Software Requirements Specification

for

STUDENT EXCHANGE LIBRARY (SEL)

Version 1

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Revision History

Name	Date	Reason For Changes	Version
First Draft	5-12-2018	First Document for Review & Approval	1

1.   Introduction

This Software Requirements Specification Document, SRS, provides a general description of the software project named STUDENT EXCHANGE LIBRARY, SEL, including all the functional and non-functional requirements necessary to implement the software.

The overall assumption is that SEL will provide the students and faculty with a website that will allow them to sell and buy books. Students will need to sign up using their school email (username@calstatela.edu) in order to gain access to the web site. Once registered the user will have the ability to search for a book as well as add their own book for sell.

The associated Software Design Document, SDD, will discuss in detail the implementation of the requirements presented herein.

1.1   Purpose

The purpose of this SRS is to serve as the main source of requirements for the SEL programmers who will write the SDD and then implement the code that will become the SEL software. This is the only authorized source of the SEL software requirements. The document's first version is the one being reviewed and approved. The second version will be the one including all the initial inputs from the reviewers and the one used to design implement (code) the software. The third and final version   of the SEL SRS will include all the modifications approved after the SDD, if any.

The requirements will be listed using tables with entries for each of the modules initially understood to be part of SEL. These tables may be modified accordingly after the SDD has been generated and approved. Lastly, there may be requirements that will be better understood at coding time (implementation) and these will be the last modifications to the requirements table before software full implementation and delivery to its customers.

1.2   Intended Audience and Reading Suggestions

The main users of this SEL SRS are the developers that will write the corresponding SDD and then the software implementation coders that will write the corresponding software code. Also, audience to this document include reviewers who will be accepting and approving this software document.

No other user/reader is expected at this time.

1.3   Product Scope

This documentation was developed as part of a Software Engineering Class CS-3337.
The scope of this document includes the following:
- All functional and non-functional requirements. These requirements are organized by key SEL function units shown on level 0 and 1 of the DFD
- Functional descriptions of each of the modules of SEL

1.4   Definitions, Acronyms, and Abbreviations

SEL - Student Exchange Library
DB - Database
JSP - Java Server Page
MVC - Model View Controller
JDBC - Java Database Connectivity
DFD - Data Flow Diagram
CS3 server - Server owned by CSULA

1.5   References

This SRS template - SRS-CB2S-Template-2017

Database - phpMyAdmin - http://cs3.calstatela.edu/phpmyadmin/

Bootstrap - https://getbootstrap.com/docs/4.1/getting-started/introduction/

Web Development with Eclipse and Tomcat -
https://csns.calstatela.edu/wiki/content/cysun/course_materials/eclipse

Apache Tomcat - http://tomcat.apache.org/

Java EE API - https://docs.oracle.com/javaee/7/api/

JDBC - https://dev.mysql.com/downloads/connector/j/

Java Mail - http://www.java2s.com/Code/Jar/m/Downloadmailjar.htm

Java Mail Example - www.mkyong.com/java/javamail-api-sending-email-via-gmail-smtp-example/

MySQL Workbench Manual - https://dev.mysql.com/doc/workbench/en/

JSTL Library - https://docs.oracle.com/javaee/5/jstl/1.1/docs/tlddocs/

2.　Overall Description

The SEL Data Flow Diagram level 1, DFD 1, or Context Diagram below provides a pictorial view of all the requirements associated with this software.

Figure 2.1. SEL - Level 1 DFD

The Student Exchange Library is a website where students and staff alike can buy, sell and/or exchange books. It serves as an alternative to bigger online shopping websites because it is specifically designed for internal use (in Cal State LA), which simplifies the process significantly. SEL restricts access only to Cal State LA students or faculty with an active Cal State LA email. After signing up and verifying that you are a valid Cal State LA user, you will have access to the entire site, posting and viewing books. From there you can easily search any book based on any attributes of the book. In addition to being able to search and exchange, you can post a book of your own to sell. When posting your book, you will be asked to provide specific information about the book you are going to post. For instance, SEL asks you to provide the title, author, ISBN#, as well as the course for which you used this book. All of these attributes make it easier for users to find your book on SEL. For example if you were posting the Algorithms textbook, after providing all of the book's information a user can search any attribute of the book, such as searching "cs-3112", "algorithms", "corem". All of these would be a valid way to search for a book. SEL is a website

2.1   Product Perspective

SEL is a live, dynamic website, it requires a working database. For this we used the cs3 server in order to store the information of the users, books, and the posts. Other than the database, the website does not need any other resources.

In comparing SEL to other systems currently on the market we can note some similarities and some differences. SEL is similar to various systems currently on the market such as Amazon, and Craigslist. This is due to the simple notion that SEL at its core is a system that serves as a medium for connecting a seller and a buyer. This notion carries many implications on the functionalities of such a system. For example, these systems have searching capabilities, and allow users to post products. Where SEL stands out is that SEL is a system used in a body of verified users from a specific institution (CSULA); such exclusivity is a key difference between SEL and any other system on the market. The exclusivity provided by SEL serves as a motivation for creating the software, it allows for the buying, selling, and exchanging of books to be within a trusted community.

2.2   Product Functions
N/A

2.3   User Classes and Characteristics
N/A

2.4   Operating Environment
The code will be deployed on the CS3 server.

2.5   Design and Implementation Constraints
N/A

2.6   User Documentation
N/A

2.7   Assumptions and Dependencies
N/A

2.8   Apportioning of Requirements
N/A

3.   External Interface Requirements

The SEL Data Flow Diagram level 0, DFD 0, or Context Diagram below provides a pictorial view of all external requirements associated with this software.

Figure 3.1. SEL - Level 0 DFD

3.1   User Interfaces

The User will have have access to the website when they type in the address of the webpage or launch a batch file that is included in the project folder. The batch file will open the Firefox browser and lead the user to the website. The first page the user should see is the homepage. The homepage has a search bar along with a list of the recently posted book. The user will have the ability to either log in or sign up. If the user is not an authorized user yet then their access to the website will be restricted. Once the user has signed up or logged in they will have access to post books of their own as well as buy them. These pages consist of simple forms asking for basic information about the user or the book they are posting.

3.2   Hardware Interfaces

N/A

3.3   Software Interfaces

SEL is deployed on the CS3 server and uses phpMyAdmin database also hosted on CS3 to communicate with the website. In order to connect to the database on the CS3 server, SEL uses the Java Database Connectivity (JDBC) library. This allows for the program to open a connection to the database using our unique username and password on the database. Once the connection is opened we can access the records in the database.

3.4   Communications Interfaces

A web browser will be necessary to access SEL. The user will either need to sign up or log in. Each page contains a form. Sign up will take the users input and add it to the database. Log in will check if the credentials provided match a record on the database. The HTTP methods used will be GET and POST. We will also have a configuration file that contains the username and password of the database.

4.   Requirements Specification

4.1   Functional Requirements

4.1	Web Icon Module (WIM)	Implemented
4.1.1	The WIM shall launch SEL web program.	Yes
4.2	Home Module (HM)	
4.2.1	The HM shall facilitate navigation to other pages on SEL by providing links to prioritized pages, recent books, and have a search box.	Yes
4.3	Verification Module (VM)	
4.3.1	The VM shall create a user profile.	Yes
4.3.2	The VM shall verify that the email provided is a valid Cal State LA email address.	Yes
3.3.3	The VM shall provide a standard login	Yes
4.4	Manage Post Module (MPM)	
4.4.1	The MPM shall allow users to add books in SEL.	Yes
4.4.2	The MPM shall allow users to delete their own books in SEL.	Yes
4.5	Information Handling Module (IHM)	
4.5.1	The IHM shall provide the user with a search bar to filter search results.	Yes
4.5.2	The IHM shall provide the user with a description page for each book.	Yes
4.6	Buyer Notification Module (BNM)	
4.6.1	The BNM shall notify seller with buyers email address.	Yes

Web Icon Module (WIM) - Module 4.1
The WIM module provides the user with an icon which the user can click and it open the internet browser and take them to the homepage.

Home Module (HM) - Module 4.2
The HM provides the user with an easy way to access different pages within the website. Different buttons lead to different pages on the site.

Verification Module (VM) - Module 4.3

The VM checks if the user is an authorized user. If they are not an authorized user they can register or log in. When registering the VM will make sure the user is using a valid Calstate LA email.

Manage Post Module (MPM) - Module 4.4

The MPM allows the user to add books to the catalog making them available for sell. Users can also remove books they posted from the catalog.

Information Handling Module (IHM) - Module 4.5

The IHM handles the data from the books that are being added into the catalog, formats it, and adds it to the database. Information from the users is also taken in and added to the database. Using these two tables, a third table is formed called posts which matches the users to what book they specifically posted. Using these three tables, a description page can be created for each book containing book information along with the information of the poster.

Buyer Notification Module (BNM) - Module 4.6

The BNM sends an email to the owner of the book when the buyer clicks on the buy button on the description page.

4.2 External Interface Requirements

There are no external interface requirements

4.3 Logical Database Requirements

The database phpMyAdmin hosted on the CS3 server is the database used for this program. There are three tables, users, posts, books. Users keeps track of the authorized users with information such as name, email, phone and username. The books keeps track of the books posted for sell with information such as title, ISBN number, author name, subject, course, and condition. The posts only contains book id and user id to match each user to what book they posted.

4.4 Design Constraints

N/A

5.   Other Nonfunctional Requirements

5.1   Performance Requirements

1	The software shall be written in Java
2	The Database shall be written in SQL

5.2   Safety Requirements
There are no specific safety requirement affecting the SEL software.

5.3   Security Requirements
N/A

5.4   Software Quality Attributes
N/A

5.5   Business Rules
Since this is an academic project generated to satisfy the cs3337 class requirements, there are no applicable business rules to be considered.

6.   Other Requirements

There are no other sources of requirements for SEL

Appendix A: Glossary

N/A

Appendix B: Analysis Models

N/A

Appendix C: To Be Determined List

Revise requirements.