Bookify.Com

1.Business Goals :

- Providing personalized book recommendations based on user preferences, reviews, and ratings.
- Recommend books by analysing sentiment from customer reviews and feedback.
- Helping businesses to make data-driven decisions.

2. Gathering Project Requirements

a) Functional Requirements:

- User authentication and profile management.
- AI-powered Book recommendation system.
- Sentiment analysis for user reviews.
- Business analytics dashboard for book performance tracking.

b) Non-Functional Requirements:

- Scalable system to handle a increasing number of user .
- Secure authentication and user's data privacy.
- Fast and efficient AI models for book recommendations.
- Simple and User-friendly interface.
- Recommend the Books accurately and trustworthy.

c) Prioritization:

- Personalized book recommendation
- Sentiment analysis of Reviews.
- User-friendly interface is important for engagement.
- Business analytics dashboard to support decision-making.

3. Expected Outcomes

a) Measurable Success Indicators :

- Improved accuracy of recommendations.
- Increased user engagement.
- Quick and more insightful sentiment analysis.
- Accurate Business Decisions.

b) Key Performance Metrics :

- For Recommendation - Classification Report , RMSE , MAE
- For Sentiment analysis – accuracy, Classification report , Confusion Matrix.

4. Stakeholder Identification

a) **Readers (Book lovers or Casual Users) :** Finds personalized books of their interests, leave reviews, tack the reading progress and explore reviews.

b) **Reviewers:** Share their rating and reviews to influence book recommendation and its popularity.

c) **System Administrators:** Manage books, platform performance, sees user interactions, and monitor system accuracy.

d) **Publishers and Authors:** Analyse book performance, Promote books.

e) **Business Owners :** Analyse top-rating and low-rating book and adjust marketing strategies accordingly.

5. Document Use Cases & Flow Diagrams

I. **Use Case Description:**

  i. **User Authentication & Access Control**

- **Actor:** User/Admin

- **Precondition:** User or admin must have an account with login credentials.

- **Flow:**

    a) User/Admin enters their login details(Username and Password).

    b) Authentication System verifies credentials.

c) If valid, access is granted; if invalid, an error message is displayed.

d) Admin manages user access permissions via the Authentication System.

- **Outcome:** Secure access to the system.

ii. **Personalized Book Recommendations**

- **Actor:** User

- **Precondition:** User must be logged in.

- **Flow:**

    a) User browses books, leaves ratings, writes reviews, or searches for titles.

    b) System fetches relevant data from the Book Database , User & Review Database.

    c) Recommendation System generates personalized book suggestions.

    d) User receives recommendations on their interface.

- **Outcome:** User gets book recommendation of their interests.

iii. **Sentiment Analysis for Reviews**

- **Actor:** User

- **Precondition:** User submits a book review.

- **Flow:**

    a) User writes and submits a book review and rating.

    b) Sentiment Analysis Module fetches the review from the User & Review Database.

    c) The system analyses sentiment (positive, neutral, negative).

    d) Sentiment insights are stored and sent to the Recommendation System to better book suggestions.

- **Outcome:** The system adjusts recommendations based on user sentiments, ensuring books with positive feedback are promoted.

iv. Book , User & Review Data Management

- **Actor:** System

- **Precondition:** Data must be stored in the respective databases.

- **Flow:**

  a) Book Database stores book information.

  b) User & Review Database stores user data, their interactions, ratings, and reviews.

  c) Sentiment Analysis Module fetches review data for processing.

  d) This structured data helps in recommendation improvements.

- **Outcome:** well organized and easily accessible book and review data improve recommendation and sentiment-driven insights.

v. Admin Dashboard & Analytics

- **Actor:** Admin

- **Precondition:** Admin must have proper access rights.

- **Flow:**

  a) Admin logs into the system via Authentication System.

  b) Upon successful login , Admin gets access to Analytics Dashboard.

  c) Dashboard displays system insights (user engagement metrics, book trends, sentiment analysis report).

- Admins can use these insights to improve recommendations, adjust marketing strategies and take decisions.

- **Outcome:** The admin gains valuable data-driven insights to enhance user experience and optimize book recommendation.

II. Data-Flow diagram :