***Experiment-1***

Creating a detailed Software Requirements Specification (SRS) for a Book Recommendation System is a comprehensive task. Below is an extended and detailed SRS document for such a system. Please note that you should customize it to fit the specific needs and features of your Book Recommendation System project.

**1.Introduction:**

The Book Recommendation System will encompass book catalog management, recommendation algorithms, a user-friendly web user interface.

**2.Constraints**

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

**3.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.

**4.Functional Requirements**

**1.User Management**

**User Registration**

* Users must be able to create accounts by providing a unique username, email, and password.
* The system shall verify the uniqueness of usernames and email addresses.
* Users must receive a confirmation email for account activation.
* Passwords must be securely hashed and stored.

**User Login**

* Registered users should be able to log in using their username and password.
* The system shall authenticate users and create secure sessions upon successful login.
* Failed login attempts should trigger appropriate security measures (e.g., account lockout).

**2.Book Information**

* The system shall maintain a comprehensive catalog of books with attributes such as title, author,

ISBN, publication date, and summary.

* Book data should be periodically updated from reliable external sources.

**Book Search**

* Users should be able to search for books based on title, author, genre, ISBN, or keywords.
* Search results should be displayed in a user-friendly format with book details and cover images.

**3. Recommendation Engine**

**Recommendation Algorithms**

* The system shall implement recommendation algorithms that consider user preferences.
* Recommendations should based on user.

**Personalized Recommendations**

* Users should receive personalized book recommendations on their homepage.
* Like top 50 books recommend on home page.

**5.Data Security**

* User data, including passwords and personal information, shall be securely encrypted and stored.
* Access to user data shall be restricted to authorized personnel only.

**6.Use Cases**

**User Registration**

* User accesses the registration page.
* User provides a unique username, email, and password.
* System validates the uniqueness of the username and email.
* User submits the registration form.
* System creates an account and sends a confirmation email.
* User activates the account by clicking on the confirmation link.

**User Login:**

* User accesses the login page.
* User provides their username and password.
* System validates the user's credentials.
* Upon successful validation, the system logs the user in and redirects to the user dashboard.

**Search:**

* User accesses the search page.
* User enters a search query (e.g., book title, author, genre).
* System processes the query and retrieves relevant book results.
* System displays the search results, including book details and cover images.

**7.Generate Book Recommendations**

* User accesses the recommendations page or dashboard.
* System generates a list of book recommendations tailored to the user.
* System displays the recommendations to the user.

**8.Non-Functional Requirements:**

The system shall respond to user requests within an acceptable time frame. such as searching for books, retrieving recommendations, and loading user profiles.

The system shall be available 99% of the time during regular operating hours, with planned maintenance windows communicated to users in advance.

**1.Error Handling**

The system shall provide meaningful error messages to users in the event of system errors, ensuring a clear understanding of the issue and potential resolution steps.

**2.Scalability**

The system shall be designed to scale horizontally to accommodate increased user traffic and data growth. Scaling should be achieved by adding additional server resources or employing cloud-based scaling solutions.

**3. Usability**

The user interface (UI) shall be intuitive and user-friendly, requiring minimal training for users to navigate and interact with the system.

**4.Accessibility**

The system shall comply with accessibility standards (e.g., WCAG) to ensure it is accessible to users with disabilities.

**5.Compatibility**

The system shall be compatible with modern web browsers, including but not limited to Chrome, Firefox, Safari, and Edge.The system shall be responsive and compatible with mobile devices, including iOS and Android platforms.

**6 Security**

User data in transit shall be encrypted using secure protocols (e.g., HTTPS).

**7.Authentication**

The system shall implement strong user authentication mechanisms, including password hashing and salting.

Multi-factor authentication (MFA) shall be supported for enhanced security.

Access to system resources and user data shall be controlled based on user roles and permissions, ensuring that users can only access data and features they are authorized to use.

**9.References**

1. <https://www.kaggle.com/datasets/rayhan32/8k-book-list-of-book-fair-2023-dhaka>
2. <https://jupyter.org/>
3. ] IEEE Software Engineering Standards Committee, “IEEE Std. 2011, IEEE Recommended Practice for Software Requirement Specifications” 2011.

This detailed SRS document provides a comprehensive overview of the requirements for the Book Recommendation System. Customize each section with specific details, requirements, and use cases tailored to your project. Collaborate with stakeholders and subject matter experts to ensure that the SRS accurately represents the project's needs.