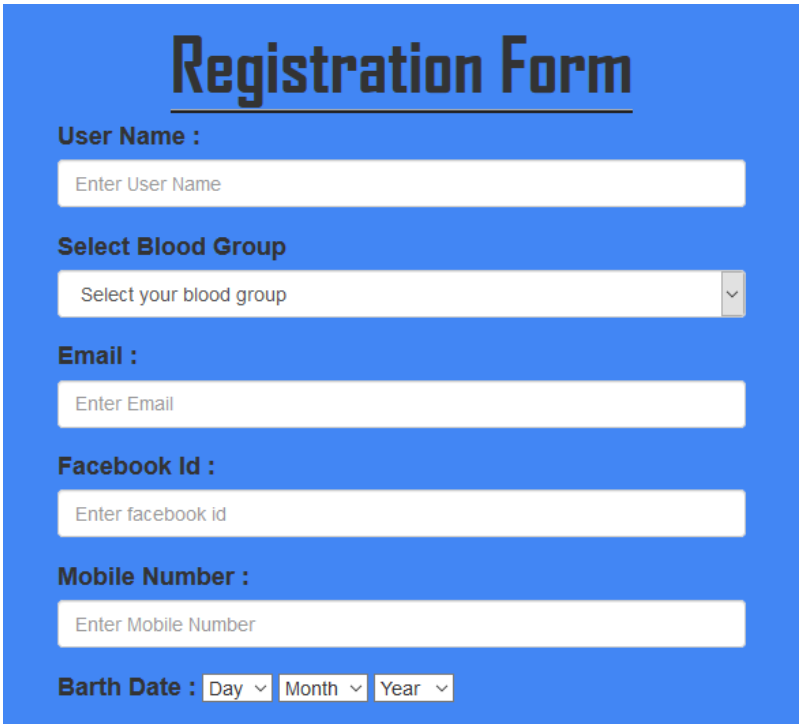
4.1.1 Home Page

- Show the index of pages that selected for users.
- Users can view the details of the application.
- Users can also view the navigation's bar of the application.
- Users will also view the Registration button and the login button on the navigation bar.

Figure4.1: A project on blood donation (blood hub) home page.

4.1.2 Registration

- Must provide the full name of the user
- Must provide the Mobile number.
- Must provide valid Email Address.
- Must provide the valid password.



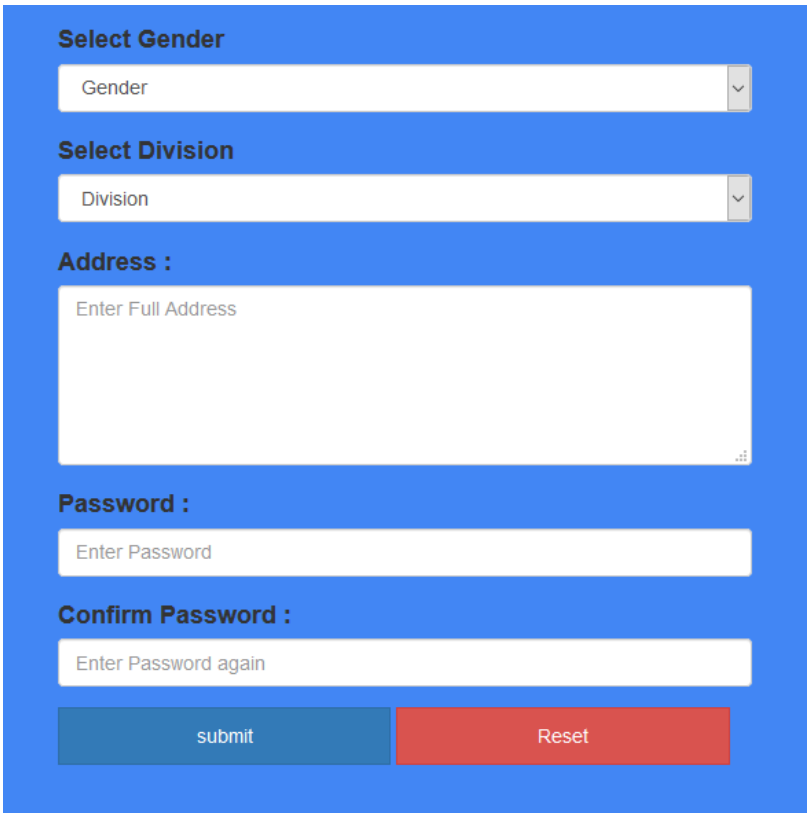


Figure 4.2: Blood Hub user registration page.

4.1.3 Update profile

- Must be provide registered user valid email address.
- Must provide registered user valid address.
- Must provide registered user birth of date.
- Must provide registered users blood groups.
- Must provide registered users gender

4.1.4 Login

- Must be provide registered user Mobile number.
- Must be provide valid password.

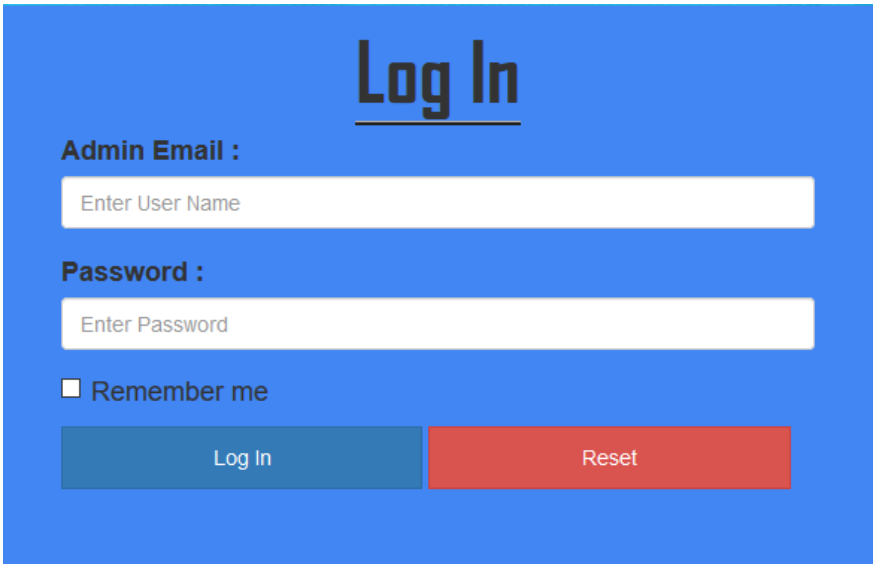


Figure 4.3: Blood Hub login page.

4.1.5 Show users information

- Show all the users information here.
- Find the users blood groups and address by using the upper two text box.
- Send email by clicking the sent email button.

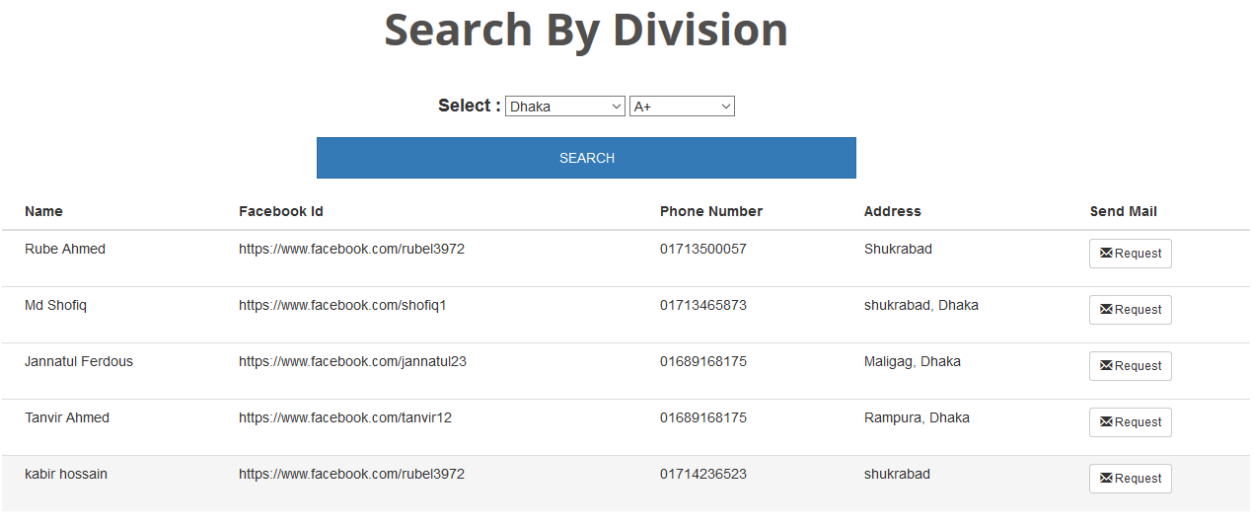


Figure 4.4: Blood Hub user Information.

4.1.6 Show Request message

- Show message now in email address.
- User can reply it.

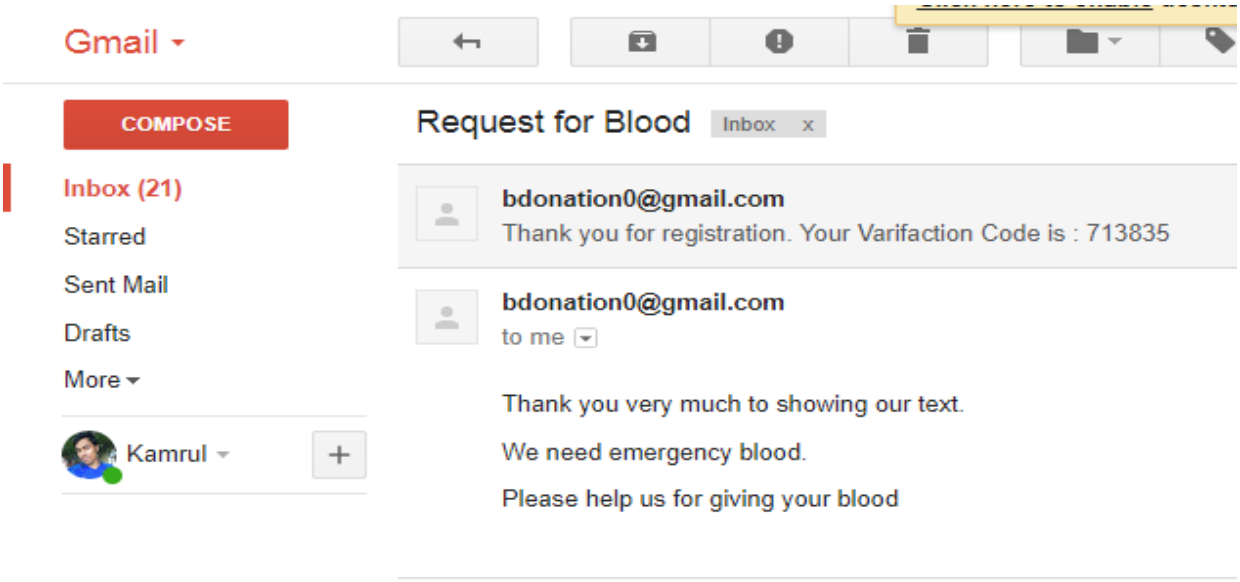


Figure 4.5: Blood Hub Sending SMS.

4.2 Back-end Design

Every applications has back end design for storing the data or information. We also used back-end design in our application. We create the database diagram for our application and showing it below:

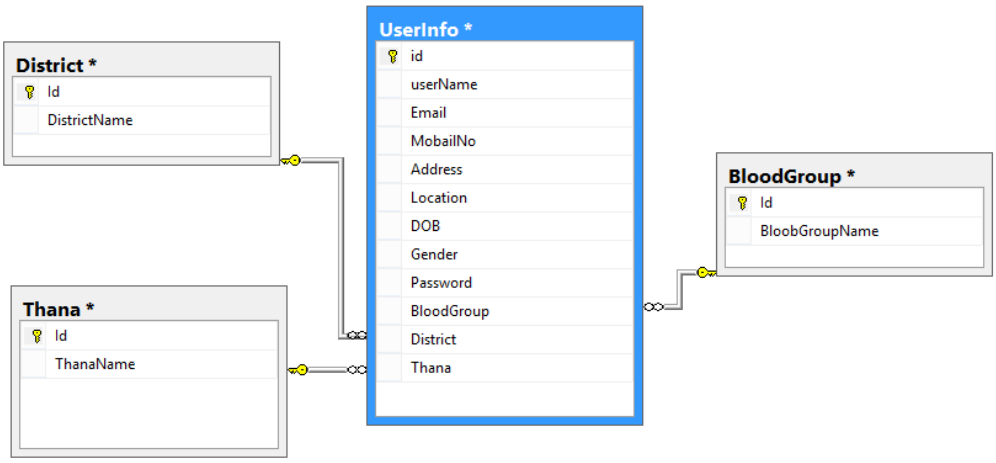


Figure 4.6: Blood Hub Database diagram.

In this diagram we connect all of our database table and select the primary and foreign key. We also use some programing language to select the store value the user front-end side.

4.3 Implementation Requirements

Every web applications has the implementations requirements to implement the applications. We also have used some implementation requirements in our application.

Requirements:

1. Used programing languages such as
   HTML, CSS, Bootstrap, Java Script, Query & PHP OOP.
2. NetBeans IDE & xampp server.

We used PHPMyadmin for database connection, and NetBeans IDE for Raw coding.

3. A valid email or phone number.
4. By the email we will confirm the registration verification, and when he\she will search any blood group by an email he can get the blood.
5. Need a mobile or pc and net connections for browsing the application, and also must need any browser.

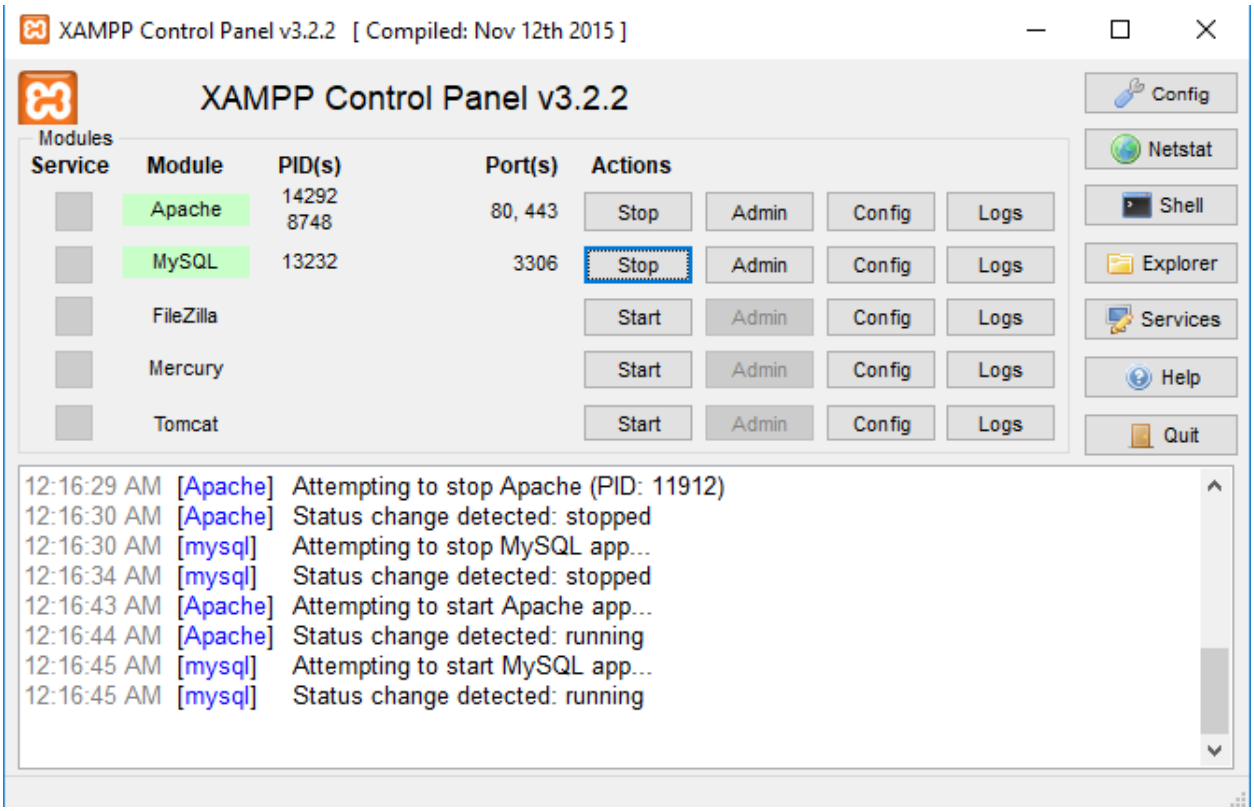


Figure 4.7: Xampp control pannel

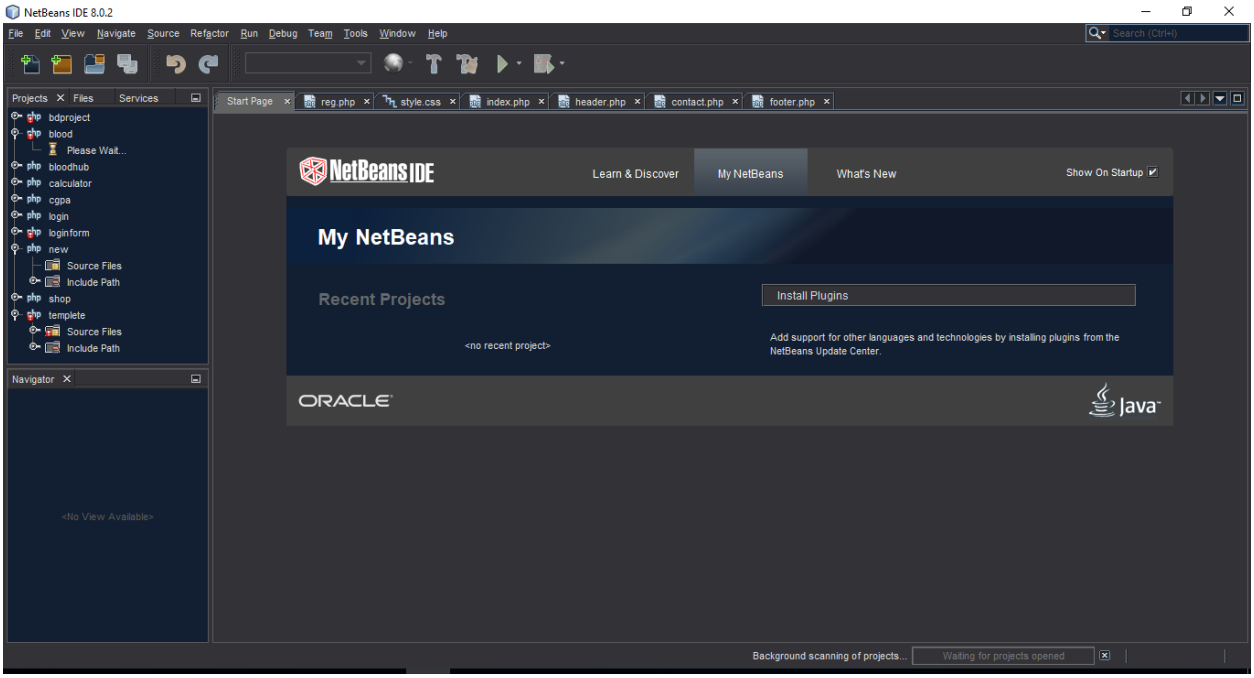


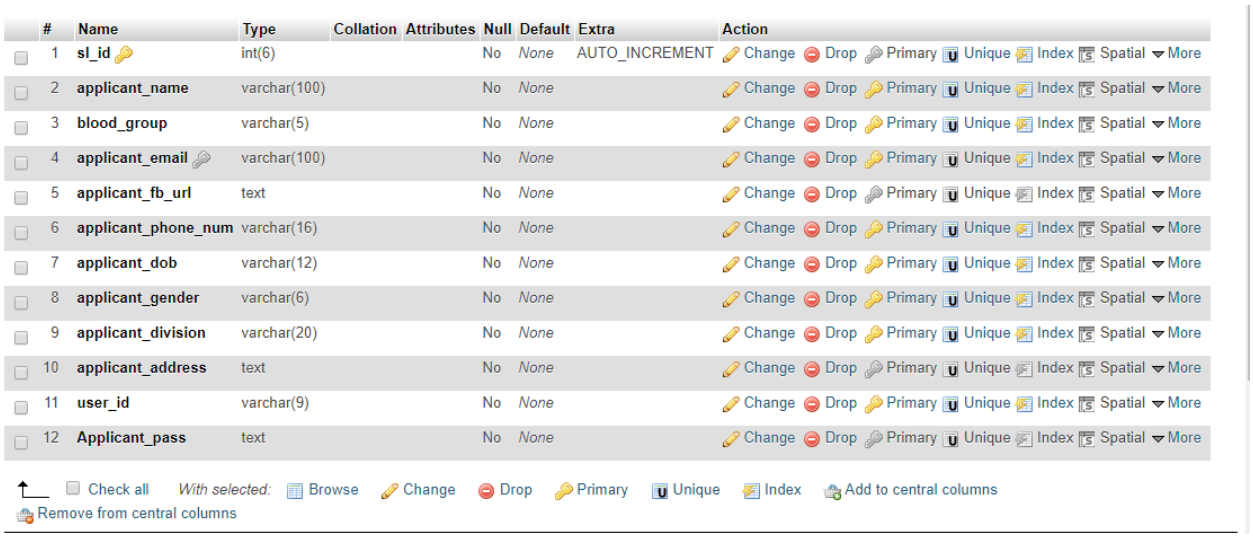
Figure 4.8: NetBeans IDE 8.0.2

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1: Implementation of database

The implementation of database is the stored of user information system. Implementation of database is the process of installation of database application. It is the design of database and requirements of identification.



#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	sl_id	int(6)			No	None	AUTO_INCREMENT	Change Drop Primary Unique Index Spatial More
2	applicant_name	varchar(100)			No	None		Change Drop Primary Unique Index Spatial More
3	blood_group	varchar(5)			No	None		Change Drop Primary Unique Index Spatial More
4	applicant_email	varchar(100)			No	None		Change Drop Primary Unique Index Spatial More
5	applicant_fb_url	text			No	None		Change Drop Primary Unique Index Spatial More
6	applicant_phone_num	varchar(16)			No	None		Change Drop Primary Unique Index Spatial More
7	applicant_dob	varchar(12)			No	None		Change Drop Primary Unique Index Spatial More
8	applicant_gender	varchar(6)			No	None		Change Drop Primary Unique Index Spatial More
9	applicant_division	varchar(20)			No	None		Change Drop Primary Unique Index Spatial More
10	applicant_address	text			No	None		Change Drop Primary Unique Index Spatial More
11	user_id	varchar(9)			No	None		Change Drop Primary Unique Index Spatial More
12	Applicant_pass	text			No	None		Change Drop Primary Unique Index Spatial More

Check all With selected: Browse Change Drop Primary Unique Index Add to central columns
Remove from central columns

Figure 5.1: Database design of Blood group and User Information.

5.1.1 Blood Group

Blood group database stored the all user blood information. When a user search the blood then blood group database table know the all user blood information

5.1.2: User Information

User information database table stored the user name, email, mobile number, address, gender, and date of birth, district and other information. When user search the donor then user information database table know the all user details information.

sl_id	applicant_name	blood_group	applicant_email	applicant_fb_url	applicant_phone_num	applicant_dob	applicant_gender	applicant_divi
1	shahriar kabir	Ap	zzinnah@gmail.com	https://www.facebook.com	01916562778	29-3-2002	M	
2	shahriar kabir	Bp	zzinnnah@gmail.com	https://www.facebook.com/	01719817941	5-3-2014	M	
3	Hasan Reza	An	hasan@gmail.com	https://web.facebook.com/hasan	01719817941	3-2-2015	M	
4	Reza Hasan	ABn	reza@gmail.com	https://web.facebook.com/reza	01234567898	17-3-2001	M	
5	Rina Hasan	Op	rina@gmail.com	https://web.facebook.com/rina	01719817941	19-2-2001	F	
6	Great woman	On	great@gmail.com	https://web.facebook.com/great	01234567898	4-3-2015	F	
7	Ekramul Haque	Op	rubel3972@diu.edu.bd	https://www.facebook.com/rubel3972	01713500057	18-12-1999	M	Moymonsingho

Console Edit Copy Delete Export

Figure 5.2: Database design of users.

5.1.3: Thana and District

Database table Thana and District stored the user address information. When the user search donor than database table help the nearest donor search and know the details information.

5.2 Implementation of Front-end Design

We have tried to better front-end design in this project and implementation. We used it html, css3 and java script that's makes the better user interface. We want to make the user friendly design in our project. So that all user can easily use it

5.2.1: Overview of pages and Description

Figure 5.3: Home page of a project on blood donation (blood hub)

This figure is Donate Blood and Save Life applications main home page. It has a navigation bar containing home, service, facilities, registration and login. When the user click registration button then quickly opened it. When registration is completed then user can login in this application.

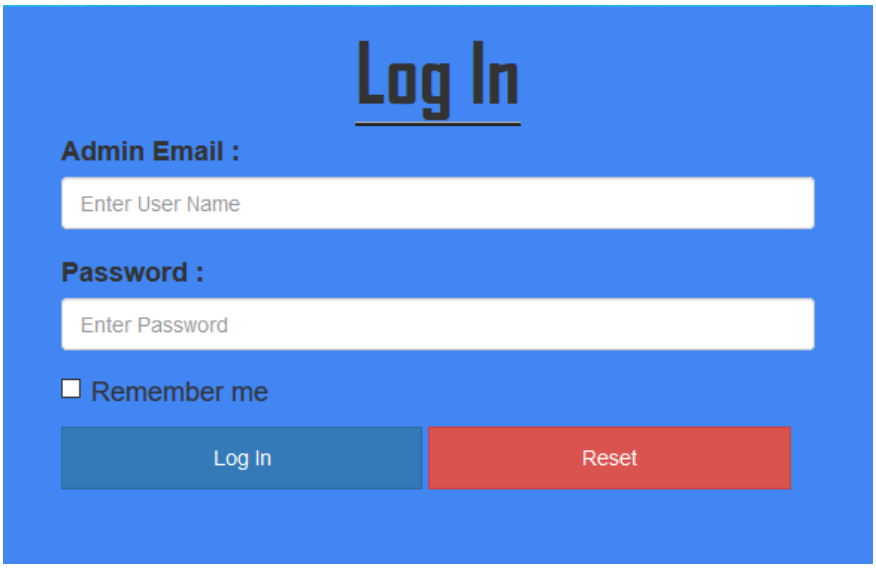
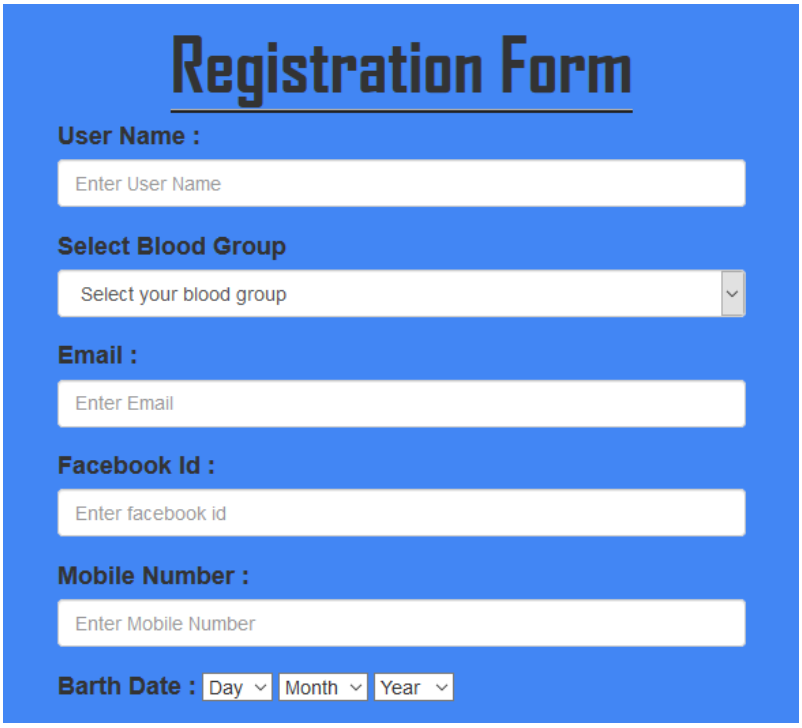


Figure 5.4: Login page of Blood Hub.

This figure is the Blood Hub Login page. Only Registered person can login in this application.



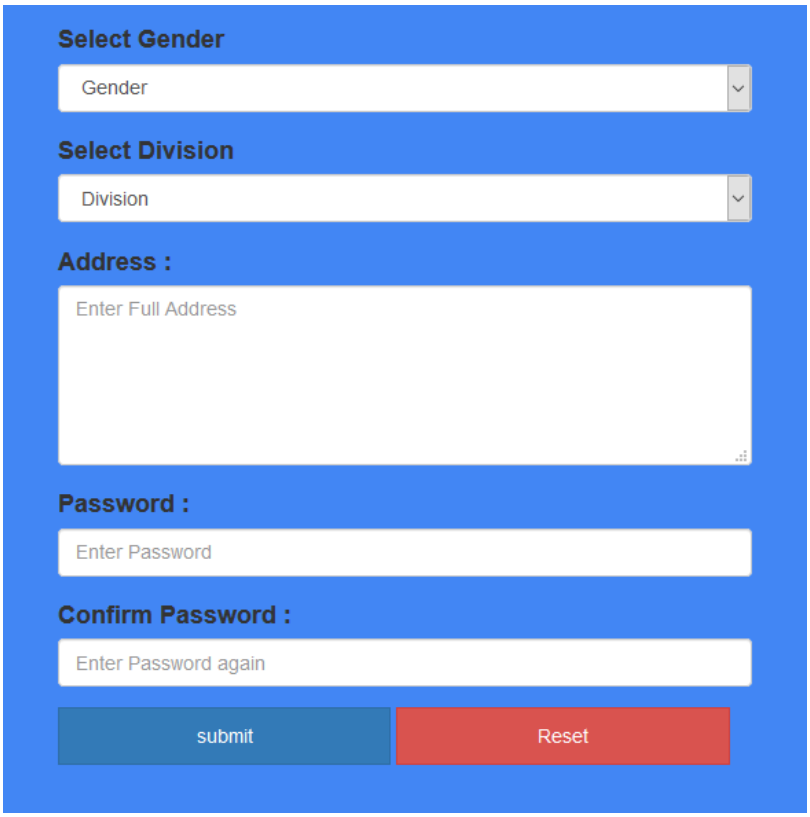
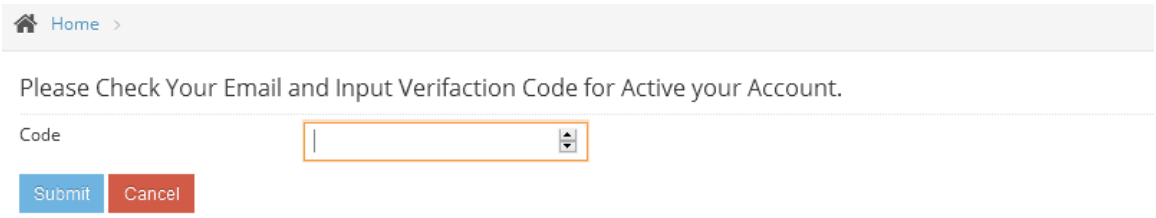


Figure 5.5: Blood Hub Registration page

This figure is Donate Blood and Save Life user registration page. Any person can be registration in our application for search the blood donor. Must be valid information need for successful registration. Without email verification code user can't successful registration completed.



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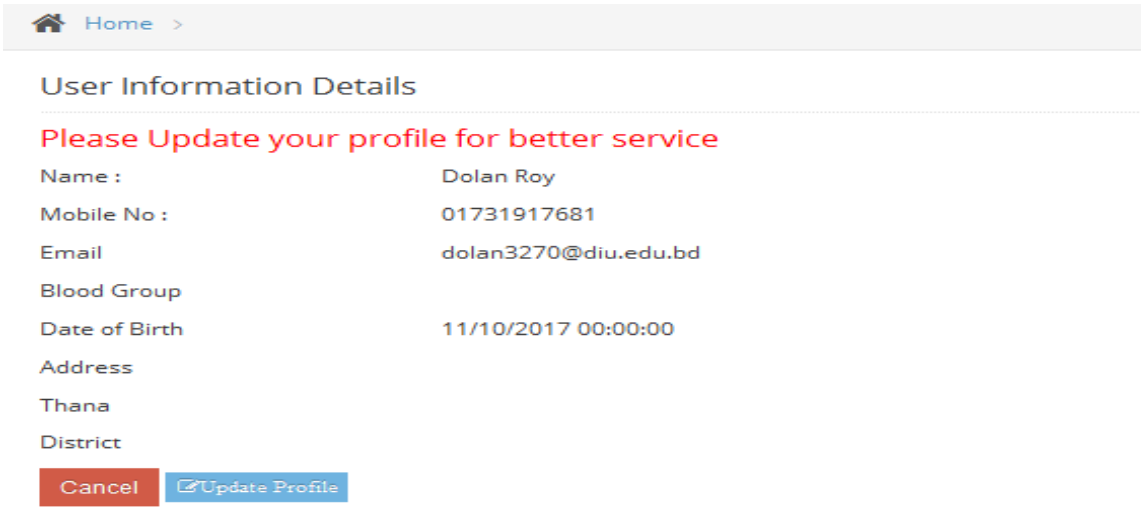

Figure 5.6: User update profile.

This figure is user profile update system. After the completed registration user must be update your profile. Without user can not send request for blood.

Figure 5.7: User information table.

This figure is user information table in our project. When a user can search donor then show the matched nearest donor list.

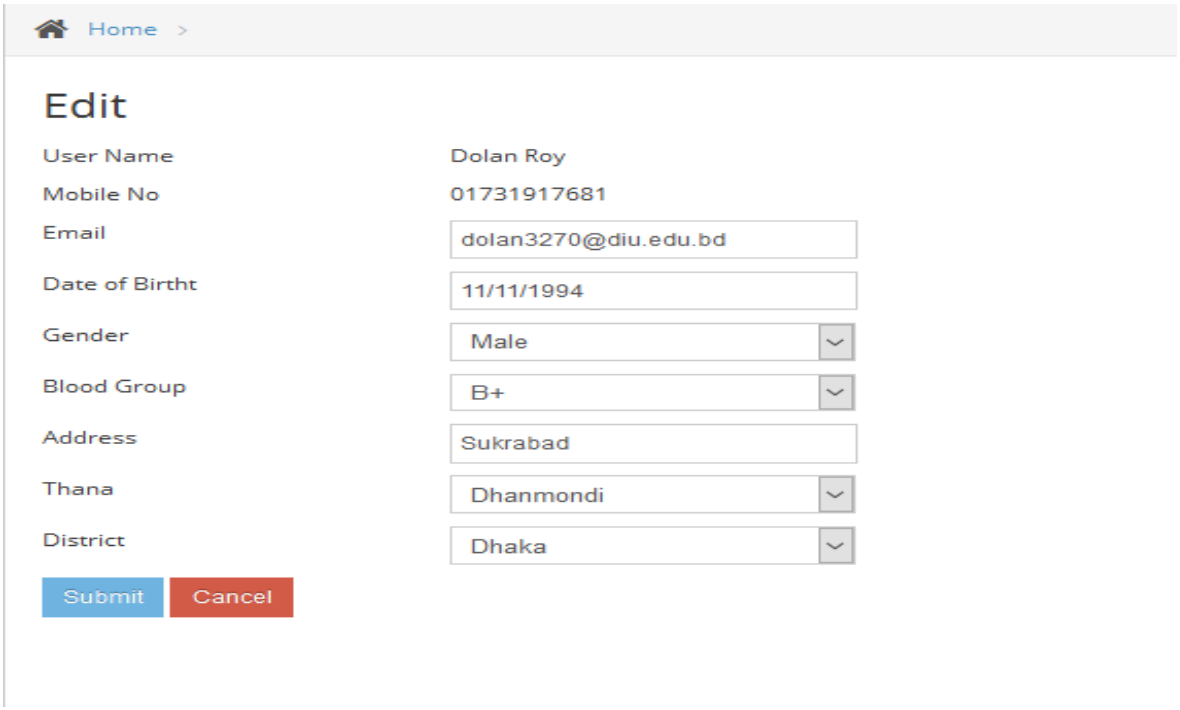

Figure 5.8: Blood Hub user edit page.

This figure is user edit page in our system. If a user want his profile edit, then he can edit it.

Figure 5.9: Blood group information page.

This figure is all user information blood group information system. Blood group information table stored the all blood group.

5.3 Testing Implementation

Testing implementation is the process of an action for the formulated plan. We are testing multiple parts in this system. That's requirement is installation, configuration, customization, running and user training necessary are implementation of testing.

The page is email verification Donate Blood and Save life applications. When a user returns a wrong code then show the email verification is failure.

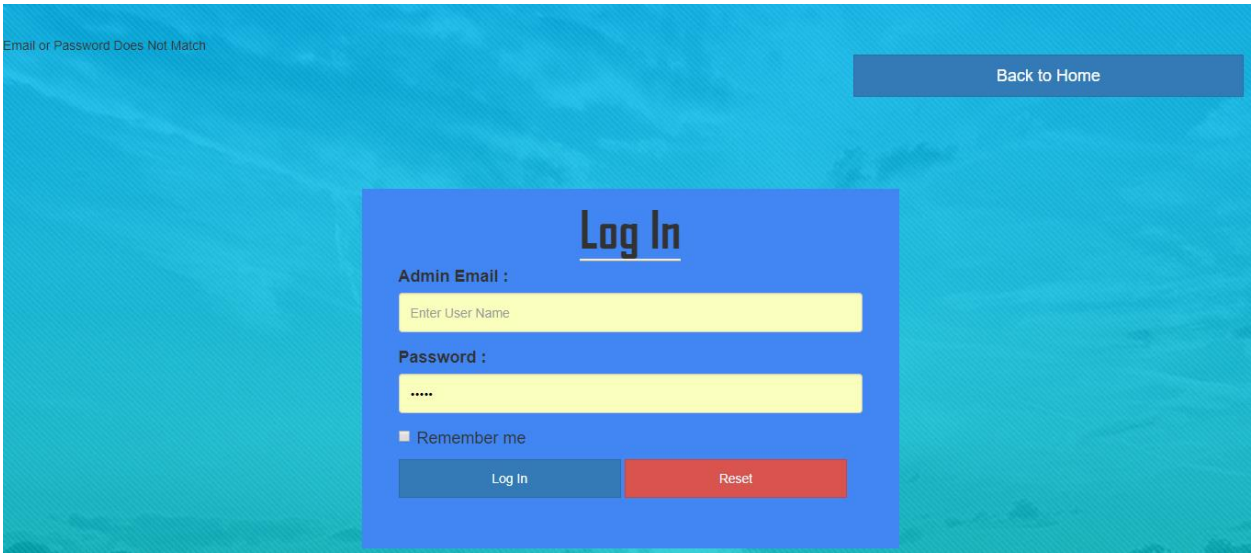

Figure 5.10: Invalid Login form.

This page is invalid login form in our application system. However if the user wants to login must be valid mobile number and password. Without user can't login in our application.

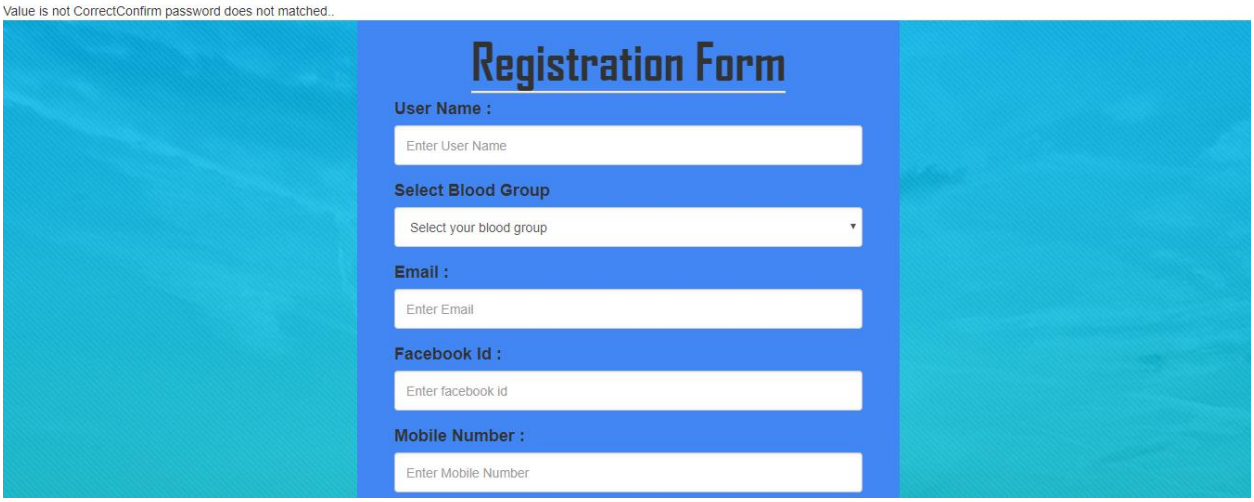

Figure 5.11: invalid registration form.

This page is invalid registration form. No one can registration without mobile number and password match. If you want to registration must mobile number required. Without can't user successful registration. Then the message will show.

5.4 Test Results and Reports

Table 5.1: Test Case Table for Registration.

Test Case	Test Input	Expected Output	Actual Output	Result	Tested On
1.Display The application pages	Tested browsers- ❖ Firefox ❖ Google Chrome ❖ Opera	To display the Pages successfully	Displayed the pages successfully	Passed	19-2-18
2.Username	Blank or Incorrect Username	Username or correct username must entered	Showed the Warning	Passed	19-2-18
3.Password	Blank or Incorrect Password	Password or correct password must entered	Showed the Warning	Passed	19-2-18
4.Registration	Without Registration	To restrict to access the Donate Blood and Save Life	Imposed the restriction	Passed	19-2-18

Table 5.2: Test Case Table for Blood Hub

Test Case	Test Input	Expected Output	Actual Output	Result	Tested On
1.Create profile for users	Input blood group, date of birth and address	Add users blood group, dob and address	Updated user profile and details	Passed	20-2-18
2.Search donor information	Add blood type and location	Show the matching donor list	Showed the donor list	Passed	20-2-18
3.User request for blood	Input blood group and location	Send request all donor	Delivered to all request	Passed	20-2-18

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The application has been successfully implemented. All features and functionalities work fine. This application's workflow and responsive design is user friendly. We have encouraged and took initiatives to develop this application because various Organizations need this system in their day to day operations. This project is meant for describing all the features and procedures that were followed while developing the application. This document specially mentions the details of the project how it was developed, the primary requirement, as well as various features and functionalities of the project and the procedures followed in achieving these objectives.

6.2 Scope for Further Developments

- Our mission is to make this application for all platform like Windows, IOS, and Android.
- Our application's data needs more storage in future, so we will add this with larger database system such as Oracle Database.
- We will add more advance features to make it more dynamic to satisfy larger organizations and make this application trusted by them and verified.

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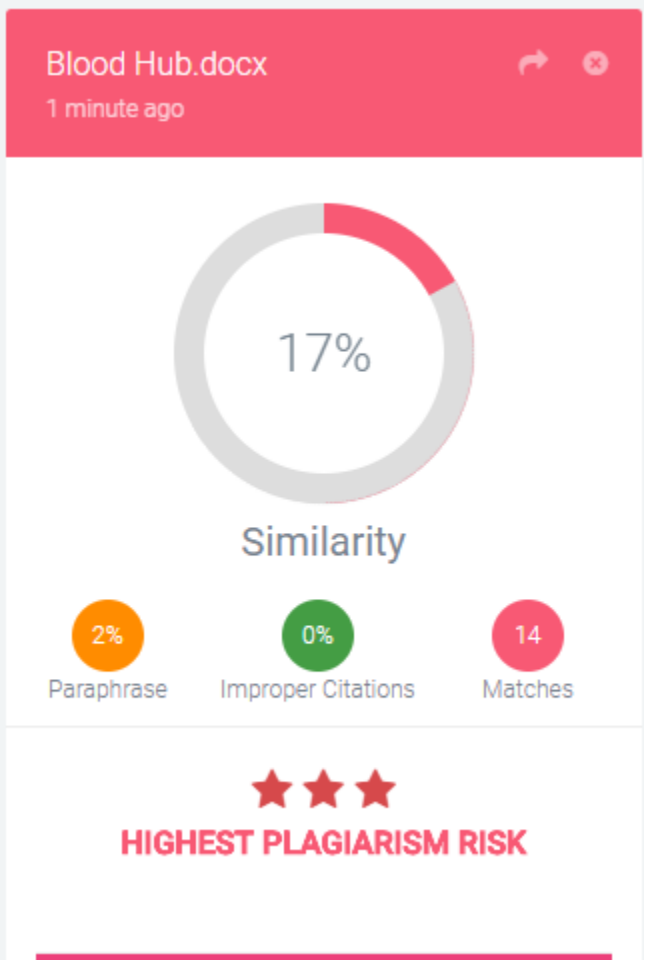
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