Final Report on

Blood Bank Management System

Submitted to

Department of Computer Science and Engineering

Nepal Engineering College

In Partial Fulfillment of the
Requirements for the Degree of B.E. in Computer

By

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Abstract

The main aim of this project is to save lives of people by providing blood. Our project Online Blood Bank Management System is developed so that users can view the information of donors and receivers.This project is developed by three perspective i.e. blood bank, seeker and donar. We have provided security for authenticated user as new user have to register according to their type of perspective and existing user have to login.This project requires internet connnection.This System reduces the time to a greater extent that is searching for the required blood through blood group.Thus Blood Bank Management System provides the required information in less time and also helps in quicker decision making.To build a solutin to the ever growing requirement of blood due to various health problems the system is developed for accessing the information about various users and their blood group.Blood Donors and Seeker are provided with registration process to maintain their information for donations as well as to make their information available to search.This system is totally targeted for immediate.Provides the information of user for various blood groups.This system also takes feedback for future enhancement.

Acknowledgement

The success and final outcome of this project required a lot of guidance and assistance from many people and we are extremely privileged to have got this all along the completion of my project. All that we have done is only due to such supervision and assistance and we would not forget to thank them.

We owe our deep gratitude to our project guide Asst. Prof. Naresh Prasad Das, who took keen interest on our project work and guided us all along, till the completion of our project work by providing all the necessary information for developing a good system.

We are thankful to and fortunate enough to get constant encouragement, support and guidance from all Teaching staffs of Computer faculty which helped us in successfully completing our project work.

Abbreviations

SHORT FORM	ABBREVIATION
WWW	World Wide Web
MySQL	My Structured Query Language

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Chapter 1: Introduction

1.1 Overview

Blood Bank is a Web based application which stores the information of all users with their Blood Group, Contact numbers, email id and it includes features like to whom they can donate the Blood, No. of times they have donated the Blood, Do they charge anything for donating Blood and is there any Food requirements for them after donating Blood etc. The project is an online system that allows to check whether required blood deposits of a particular group are available in the blood bank. Each donor will need a clear Demographics record that includes address, phone, email and some identification. The person's blood type can be part of the Demographics, and it should be limited to the valid blood types that exist A, B, O, positive and negative, etc[1].

1.2 Problem Statements

- The current system that is using by the blood bank is manual system. With the manual system, there are problems in managing the donor records.
- The only option is to manually search and match donors and then make phone calls to every donor.
- The percentage of people donating blood is increasing day by day due to awareness to donate blood for those needed. The blood received have to be managed thoroughly so that there will be no negative effect to the blood receiver once they received blood.
- The main aim of this project Blood Bank Management System is to maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help them manage in a best way.

1.3 Objectives

- To allow the probable recipient to make search and match the volunteer donors, and make request for the blood.
- To provide an efficient donor and blood stock management functions to the blood bank by recording the donor and blood details.
- To provide synchronized and centralized donor and blood stock database.
- To provide immediate storage and retrieval of data and information.

1.4 Aim

The main aim of developing this system is to provide blood to the people who are in need of blood. The number of persons who are in need of blood are increasing in large number day by day. Using this system user can search blood group available in the city and they can also get contact number of the donor who has the same blood group in needs.

1.5 Motivation

This project is mainly motivated to increase our knowledge horizon on technologies like JAVA and SQL. Also, we wanted to broaden our knowledge on web-based applications. We wanted to create a platform for blood bank for a blood donor and a person who need blood. The system is used for maintaining all the process and activities of blood bank management system

1.6 Scope

The Scope of the project is that in a very short span it provides user with many facilities. It provides an elegant management of blood, list of seekers and active donors online. The main purpose of this project is to interconnect all the users, seekers, active donors into a single network, validation, store various data and information of blood. This system is used to store data over a centralized server

which consist of database where the individual's information cannot be accessed by a third party.

1.7 Application

The applications of blood bank management system are as follows:

1. User can check whether the blood is available or not.

2. This system is used to check available amount of blood required.

3. User can access whenever needed.

1.8 Feasibility Study

Feasibility study is carried out on the following criteria .Its main objective is not to solve the problem, but to acquire its scope. It focuses on following:

- Meet user requirements.
- Best utilization of available resources.
- Develop a cost effective system.
- Develop a technically feasible system.

It is further divided into three parts as shown below:-

1. Technical Feasibility:
    - Accuracy
    - Reliability
2. Operational Feasibility:
    - Sufficient support for the Donors/Users.
    - Work properly if it is being developed and implemented.
    - Easy to maintain
3. Economic Feasibility:
    - The System is Economically Feasible.
    - Hardware, Software and others.

Chapter 2: Literature Review

A number of scholars have written on the concept of blood bank management systems with the majority of them praising computerization as a mechanism of achieving efficiency and effectiveness in this area. Mailtrey D Gaijart (2002) et al proposes development of blood bank data management system as a solution to prevent near miss events and improve record retrieval. Their argument is that with computerization fast retrieval of records will improve efficiency of blood banks operations[2]. According to Choudhury (2009) blood transfusion service is a multi-billion dollar profession given the expenses and revenue involved in the blood transfusion. Therefore, a process that has so much financial implications management of its data and information is called for. Catassi and Peterson (1967) in their joint paper on Inventory management of blood banks describe a computerized solution for controlling blood distribution between the blood bank and its client hospital, Pah Essah and Said Ab Rahman (2011) propos development of a management information system to manage blood bank based on information of donor, recipient and blood. Their system has three modules: the donor module, patient module and blood module[3]. However some crucial issues are left aside in this approach, for instance who is responsible for administration of the system. Akshay V Jain Khanter (2009) suggests a management information system application that covers some of the blood bank management issues related to a particular region. An interesting approach by Jeroen Benien and Hein Force (2012) is that of supply chain management for blood and blood products terming the process as irregular and the demand for blood stochastic. This is of great implications if the management of blood banks were to become effective[4].

Chapter 3: System Design

3.1 System Flow Diagram: -

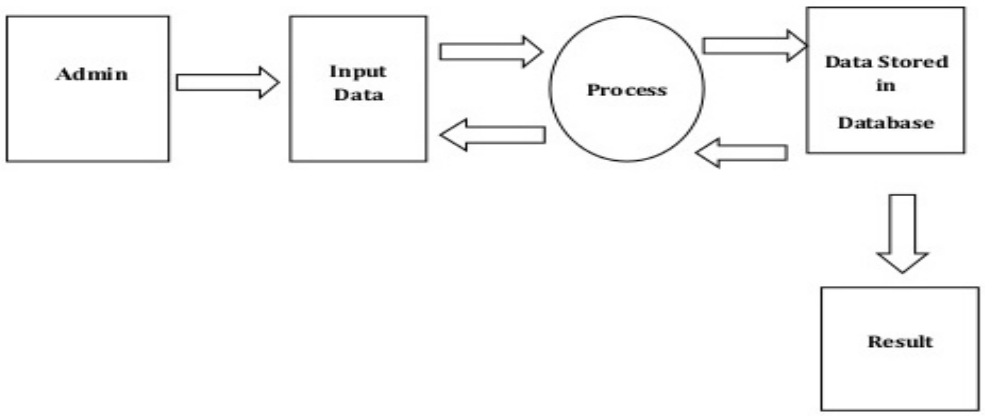


Figure 3.1: a system flow diagram for “Blood Bank Management System” for the admin.

This diagram explains the system flow diagram for the admin. The admin inputs the data which is to be processed and the processed data is stored in the database. The final outcome (result) then can be obtained.

3.2 Use-Case Diagram: -

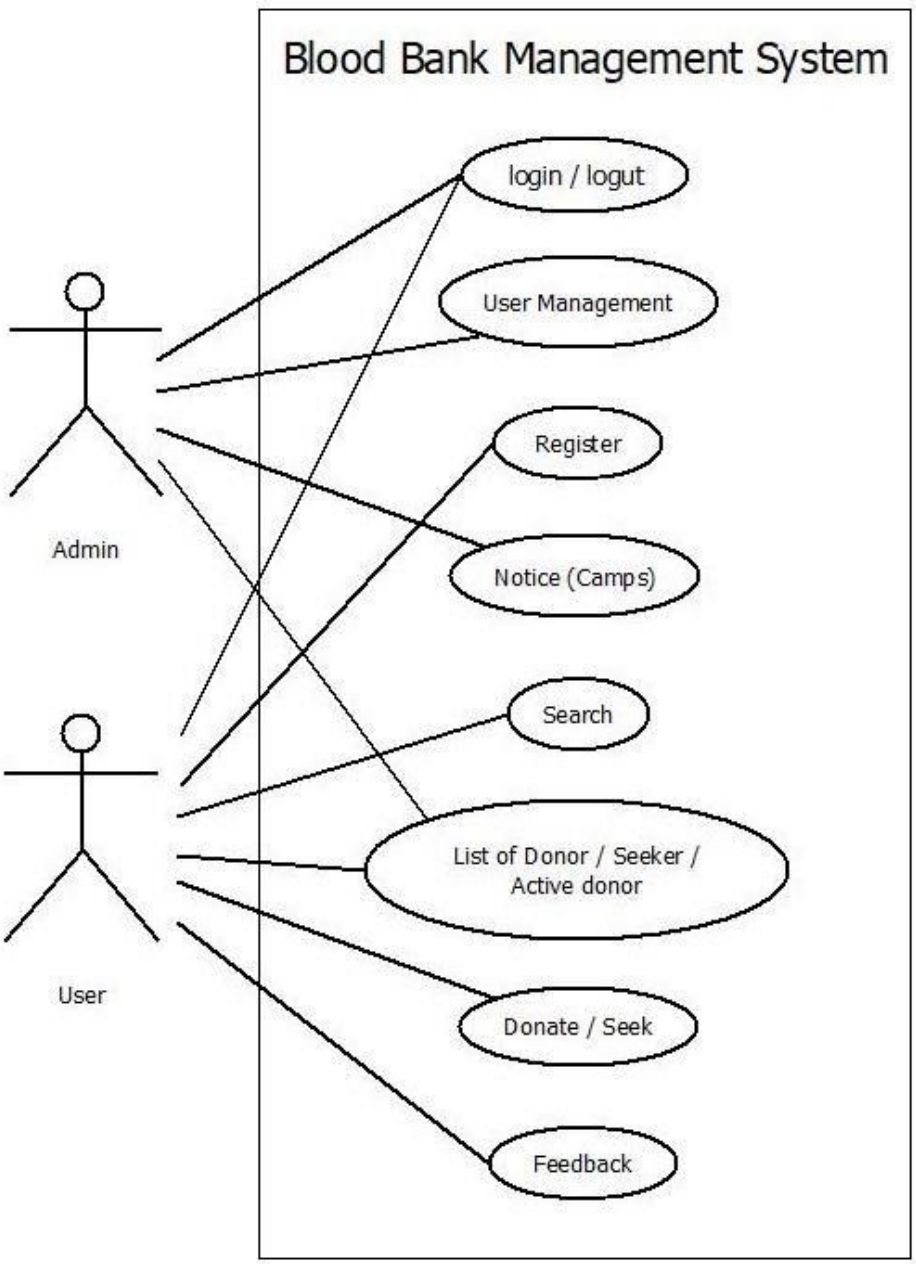


Fig: 3.2 Use-case diagram of blood bank management system

The use case diagram shows the graphical description of how the user interact with the system. It shows a single function of a system with two actors: user and admin.

3.3 ER Diagram: -

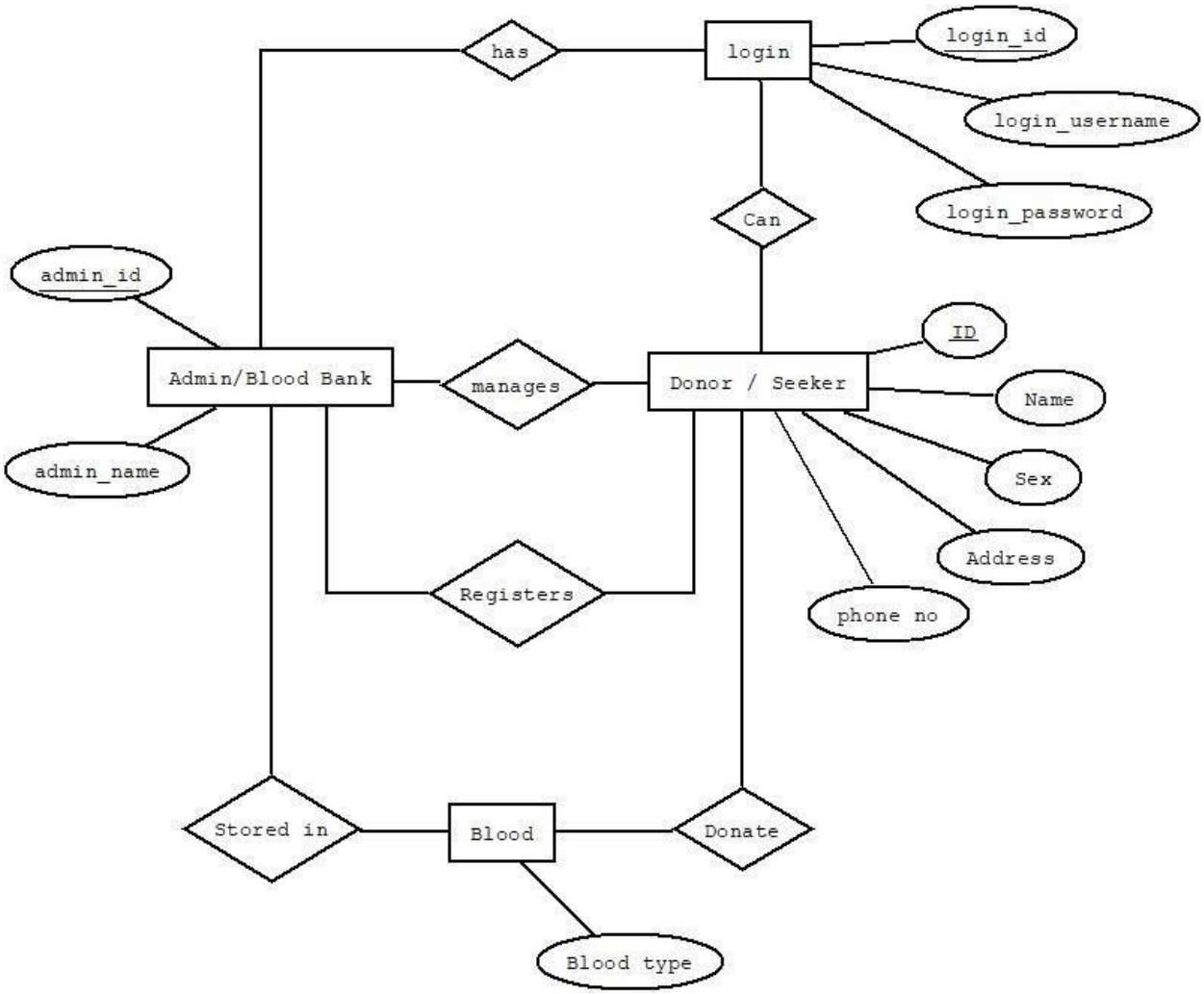
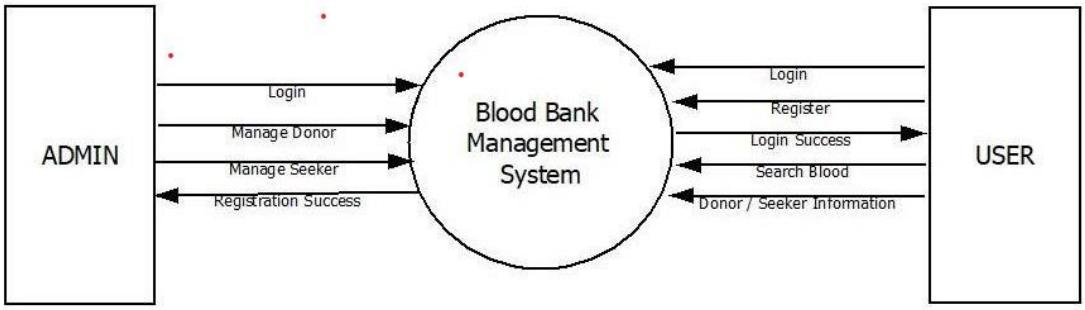


Fig: 3.3 ER diagram of blood bank management system

The ER diagram describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram.

3.4 Data flow diagram:-

Level 0 DFD: Blood bank management system



Level 1 DFD: Blood bank management system

3.5 Hardware requirements: -

XAMPP Software installs on a standard PC system. Minimum Hardware requirements are as follows:

- ✓ Processor –Celeron (R) Dual –Core CPU T3100@1.90GHz 1.90 GHz;
- ✓ Installed Memory (RAM) – at least 350 MB;
- ✓ System type-32 bit Operating System;
- ✓ Model-Presario CQ42 Notebook PC;
- ✓ Resolution-1366/768;

3.6 Software requirements: -

XAMP

XAMPP is an easy to install Apache distribution containing MySQL, PHP and Perl. XAMPP is really very easy to install and to use - just download, extract and start.

XAMPP for windows

The distribution for Windows 2000, 2003, XP, Vista, 7 and 8. This version contains:

- ✓ Apache 2.4.4
- ✓ MySQL 5.5.32
- ✓ HTML
- ✓ CSS
- ✓ MySQL

Chapter 4: Implementation and Evaluation

4.1 Tasks Implemented

The ambition of this project is to create a Blood Bank Management System web application which follows the proposed system. This application should be able to allow the following functionalities-

1. Users are allowed to freely donate.
2. Admin has access of whole website where they can see the list of donors, active donors and seekers.

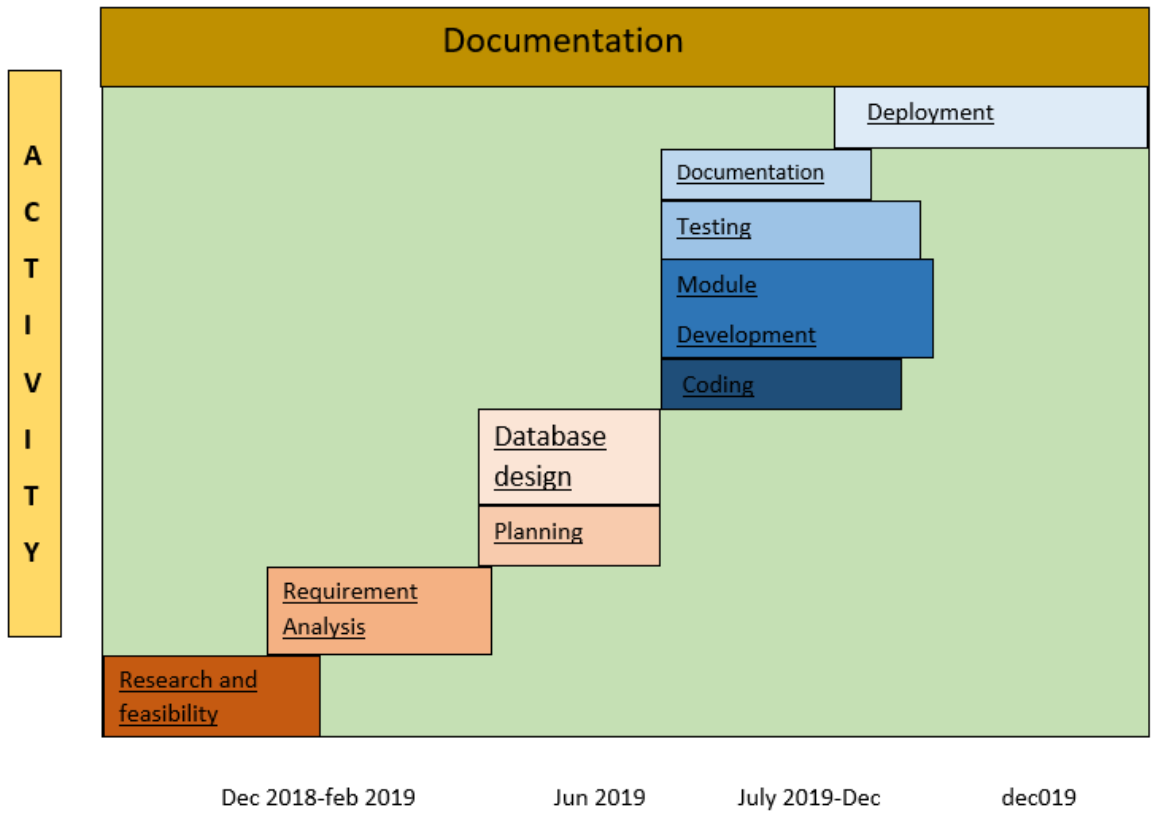


Fig 4.1: Gantt chart

Here is the Gantt chart which is constructed to represent the time span of each task of the project and the activities to build the project.

4.2 Output Obtained

Following output have been generated till date:

1. Login module with username and password information to be entered for admin.
2. Users poses categorized into donors lists, active donor list and seeker list.

4.3 Tasks to be completed

Addition of further features to make the project more effective towards its objective. Some of the tasks are as follows:

1. User Profile needs to be update, edit and delete after completion.
2. Blood Seeker needs to approve the received button after receiving the blood.

4.3 Test Cases:-

Requirement 1: User should be able to register and login.

Test case Id	Test Steps	Test Data / User Input	Expected Result	Actual Result	Pass / Fail
1.	Admin's Login	name = melisa Password= melisa	Successful login	Admin Logged in successfully	Pass
2.	Admin to see donor/active donors list	On-click	Show list of donors.	Request shown Successfully.	Pass
4.	Admin to see seekers list.	On-click	Show list of seekers.	Request shown Successfully	Pass
5.	Admin to view feedback from users.	On-click and form values.	Show the list of feedback send by users and others.	Requests shown successfully	Pass
6.	User's Login	Email = java@gmail.com Password= java	Successful login	User Logged in successfully	Pass
8.	New User Registration	Form values	Register new user successfully	Successfully registered	Pass
9.	New	Form values	Register new donor successfully	Successfully registered	Pass

	Donor Registration				
10.	User to view donor/active donor.	On- click	Show the list of donor/active donor.	Request shown Successfully.	Pass
11.	New Seeker Registration	Form values	Register new seeker successfully	Successfully registered	Pass
12.	User to view seeker.	On- click	Show the list of seeker.	Request shown Successfully.	Pass
13.	Admin, User and others to give feedback.	Comment box and on-click	Add comments and messages as feedback.	Feedback added to the list with their module name.	Pass

Figure 5 Black Box Test Cases for website module

Chapter 5: Conclusion and future work

This report presents the Blood Bank Management System related issues. This is to make sure that the management of the blood stock became effective, systematic and meeting user requirements. Since we have difficulty in identifying blood expiry date we can have a proper storage management system.

Limitations

There are some limitations for the current system to which solutions can be provided as a future development:

- System cannot be expanded for user login.
- Searching system is not more flexible.
- Sensibility level could not add.

Future scope

The future scope of our project is valuable. Our project time duration was only four months .In this time interval we developed our project. It was very difficult to complete project within this time duration. In future if we get chance we will develop this website for large volume. As for other future developments, the following can be done:

- We can expand with availability over worldwide.
- We update our database.
- We can Make Searching system more flexible.
- Sensibility level could add be added.
- A smart phone application of the system can be made.

References

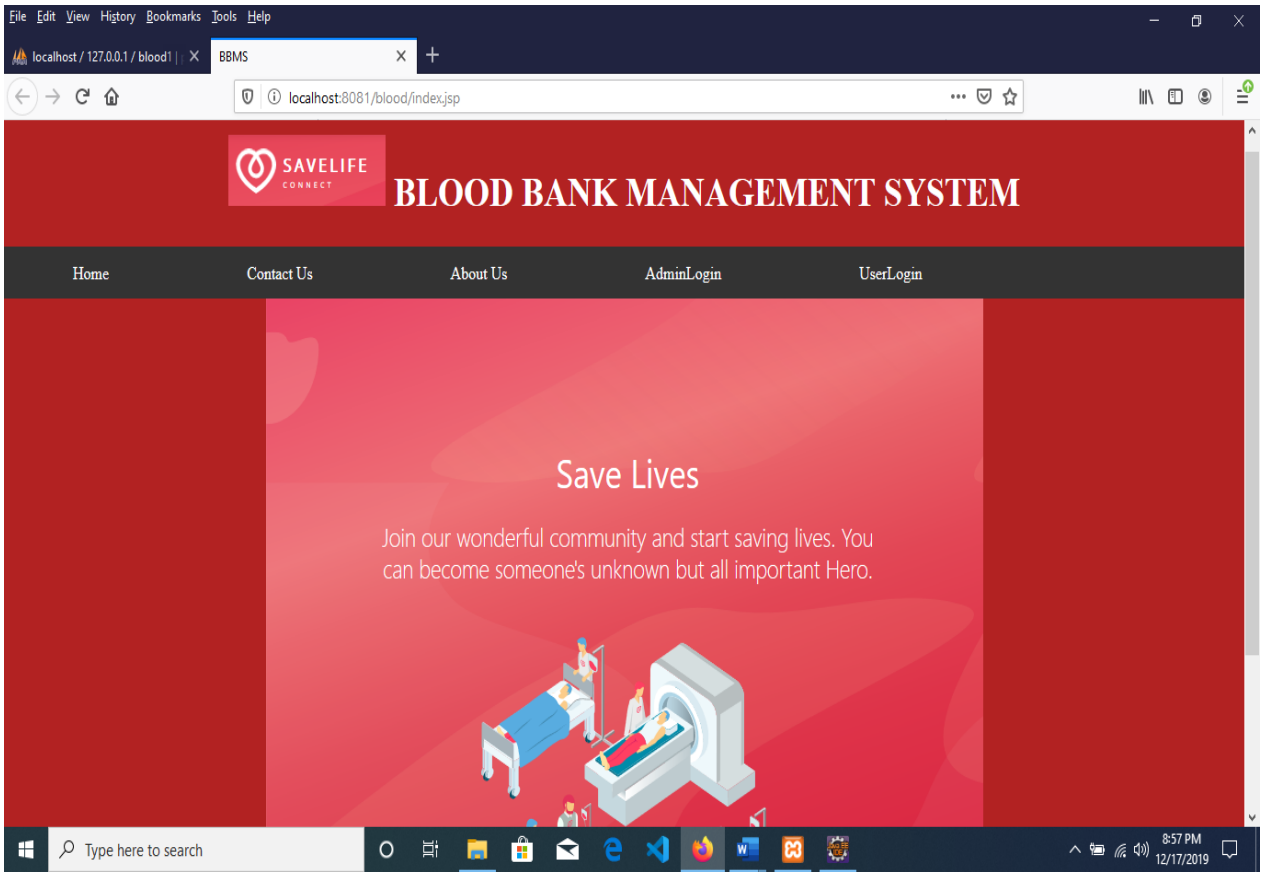
[1] S. Sulaiman, A. A. K. Abdul Hamid, and N. A. Najihah Yusri, "Development of a Blood Bank Management System," *Procedia - Soc. Behav. Sci.*, 2015.

[2] K. Wong, "Virtual blood bank," *J. Pathol. Inform.*, 2011.

[3] M. A. Cohen and W. P. Pierskalla, "Management Policies for a Regional Blood Bank," in *Transfusion*, 1975.

[4] V. Kulshreshtha and S. Maheshwari, "Benefits of Management Information System in Blood Bank," *Res. Inven. Int. J. Eng. Sci.*, 2012.

Appendices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BBMS
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SAVELIFE
CONNECT
BLOOD BANK MANAGEMENT SYSTEM
Home
Contact Us
About Us
AdminLogin
UserLogin
Save Lives
Join our wonderful community and start saving lives. You can become someone's unknown but all important Hero.
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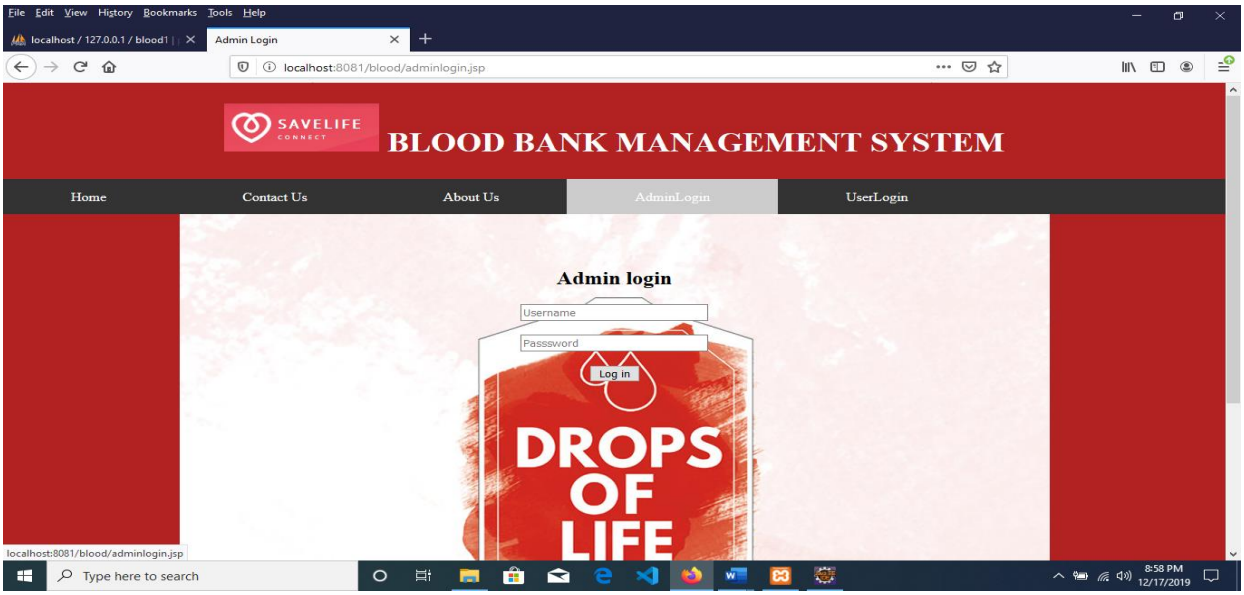
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Home
Contact Us
About Us
AdminLogin
UserLogin
Admin login
Username
Passsword
Log in
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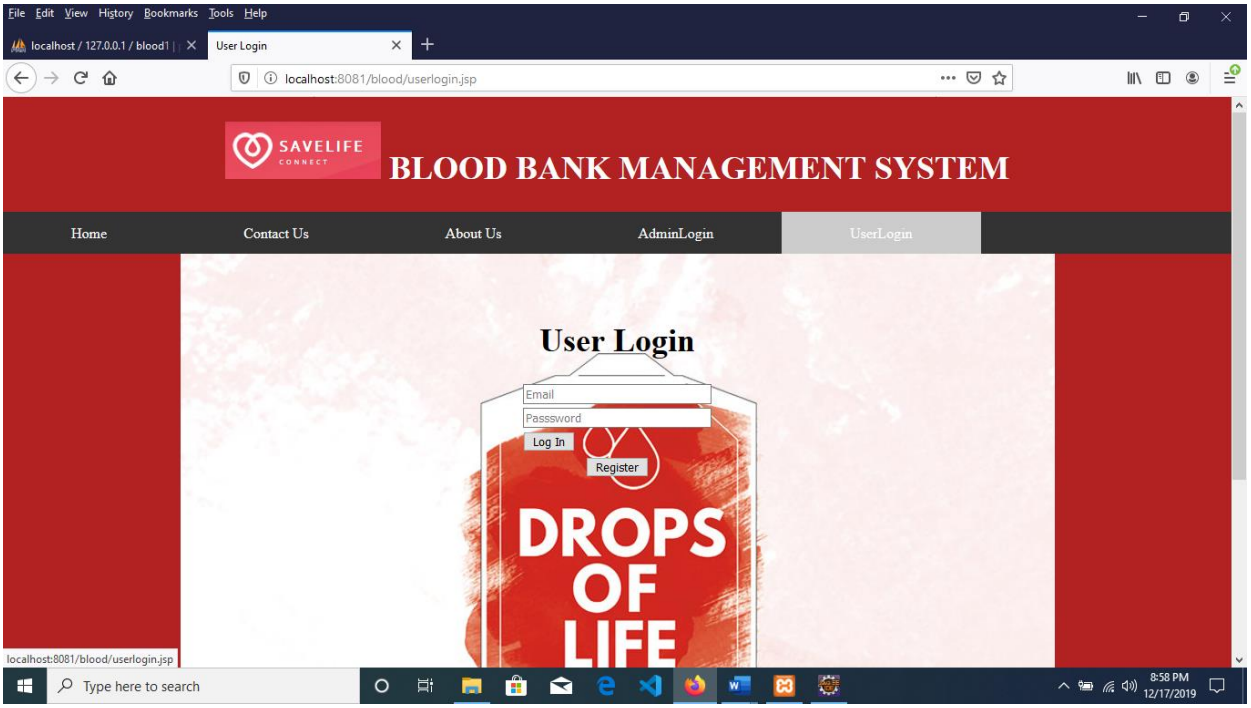
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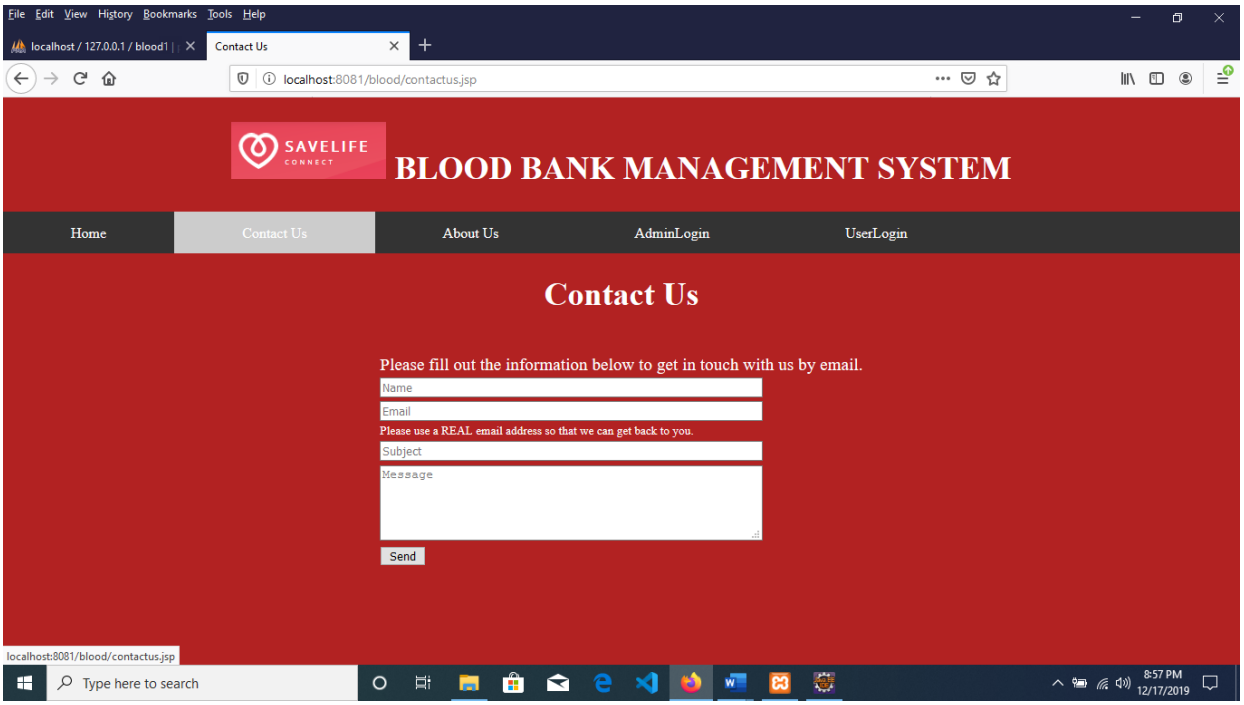
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localhost / 127.0.0.1 / blood1 |
Contact Us
localhost:8081/blood/contactus.jsp
SAVELIFE
CONNECT
BLOOD BANK MANAGEMENT SYSTEM
Home
Contact Us
About Us
AdminLogin
UserLogin
Contact Us
Please fill out the information below to get in touch with us by email.
Name
Email
Please use a REAL email address so that we can get back to you.
Subject
Message
Send
localhost:8081/blood/contactus.jsp
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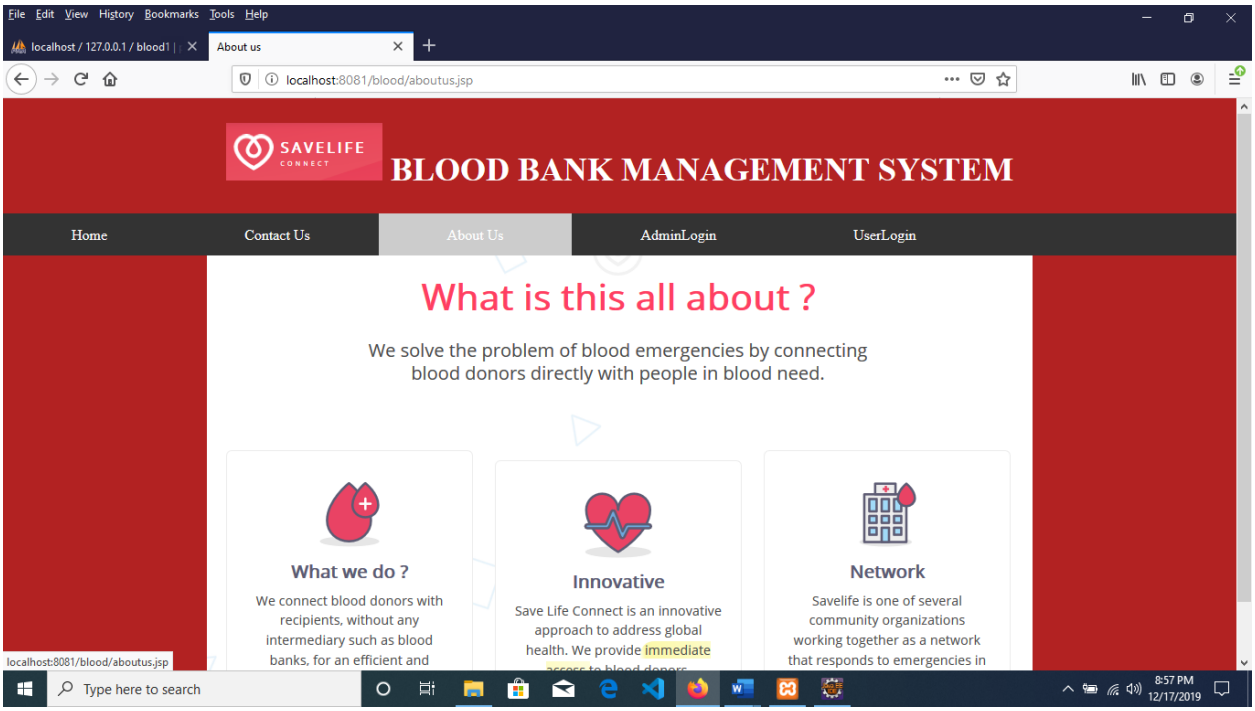
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About us
localhost:8081/blood/aboutus.jsp
SAVELIFE
CONNECT
BLOOD BANK MANAGEMENT SYSTEM
Home
Contact Us
About Us
AdminLogin
UserLogin
What is this all about ?
We solve the problem of blood emergencies by connecting blood donors directly with people in blood need.
What we do ?
We connect blood donors with recipients, without any intermediary such as blood banks, for an efficient and
Innovative
Save Life Connect is an innovative approach to address global health. We provide immediate
Network
Savelife is one of several community organizations working together as a network that responds to emergencies in
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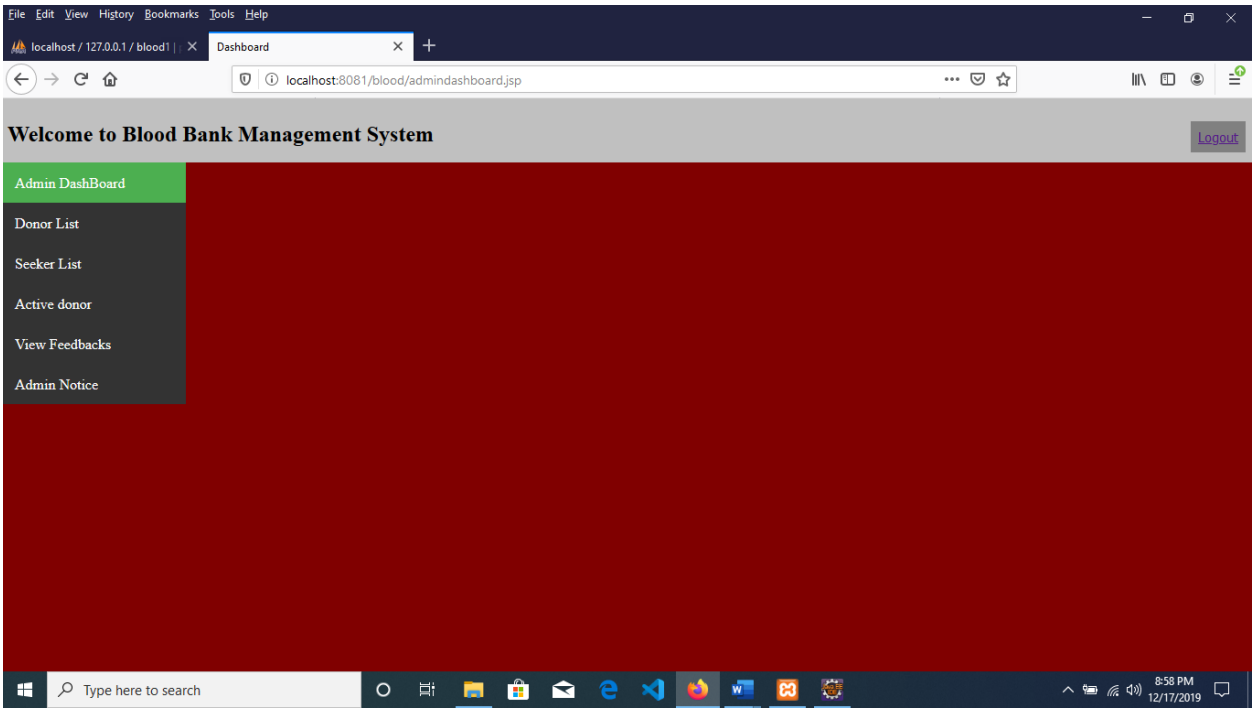
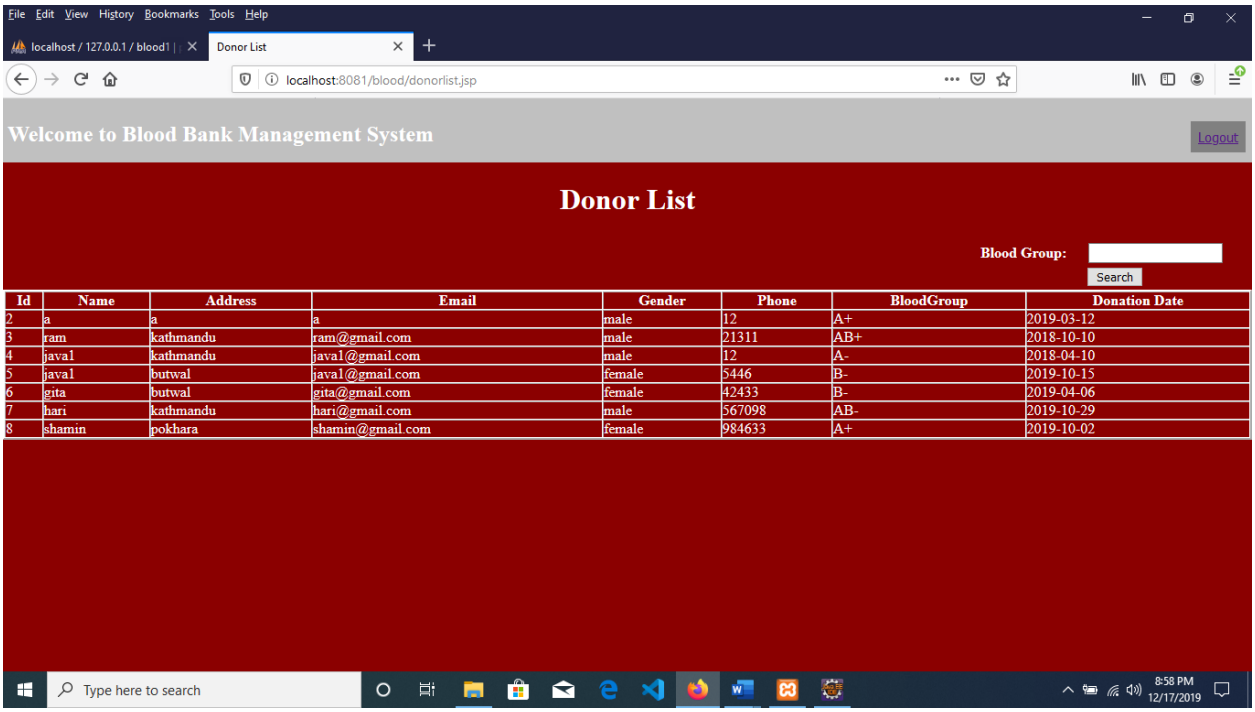
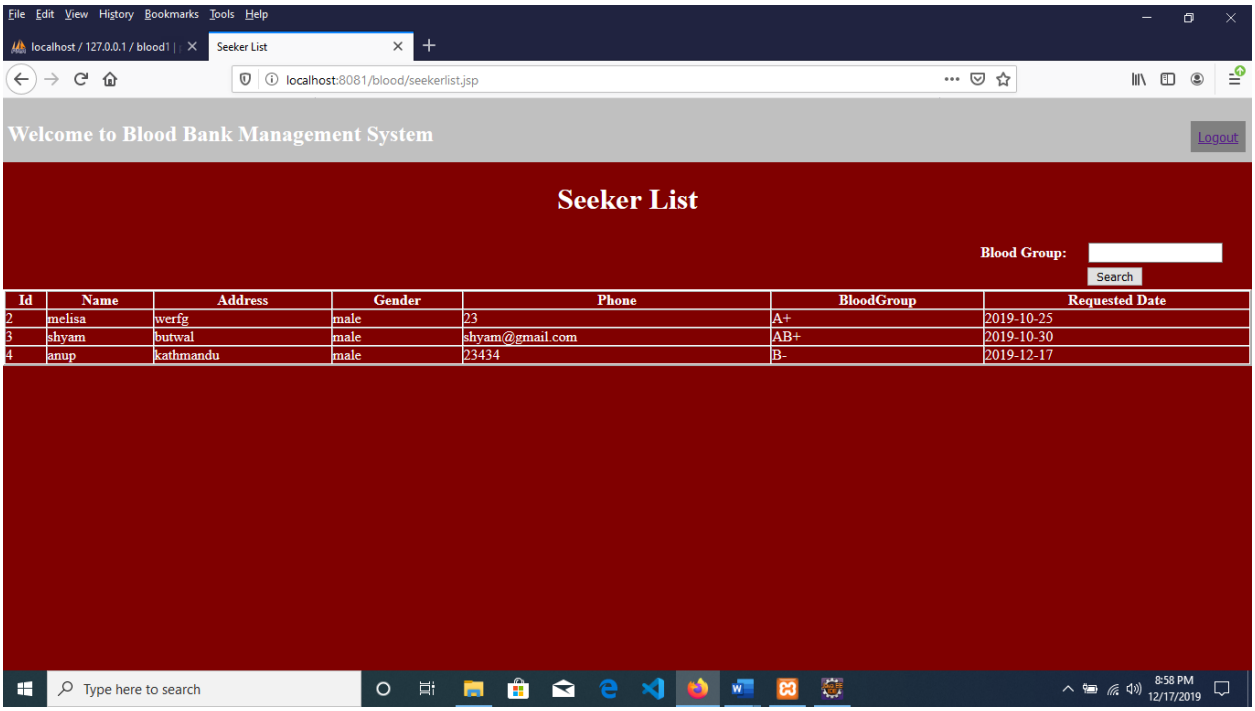




Id	Name	Address	Email	Gender	Phone	BloodGroup	Donation Date
2	a	a	a	male	12	A+	2019-03-12
3	ram	kathmandu	ram@gmail.com	male	21311	AB+	2018-10-10
4	java1	kathmandu	java1@gmail.com	male	12	A-	2018-04-10
5	java1	butwal	java1@gmail.com	female	5446	B-	2019-10-15
6	gita	butwal	gita@gmail.com	female	42433	B-	2019-04-06
7	hari	kathmandu	hari@gmail.com	male	567098	AB-	2019-10-29
8	shamin	pokhara	shamin@gmail.com	female	984633	A+	2019-10-02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localhost / 127.0.0.1 / blood1
Seeker List
localhost:8081/blood/seekerlist.jsp
Welcome to Blood Bank Management System
Logout
Seeker List
Blood Group:
Search
Id Name Address Gender Phone BloodGroup Requested Date
2 melisa werfg male 23 A+ 2019-10-25
3 shyam butwal male shyam@gmail.com AB+ 2019-10-30
4 anup kathmandu male 23434 B- 2019-12-17
Type here to search
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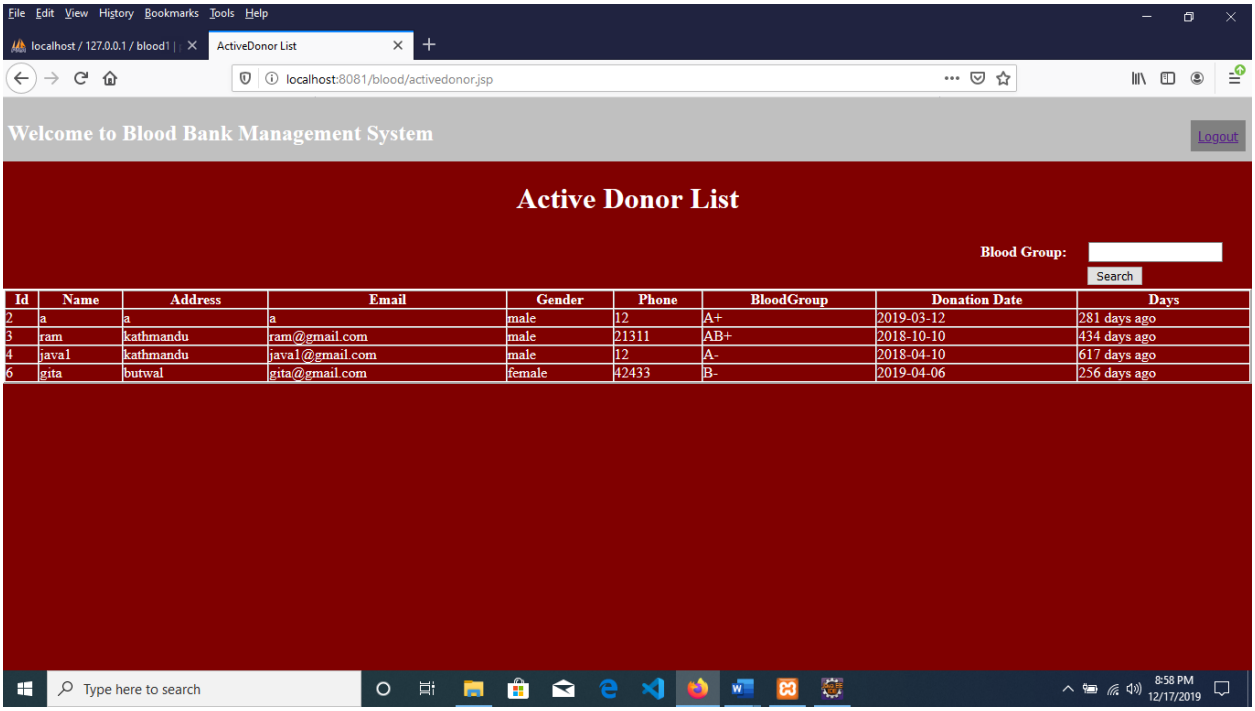
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localhost / 127.0.0.1 / blood1
ActiveDonor List
localhost:8081/blood/activedonor.jsp
Welcome to Blood Bank Management System
Logout
Active Donor List
Blood Group:
Search
Id Name Address Email Gender Phone BloodGroup Donation Date Days
2 a a a male 12 A+ 2019-03-12 281 days ago
3 ram kathmandu ram@gmail.com male 21311 AB+ 2018-10-10 434 days ago
4 java1 kathmandu java1@gmail.com male 12 A- 2018-04-10 617 days ago
6 gita butwal gita@gmail.com female 42433 B- 2019-04-06 256 days ago
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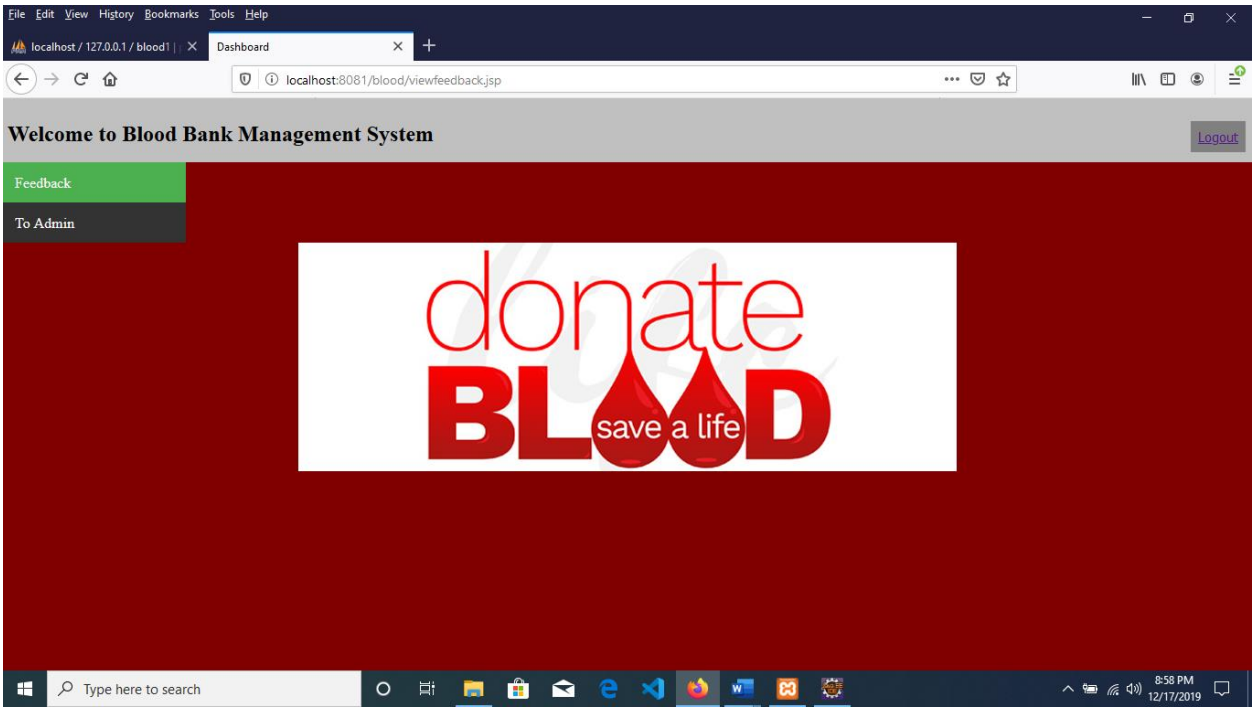
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Dashboard
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Welcome to Blood Bank Management System
Logout
Feedback
To Admin
donate
BLOOD
save a life
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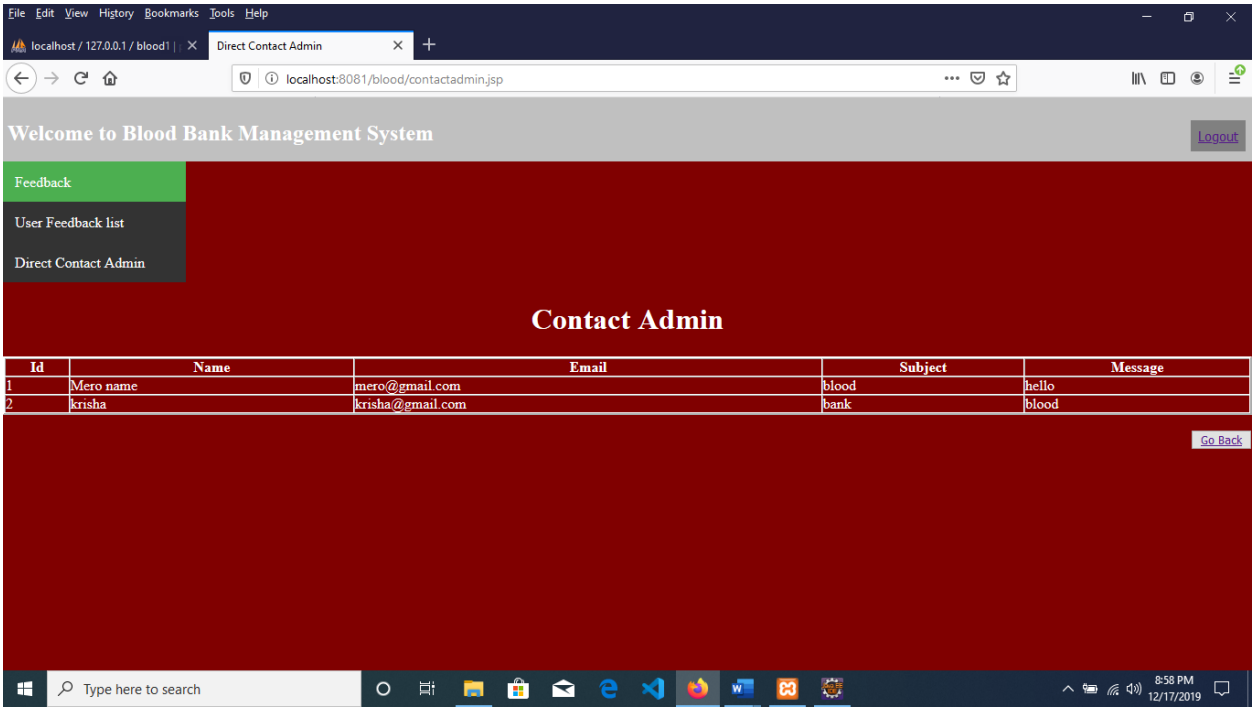
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Direct Contact Admin
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Logout
Feedback
User Feedback list
Direct Contact Admin
Contact Admin
Id
Name
Email
Subject
Message
1
Mero name
mero@gmail.com
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hello
2
krisha
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bank
blood
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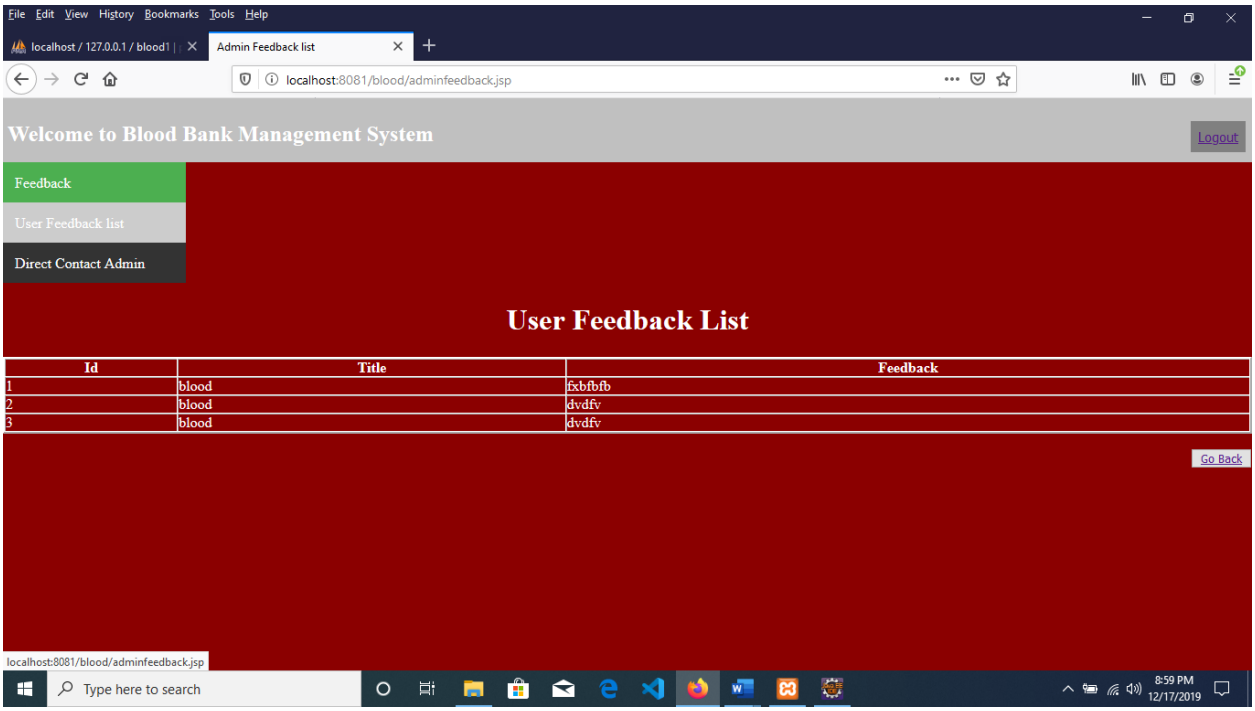
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Admin Feedback list
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Welcome to Blood Bank Management System
Logout
Feedback
User Feedback list
Direct Contact Admin
User Feedback List
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1
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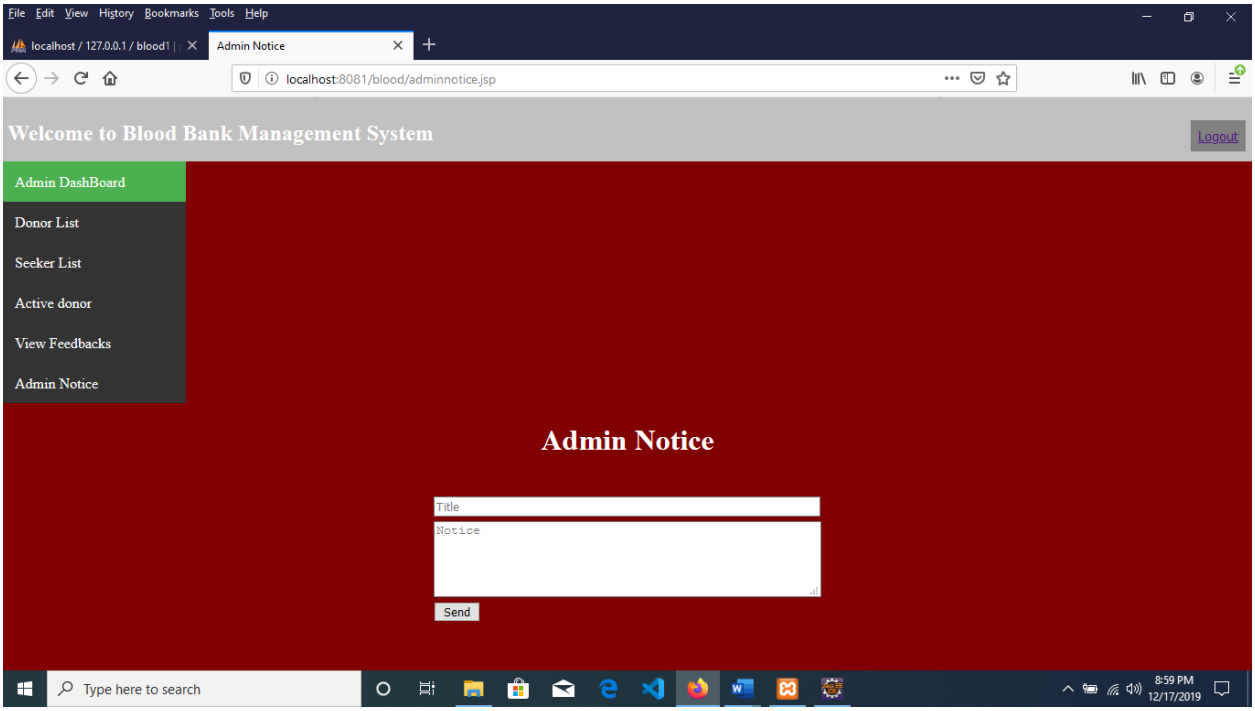
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Notice
Send
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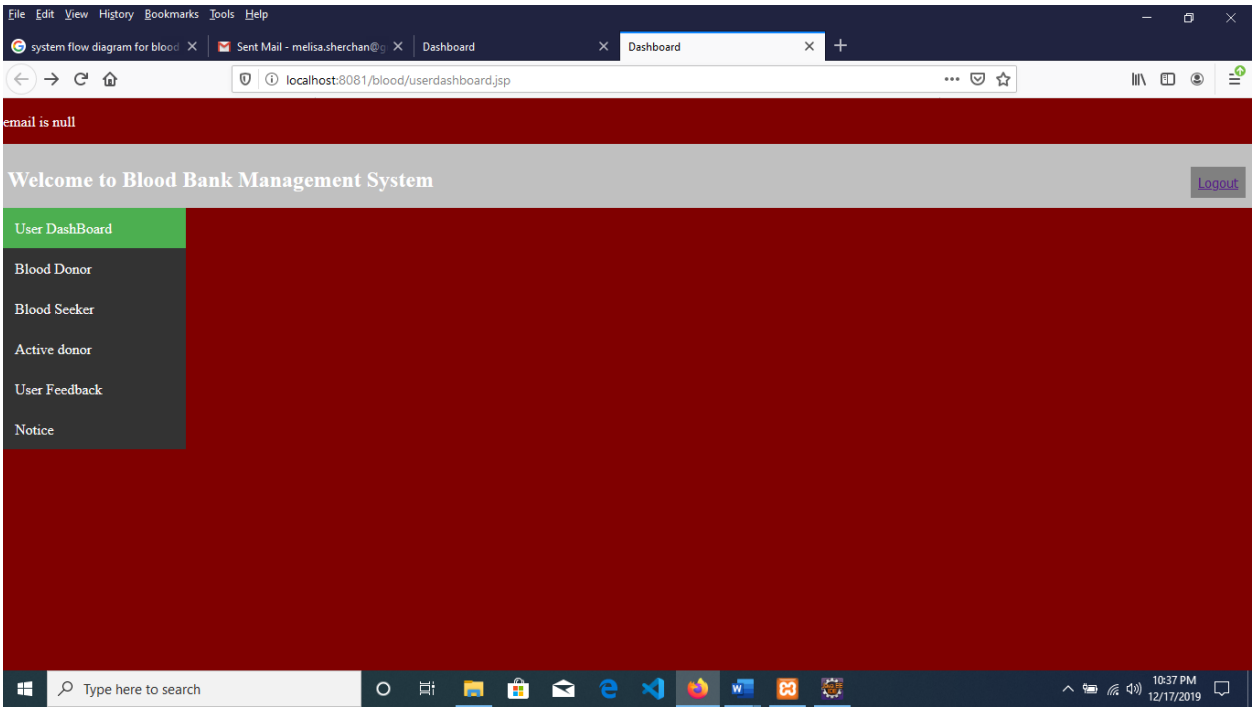
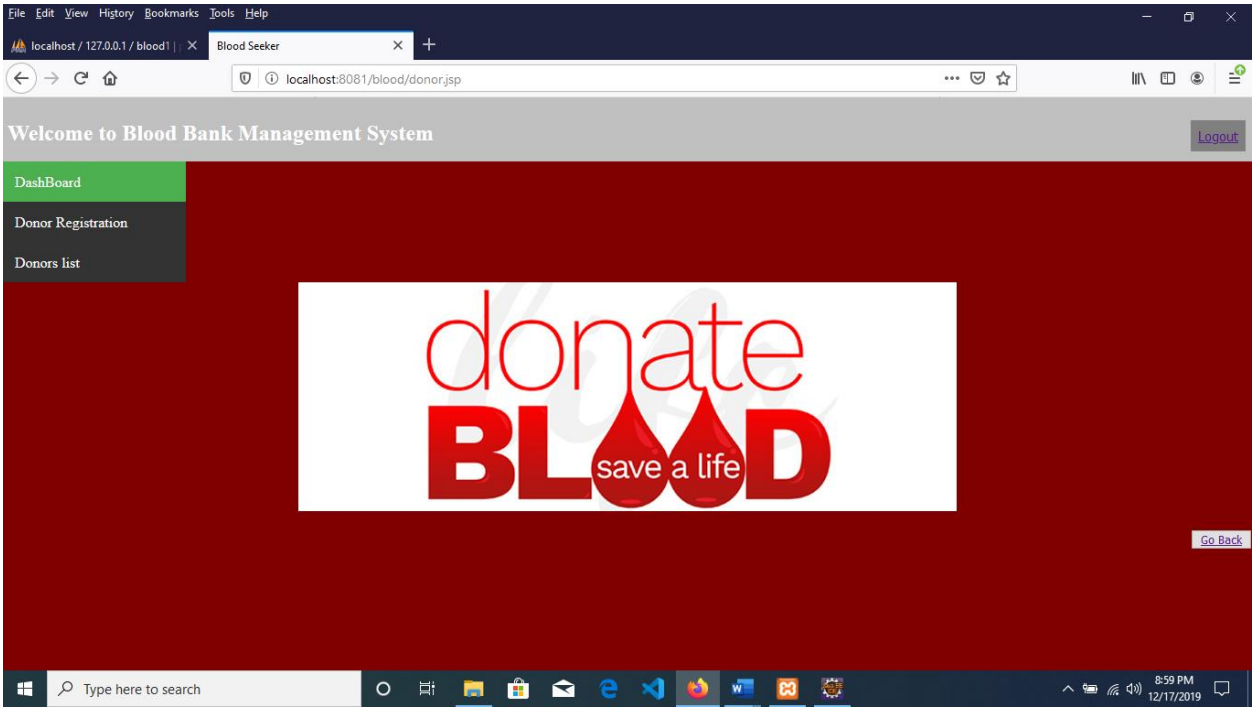
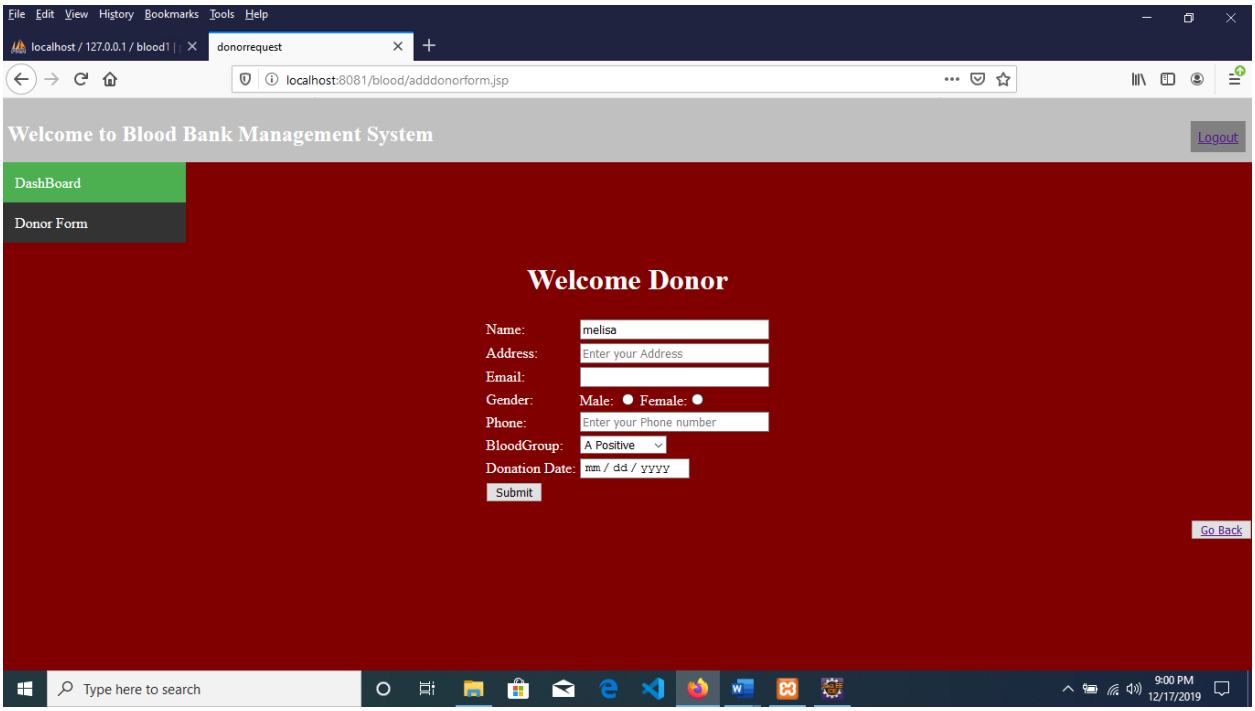
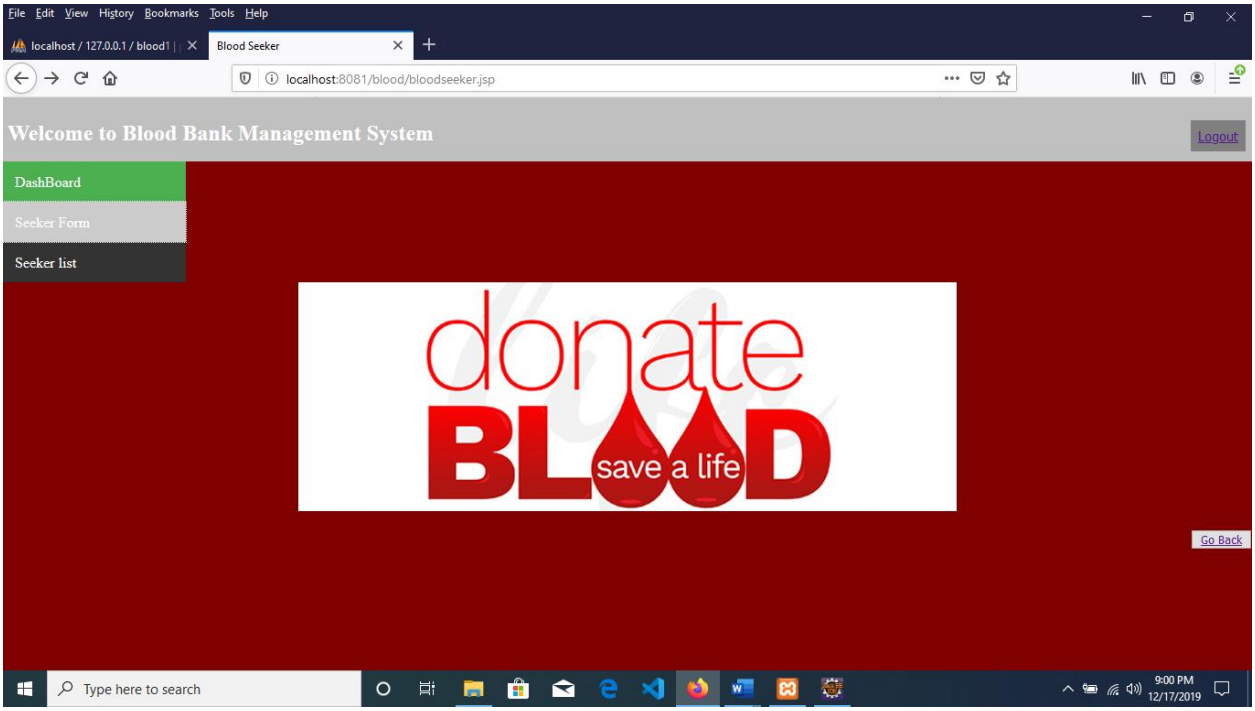
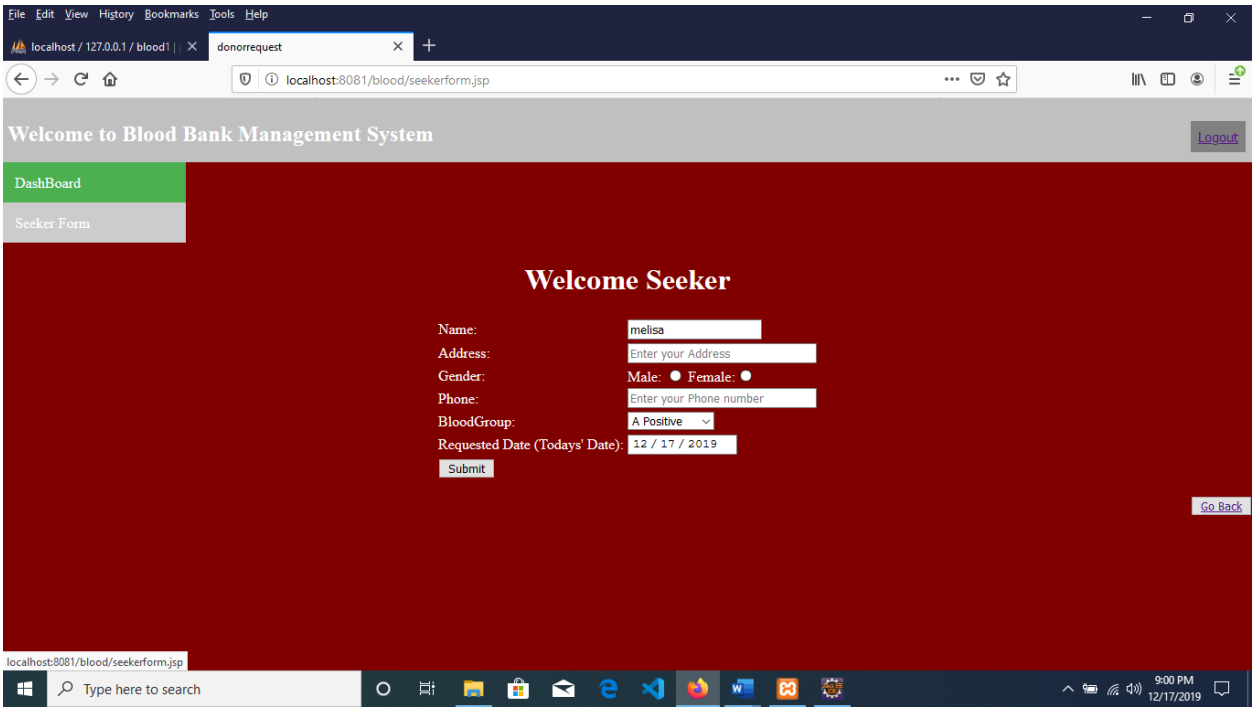
12/17/2019

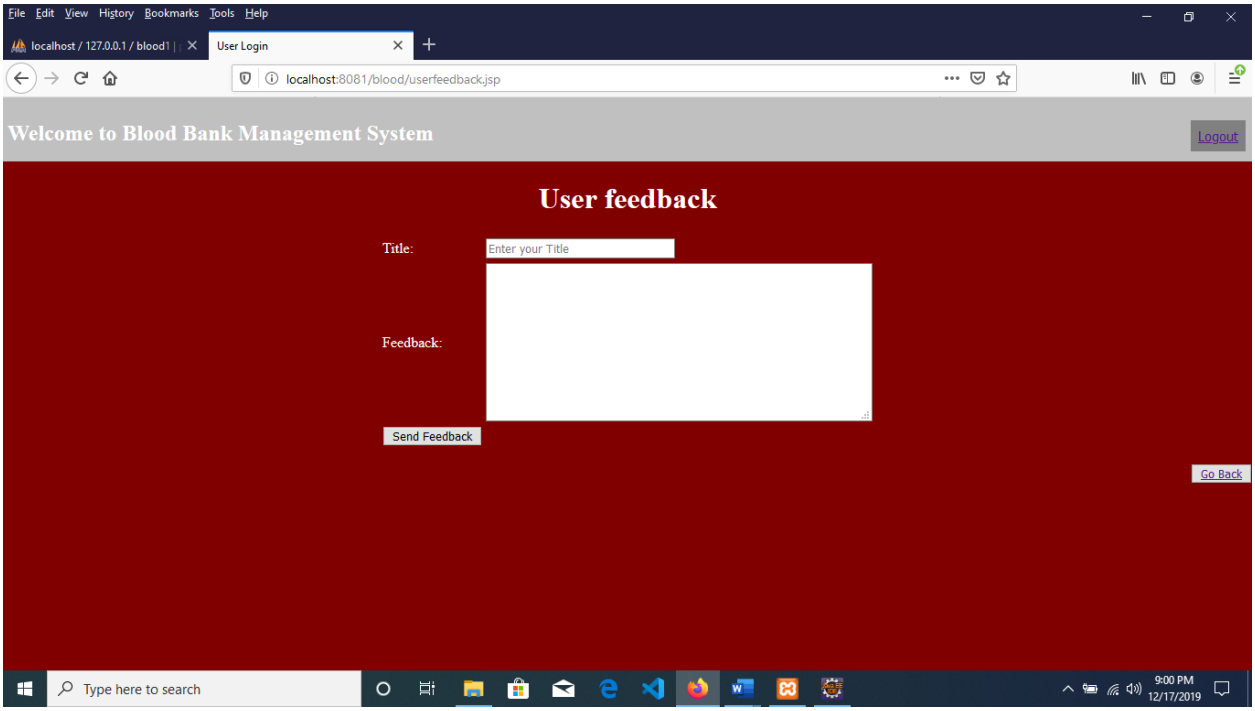

File Edit View History Bookmarks Tools Help
system flow diagram for blood
Sent Mail - melisa.sherchan@g
Dashboard
Dashboard
localhost:8081/blood/userdashboard.jsp
email is null
Welcome to Blood Bank Management System
Logout
User DashBoard
Blood Donor
Blood Seeker
Active donor
User Feedback
Notice
Type here to search
10:37 PM
12/17/2019

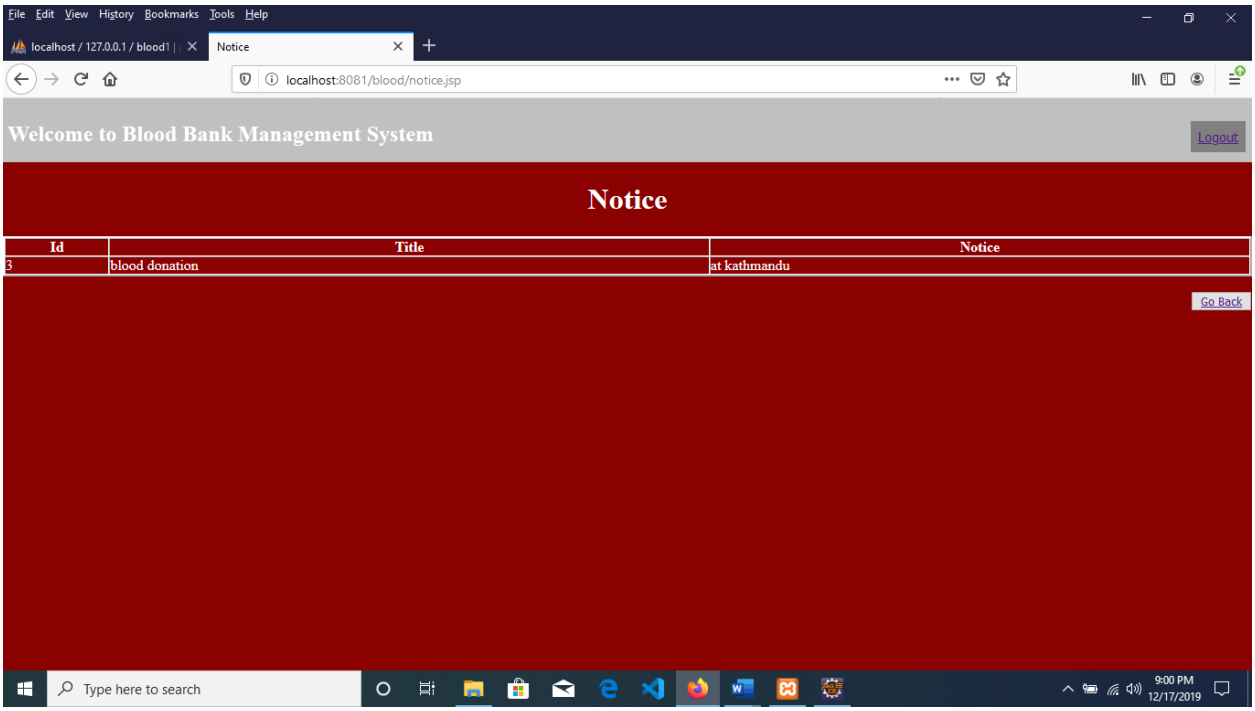

File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1
Blood Seeker
localhost:8081/blood/donor.jsp
Welcome to Blood Bank Management System
Logout
DashBoard
Donor Registration
Donors list
donate
BLOOD
save a life
Go Back
Type here to search
8:59 PM
12/17/2019


File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1
donorrequest
localhost:8081/blood/adddonorform.jsp
Welcome to Blood Bank Management System
Logout
DashBoard
Donor Form
Welcome Donor
Name:
melisa
Address:
Enter your Address
Email:
Gender:
Male:
Female:
Phone:
Enter your Phone number
BloodGroup:
A Positive
Donation Date:
mm / dd / yyyy
Submit
Go Back
Type here to search
9:00 PM
12/17/2019


File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1
Blood Seeker
localhost:8081/blood/bloodseeker.jsp
Welcome to Blood Bank Management System
Logout
DashBoard
Seeker Form
Seeker list
donate
BLOOD
save a life
Go Back
Type here to search
9:00 PM
12/17/2019


File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1
donorrequest
localhost:8081/blood/seekerform.jsp
Welcome to Blood Bank Management System
Logout
DashBoard
Seeker Form
Welcome Seeker
Name:
melisa
Address:
Enter your Address
Gender:
Male:
Female:
Phone:
Enter your Phone number
BloodGroup:
A Positive
Requested Date (Todays' Date):
12 / 17 / 2019
Submit
Go Back
localhost:8081/blood/seekerform.jsp
Type here to search
9:00 PM
12/17/2019


File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1
User Login
localhost:8081/blood/userfeedback.jsp
Welcome to Blood Bank Management System
Logout
User feedback
Title:
Enter your Title
Feedback:
Send Feedback
Go Back
Type here to search
9:00 PM
12/17/2019


File Edit View History Bookmarks Tools Help
localhost / 127.0.0.1 / blood1 |
Notice
localhost:8081/blood/notice.jsp
Welcome to Blood Bank Management System
Logout
Notice
Id
Title
Notice
3
blood donation
at kathmandu
Go Back
Type here to search
9:00 PM
12/17/2019