
Software Requirements Specification

for

Blood Bank Management System

Version 1.0 approved

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1. Introduction

1.1 Purpose

The blood management system is designed for hospitals, clinics, and other relevant industries where the blood donations are recorded and stored through software systems. The software must have high quality parameters because of the seriousness of the operations.

The motivation for the project is that our group has noticed that these systems are very interesting and that the yearly Blood donation drive carried out by Indus Hospital in our university has prompted our interest in the field of record keeping for blood management operations. The customer for our product are the clinics, the hospitals, field hospitals for the military and blood donation camps.

The product is already in existence but our software will enhance the functionalities of the existing systems. The project takes around 2 months to complete with all the necessary testing and development needs. The project will be a combination of other courses as well. The backend will be connected to a Database, the front end will be made from knowledge of the course using software construction and development, and the testing, quality assurance, and quality management will be done via the course of Software Quality Engineering. The purpose of the document is to mention the requirements for the software, produce formal documentation and establish a criteria for the software.

1.2 Document Conventions

The SRS is formatted by following the IEEE standard.

1.3 Intended Audience and Reading Suggestions

Requirements engineers, software developers, software designers, testers, students, teachers and project managers are the intended audience for this document consists of.

1.4 Product Scope.

Usage facet: Managing an existing blood bank interface, manage blood donors and receivers, management information system for a hospital's blood resources .

Development Facet: The hospital's internal policy and culture should be taken into account. Produce highly learnable systems, interactive user interface, and entertain requirements.

1.5 References

1. www.wikipedia.com
2. <https://www.sciencedirect.com>
3. www.youtube.com

2. Overall Description.

2.1 Product Perspective

Product is such that an admin user will manage the clinic, blood bank, hospital.

2.2 Product Functions

Customers and administrators will have access to features, which are described below

2.2.1 Manage Recipients

Access to donor management is available to the admin. Admin can modify the blood record, search for donor or acceptor information, and examine the personal information.

2.2.2 Manage Donator

The administrator has access to the blood donor. He can update the donor's information.

2.2.3 Donor Registration

Customers will fill out the documents for the donor registration such as their full name, gender, date of birth, blood type, contact information (phone, email, home address, etc.), and so on.

2.2.4 Contact Information.

Users can view the blood bank address, phone number, and email address under "Contact Us." They can fill up a form.

2.2.5 Blood Bank FAQs

Under "About Us," you may view the blood bank management system's *frequently asked questions*.

2.2.6 Manage Blood packets

Manage and list no. of blood packets available.

2.2.7 Manage acceptor information

This functionality enables administrator to view the acceptor details.

2.2.8 Manage blood transfer

Manage the transfer of blood from one bank to another.

2.2.9 Blood expiration check

List the expired or unsuitable blood packs.

2.2.10 Generate donation reports

Produce a report for the blood donation by donors.

2.2.11 Donor eligibility

List of a donor who is eligible for donation on a particular date with a contact number.

2.2.12 Record retrievals

Retrieve data of blood packet accepters.

2.2.13 Donation by users

Provide a financial donation option to the blood bank.

2.3 User Classes and Characteristics

2.4 Operating Environment.

The system can work on computer systems. The software can work on any personal computers (once we host it). On the system, the users must have a browser installed to access local host.

2.5 Design and Implementation Constraints

The user needs to be trained.

The admin needs to be trained.

System needs a printer to print reports.

2.6 User Documentation

We will provide the users with a tutorial to help them understand the working of the software. A hands-on workshop of 2 hours is deemed more than enough.

2.7 Assumptions and Dependencies

It is has been assumed that the user has access to the internet. The hospital has an administrator who will overlook the operations. The admin account can manage customer data, alter it, and be used for checking.

The other online users are capable of making online payments via debit cards, credit cards, for donation option. The user is not disabled, and the user can read and understand English language to an extent. The quality and speed of the internet connection affects the BBMS performance. The hardware should have minimum specifications to make sure BBMS work best.

3. External Interface Requirements

3.1 Hardware Interfaces

The users need computer to access the website. They should have a mouse, keyboard and speakers for the software system.

3.3 Software Interfaces

3.3.1 BBMS is a web-based system.

3.3.2 We use MySQL as a database for data storage.

3.4 Communications Interfaces

3.4.1 HTTP protocol has to be made use of as an interface of communication for the browser.

4. System Features

These are the main system features that are expressed as describe and as a functional requirement. All of the features have a high priority and they are a must.

4.1 Core functional requirements

4.1.1 User Functions

- User requests blood type in city.(DB search { blood fetched directly from the database as user signed up})
- User signup.

- User can make a donation of money.
- Put a request for receiving blood. (Later accepted by the Admin or denied)
- Donate their blood.
- Search for a blood type in hospital, bloodbank and hospital.(Use bloodtype and city)
- Search for hospitals in a city with views.(DB views used, complex ID hidden)
- Prints generated reports.

4.1.2 Admin functions

- Add a donor.(DB)
- Edit a donor. .(DB)
- Update a donor. (DB)
- Add a hospital. (DB)
- Edit a hospital. (DB)
- Update a hospital. (DB)
- Add a bloodbank. (DB)
- Edit a bloodbank. (DB)
- Update a bloodbank. (DB)
- Manage stock. (DB triggers used, as a donation made, add , as a request completed reduced)
- Check requests of blood made by users. Mark done or delete.
- Store all completed requests.

5. Other Nonfunctional Requirements

5.1 Performance Requirements.

5.1.1 The system needs a high speed internet.

5.2 Safety Requirements

5.2.1 System should include restore and recover functions in order to prevent data loss and should be able to restart within 15 seconds.

5.2.2 System will assure data integrity.

5.2.3. System will have a backup database.

5.3 Security Requirements

5.3.1: *Only those who login with a predetermined administrator username and password should be granted administrative privileges.*

5.3.2: *The system should allow the administrator to customize his or her system-generated password.*

5.3.3: *The security of the communication channel should be guaranteed by the system.*

5.3.4: *System should allow administrator to login with password.*

5.3.5: *Access should be blocked by the system to one who fails to login.*

5.3.6: *For logins, the system should have an Authentication and Authorization System (AAS).*

5.4 Software Quality Attributes

5.4.1 Usability

A user's non-technical background should not be a barrier to understanding and using the software. Our software ensures that the ease of use of the system in order to provide conditions for users to perform tasks effectively, safely and efficiently while also allowing the user to achieve their goals.

5.4.2 Consistency.

Our software has interaction tasks that are usually transferred consistently in human and computer interaction tasks. Our functionalities of similarity will ensure consistency, such as in design and navigation. Once a transaction for the flight ticket is completed, the number of available seats for that flight should be reduced by one unit. Will be perfectly demonstrated when website is hosted.

5.4.3 Robustness

Our software will provide support to the user in order to identify successful achievements and help in assessment of goal-directed behaviors. In the event of a page refresh after a sudden connection loss, the system should be able to display the user's most recent enquiry.

6. Other requirements

Each and every requirement mentioned is covered.

Appendix A: Glossary

IEEE: It is the Institute of Electrical and Electronics Engineers

HTTP: protocol of Hypertext Transfer Protocol

Adult: 12+ years individuals.

Children: 0-12 years individuals

Infant: To 2 years

BBMS: Blood Bank Management System

Authorization: The process of granting defined privileges to successfully authenticated individuals

AAS: Authorization and Authentication System

Authentication: This validation process identifies a customer, based on their usernames and passwords for existing records.

Database: The storage by providing an organized collection of data, stored and accessed electronically.

Standby database: A backup Database replica created from a backup of a primary database

Server: The command of computer program that provides functionality to other programs such as clients

World Wide Web: The combination of all resources and users on the Internet that are using HTTP protocols.

Web-browser: An interface of software application to access information on World Wide Web

Client: Can be the Computer application that runs on a computer and connects to server as necessary

Appendix B: Analysis Models.

Stakeholder analysis:

Software owner, blood donors, administrators, software developers, database engineers, payment processors, managers, requirement engineers, hospital owners, employees, hospital , bloodbank.

Stakeholder classification.

Administrators: Administrators,

Support: database engineers, developers, managers, employees

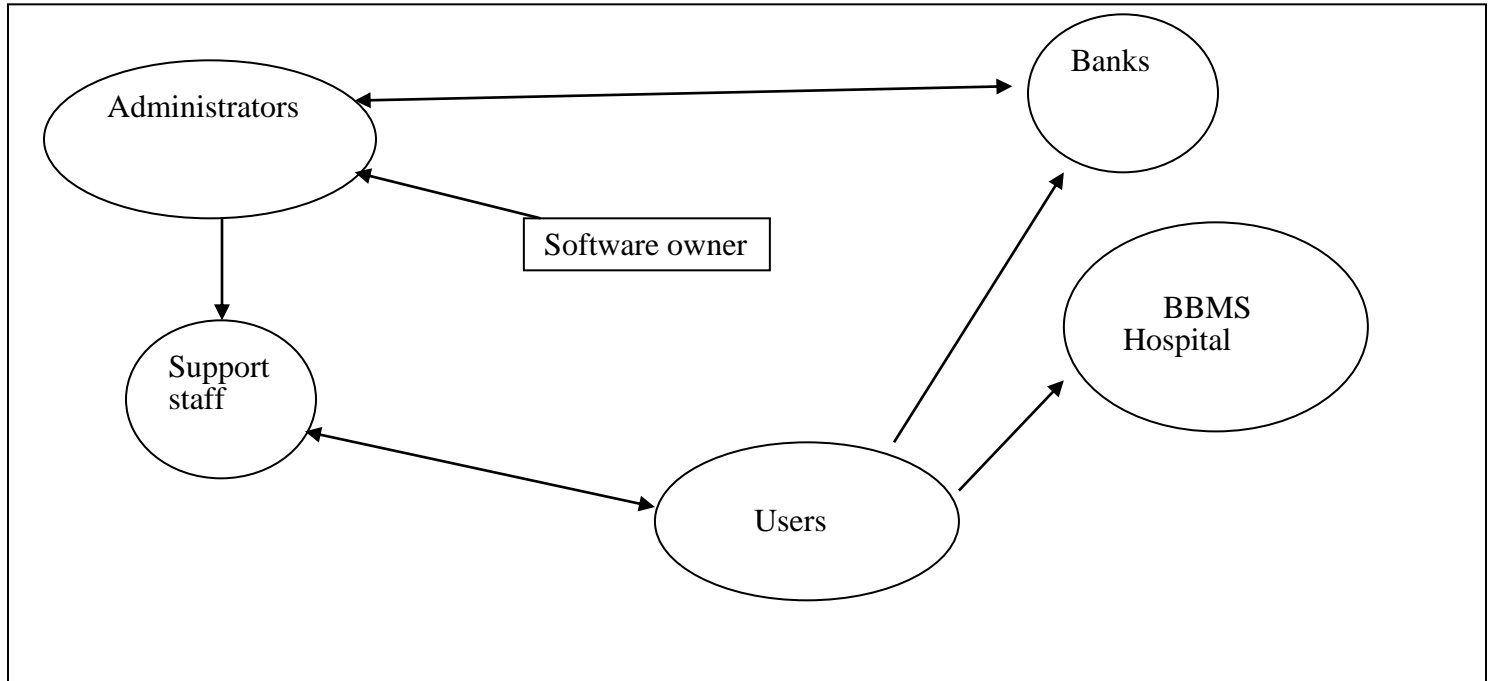
Users: blood donors, blood receivers

Banks: payment processors.

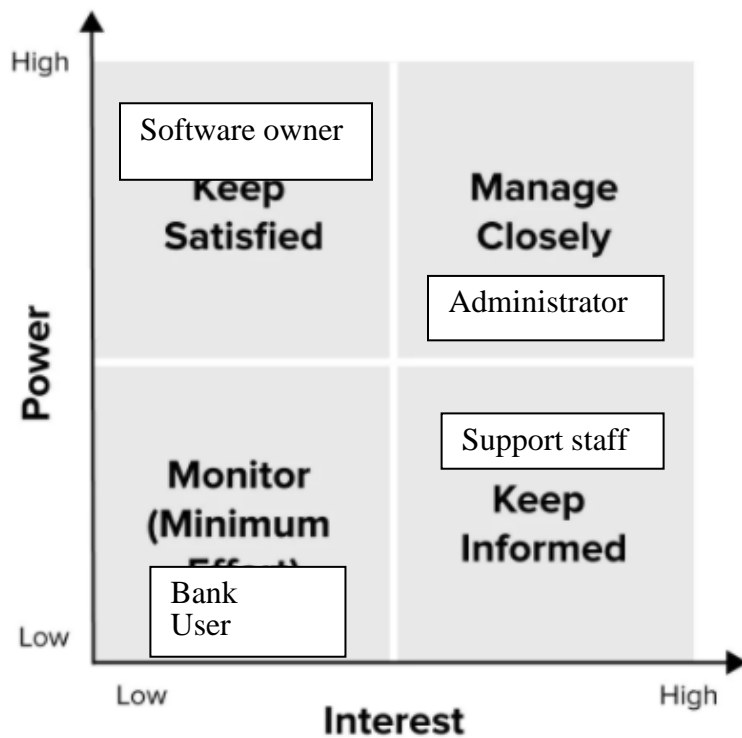
Software owners

Blood Bank management System: hospital, bloodbank

Stakeholder map.



Power interest grid:



In some scenarios the software owner will also be the administrator such if the software is used on a small scale.

Stakeholder	Power	Interest
Software owner	10	3
Administrator	6	8
bank	3	2
user	2	8
Support staff	3	9

RACI model:

Responsible

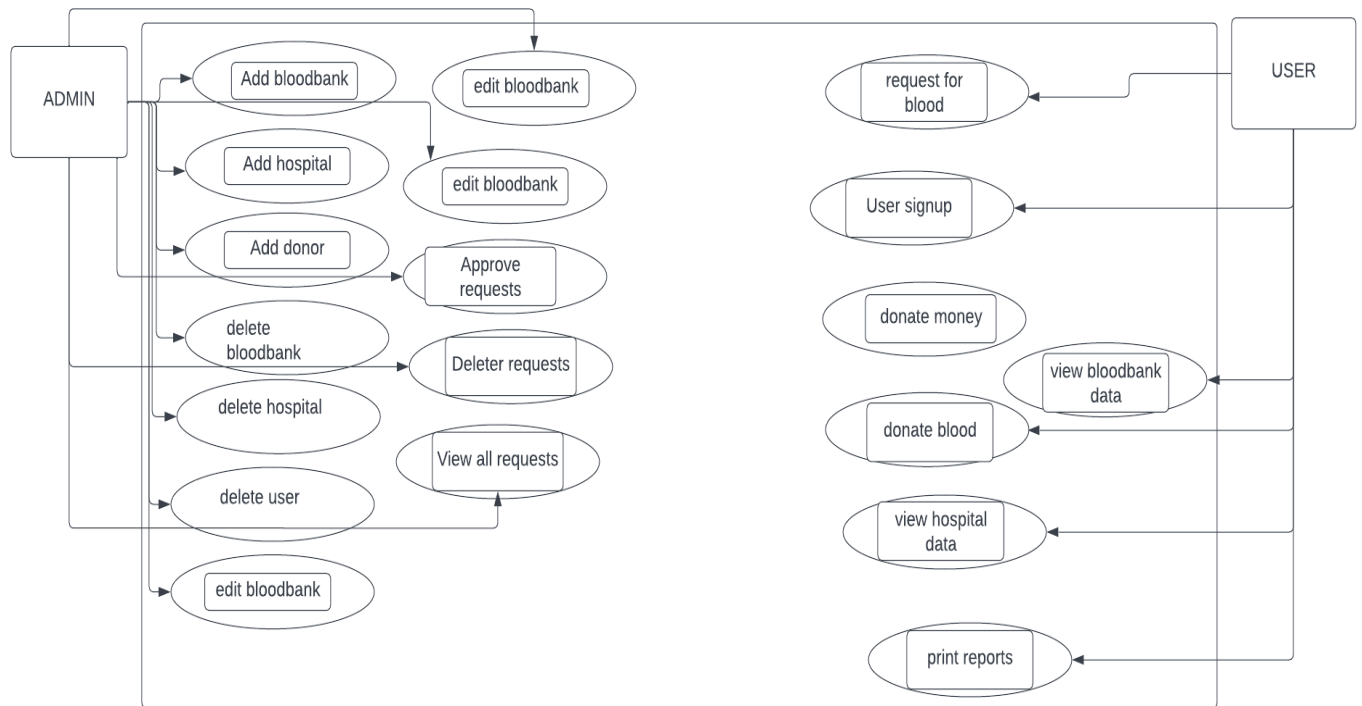
Accountable

Consulted

Informed

Task	Owner software	Support staff	bank	Govt bodies	administrators
Maintain software		A			C/A
Data entry		R			I
Process payment			R/A	I	
Clean the hardware		R			A
Update software	I	A		I	R

Use case



Appendix C: To Be Determined List

Are all of the functional requirements met?

Are all of the nonfunctional requirements met?

Are the flights updated in databases as in validated by the system?

The rate of sync between software and database?

Payment processing is correct?