SOFTWARE REQUIREMENTS SPECIFICATION

SRS

1.1 Introduction

This section gives a scope description and overview of everything included in the SRS document. Also, the purpose of this document is described.

1.2 Purpose

This document provides a detailed outline of the software requirements for "Open Book Circle" software. It covers the purpose and scope of the project, general and specific requirements, constraints, and assumptions.

1.3 Definitions, Acronyms, and Abbreviations

- **ISBN:** International Standard Book Number
- **ML:** Machine Learning

1.4 References

[1] IEEE Software Engineering Standards Committee, "IEEE Std. 2011, IEEE Recommended Practice for Software Requirement Specifications" 2011.

1.5 Overview

The rest of the SRS document describes various system requirement, interfaces, features and functionalities in detail.

2. The Overall Description

This section will give the overview of the whole system and also describes the software's principle functions. It basically manages the functionality of the system in terms of hardware, software, human ware. It will also describe the type of stakeholders that will use the system and what type of functionality is available to them. The constraints and assumption would be presented later.

2.1 Product Perspective

The Book Recommendation System will function as a standalone application, interacting with a database and utilizing machine learning algorithms for recommendation generation.

2.2 Product Functions

- User registration and login.

- Profile management for users.
- Book database management.
- Recommendation algorithm for personalized suggestions.
- User feedback mechanism for ratings and reviews.

2.3 User Characteristics

The system is designed for readers of various genres and preferences. Users may range from casual readers to avid book enthusiasts.

2.4 Constraints

- The system will be developed using Python and machine learning libraries.
- Availability of a reliable internet connection for user interaction.

2.5 Assumptions and Dependencies

- Assumption: Users will provide accurate information during registration.
- Dependency: Availability of a book database with accurate and up-to-date information.

3. External Interface Requirements

3.1 User Interfaces

The system will feature an intuitive and user-friendly graphical interface for user interaction.

3.2 Hardware Interfaces

The system will be compatible with standard computing devices (PCs, laptops, tablets, and smartphones) with internet connectivity.

3.3 Software Interfaces

The system will interface with a database management system for book data storage.

3.4 Communications Interfaces

The system will communicate with external APIs for real-time book data updates.

4. System Features

2.1.1 User Registration and Authentication

- Users shall be able to create accounts with unique usernames and passwords.
- The system shall authenticate users during the login process.

2.1.2 Profile Management

- Users shall have the ability to create and update their profiles.

- Profiles shall store user preferences, reading history, and feedback.

2.1.3 Book Database Management

- The system shall maintain a comprehensive database of books with relevant information (title, author, genre, etc.).
- Book information shall be regularly updated from reliable sources.

2.1.4 Recommendation Algorithm

- The system shall implement a collaborative filtering recommendation algorithm.
- Recommendations shall consider user preferences, ratings, and reading history.

2.1.5 User Feedback Mechanism

- Users shall be able to provide feedback on recommended books.
- The system shall use feedback to improve future recommendations.

5. Non-Functional Requirements

5.1 Performance Requirements

5.1.1 Capacity

The system should handle a user base of at least 100,000 users concurrently.

5.1.2 Dynamic Requirements

The system should provide real-time recommendations within 2 seconds of user interaction.

5.1.3 Quality

Recommendations should be accurate with a recommendation accuracy of at least 85%.

5.2 Software System Attributes

5.2.1 Reliability

The system should be available 99.9% of the time.

5.2.2 Availability

The system should be accessible 24/7, with scheduled maintenance communicated in advance.

5.2.3 Security

User data, including passwords, should be encrypted. Access to user data should be role-based and secure.

5.2.4 Maintainability

The system should allow for easy updates and modifications without affecting user experience.

6. Change Management Process

The system must allow the additional features to be integrated in the future.

7. Document approval