Software Requirements Specification

for

BookShare

Version 1.0 approved

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6th Semester B.Tech Nitk

9-1-2018

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Revision History

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| **Name** | **Date** | **Reason For Changes** | **Version** |
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# Introduction

## Purpose:

## *The purpose of this document is to present a detailed description of BookShare- a book sharing platform. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for Software Engineering course instructors Mr. Biju R Mohan and Miss Raksha and a reference for first version of the software.*

## Document Conventions

*Main topics are bolded in heading (whole numbered) followed by subtopics (decimal numbered) and bullets. All acronyms have been introduced in the glossary of Appendix A.*

## Intended Audience and Reading Suggestions

This SRS is intended for developers and common users.

Developers may go through the document in the sequence as intended in the index page.

Users may skip section 4 and 5 if necessary.

The glossary in Appendix A will provide the meanings for all abbreviations used in the document.

## Product Scope

This software system is a web application which provides a platform for users to borrow / lend books. The users can register with their personal details including addresses. The users must put up books they are ready to share before requesting for a book. These books will act as bases for other users.

The users can search for books they would like to read and if available they will be provided with two options:

* They can have the book delivered to their requested address at a fixed delivery cost
* The lender and the borrower may decide on a spot for exchange of the book.

The borrower may be charged certain fees for the duration of their read which may be credited to the lender.

To ensure the best experience for users, an option of flagging a fellow lender or borrower is allowed in cases of mishandling of books, non-return of books or poor quality of books is detected.

An administrator also uses the web application to maintain the system and keep the system accurate.

Furthermore, the software needs Internet to fetch and display results. All system information is maintained in a database, which is located on a web-server.

## References

IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998.

# Overall Description

## Product Perspective

The system consists of web application and a backend web server with database maintenance. The web application will maintain the information of users, lenders and borrowers as well as the books that are up for sharing and the user information will be regulated by the administrator.

Since this is a data-centric product it will need somewhere to store the data. For that, a database will be used. All of the database communication will go over the Internet.

(Block Diagram)?

## Product Functions

* Functionality to manage user information
* The search result for books will be based on the criteria the user inputs
* There are several search criteria and it will be possible for the administrator of the system to manage the options for those criteria that have that
* The result of the search will be viewed in a list view where one list item for each book matching the search criteria and show a small part of the book information so the user can choose the book.

## User Classes and Characteristics

There are three types of users who will use the software.

1. Lenders: The lenders can put up information regarding books they would like to share. They provide information regarding their willingness to meet and share books to a borrower. The fees charged for the duration of the read can be credited to the lender’s account.
2. Borrowers: The borrowers can search for books they want to borrow. If available they can have it delivered either to their doorstep or meet the lender in person and borrow it. The borrower will be responsible for timely return of the book either through the website or through person.
3. Administrator: The administrators manage the overall system so there is no incorrect information within it. The administrator can manage the information for each restaurant as well as the options for both the mobile application users and the restaurant owners.

NOTE: A user who is a lender may also be a borrower and vice versa.

## Operating Environment

The software can be used on any operating system which has internet facilities. Bigger screen size and faster internet connections are preferred and as such the software is much suited for desktop systems and laptops than mobile phones.

## Design and Implementation Constraints

The Internet connection is also a constraint for the application. Since the application fetches data from the database over the Internet, it is crucial that there is an Internet connection for the application to function.

The web portal application will be constrained by the capacity of the database. Since the database is shared between many applications it may be forced to queue incoming requests and therefore increase the time it takes to fetch data.

## User Documentation

There may not be any hard copy of documentation provided. However if possible a section of the website will be devoted to discuss the purpose and the working of the site.

## Assumptions and Dependencies

One assumption about the product is that it will always be used on systems that have enough performance. If the system does not have enough hardware resources available for the application, for example the users might have allocated them with other applications, there may be scenarios where the application does not work as intended or even at all.

# External Interface Requirements

## User Interfaces

A first-time user of the mobile application should see the log-in page when he/she opens the application, see Figure 2. If the user has not registered, he/she should be able to do that on the log-in page.

If the user is not a first-time user, he/she should be able to see the search page directly when the application is opened, see Figure 3. Here the user chooses the type of search he/she wants to conduct.

Every user should have a profile page where they can edit their e-mail address, phone number and password, see Figure 4.

A separate page regarding the books shared, borrowed or ready to be shared will be included in the users profile page.

Based on the users search query, books will be displayed in list view.

## Hardware Interfaces

Since web application does not have any designated hardware, it does not have any direct hardware interfaces. The hardware connection to the database server is managed by the underlying operating system on the mobile phone and the web server.

## Software Interfaces

The communication between the database and the web application consists of operation concerning both reading and modifying the data.

## Communications Interfaces

The software will follow rest api standards as far as possible. New users will be verified using standard mailing systems such as google etc.

# System Features

## User Class 1

4.1.1 Description and Priority

User class 1 is that of lenders.

4.1.2 Stimulus/Response Sequences

They can register on the web portal. System must register new lenders.

They can login on the web portal. System must login valid lenders.

They can lend books on the web portal. System maintains the status of books.

4.1.3 Functional Requirements

*REQ-1: System must check and maintain unique registration of a person*

*REQ-2: System must maintain confidentiality and integrity of login activities of the user.*

*REQ-3: System must maintain backend database with information regarding the books up for lending.*

*REQ-4: System must recognize that user class 1 and user class 2 are interchangeable and can be clubbed under a common subset of website users.*

## User class 2

4.2.1 Description and Priority

User class 2 is that of borrowers.

4.2.2 Stimulus/Response Sequences

They can register on the web portal. System must register new borrowers.

They can login on the web portal. System must login valid borrowers.

They can borrow books on the web portal. System maintains the status of books.

4.2.3 Functional Requirements

*REQ-1: System must check and maintain unique registration of a person*

*REQ-2: System must maintain confidentiality and integrity of login activities of the user.*

*REQ-3: System must maintain backend database with information regarding the books up for borrowing.*

*REQ-4: System must recognize that user class 1 and user class 2 are interchangeable and can be clubbed under a common subset of website users.*

# Other Nonfunctional Requirements

## Performance Requirements

***Prominent search feature***

The search feature should be prominent and easy to find for the user. RAT: In order to for a user to find the search feature easily. DEP: none

***Usage of the search feature***

The different search options should be evident, simple and easy to understand. RAT: In order to for a user to perform a search easily. DEP: none

***Usage of the result in the list view***

The results displayed in the list view should be user friendly and easy to understand. Selecting an element in the result list should only take one click. RAT: In order to for a user to use the list view easily. DEP: none

## Safety Requirements

***Prominent flagging system***

Unruly borrowers and lenders can be flagged and sufficient flags may lead to banning of user from the site.

## Security Requirements

**Email verification system**

New users registering should have their emails verified for further usage.

## Software Quality Attributes

**Adaptability**: Adaptability issues may occur when used with different screen sizes. Hence the website should be adaptable to different screen sizes such as that of mobile phones,etc.

**Interoperability:** The system interoperates between many services such as database systems and web servers and web clients.

**Security:** The system must try to verify users before registering and allowing access for further service.

## Business Rules

The administrator has the discretionary power to remove a user if he/she has been flagged for a significant number of times and under valid reasons.

# Other Requirements

In the initial stage of the software development all requirements have been met above.

Appendix A: Glossary

*REQ – requirement*

*DEP- dependency*

*RAT - rational*

Appendix B: Analysis Models

In the initial stage no analysis models have been used

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>