Case Study
On
Blood Bank Website

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE AND ENGINEERING

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DECLARATION STATEMENT

I hereby declare that the case study entitled “BLOOD BANK WEBSITE” submitted at Lovely Professional University, Phagwara, Punjab is an authentic work and has not been submitted elsewhere.

I understand that the work presented herewith is in direct compliance with Lovely Professional University’s Policy on plagiarism, intellectual property rights, and highest standards of moral and ethical conduct. Therefore, to the best of my knowledge, the content of this case study represents authentic and honest effort conducted, in its entirety, by me. I am fully responsible for the contents of my case study report.

Signature of Candidate

Rohan Boorugu

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1.Introduction

1.1 Purpose

The main purpose for preparing this document is to give a general insight into the analysis and requirements of the existing system or situation and for determining the operating characteristics of the system.

1.2 Document Conventions: font: TNR 12

1.3 Intended Audience and Reading Suggestions:

The document is intended for all the stakeholders customer and the developer **(designers, testers, maintainers**). Knowledge and understanding of UML diagrams is also required.

1.4 Project Scope:

The Blood Bank website is to create an e-Information about the donor and organisation that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any person requires blood can also register with this site. Moreover if any general consumer wants to make request blood online he can also take the help of this site. Admin is the main authority who can do addition, deletion, and modification if required.

2. Overall Description

2.1 Product Perspective

Communication interface: The blood bank system communicate with the organisation via a communication network.

Software interface: The messages sent via the communication network are specific to the target software systems.

Hardware interface: The software will run on any computer or laptop.

User interfaces

Donor: The donor user interface should be intuitive, such that 99.9% of all new donors are able to complete their donations without any assistance.

Consumer: The consumer user interface should also be intuitive, such that all consumers are able to complete their requests with ease.

Admin: The admin is responsible for adding new blood camp informations to the website. A maintainer should be possible to check and resolve any issues in blood donation/consumption within minimal time.

2.2 Product Features

The website should work 24 hrs. The website identifies a customer by a username and password. It collects information about the person's personal details, medical history, communicates the request information to the admin, and makes a request to dispense blood to the customer/update information about the donation. The website requires appropriate record keeping and security provisions. The software must handle concurrent accesses to the same account correctly.

2.3 User Classes and Characteristics

Characteristics: There are several users of the blood bank website:

Donors are simply members of the general public who donate blood.

Consumers/Acceptors are simply members of the general public who request for blood.

Admin must be experienced administrator, to be able to be able to resolve any kind of issue.

2.4 Operating Environment

The software, hardware and technology used should have following specifications:

Software Requirements:

Name of Component	Specifications
Operating System	Windows, MacOS, Linux
Web Server	Apache
Database	MySQL Server
Browser	Any of Mozilla, Opera, Chrome, Safari, etc.

Hardware Requirements:

Name of Component	Specification
Processor	Intel Core i3 or higher
RAM	512 MB
Hard disk	25 GB
Monitor	Colour monitor

Technology Requirements:

- HTML5
- CSS3
- JavaScript
- PHP
- MySQL

2.5 Design and Implementation Constraints

- Login

Validate for User Account:

- Validate for valid username credentials
- Validate for valid password credentials

Validate for Locked Account:

- Validate that account is not locked
- If account is locked, prompt error message “Account is locked”

Lock Account:

- If number of consecutive unsuccessful logins exceeds three attempts, lock account
- Maintain consecutive unsuccessful login counter
- Increment login counter
- Reset login counter to 0 after login is successful
- Get access to the website

2.6 Assumptions and Dependencies

- Hardware never fails
- Limited number of blood donations in a period
- Age limit for blood donations

3. Specific Requirements

3.1 Functional Requirements

Functional Requirement 1:

- **Login**

  The system provides security features through username-password match

  Input: Username, Password

  Process: Validate username, password

  Output: Login successful or retry

Functional Requirement 2:

- **Profile Registration/Sign up**

  This allows public to register themselves online

  Input: Personal details, Medical history details

  Process: Validate with existing users

  Output: Registration successful or User already exists

Functional Requirement 3:

- **Donation Record**

  This allows public to maintain a record of their donations

  Input: All details required in the form

  Process: Validate form

  Output: Record saved successfully

Functional Requirement 4:

- **Blood Request Form**

  This allows public to request the blood as per requirement

  Input: All details required in the form

  Process: Validate form

  Output: Record saved successfully

Functional Requirement 5:

- **Blood Donation Camp Details**

  This allows public to get information about upcoming blood donation camps

  Input: Donation camp

  Process: Check for donation camps

  Output: Donation camp details

Functional Requirement 6:

- **Change Password**

  This allows user to change their password

  Input: Old password, New password

  Process: Validate old and new password

  Output: Password changed successfully

4. External Interface Requirements

4.1 User Interfaces

The user interface should be intuitive, such that 99.9% of all new donors are able to complete their donations/requests without any assistance.

4.2 Hardware Interfaces

The Hardware should have following specifications:

- Ability to read the screen content
- Ability to fill in the forms
- Proper internet connectivity
- Ability to take input from user
- Ability to validate user
- Ability to connect to organisation’s network

4.3 Software Interfaces

The software interfaces are specific to the blood bank management systems.

- Must be reliable
- Must re-useable
- Must be available all-day

5. Other Non-Functional Requirements

5.1 Performance Requirements

- It must be able to perform in adverse conditions like high traffic, etc.
- Uninterrupted internet connection
- Good data transfer rate

5.2 Security Requirements

- Users accessibility is censured in all the ways
- Users are advised not to tell their password to anyone
- Users are advised to use strong passwords
- The maximum number of attempts to enter password will be three

5.3 Software Quality Attributes

- Security
- Performance
- User-Friendly
- Attractive
- Availability

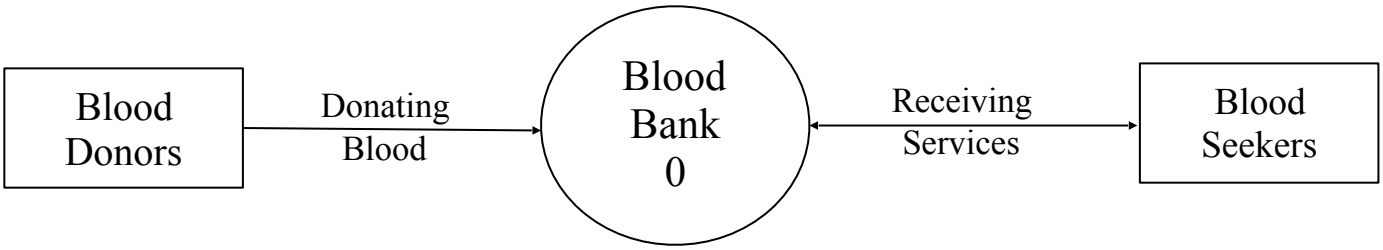
6. Other Requirements

6.1 Database

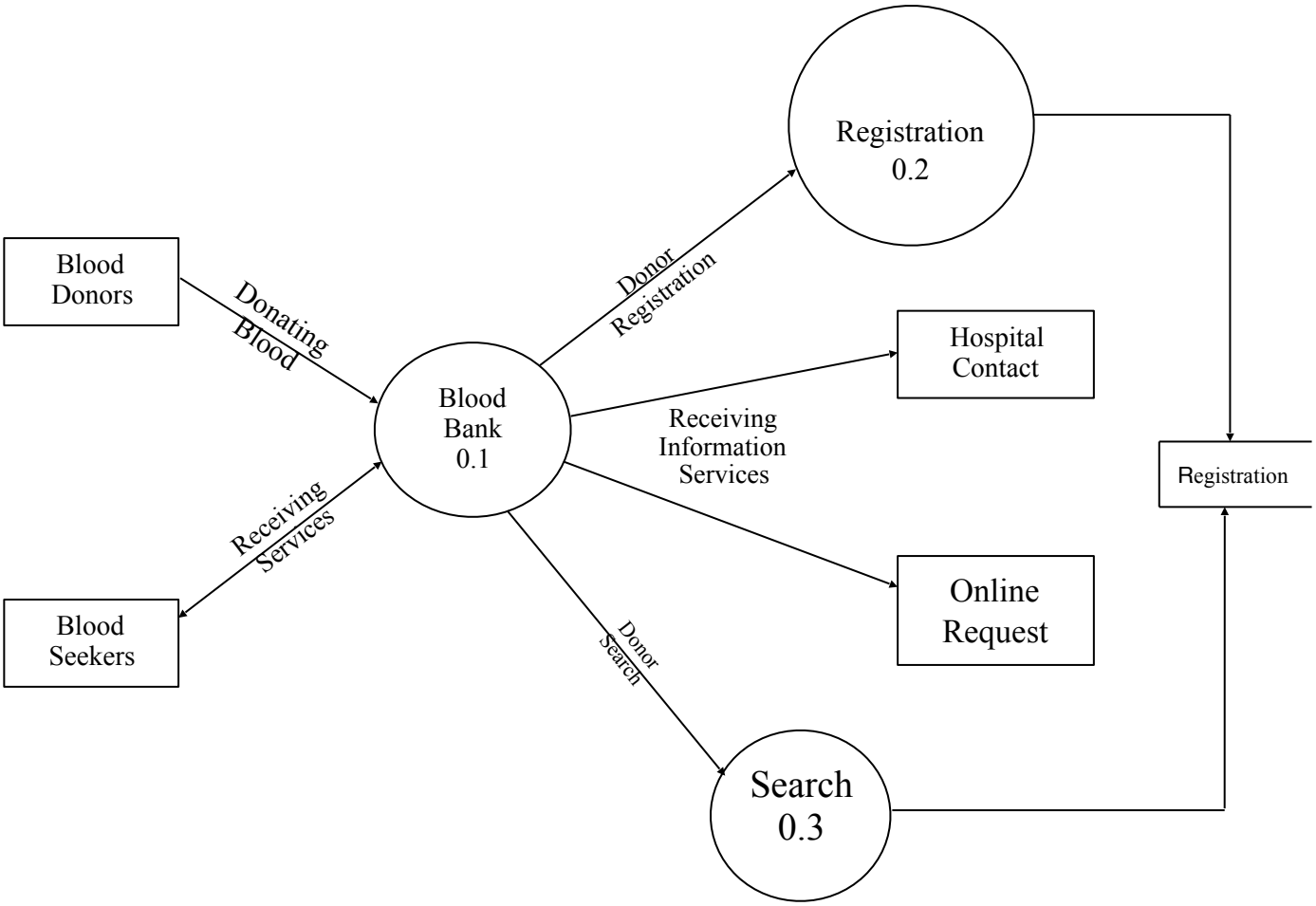
The website must be able to use several data formats according to the data formats that are provided by the databases of different organisations. A record should have all the properties of a data base record (Consistency, Isolation, Durability, Atomicity).

7. Logical Design of the System

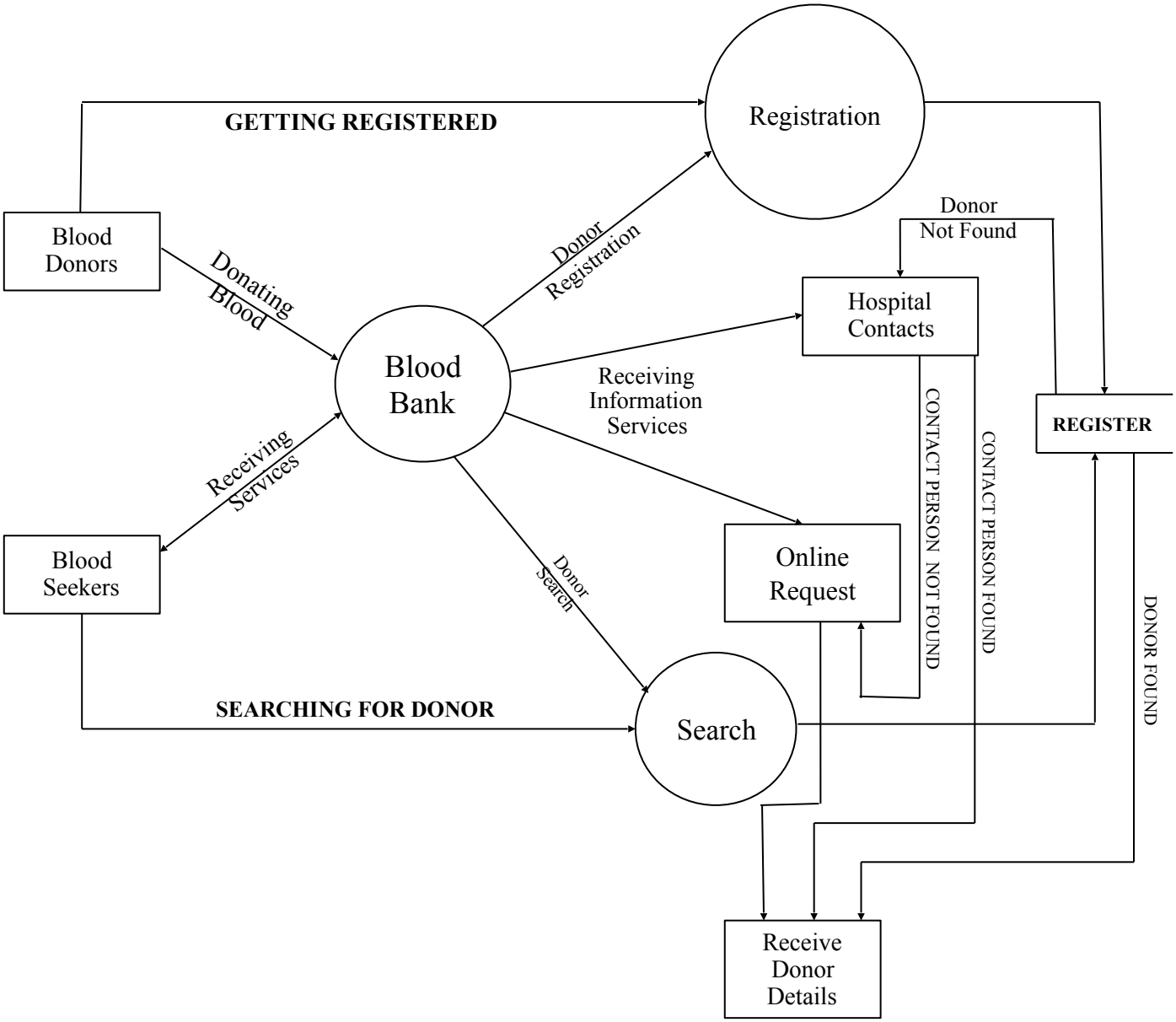
7.1 Data Flow Diagram - Context Diagram



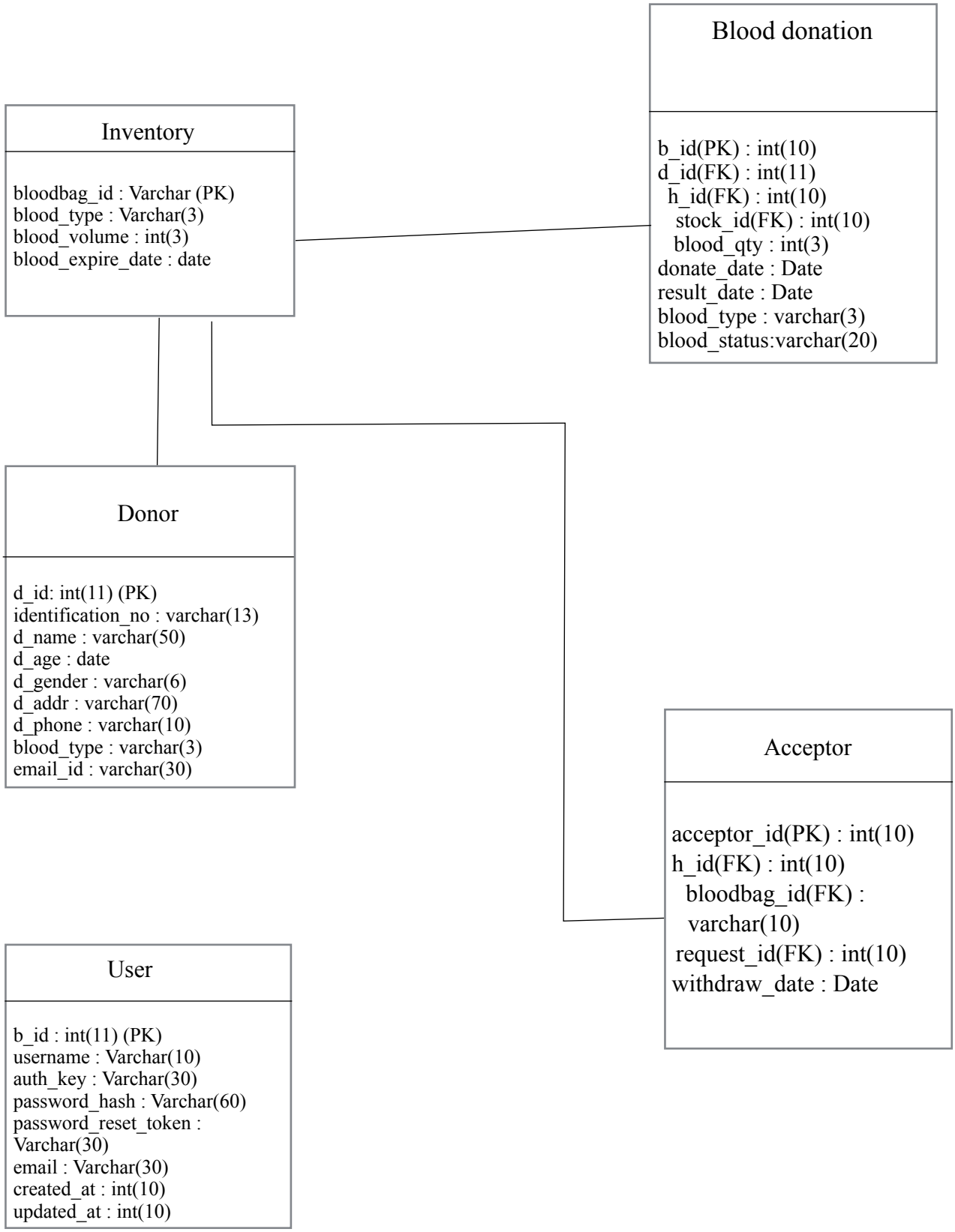
7.1 Data Flow Diagram - Level 1



7.1 Data Flow Diagram - Level 2



7.2 Classes and Objects



7.3 Data Dictionary

7.3.1 User : Contains general information of a User

Column	Type	Description
id(PK)	int(11)	Unique key to identify each user
username	Varchar(10)	username for log in to system
auth_key	Varchar(32)	key to remember username and password
password_hash	Varchar(60)	generate hash for password
password_reset_token	Varchar(30)	token for user to reset password
email	Varchar(30)	email address that user use for register to system
created_at	Date	date of new username is created
updated_at	Date	date of user update username or password

Data Dictionary for USER

7.3.2 Inventory : Contains inventory information

Column	Type	Description
bloodbag_id (PK)	varchar(10)	id to identify blood bag
blood_type	Varchar(3)	blood type of donor
blood_volume	Int(3)	Amount of blood in each bag
blood_expire_date	Date	date of blood expire
blood_receive_date	Date	date of blood received

Data Dictionary for Inventory

7.3.3 Donor : Contains general information of a Donor

Column	Type	Description
d_id(PK)	Int(11)	unique key to identify donor
identification_no	Varchar(13)	identification number
d_name	Varchar(50)	name and surname of donor
d_age	Date	donor's date of birth
d_addr	Varchar(70)	address of donor
d_gender	Varchar(6)	gender of donor
d_phone	Int(11)	contact number of donor
blood_type	Text(3)	blood type of donor
email_id	Varchar(30)	email id of donor

Data Dictionary for Donor

7.3.4 Blood Donation : Contains blood information of each donor

Column	Type	Description
b_id(PK)	Int(10)	Unique key to identify each donation
d_id(FK)	Int(11)	auto-increment number
h_id(FK)	Int(10)	Unique key to identify hospital
stock_id(FK)	Int(10)	Key to identify blood bag
blood_qty	int(3)	unit of blood donation
donate_date	Date	donation date
result_date	Date	blood result date
blood_type	Varchar(3)	blood type of donor
blood_status	Varchar(20)	approved/disapproved

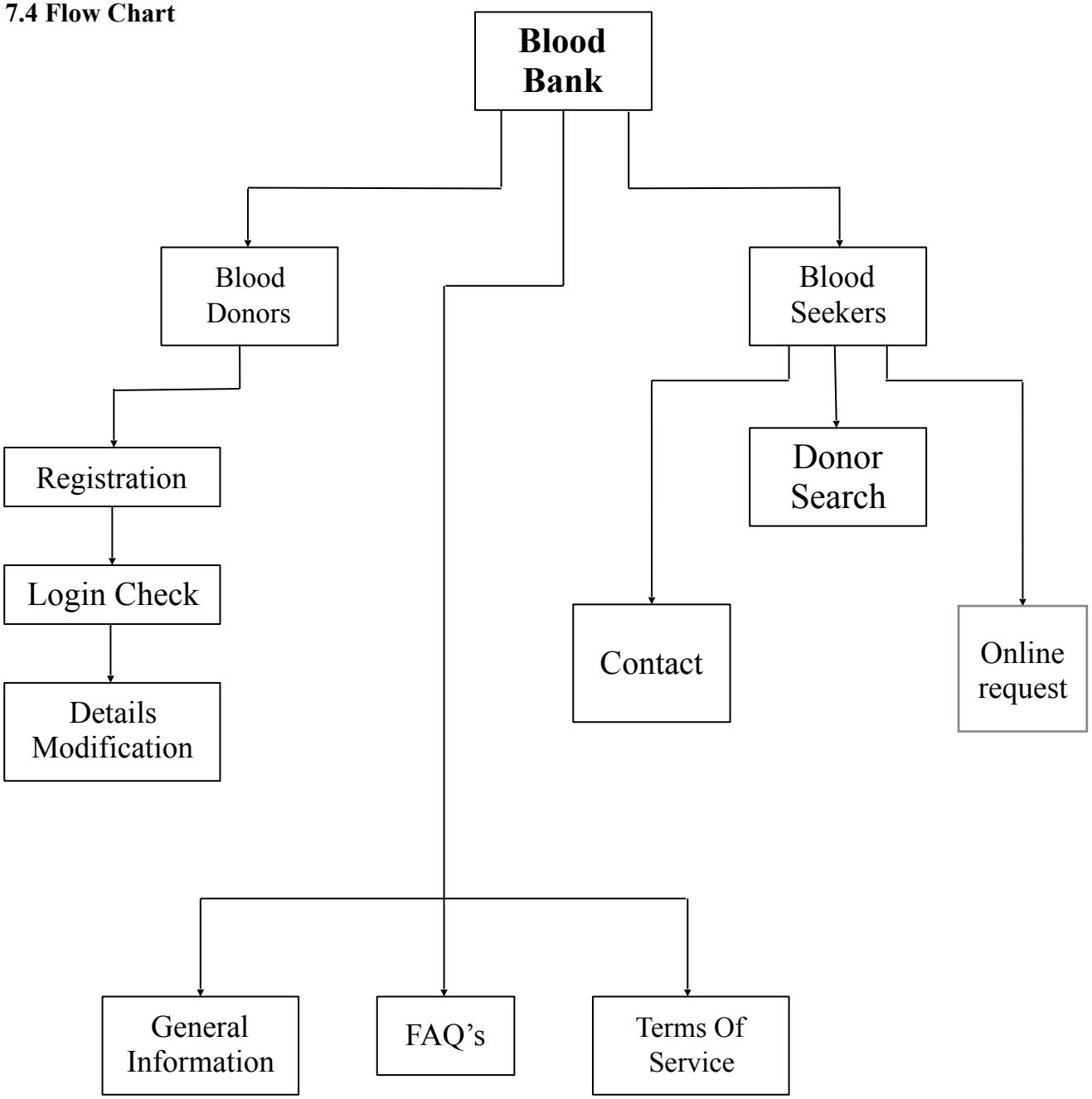
Data Dictionary for Blood Donation

7.3.5 Acceptor : Contains general information of blood withdrawal

Column	Type	Description
acceptor_id(PK)	Int(10)	unique key to identify acceptor
h_id(FK)	Int(10)	unique key to identify hospital
bloodbag_id(FK)	Varchar(10)	unique key to identify blood bag after withdrawal
request_id(FK)	Int(10)	unique key to identify request
withdraw_date	Date	date of blood bag withdrawal

Data Dictionary for Acceptor

7.4 Flow Chart



7.5 Interface Design

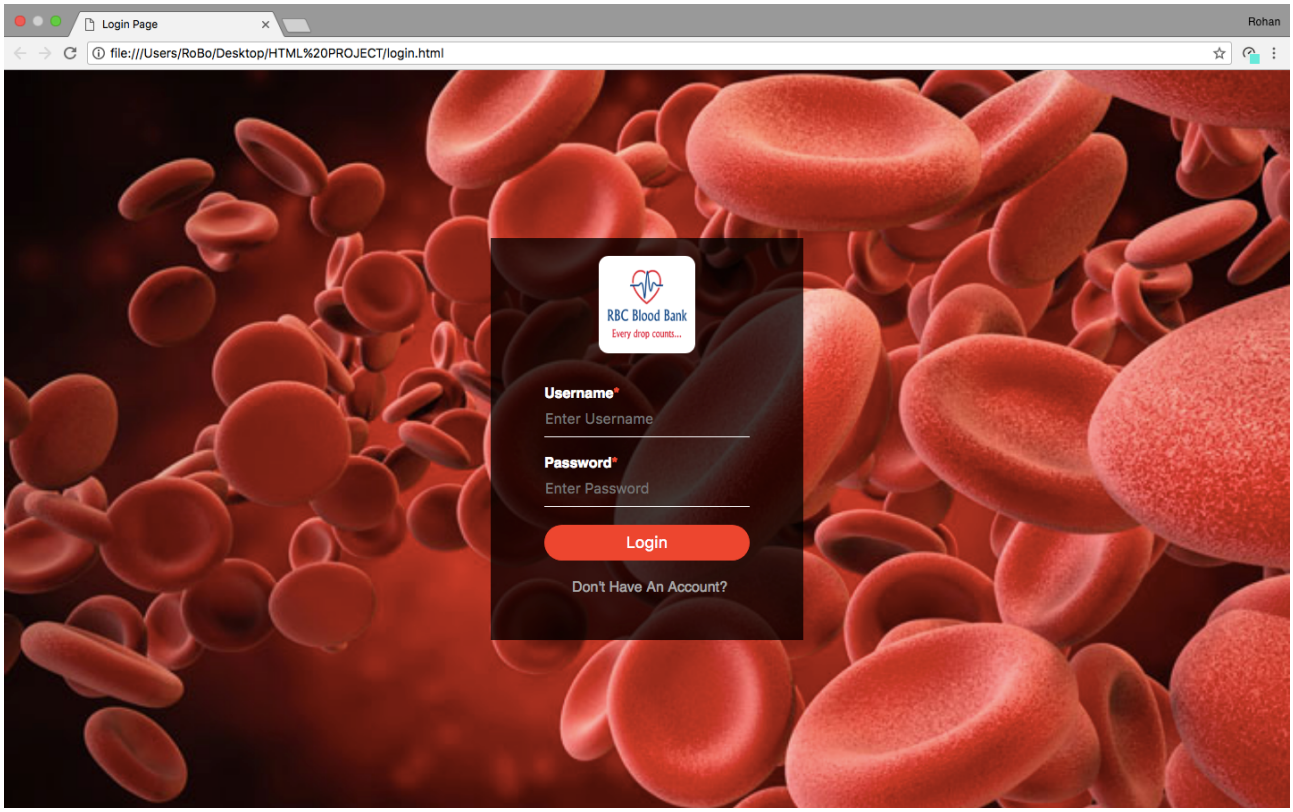


Figure : Login Page

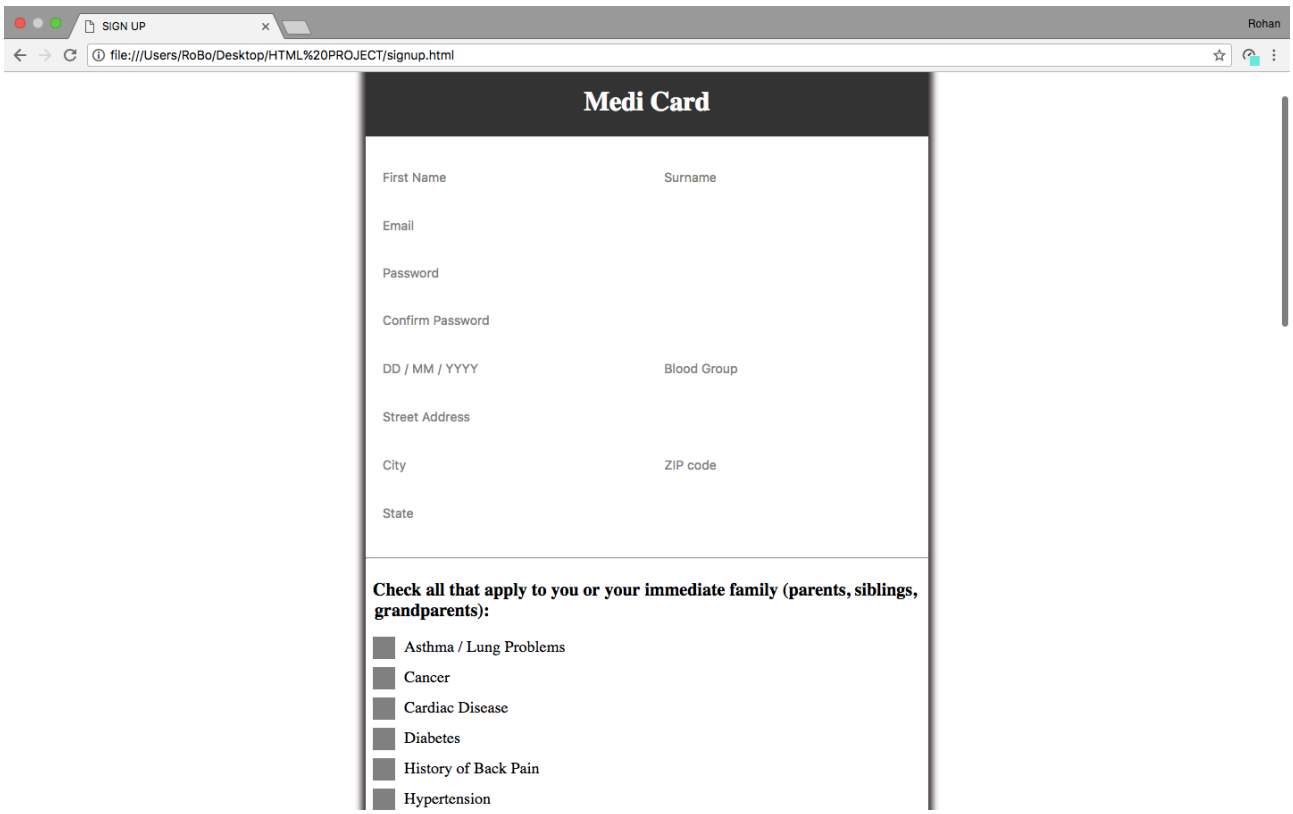


Figure : Sign Up Page

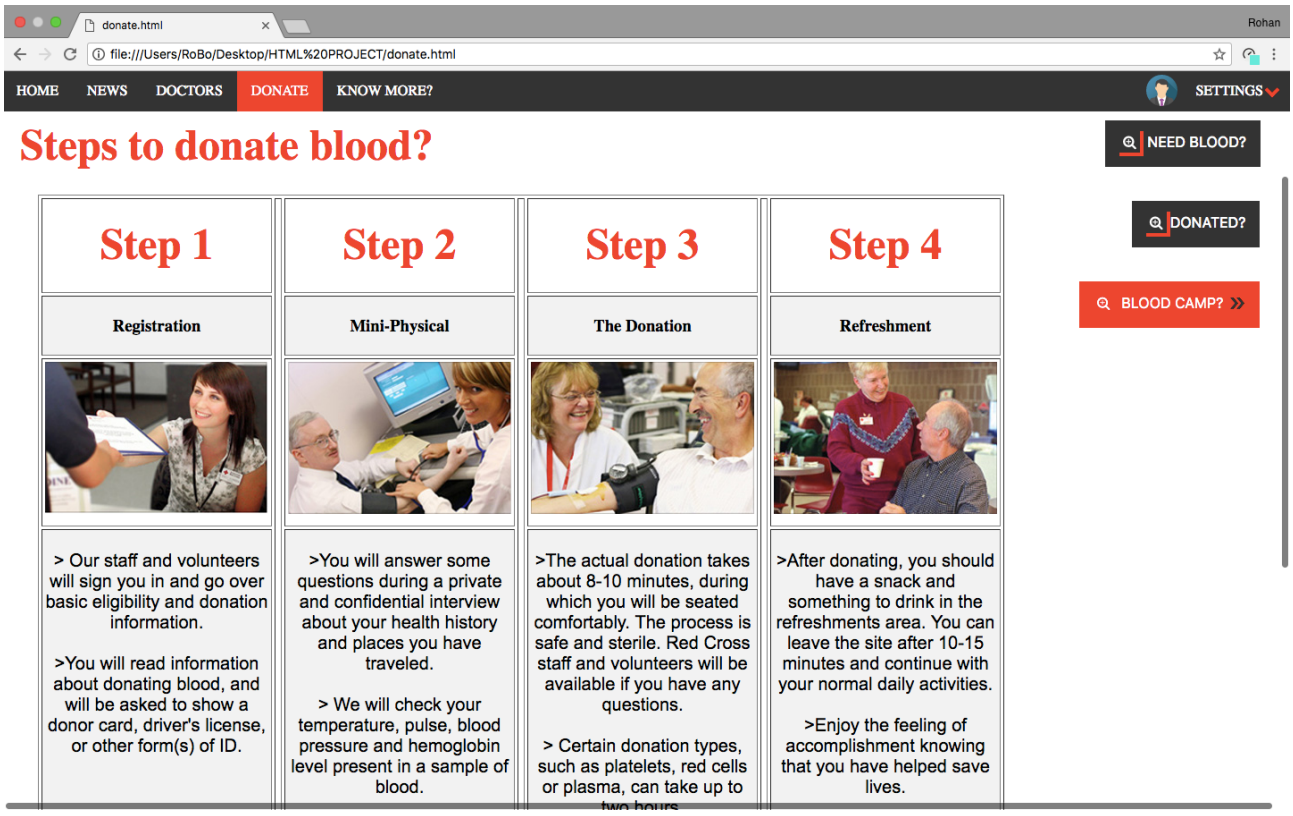


Figure : Donate Page

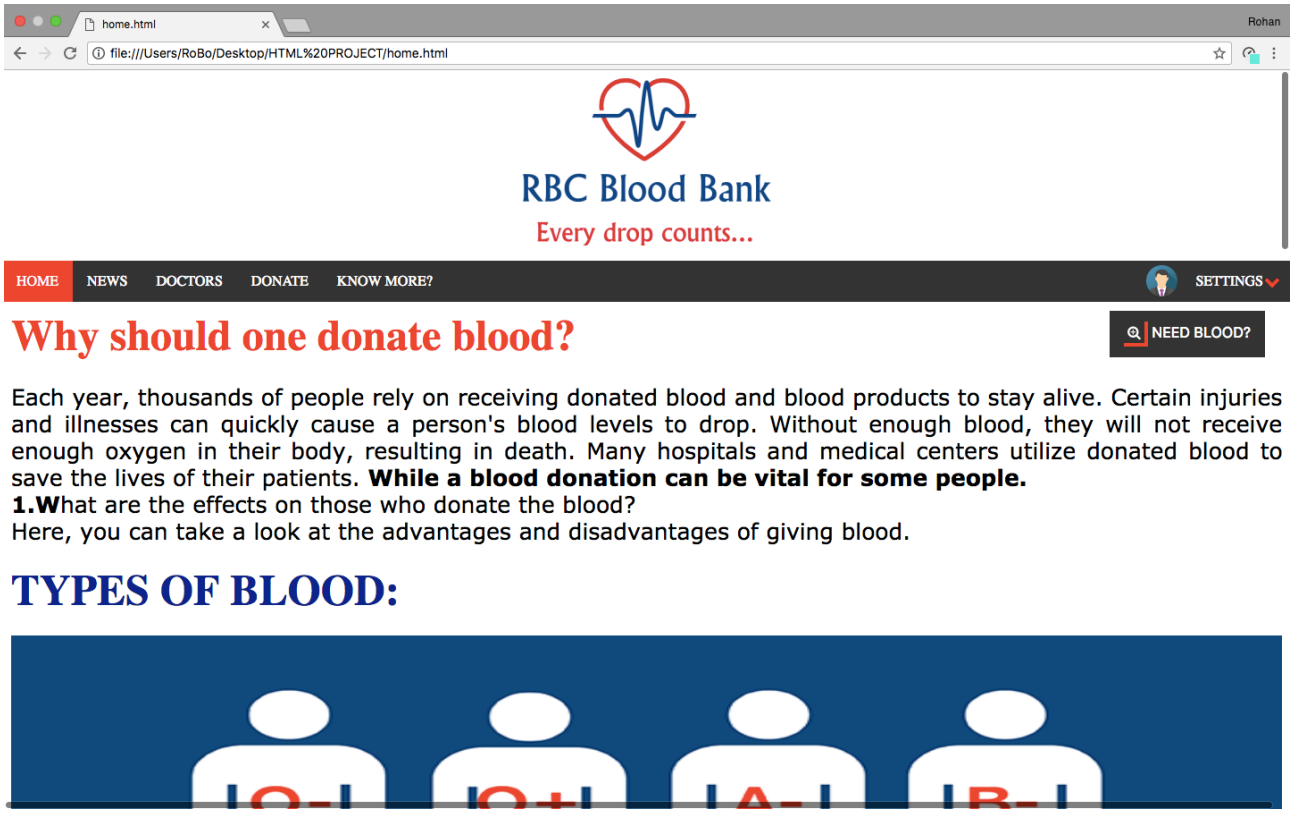


Figure : Home Page

8. Test Cases

8.1 Test Case 1

Test Case #: 1.1	**Test Case Name:** Login Validation
System: Blood Bank Management System	**Design Date:** 10th October, 2018
Short Description: Test the Login Validation	

Pre- Conditions:

System have 2 kind privileges to access, those are admin and the user. They must access to the system with proper username and password. If the admin or user type their correct username and password, then the programme will be check the valid username and password to access to the system.

Step	Action	Expected System Response	Pass/Fail
1	Without Filling the text box and click login button	Display error message with information to login	Pass
2	Type incorrect username and password and click login button	Display error message with information to login	Pass
3	Type correct username and password and click login button	Access to main menu after completed the progress	Pass
4	Click the cancel button	To exit the system	Pass

Post- Conditions

- There are two User type, Administrator and User.
- If the Username and Password is correct, access to the main function in the system.
- If the Username and Password is incorrect, then error massage will be display.
- Check the valid username and password from the database.
- Make Sure the username and password of those two users in the system.

8.1 Test Case 2

Test Case #: 1.2	**Test Case Name:** Donor Registration
System: Blood Bank Management System	**Design Date:** 10th October, 2018
Short Description: Test the Donor Registration Fields	

Pre- Conditions

After given correct username and password, then the user can view this page by using main window of the system. All the text fields can be fill by administrator or user.

Step	Action	Expected System Response	Pass/Fail
1	Click the donor id text field and fill	Filling with using any kind numbers or text	Pass
2	Without filling the donor id field and click save button	Display error message with information	Pass
3	Selecting Blood Group and click save button	Any kind of blood group can be added to database	Pass
4	Complete all the text fields and click save button	All the details save in the database	Pass
5	Without completing some text fields and click save button	Display current error with information	Fail
6	Click donor maintaining button	Access to donor maintaining window	Pass
7	Without completing any fields click save button	Sometime can save in the database, or can be display an error message	Pass
8	Click close button	To exit the window	Pass

Post- Conditions

- All the Donor details can be store in the database.
- Donor id is the primary key, can’t duplicate the value.
- Admin and users can view this window to register new donors to the system.

8.1 Test Case 3

Test Case #: 1.3	**Test Case Name:** Create Admin and User
System: Blood Bank Management System	**Design Date:** 10th October, 2018
Short Description: Test Creating Administrator to the System	

Pre- Conditions

Administrator only can create the new administrator and user for the system. To create new admin or user they must log into one of admin account. Admin can create new account, update the account, and delete the account.

Step	Action	Expected System Response	Pass/Fail
1	Change the admin id	Changing user name and password of the current administrator	Pass
2	Change the user id	Changing user and password of the current user	Pass
3	Fill the username and password with proper name and click save	Display successful message in the message box	Pass
4	Without filling username and password and click save	Display error message with information	Pass
5	Change the username and password of current user and click update	Display updated successfully message with detailed	Pass
6	Select the current user and click delete button	Display deleted successfully message with detailed	Pass

Post- Conditions

- Admin only can use this system.
- Easily create new administrator and users to the system.
- Update the username and password of current users, or administrators.
- Delete unwanted users from the database.
- Clear the text field just clicking a button.

8.1 Test Case 4

Test Case #: 1.4	**Test Case Name:** Search Blood Donors
System: Blood Bank Management System	**Design Date:** 10th October, 2018
Short Description: Test Search Blood Donors	

Pre- Conditions

Search event is most important for any kind of system, because it will be make easy to identify the details by using id. Here search donors is needed to identify donors immediately.

Step	Action	Expected System Response	Pass/Fail
1	Changing the search by combo box and click to next	Display search window	Pass
2	Select the Search by	Display the some search by option in the combo box	Pass
3	Click to Search by id and click next	Display search by id window	Pass
4	Click to Search by name and click next	Display search by name window	Pass
5	Click to Search by address and click next	Display search by address window	Pass
6	Click to Search by blood group and click next	Display search by blood group window	Pass
7	Enter value in the search text field	Display search result in the grid view	Pass

Post- Conditions

- Administrator and user can search the blood donors.
- There 4 type to search the donors
  - Search by Donor ID
  - Search by Donor Name
  - Search by Donor Address
  - Search by Donor Blood Group
- Quickly view the search result to grid view.

9. References

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