Software Requirements Specification (SRS)

Borrow Book Buddy

1. Introduction

1.1 Purpose

The purpose of this document is to provide a detailed description of the requirements for the "Borrow Book Buddy" web application. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, and the constraints under which it must operate.

1.2 Scope

"Borrow Book Buddy" is a web application designed for college students to facilitate book sharing within their college community. The system allows students to post books they own and are willing to lend, as well as browse and borrow books from other students.

1.3 Definitions, Acronyms, and Abbreviations

SRS: Software Requirements Specification

UI: User Interface

API: Application Programming Interface

CRUD: Create, Read, Update, Delete

2. Overall Description

2.1 Product Perspective

"Borrow Book Buddy" is a standalone web application that will be accessible via web browsers. It will interact with a backend database to store user information, book details, and borrowing records.

2.2 Product Features

* User registration and authentication
* Book listing and management
* Book search and filtering
* Borrowing request system
* User ratings and reviews
* Notification system

2.3 User Classes and Characteristics

* Students: Primary users who will both lend and borrow books
* College Administrators: Oversee the system and manage user accounts

2.4 Operating Environment

* Web browsers (Chrome, Firefox, Safari, Edge)
* Mobile responsiveness for smartphone and tablet access

2.5 Design and Implementation Constraints

* Must comply with data protection regulations
* Should be accessible to users with disabilities
* Must be scalable to handle multiple colleges

2.6 Assumptions and Dependencies

* Users have access to the internet and a web browser
* The college provides initial authentication for students

3. Specific Requirements

3.1 External Interface Requirements

* 3.1.1 User Interfaces
* Responsive web design for desktop and mobile devices
* Intuitive navigation menu
* Dashboard for quick access to key features
* Book listing page with search and filter options
* User profile page
* Borrowing and lending management interface

3.1.2 Hardware Interfaces

* No specific hardware interface required beyond standard web browsing devices

3.1.3 Software Interfaces

* Integration with college authentication systems
* Potential integration with ISBN database for book information

3.2 Functional Requirements

3.2.1 User Registration and Authentication

* Users must be able to register using their college email
* System shall verify the user's college affiliation
* Users can log in and log out securely

3.2.2 Book Management

* Users can add books they own to their library
* Users can edit or remove books from their library
* System shall allow users to specify book condition and lending preferences

3.2.3 Book Search and Discovery

* Users can search for books by title, author, or ISBN
* System shall provide filtering options (e.g., by subject, availability)
* Users can view detailed information about each book

3.2.4 Borrowing System

* Users can request to borrow available books
* Book owners can approve or decline borrowing requests
* System shall facilitate the exchange of contact information upon approval

3.2.5 User Ratings and Reviews

* Borrowers can rate and review lenders after a transaction
* Users can view ratings and reviews of other users

3.2.6 Notification System

* Users receive notifications for borrowing requests, approvals, and returns
* System sends reminders for due dates and overdue books

3.3 Non-Functional Requirements

3.3.1 Performance

* Page load times should not exceed 3 seconds
* System should handle at least 1000 concurrent users

3.3.2 Security

* All user data must be encrypted in transit and at rest
* Passwords must be hashed and salted

3.3.3 Reliability

* System uptime should be 99.9% excluding scheduled maintenance

3.3.4 Usability

* UI should be intuitive and require no more than 30 minutes of learning for new users
* System should be accessible and comply with WCAG 2.1 Level AA standards

4. Additional Features

4.1 Book Condition Tracking

* Implement a system to track and update book conditions before and after lending

4.2 Integration with Academic Syllabi

* Allow integration with course syllabi to suggest relevant books for borrowing

4.3 Virtual Bookshelf

* Provide users with a virtual bookshelf to showcase their book collection

4.4 Book Clubs

* Facilitate the creation and management of book clubs within the college community

4.5 Gamification

* Implement a points system to reward active lenders and responsible borrowers

4.6 Text Message Notifications

* Offer SMS notifications for users who prefer text updates

4.7 Reading Progress Tracking

* Allow borrowers to track and share their reading progress

5. Future Enhancements

* Expansion to inter-college book sharing
* Integration with e-book platforms for digital lending
* Implementation of a mobile app for iOS and Android
* Addition of a marketplace for selling used textbooks

6. Appendices

6.1 Glossary

* Lender: A user who offers a book for borrowing
* Borrower: A user who requests to borrow a book
* ISBN: International Standard Book Number

6.2 Analysis Models

* Use case diagrams
* Entity-Relationship Diagram (ERD) for the database structure

6.3 Issues List

* Handling of lost or damaged books
* Ensuring timely return of borrowed books
* Managing peak usage during start and end of semesters