Software Requirements Specification

For Books-R-Us E-Commerce Project

Version 1.0 approved

Prepared by Group 11

Intro to SE

1/30/24

1. Introduction

This document is the Software Specification Requirement (SRS) for the online shopping system Books-R-Us, a user-friendly system to both consumers and admins alike.

The product will allow the consumers to easily search and purchase desired books and admins to list and sell books.

1.1 Purpose

The purpose of this document is to display and examine varied ideas to provide a detailed definition of the system in regards to users. In addition, outlines of potential features, ideas, and hindrances will be presented, structured and discarded as the system's development requires. These outlines will be used to further our understanding and by extension the quality of the product.

Overall, this document describes a complete overview of the system, guidelines, and objectives, definingthe software and hardware specifications, user interface, and target clients.

1.2 Document Conventions

The use of the pound symbol (#) signifies a comment that is not inherently part of the SRS. These comments are intended to provide helpful insight, highlight a potential problem that will need to be addressed, or for simple ease of use by any of the users of this document.

The product features (Section 2 & 3) and requirements (Section 4 & 5) are not designated to showcase different priority levels through fonts, highlighting, or order. Priority level will be assigned through declaration or magnitude of detailed requirements.

1.3 Intended Audience and Reading

This document is intended for use by the product developers, product overseers, and users. The product developers reference this document to develop the system and amend the SRS as necessary. The product overseers examine this document to determine if the developer team has correctly defined the product, features, and requirements without omitting crucial information. The users grasp a greater understanding of the features given to them, hardware and software requirements necessary to utilize the product, and a comprehension of how the system side of the product works with the client side.

1.4 Product Scope

The software application is an online web system that provides basic functions to allow a web customer to make book purchases and a web vendor to provide books for purchase. The objective of this interaction is to provide an online foundation to allow consumers to purchase books they seek and allow vendors to sell books for profit. This interactional relationship in turn allows the product provider to gain profit and marketing for expansion.

1.5 References

Intro to SE SRS document template by Dr. Charan Gudla-
https://canvas.msstate.edu/courses/121638/files/9824905?wrap=1

2. Overall Description

2.1 Product Perspective

The "Books R Us" ecommerce app is a standalone product designed by a team of four students using C++ for the backend logic and SQL for database management. It is a new, self-contained product that aims to provide a platform for users to buy and sell books. The system interacts with a database to manage book inventory, user information, and transaction records.

Diagram:

[User Interface] <---> [C++ Backend] <---> [SQL Database]

2.2 Product Functions

- User Registration
- Browse Books
- Add to Cart
- Purchase
- Inventory Management
- Profile Management

2.3 User Classes and Characteristics

Buyers(Users)

Able to search, add to cart, and checkout simply and easily.
Sellers(System Admins)

Able to update the inventory, Manage user accounts, using the app instead of having to make changes to the SQL database or code.

2.4 Operating Environment

- **Hardware Platform: Compatible with standard PCs, laptops, and mobile devices.**
- **Operating System: Compatible with Windows, MacOS, Linux operating systems.**
- **Software Components: Requires C++ runtime environment and SQL database support.**

2.5 Design and Implementation Constraints

Security is limited to the Admin keeping their password safe. The customer will be required to upkeep the inventory and prices of incoming books. The customer will be required to know python and SQL to create new parameters for organization if needed.

3. System Features

3.1 User Registration and Authentication

3.1.1 This feature will allow users to create accounts for new users or all existing users to securely log in. (This is a High priority because security is important when dealing with personal information)

3.1.2 Stimulus/Response Sequences

Use Case: User Registration

User Class: New User

Use Case: User Login

User Class: Registered User

3.1.3 Functional Requirements

- This system will allow new users to register using their First and Last name, a unique username and password, and an email address.
- System will validate email address.
- The system will check the user's input username against the list of existing users to ensure no username is copied.

- Upon successful registration, the system will assign a unique User-ID to each user.
- The system will provide a login page with fields to input username and password
- The system will validate the user credentials during login, checking against the stored user data. If the credentials are incorrect, it will display an error message.
- The system will support password hashing and salting for secure storage of user passwords.

After a successful registration of an account, the User will be directed to the Home Page

3.2 User Interaction

3.2.1 This feature allows the user to access all parts of the system that pertain to them.

3.2.2 Stimulus/Response Sequences

Use Case: User Cart

User Class: View Cart

User Case: User Remove from Cart

User Class: Remove Cart

User Case: User Check out

User Class: Check Out

User Case: User Add Item to Cart

User Class: Add item

User Case: User decrease Item form Cart

User Class: Decrease Item

User Case: Search for an Item

User Class: Search Item

User Case: View inventory

User Class: View Inventory

3.2.3 Functional Requirements

- User Should be able to view all items in inventory
- User should be able to search for specified item form the inventory list
- User should be able to add and remove items form the cart
- User should be able to decrease specified number of items form the Cart
- User should be able to check out items for the cart

3.3 Admin Interaction

3.3.1 This feature allows the Admin to have separate access form the users and allows them to do the admin side of the system.

3.3.2 Stimulus/Response Sequences

Use Case: Update Inventory (Increase Stock)

User Class: Inventory Increase

Use Case: Update Inventory (Decrease Stock)

User Class: Decrease Inventory

3.3.3 Functional Requirements

- The admin will have a unique password to be able to update the inventory on the system
- Admin will be able log in using their password to gain admin access
- Admin will be able to increase/decrease the items in the stock list

4. Other Nonfunctional Requirements

4.1 Performance Requirements

Big O algorithms should never be exponential or cubed. Unless there is no other option, they should not be quadratic as well.

4.2 Safety Requirements

If a hacker gains access into the admin account, they have access into the entire system. To protect the users, the admin password needs to be protected. The admin password is safeguarded through hashing. Django will be used for framework and security.

4.3 Security Requirements

- Checks to see if the email is already in the system, tells the user to login if the email is already in use.

- When a user creates a password it is assigned a number that is put through a hashmap.

4.4 Software Quality Attributes

- Reusability
    - Users are able to buy again an unlimited number of times
    - Important for consumer use
- Availability
    - Only requires a computer to access
- Usability
    - Easy to understand for all age users, ease of learning
    - Important for both young and elderly consumers

5. Other Requirements

Usernames and passwords need to be securely stored to protect the integrity of the customers. Emails can be simply stored and checked to prevent duplicate accounts. Admins are required to uphold integrity of their accounts, and never share their password with anyone else to prevent non-cyber attack breaches.

Users must be able to navigate through pages in a non-linear manner (go from checkout to search, etc.).

Appendix A: Glossary

ISBN - International Standard Book Number

SRS - Software Requirements Specification

Username - User-created string of characters and numbers to be used as credentials to sign in and be linked with a user-given email and password.

User ID - System-created string of numbers assigned to a user upon creation for admin account tracking within the database.

Appendix B: Analysis Models

Appendix C: To Be Determined List

1. When inputting password, Bullets (•) will be displayed in place of the user character input.
2. Confirm password: requirement to enter the password twice.