Dhirubhai Ambani Institute of Information and Communication Technology

BLOOD BANK MANAGEMENT SYSTEM

GROUP NO: 11

KANIKA AGRAWAL	201812045
MAHIMA GAJIWALA	201812062
PRACHI JAIN	201812070
DHWANI KSHTRIYA	201812077
YASH MEHTA	201812085
DEVARSHI SHAH	201812094
SONIYA VAIDYA	201812113
DENISH MANIYA	201812118
YOGESH THAKKAR	201812121

GUIDED BY

PROFESSOR ASIM BANERJEE

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1. Introduction

1.1. Purpose

The purpose of making this system is to control various activity performed in blood bank by using blood bank management system. This system maintains the records of all donors, blood banks, hospitals, camps, camp organizers and blood requests and also maintain the blood stock records and discard it as required.

1.2. Scope

- This system will help to improve the reliability of the data maintain and provide a fast and efficiencies for find blood from hospital, blood bank or donor.
- The main objective of blood bank management system is ....
    - Manage details properly
    - Maintaining the details of all stakeholders
    - Maintain Blood stock

1.3. Design and Implementation Constraints

1.3.1. Tools & Technology

- Front-end: HTML5, CSS, Bootstrap, JavaScript, JQuery
- Back-end: PHP 7.0
- Server: SMTP, XAMPP server
- Database: MySQL

1.4. Hardware Interfaces

1.4.1. User and Developer side: -

- There are no hardware interfaces to this software system.
- The only interfaces are through a computer system/mobile phone and a running internet.

1.5. Software Interfaces

1.5.1. Development Side: -

- We will use PHP language for developing our system.

1.5.2. Database Server: -

- We will use PHPMyAdmin server to store the information.

1.6. Communications Interfaces

We provide two type of notification functionality to our users.

1. Text Message
2. Email

To send message from web server to user mobile system will use SMPP (Short Mail Peer to Peer Protocol).

To send mail from web server to user mail account system will use SMTP (Simple Mail Transfer Protocol).

2. System Analysis

2.1. Identification of Stakeholder

1. Admin
    - View user's details
    - Add user
    - Send Reminder
2. Donor
    - Register in the system
3. Recipient
    - Send blood request
4. Hospital
    - Maintain blood stock
    - Add recipient
    - Maintain blood request
5. Camp Organizer
    - Organize camp
    - Upload donor details
6. Blood Bank
    - Maintain blood stock
    - Add recipient
    - Maintain blood request

2.2. Functional Requirement

1. User Login
2. Donor Registration
3. Hospital Registration
4. Blood bank Registration
5. Camp organizer Registration
6. Organizing camp
7. Blood request
8. Notify detail of expired stock
9. Camp notification
10. Blood request notification
11. Upload blood collection detail

2.3. Non- Functional Requirement

2.3.1. Performance Requirements

- The system needs to be reliable.
- If the process doesn't complete properly, appropriate error message will display.

2.3.2. Safety Requirements

- After entering user id and password the user can access his/her profile.
- The details need to be maintained properly.
- Users must be registered.

2.4. Initial Requirement Document

2.4.1. Version1

Title of the project:	Blood Bank Management System
Stakeholders involved in capturing requirements:	Owner of the blood bank (Shraddha deep blood bank)
Techniques used for requirement capturing:	Oral communication
Name of the person:	Dr. Dinesh Rathod
Date:	12 February 2019
Version:	1
Consolidated list of initial requirements: 1. Identify donor's role in the system. 2. Check donor is eligible for blood donation or not? 3. There is no legal constrain for blood stock in hospital or blood bank. 4. Recipient need requisition form for collect blood from hospital or blood bank.	

2.4.2. Version2

Title of the project:	Blood Bank Management System
Stakeholders involved in capturing requirements:	Admin of the blood bank and collage of civil hospital
Techniques used for requirement capturing:	Oral communication
Name of the person:	Narayan Sir (Admin of blood bank) Sumit Chaudhry (Admin of hospital)
Date:	13 February 2019
Version:	2
Consolidated list of initial requirements: 1. Capacity of blood based on the chemical added into the blood (generally 32 days). 2. Maintain camp details. 3. Notify donors about camp. 4. Manage blood stock details. 5. Manage request of recipient.	

2.4.3. Version3

Title of the project:	Blood Bank Management System
Stakeholders involved in capturing requirements:	Medical Superintendent of civil hospital
Techniques used for requirement capturing:	Oral communication
Name of the persons:	Dr. Niyati Lakhani
Date:	19 February 2019
Version:	3
Consolidated list of initial requirements: 1. How blood bank provide blood to other blood banks or patients. 2. The process to use data of the civil hospital.	

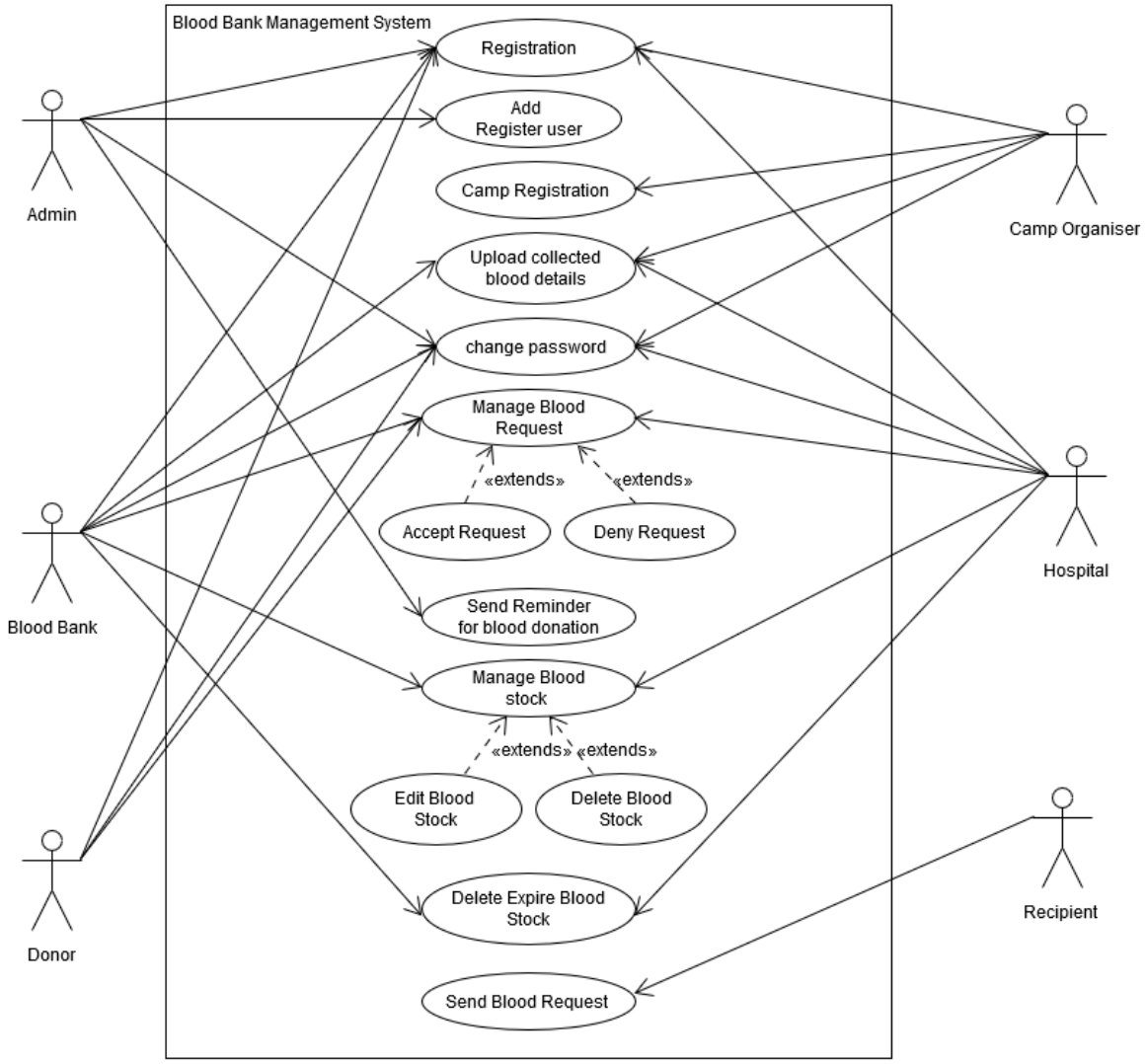
2.4.4. Version4

Title of the project:	Blood Bank Management System
Stakeholders involved in capturing requirements:	Head of the civil hospital
Techniques used for requirement capturing:	Oral communication
Name of the persons:	Dr. Harshid
Date:	26 February 2019
Version:	4
Consolidated list of initial requirements: 1. Discard bloods after specific period of time (generally after 32 days and then based on chemical added into the blood at the time of storage). 2. Discard bloods for specific reason. 3. Notify donors about camp and blood demands.	

2.4.5. Version5

Title of the project:	Blood Bank Management System
Stakeholders involved in capturing requirements:	Medical Director & CEO of AASHKA Hospital
Techniques used for requirement capturing:	Oral communication
Name of the persons:	Dr. Ankit Salot
Date:	27 February 2019
Version:	5
Consolidated list of initial requirements: 1. The way how hospital arrange the blood from blood bank.	

2.5. Use Case Diagram



2.6. Use Case Description

Introduction: This use case diagram must be followed in order to design Blood Bank Management System
Actors: Camp Organizer, Donor
Precondition: All Stakeholders must be logged onto the system before the use case begins.
Precondition: If the use case is successfully, then respective actor will be able to perform tasks.
Event Flow: Basic Flow 1. Organizer can add camp. 2. System will notify donors about camp. 3. The information of camps is stored into the database. 4. The system displays information of camps that are going to organized.
Special requirement: Donor should must running internet connection in order to receive notification of camp.
Associated use case: Login

Table 1 Use case description of blood bank management system

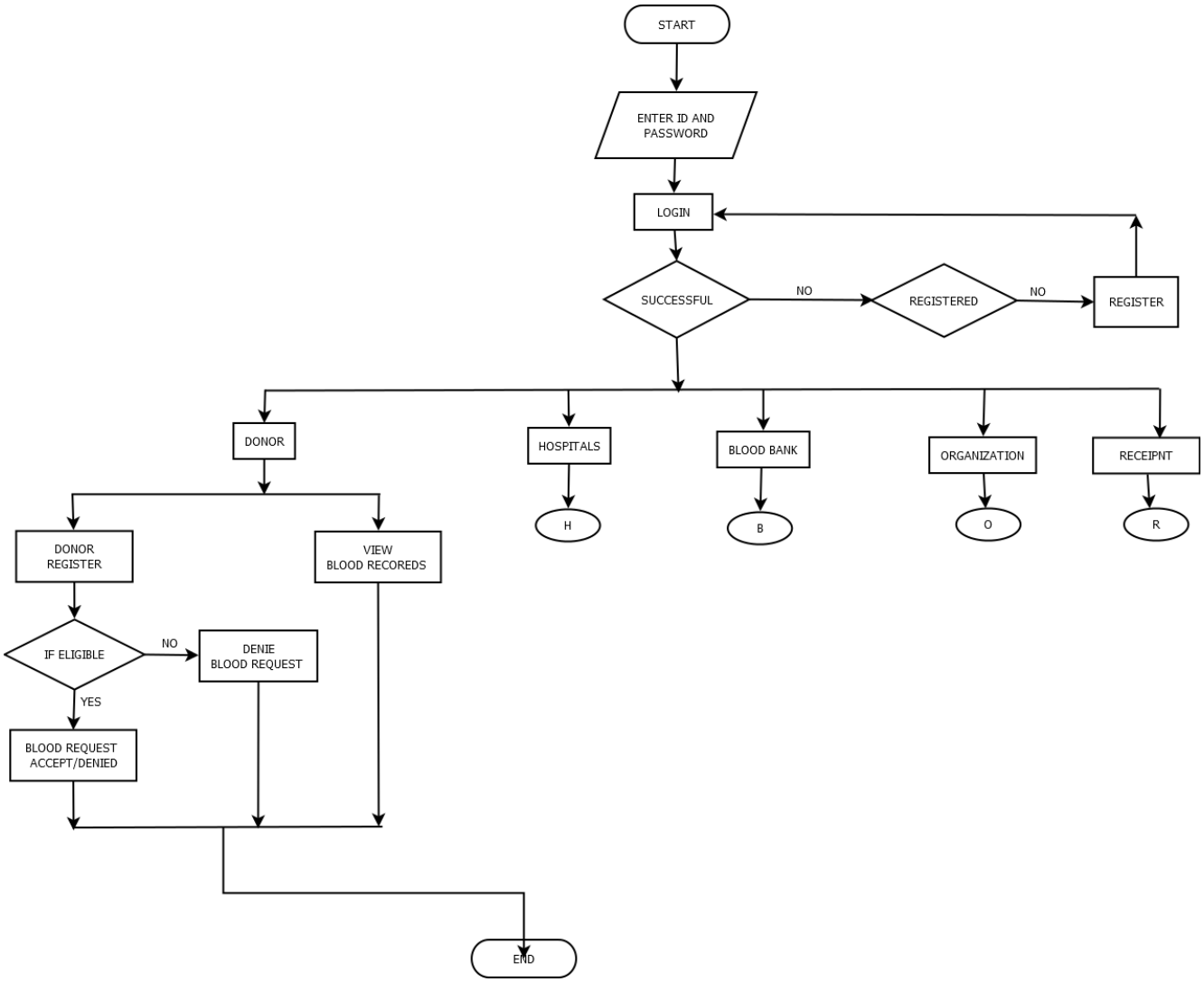
Introduction: This use case diagram must be followed in order to design Blood Bank Management System
Actors: Blood Bank, Hospital, Camp Organizer
Precondition: All Stakeholders must be logged onto the system before the use case begins.
Precondition: If the use case is successfully, then respective actor will be able to perform tasks.
Event Flow: Basic Flow 1. The blood request of recipient sends into hospitals and blood banks. 2. If blood is available at any of the place, then they accept the blood request. 3. Recipient will be notify if the blood request is accepted. 4. Not accepted blood requests can be viewed by donors.
Special requirement: Donor should must running internet connection in order to receive notification of camp.
Associated use case: Login

Table 2 Use case description of blood bank management system

Introduction: This use case diagram must be followed in order to design Blood Bank Management System
Actors: Blood Bank, Hospital, Camp Organizer
Precondition: All Stakeholders must be logged onto the system before the use case begins.
Precondition: If the use case is successfully, then respective actor will be able to perform tasks.
Event Flow: Basic Flow 1. Blood bank, Hospital and Camp organizer upload the file of donor's collected blood details. 2. Then system will verify the data and if the data are valid then it allows to update database.
Special requirement: File should be in .CSV format.
Associated use case: Login

Table 3 Use case description of blood bank management system

2.7. Flow Chart



2.8. Data Dictionary

2.8.1. tbl_organization

Name	Datatype	Constraint	Description
org_email	varchar(50)	Primary Key	Unique identifier of organization table
org_name	varchar(50)	Not Null	Name of organization
org_contact	varchar(13)	Not Null	Contact number of organizations
org_password	varchar(50)	Not Null	Auto generated password of organization
org_address	varchar(100)	Not Null	Address of organization

2.8.2. tbl_blood_bank

Name	Datatype	Constraint	Description
bloodbank_email	varchar(50)	Primary Key	Unique identifier of blood bank
bloodbank_name	varchar(50)	Not Null	Name of blood bank
bloodbank_area	varchar(20)	Not null	Region where blood bank is located Eg. Sector 22
bloodbank_contact	varchar(13)	Not Null	Phone number of blood bank
bloodbank_address	varchar(100)	Not Null	Specific location of blood bank
bloodbank_password	varchar(12)	Not Null	Auto generated password of blood bank

2.8.3. tbl_blood

Name	Datatype	Constraint	Description
blood_id	bigint	Primary Key	Unique identifier of blood stock
blood_donor_name	varchar(50)	Not Null	Name of blood donor
blood_group	varchar(3)	Not Null	Blood group of donor
blood_donor_gender	varchar(6)	Not Null	Gender of blood donor
blood_givenDate	date	Not null	Donation date
blood_donor_email	varchar(50)	Not Null	Email Id of blood donor
blood_donor_contact	varchar(13)	Not Null	Phone or contact number of blood donor
blood_status	int	Not Null	Status of the blood whether is it expired or not. If expired then 1 else 0

2.8.4. tbl_donor

Name	Datatype	Constraint	Description
donor_email	varchar(50)	Primary Key	Unique identifier of donor
donor_name	varchar(50)	Not Null	Name of blood donor
donor_gender	char(1)	Not Null	Gender of blood donor
donor_dob	date	Not null	Birthdate of blood donor
donor_city	varchar(20)	Not null	City where blood donor lives
donor_area	varchar(20)	Not null	Region where blood donor's house is located
donor_address	varchar(100)	Not null	Specific location of blood donor's residence
donor_contact	varchar(13)	Not Null	Phone or contact number of blood donor
donor_blood_group	varchar(3)	Not Null	Blood group of donors
donation_date	date	Not Null	Date of previous blood donation

donor_service	char(1)	Not null	Approach of notifying the donor Eg. Via SMS or Email
donor_donation_months	int	Not Null	Months duration of donating blood which donor prefers
donor_password	varchar(12)	Not null	Auto generated password for blood donor

2.8.5. tbl_hospital

Name	Datatype	Constraints	Description
hospital_email	varchar(50)	Primary Key	Unique identifier of hospital
hospital_name	varchar(50)	Not Null	Name of hospital
hospital_area	varchar(20)	Not Null	Region where hospital is located
hospital_contact	varchar(13)	Not Null	Phone or contact number of hospitals
hospital_address	varchar(100)	Not null	Specific location of hospital
hospital_password	varchar(50)	Not null	Auto generated password for hospital

2.8.6. tbl_recipient

Name	Datatype	Constraints	Description
recipient_id	bigint	Primary Key	Unique identifier of recipient
recipient_name	varchar(50)	Not Null	Name of requester
Patient_name	Varchar(20)	Not Null	Name of patient
recipient_gender	char(1)	Not Null	Gender of patient
recipient_blood_group	char(3)	Not Null	Blood group of patient
recipient_contact	varchar(13)	Not Null	contact number of recipient
recipient_area	varchar(20)	Not null	Region where recipient's house is located
recipient_address	varchar(100)	Not null	Address of recipient
recipient_relation	varchar(30)	Not Null	Relation of recipient with patient
hospital_name	varchar(50)	Not Null	Name of the hospital
doctor_name	varchar(50)	Not null	Name of the doctor
recipient_status	char(1)	Not null	Status of blood request is

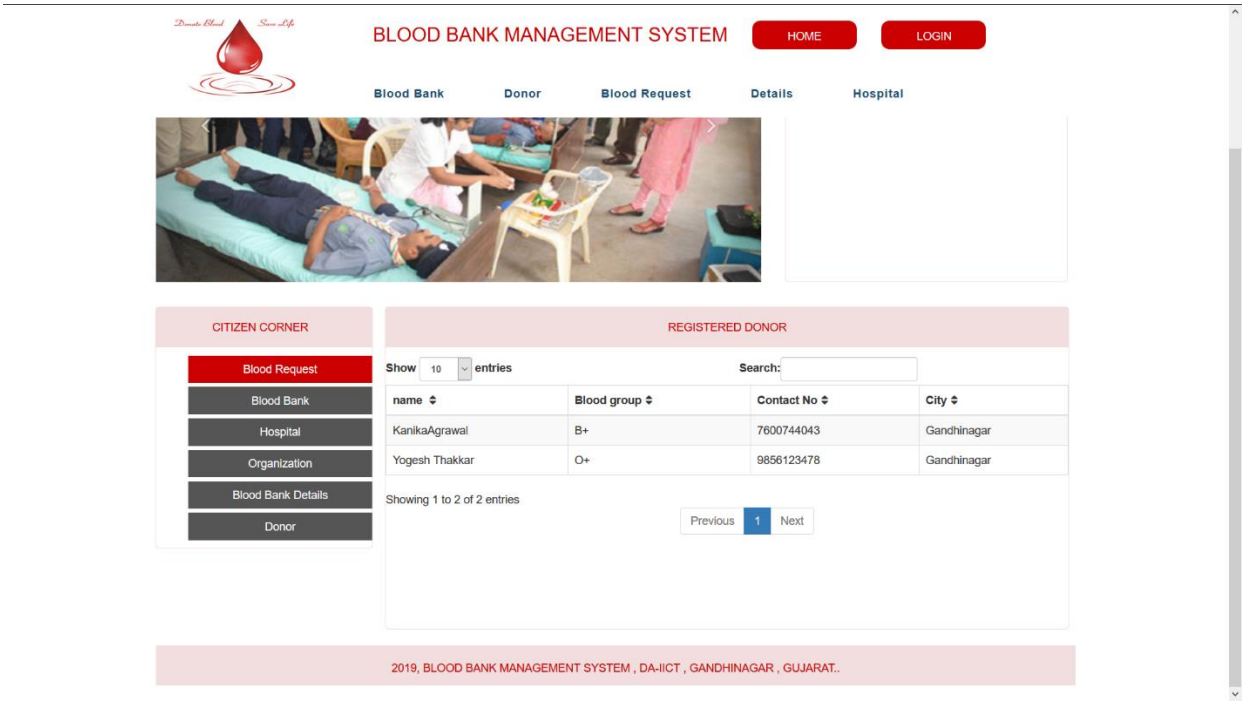
2.8.7. tbl_camp

Name	Datatype	Constraints	Description
camp_id	bigint	Primary Key	Unique identifier of blood donation camp
camp_name	varchar(50)	Not Null	Name of blood donation camp
camp_org_email	varchar(50)	Not Null	Email Id of blood donation camp organizer
camp_venueDate	date	Not Null	Date when blood donation camp will be organized
camp_registrationDate	date	Not null	Date when blood donation camp has registered
camp_location	varchar(100)	Not null	Place or venue where the blood donation camp will be held
camp_time	time	Not null	Time from when the blood donation camp will be started
camp_contact	varchar(13)	Not Null	contact number of camp

2.8.8. tbl_admin

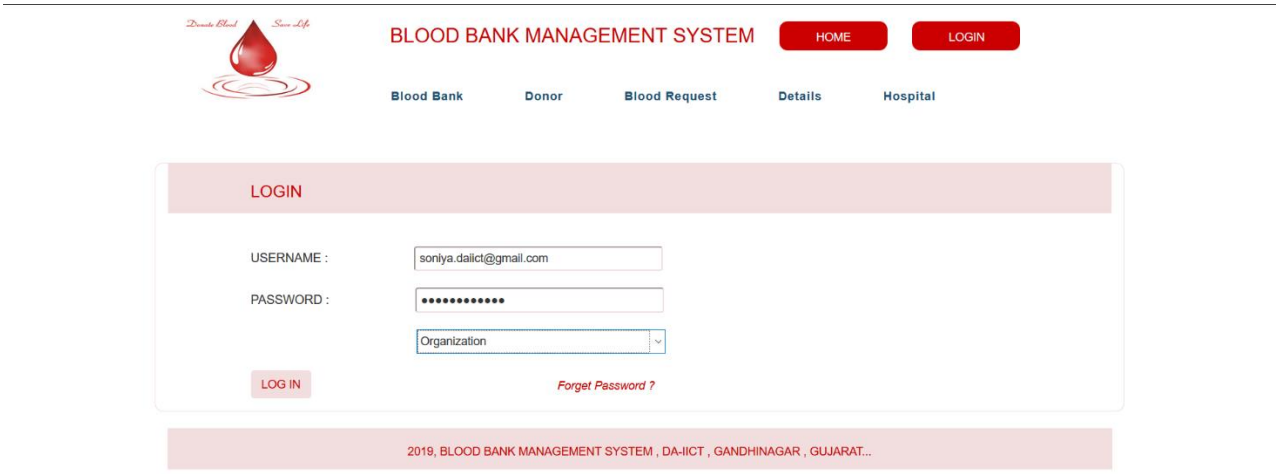
Name	Datatype	Constraints	Description
admin_email	varchar(50)	Primary Key	Unique identifier of admin
admin_name	varchar(50)	Not Null	Name of admin
admin_contact	varchar(13)	Not Null	Phone or contact number of admin
admin_password	varchar(50)	Not null	Auto generated password for admin
admin_status	int	Not null	If status is 1 then admin is super admin and 0 depicts sub admins

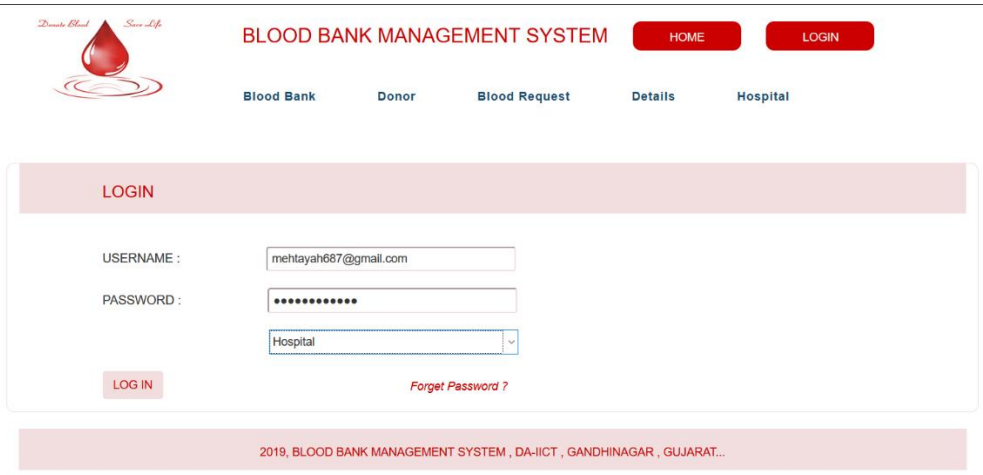
3. User Interface Design

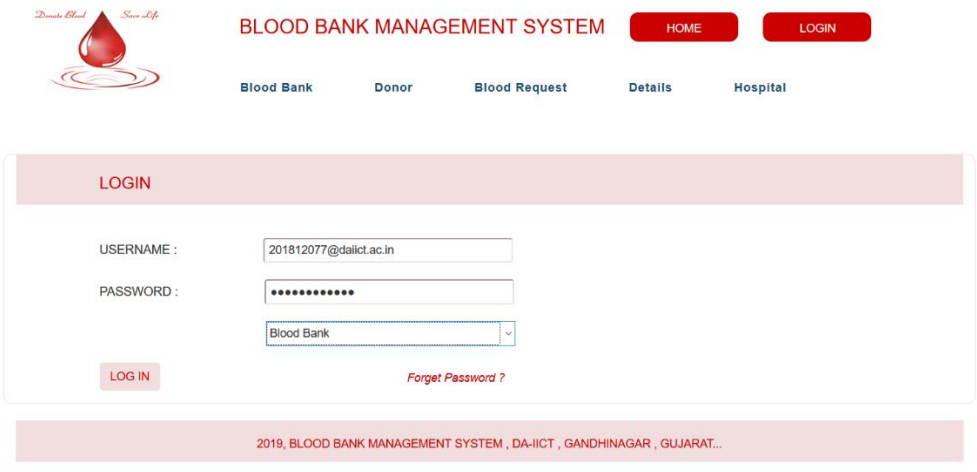


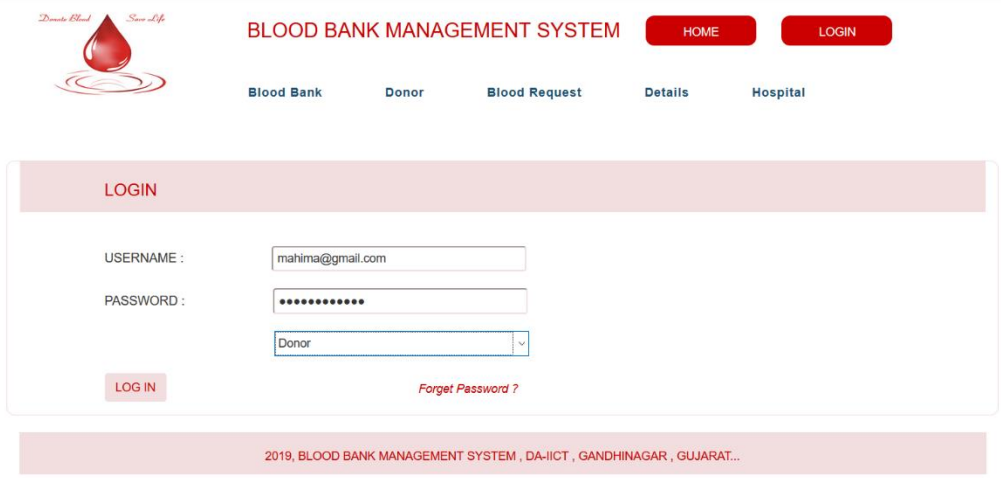
Login:

This page is used by different stakeholders to login to the system. Stakeholders are blood bank, donor, hospital, organization



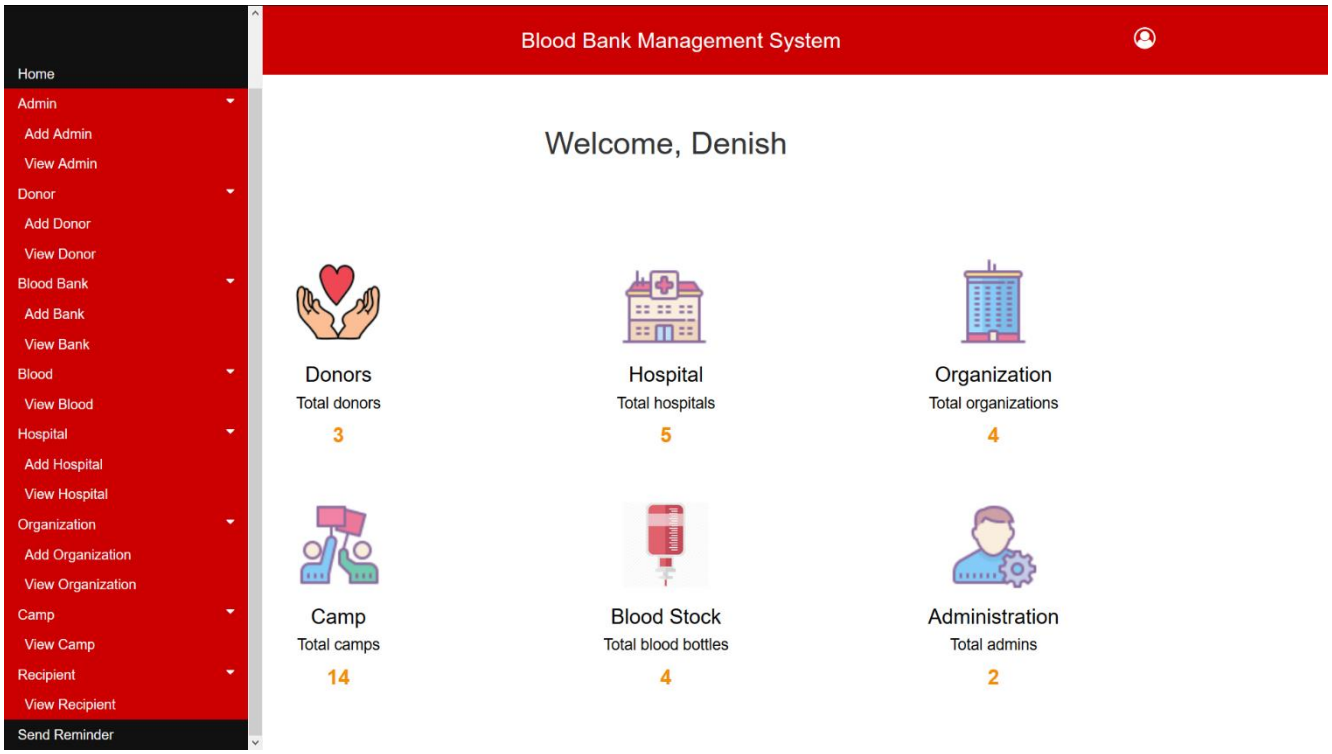

BLOOD BANK MANAGEMENT SYSTEM
HOME
LOGIN
Blood Bank
Donor
Blood Request
Details
Hospital
LOGIN
USERNAME :
mehtayah687@gmail.com
PASSWORD :
Hospital
LOG IN
Forget Password ?
2019, BLOOD BANK MANAGEMENT SYSTEM , DA-IICT , GANDHINAGAR , GUJARAT...

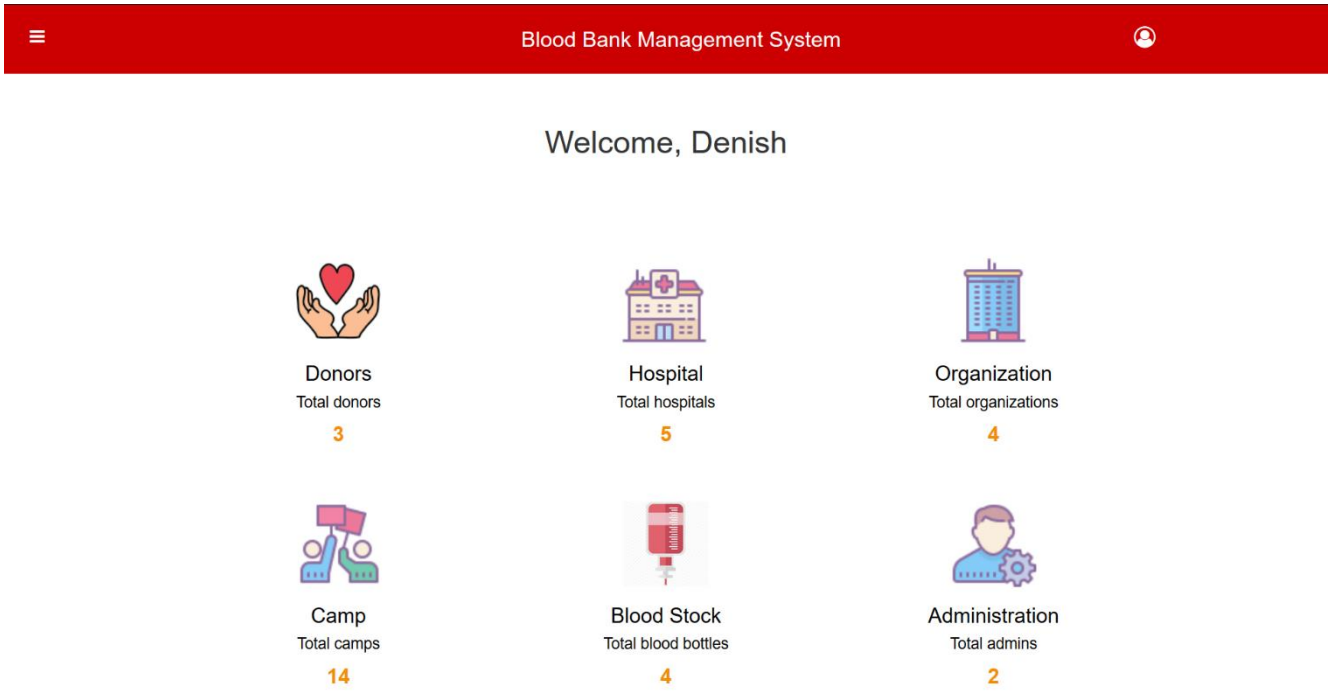

BLOOD BANK MANAGEMENT SYSTEM
HOME
LOGIN
Blood Bank
Donor
Blood Request
Details
Hospital
LOGIN
USERNAME :
201812077@daiict.ac.in
PASSWORD :
Blood Bank
LOG IN
Forget Password ?
2019, BLOOD BANK MANAGEMENT SYSTEM , DA-IICT , GANDHINAGAR , GUJARAT...



Admin:

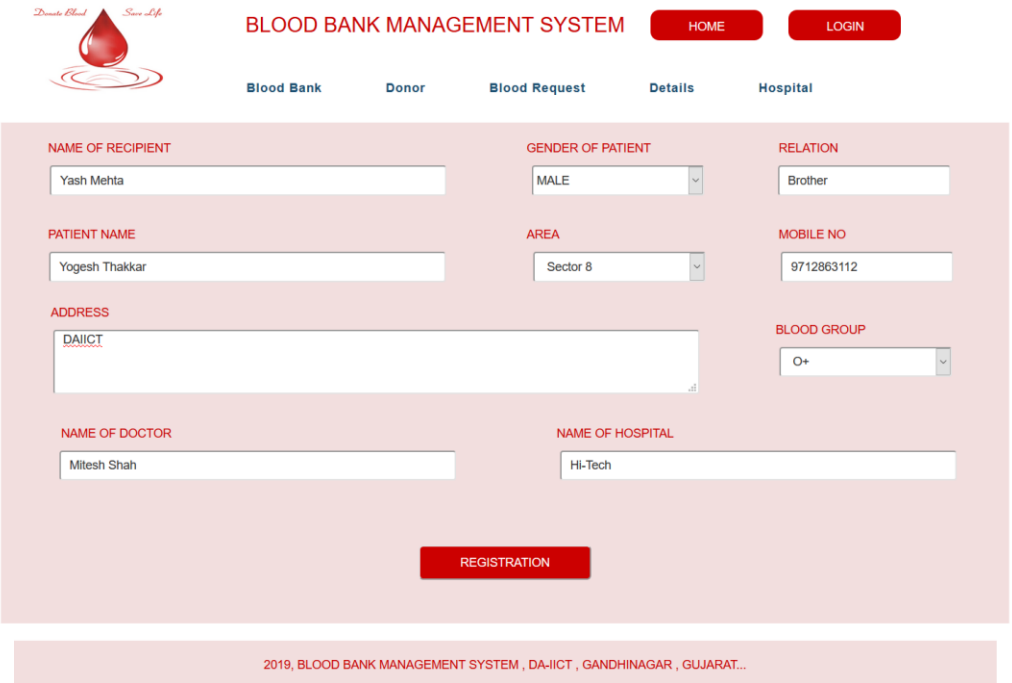
When admin log into the system, the following page is shown. It includes details such as how many donors, hospital, organization, camp is registered and what is the blood stock at present moment.

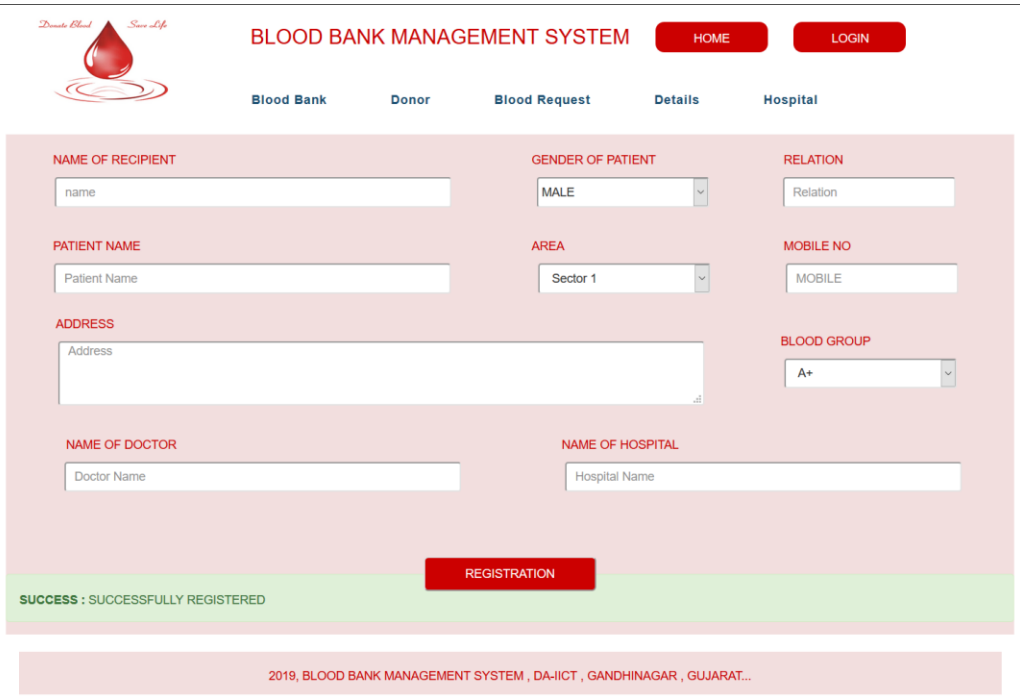




Blood Request:

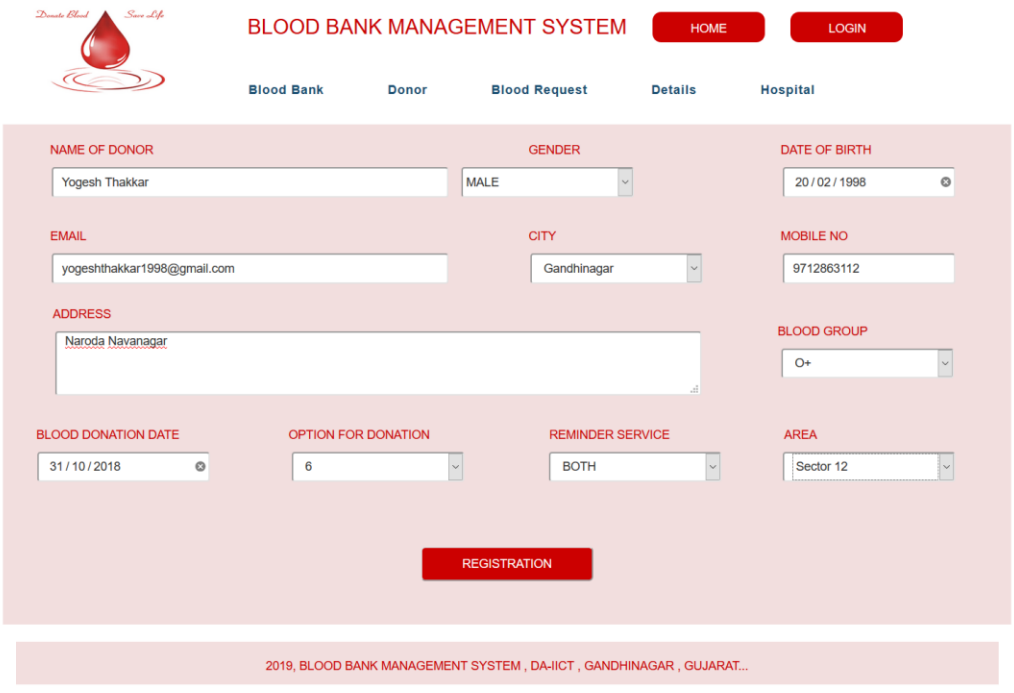
This is the screen used to request the blood.

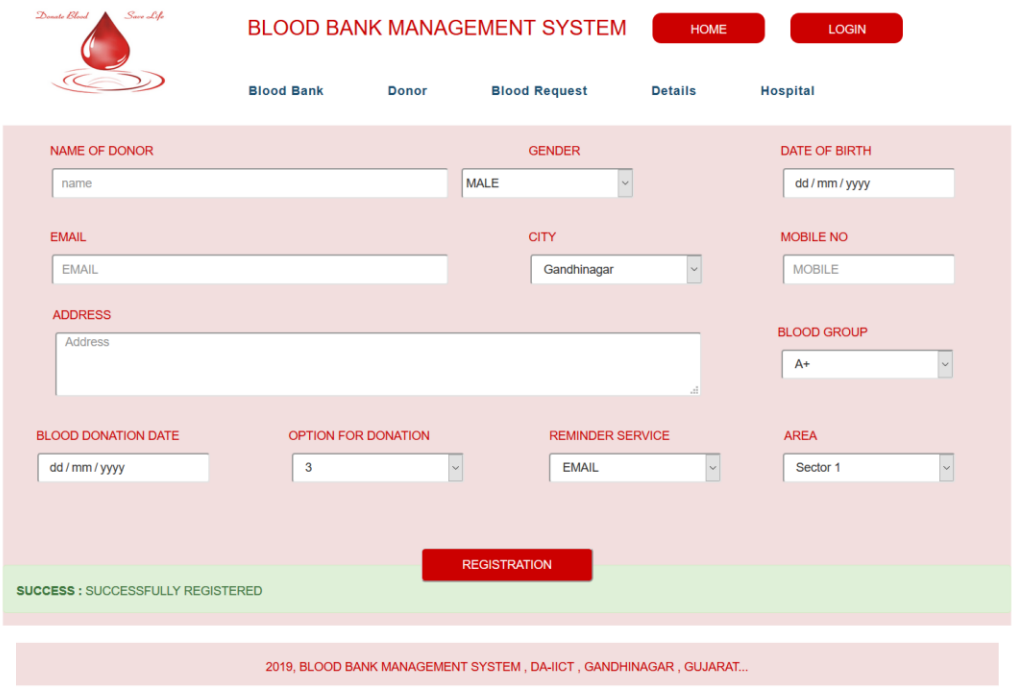




Donor Registration:

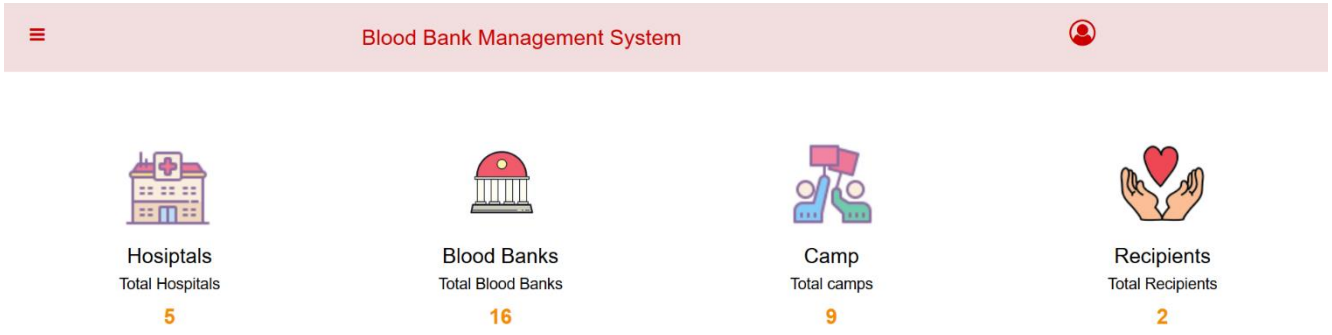
Option for donation shows the months like 3, 6, or 12 months to donate again. It also has reminder service whether he/she want email or SMS or both.





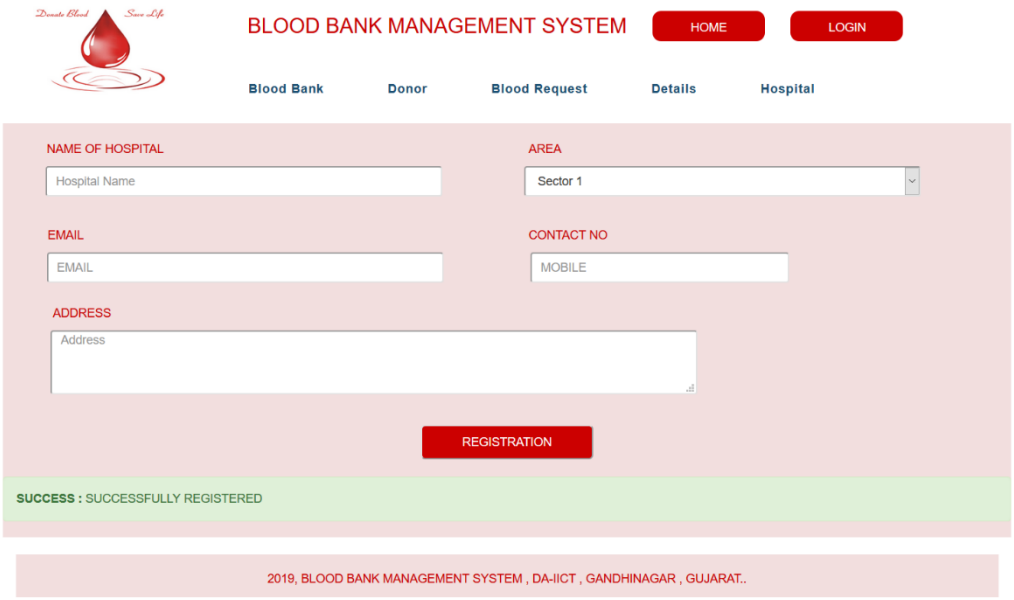
Donor:

When donor logs into the system, then following screen shows up. It includes details such as total number of hospitals, blood banks, camps and the recipients.



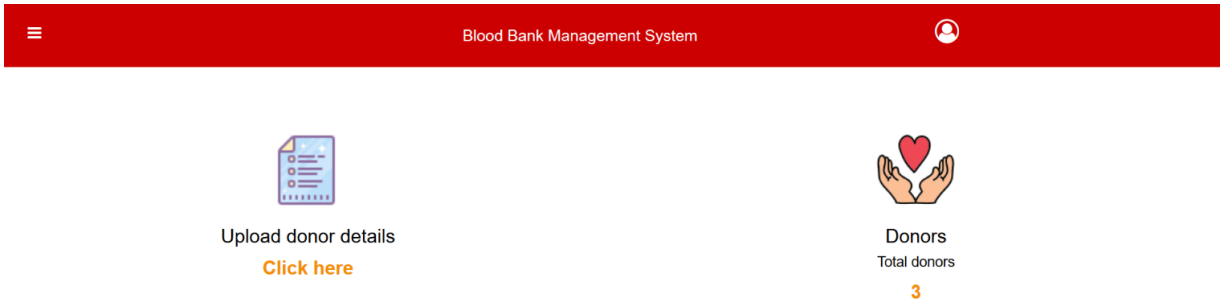
Hospital Registration:

This is the screen for hospital registration. It included all the basic detail of the hospital.



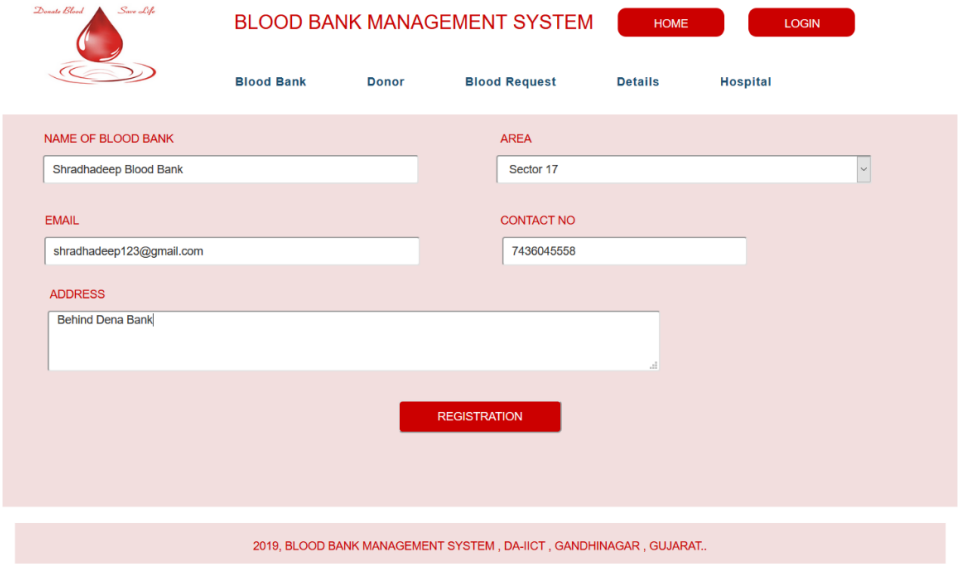
Hospital Functionality:

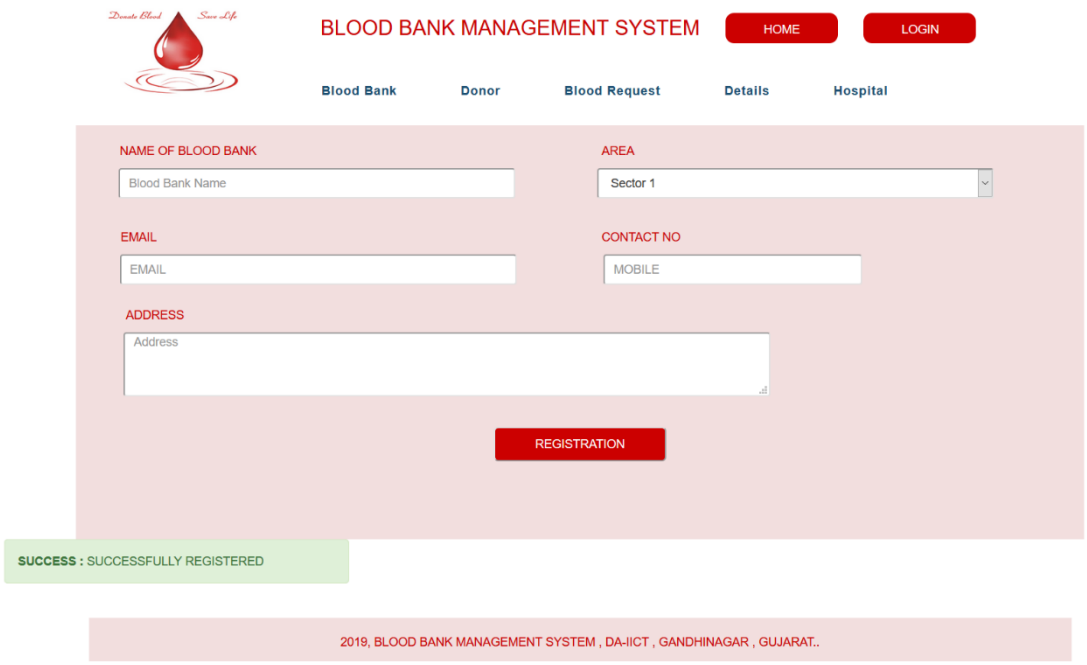
Hospital can upload donor details and can see total number of donors registered on the system



Blood bank:

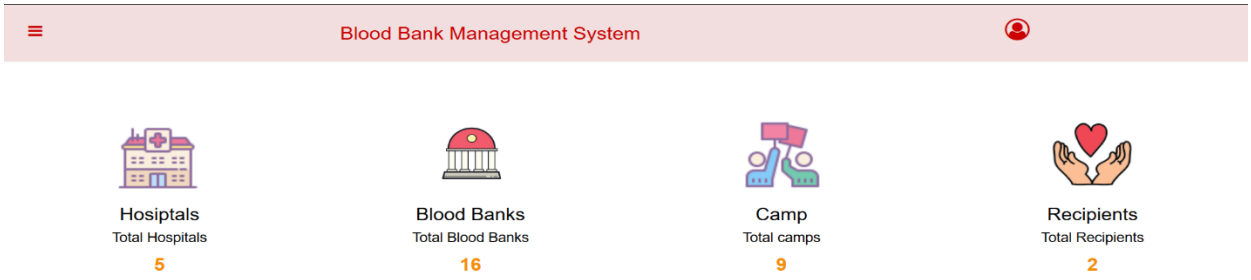
This screen is the registration screen of the blood bank.





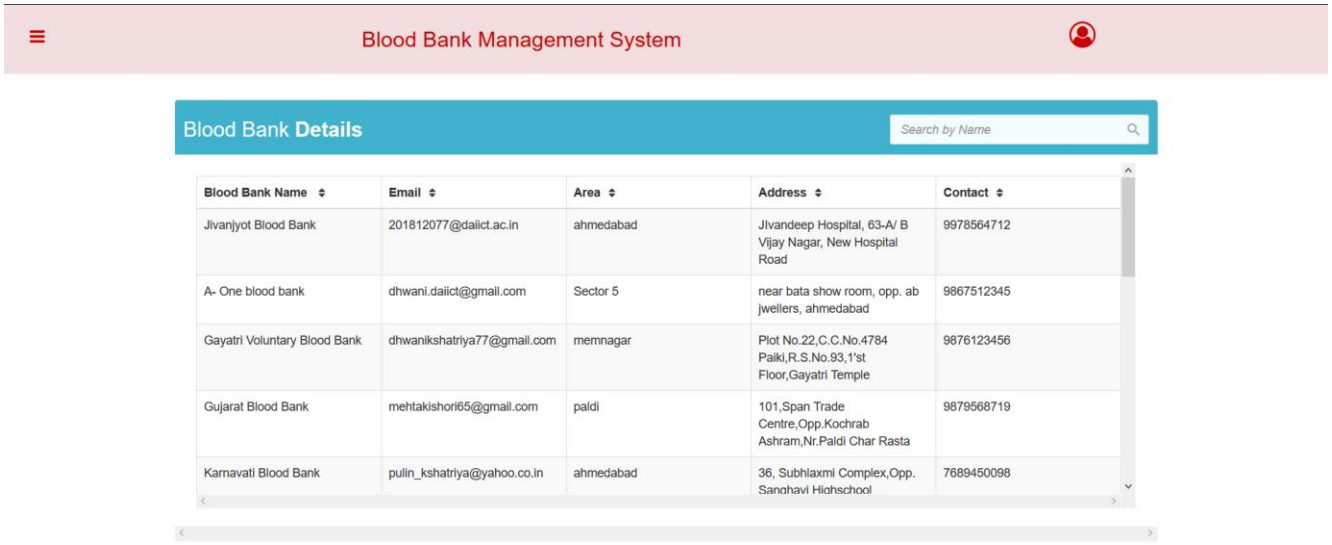
Blood bank home:

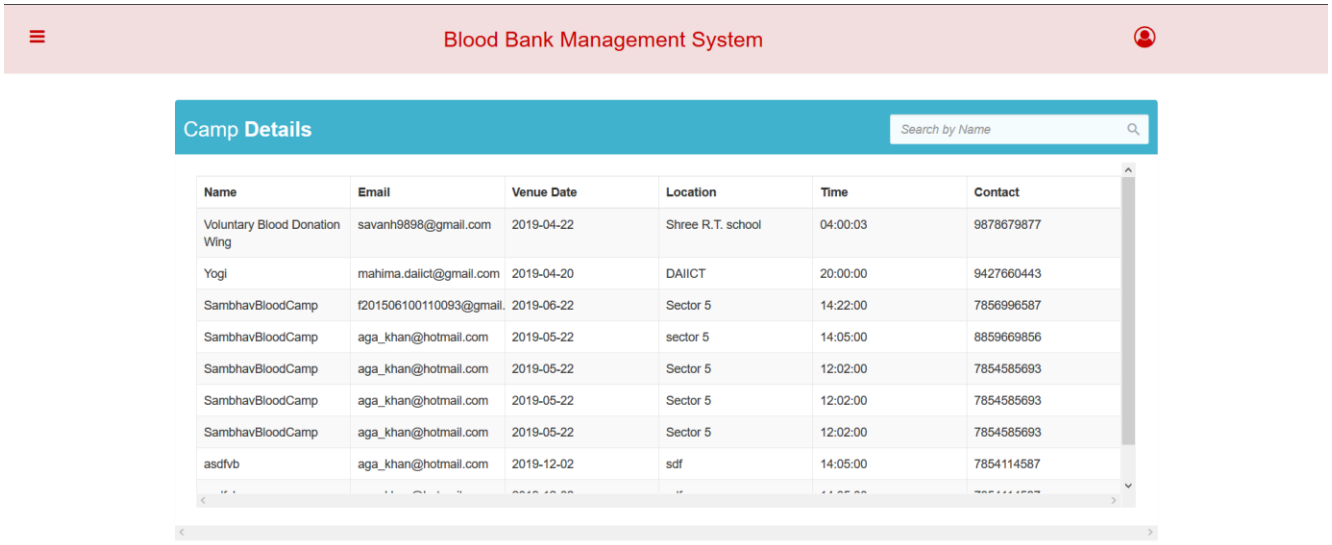
This is the home screen of blood bank. It can upload the details and view donors.

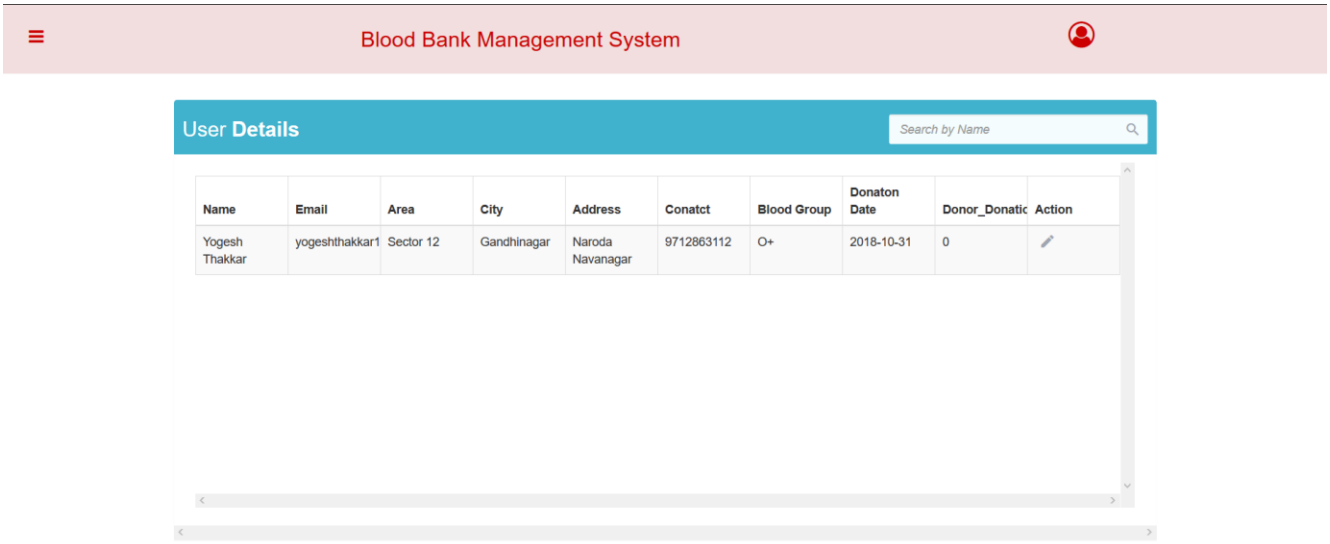


Details:

This is the blood bank detail screen. It shows all the information about the blood bank.

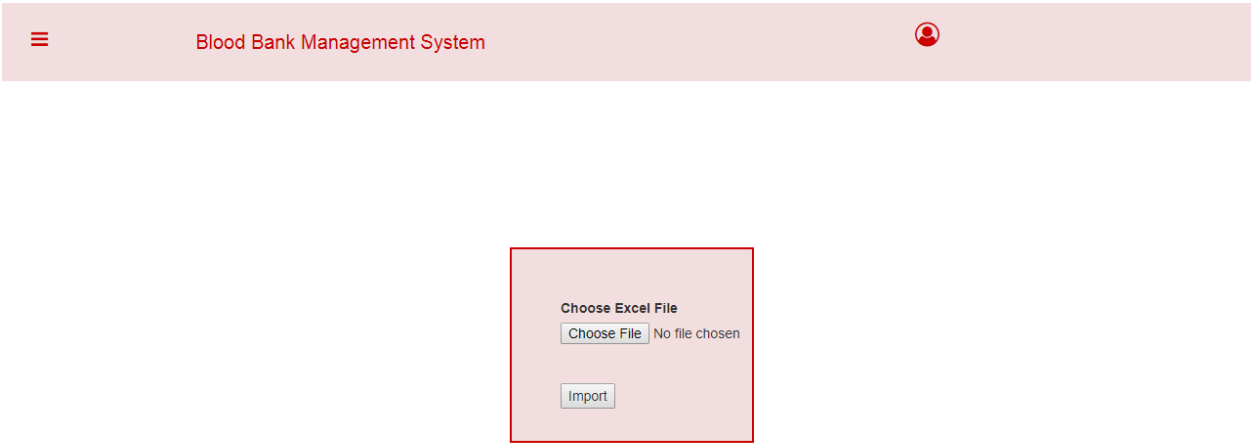






Upload Details:

This is the screen for uploading details. It is used by blood bank, hospital and organization to upload the details of the donor to the system.



- **User Manual**

  https://drive.google.com/open?id=1N2o5Bn57Zc9p8vswuBg-UCx2QzQbLGPA

4. Testing

4.1. Introduction

The Test Plan has been created to communicate the test approach to team members. This document will clearly identify what the test deliverables will be.

4.2. Objectives

- Meets the requirements and specifications.
- Supports the intended functions and achieves the required software quality.

4.3. Function Scope

Requirement	Expected Output	Pass Criteria	Fail Criteria
For first time stakeholders register with details	Registration successful	When user enter unique email id.	Same email id found.
Log in with email id and password	Should be able to log in successfully and perform task based on their log in type.	Email id and password must be correct	Enter wrong email id and password or user is not registered.
Change password	Successfully able to change password.	Old password must be correct and new password should be based on specific requirement	Enter old password or new password not match the required criteria.
Admin insert, delete or view user information from respective tables.	Only selected recipient details will be shown on the basis of donor table from database.	Only selected records will be shown, delete or updated based on id.	Given id is not available in database.
Handling blood request	If the stock is available in the hospital or blood bank then they will send acceptance	If the request is accepted then notify recipient, if	When the request is accepted but no

	to the recipient (who has given the request).	denied forward request to donor.	information is passed to donor.
Blood stock expiry check	On Expiry of blood stock from given date blood stock that is expired must be notified in the panel	On expired blood is notified and removed from database on deletion.	Blood stock that is expired is not notified at all to the user.

5. Future Enhancement

5.1. Future Enhancement and conclusion: -

This web application avoids the manual work and the problems concerned with it. It is an easy way to obtain the information that is present in our System. Well, we have worked hard in order to present an improved web application better than the existing one's regarding the information about the various activities. Still, we found out that the project can be done in a better way in future for that we think that donor details can fetch via Aadhaar card.

5.2. Learning during the Project: -

- And also, we learned more functionalities about this project
- Also, we learned more about PHP language.

6. References/Bibliography

- **Web Resource**

[1] www.youtube.com
[2] www.w3schools.com
[3] http://gis.jharkhand.gov.in/bbms/Default.aspx

- **Bibliography**
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  - A Concise Introduction Software Engineering by Pankaj Jalote.