Software Requirements Specification

for

Blood Bank Management System

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the "Blood Bank Management System". It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints, interface and interactions with other external applications.

1.2 Document Conventions

This document uses Times font throughout the entire document. Major header lines use bold, size 24 font. Subsections use bold, size 18 font. Smaller subsections use bold, size 14 font. Any part of this document that is not a header of some kind uses size 11 font. The one inch margins are maintained throughout this document as well.

1.3 Intended Audience and Reading Suggestions

This document is intended for the use of both the both the stakeholders and the developers of the system.

The remainder of this document provides the general product description and a technical outline for the requirements of this system. Section two will give a high level description of the project functionality and implementation details. Section three will give a more detailed description of the specific requirements for different components of the application, which include various interfaces and functional requirements.

1.4 Product Scope

Blood Bank Management System is a browser based system that is designed to store, process, retrieve and analyze information concerned with the administrative and inventory management within a blood bank. This project aims at maintaining data pertaining to blood donors, different blood groups available in each blood bank and helps them manage in a better way. Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of blood bank management effective.

1.5 References

1] IEEE SRS Template
https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc

User interface style guides will be mentioned in the later versions.

2. Overall Description

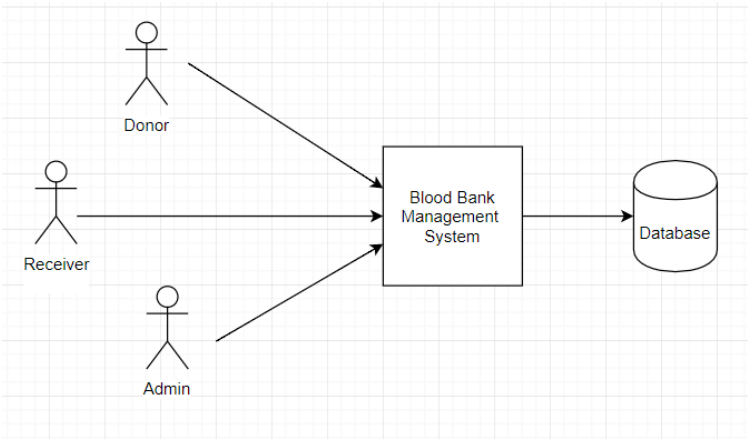
2.1 Product Perspective

A Blood Bank maintains hundreds of thousands of records. Inability to transfer blood units between blood banks which sometimes leads to units expiring on shelf, inadequate occurrences of blood camps and non-timely transfers of blood are some of the problems faced by blood banks. This application helps finding required details instantly, hence facilitating quicker blood transfusions.

The main objective of this application is to automate the operations of a blood bank. Without an automated management system, there would be problems in keeping track of the actual amount of each and every blood type in the blood bank. In addition, there is also no alert available when the blood quantity is below its par level or when the blood in the bank has expired.

To develop a web-based portal, to facilitate the co-ordination between supply and demand of blood. This system makes conveniently available good quality, safe blood, which can be provided in a sound, ethical and acceptable manner, consistent with the long-term well being of the community. It actively encourages voluntary blood donation, maintains a well-indexed record of blood donors and educate the community on the benefits of blood donation. This will also serve as the site for interaction of best practices in reducing unnecessary utilization of blood and help the state work more efficiently towards self-sufficiency in blood.

The system will provide the user the option to look at the details of the existing Donor List, Blood Group, and to add a new Donor. It also allows the user to modify the record and request for a transfusion. The administrator can alter the system data.



2.2 Product Functions

- The user will be able to register as a blood donor.
- The user will be able to make a request for a particular blood type with their details.
- The user will be able to view the current list of requests for blood.

- The user will be able to see upcoming camps and camp locations.
- The user will be able to search for a particular blood type.
- The user will be able to contact the team regarding a query.
- Admin will be able to add camps.
- Admin will be able to update news.
- A donor will be able to update profile.
- A donor will be able to make a donation.
- A donor will be able to view his/her blood donations.
- A donor will be able to view requests for blood.

2.3 User Classes and Characteristics

The user group is classified into :

1) Donor: Uses the system as and when he/she makes a blood donation.
2) Receiver: Uses the system as and when he/she requires blood.
3) Admin: Frequently uses the system to moderate activities and update the system from time to time.

2.4 Operating Environment

Hardware Requirements:-

Processor	:	Intel Core Duo 2.0 GHz or more
RAM	:	1 GB or More
Hard Disk Space	:	15GB or more

Software Requirements :-

Operating System	:	Windows 7 or more, Ubuntu
Front-end	:	HTML, CSS
Back-end	:	PHP, MySQL Database

This system will primarily act as a web service that will be supported on web browsers including Google Chrome and Firefox with the underlying operating system as Windows and Apache server.

2.5 Design and Implementation Constraints

The system faces the following constraints:

- The user has to authenticate himself / herself.
- A donor is not prompted to donate blood regularly.
- The News section is controlled by the Admin wherein the admin updates the database with news, hence the news may not always be the latest ones.
- Blood bank may face wastage of blood, as many units may go unused.

2.6 User Documentation

- Help to navigate the system is provided in the form of a FAQ section.

This application is simple to use and requires no extra explanation. Every form has self-explanatory labels and page names.

2.7 Assumptions and Dependencies

- We assume the user has or has access to a computer/laptop.
- We assume the user has a good internet connection.
- We depend on the correct operations between database and the application.

3. External Interface Requirements

3.1 User Interfaces

Home Page:
The home page allows users to view the latest news and the navigation bar.

Registration Page:
The registration page will provide a new user to create an account so that he or she can start using the web application. The user must enter his or her name, gender, age, mobile number, blood group, email, password, and profile picture, in order to register with the website. An error message will be displayed if the user does not enter in one of the fields or if one of the form fields is filled out incorrectly.

Login Page:
The login page will allow users to log in to their account using their email and password. The user will then be redirected to the home page upon successful login.

Send Request Page:
A request can be made by providing user details such as name, gender, age, mobile number, blood group, email, and additional details.

View Requests Page:
A user can see the requests made in the form of a list which contains their details- Blood Group, Name, Gender, Mobile Number, Email, Till Required Date.

Camps:
The camps page consists of upcoming camps with details such as organizing group and venue.

Search Page:
A user searches for a particular blood group by choosing from the drop down list.

Contact Us Page:
This page is used by a user to contact the team by sending a message along with their Name, Mobile Number and Email Id.

About Page:
This page contains information regarding the team.

3.2 Hardware Interfaces

Laptop/Desktop:
The user may also access our software through a web browser on their desktop or laptop.
Under the assumption that the user is using a traditional computing environment, the user may interact via mouse clicks and keyboard inputs.

3.3 Software Interfaces

- MySQL Server:
  The MySQL tables will contain all the information collected. It will be accessible by the application via PHP Interface.
- Windows/ Ubuntu Operating System.

3.4 Communications Interfaces

The communication will be through a network using an encrypted format. The user will be accessing the web interface using HTTPS when accessing our software using a laptop/desktop on a web browser. The user will interact with Blood Bank Management system through the application.

4. System Features

4.1 Register As A New Donor

4.1.1 Description and Priority

The purpose of this feature is to facilitate the registration of a new donor by providing a form and requesting for necessary details.
This feature is of high priority, as donors play an important role in this system.

4.1.2 Stimulus/Response Sequences

The user fills the fields with necessary details. Verification is done for each field. Once the user clicks on the register button, the details get stored in the database.

4.1.3 Functional Requirements

REQ-1: All the fields are verified, for example, the e-mail field requires the symbol @ to be present.
REQ-2: The entered details are stored in the database. Data is stored and retrieved without any error or delay.

4.2 Donor Login

4.2.1 Description and Priority

The purpose of this feature is to facilitate the user with the access of all services provided by the system by authenticating him/her.
The feature is of high priority as authenticating is necessary to avoid unregistered and unauthenticated users from modifying the data.

4.2.2 Stimulus/Response Sequences

The donor is asked for e-mail and password to authenticate.

Once the user hits on the login button, the details given by the user are verified against the details stored in the database and if there is no error, the user is granted access.

4.2.3 Functional Requirements

REQ-1: Once the user hits the login button, the system should be able to make sure that all the required fields are filled and verify the details against the details stored in the database.
REQ-2: The user should be taken to his/her profile page once the access is granted.

4.3 Update Profile

4.3.1 Description and Priority

The purpose of this feature is to facilitate the user to update his/her profile with basic details such as contact number.
The feature is of low priority as important details such as blood group are not allowed to be modified.

4.3.2 Stimulus/Response Sequences

Once the user hits on the update button, the corresponding details of the user in the database are modified.

4.3.3 Functional Requirements

REQ-1: Once the user hits the updates button, the system should be able to make sure that all the required fields are filled.
REQ-2: The entered details are modified in the database. Data is stored and retrieved without any error or delay.

4.4 Make Donation

4.4.1 Description and Priority

The purpose of this feature is to facilitate the user to donate blood.
The feature is of high priority as donors are very crucial and centric to blood bank management system, hence a donor must be able to make a donation without any glitches.

4.4.2 Stimulus/Response Sequences

Once the donor hits the donate button, the details are stored in the database so as to transfer to a matched receiver and for future reference.

4.4.3 Functional Requirements

REQ-1: Once the user hits the donate button, the system should be able to make sure that all the required fields are filled.
REQ-2: The donation details are stored in the database. Data is stored without any error or delay.

4.5 View Donations

4.5.1 Description and Priority

The purpose of this feature is to facilitate the user to view his/her blood donations.
The feature is of medium priority. The donors should be able to view the details of their past donations, but it is not necessary for the proper functioning of the system as a whole.

4.5.2 Stimulus/Response Sequences

Once the donor hits the view donations tab, he/she must be able to view the date of the donation and number of units donated.

4.5.3 Functional Requirements

REQ-1: Once the user hits the view donations tab, the system should be able to retrieve the details correctly from the database.
REQ-2: Data is retrieved without any error or delay.

4.6 View Requests

4.6.1 Description and Priority

The purpose of this feature is to facilitate the viewing of blood requests list.
The feature is of high priority. A site visitor as well as a blood donor must be able to view the requester list.

4.6.2 Stimulus/Response Sequences

Once the donor hits the view requests tab, he/she must be able to view the blood group in required and till required date.

4.6.3 Functional Requirements

REQ-1: Once the user hits the view requesters tab, the system should be able to retrieve the details correctly from the database.
REQ-2: Data is retrieved without any error or delay.

4.5 View Camps

4.7.1 Description and Priority

The purpose of this feature is to facilitate the viewing of upcoming camps.
The feature is of high priority. A site visitor as well as a blood donor must be able to view the upcoming camps so that they reach the venue and donate blood accordingly.

4.7.2 Stimulus/Response Sequences

Once the donor hits the view camps tab, he/she must be able to view the upcoming camps with venue details and organizing group.

4.7.3 Functional Requirements

REQ-1: Once the user hits the view camps tab, the system should be able to retrieve the details correctly from the database.
REQ-2: Data is retrieved without any error or delay.

4.6 Search

4.8.1 Description and Priority

The purpose of this feature is to search for details belonging to a particular blood type.
The feature is of high priority.

4.8.2 Stimulus/Response Sequences

Once the donor selects a blood type from the drop-down list, he/she must be able to view the details such as number of units available and donor details.

4.8.3 Functional Requirements

REQ-1: Once the user hits the search tab, the system should be able to retrieve the details correctly from the database.
REQ-2: Data is retrieved without any error or delay.

4.9 Admin Control Panel

4.9.1 Description and Priority

The purpose of this feature is to help the admin update latest news and upcoming camps.

4.9.2 Stimulus/Response Sequences

Once the admin makes changes, the corresponding changes are to be made in the database records.

4.9.3 Functional Requirements

REQ-1: Once the user hits the save button after adding a news/camp, the system should validate all the fields and be able to save the details correctly into the database.
REQ-2: Database consistency must be contained. Data is stored without any error or delay.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The response time for occurrence of a change will be no more than 4 secs.
- The response time for accessing the database will be no more than 5 secs.

5.2 Safety Requirements

A backup of the database should be maintained in case of malicious attacks or system failure.

5.3 Security Requirements

- The user's login credentials are confidential, known only to him/her.
- The system should be secure enough so that the user's personal information will not be disclosed to unauthorized users
- The system should be secure enough to prevent the corruption of data from unauthorized Users.

5.4 Software Quality Attributes

5.4.1 Availability

- The system must deliver services to the client when requested.
- Probability that the system is up at any given time interval must be high.

5.4.2 Dependability

- The application must be reliable enough so that when different users perform the same task, the expected outcome does not differ

• The application must be reliable enough so that when users perform normal functions, the system does not fail

5.4.3 Usability

• The application must be easy enough to learn so that users know how to use the product entirely on their first try.
• The application must be more efficient than similar products.

5.4.4 Flexibility

• The application must be flexible enough to support Google Chrome and Firefox 18 Browsers
•The system must be user friendly.

5.5 Business Rules

- A donor must be able to view only his/her donation details.
- A donor complies with a set of terms and conditions while registering as a blood donor.
- As per our website policy, we do not disclose the personal details of our donors.
  Those making requests will only be able to see the number of units of blood available.
  While viewing requests, a user will only be able to see the number of units required and the blood group.

6. Other Requirements

Database access should be as quick as possible. The project doesn't have legal requirements.

Appendix A: Glossary

Term	Definition
User	Person who interacts with the system.
Admin	System administrator who is given specific permission for managing and controlling the system
Database	Collection of all the information monitored by this system.
Donor	Person who donates blood
Receiver	Person who receives blood
PHP	Hypertext Preprocessor
IEEE	Institute of Electrical and Electronic Engineers
HTML	Hyper Text Markup Language
CSS	Cascading Style Sheets
Apache	Web Server Software
MySQL	Open-Source Relational Database Management System
Stakeholder	Any person who has interaction with the system who is not a developer
RAM	Random Access Memory

Appendix B: Analysis Models

Analysis models such as data flow diagrams, class diagrams, state-transition diagrams will be presented in the latest version.

Appendix C: To Be Determined List

Item	Status	Date Closed
References regarding User interface style guides (1.5)	Not Closed	-
Design of User Interfaces(3.1)	Not Closed	-
Appendix B: Analysis Models	Not Closed	-