

Project Proposal for CSCD 350 Spring 2024

Noveleaf book library

Version 1

Team 3: Powerpuff Squirrels



Submitted By

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GitHub Repository:

<https://github.com/Sanmeet-EWU/github-teams-project-bid-powerpuff-squirrels>

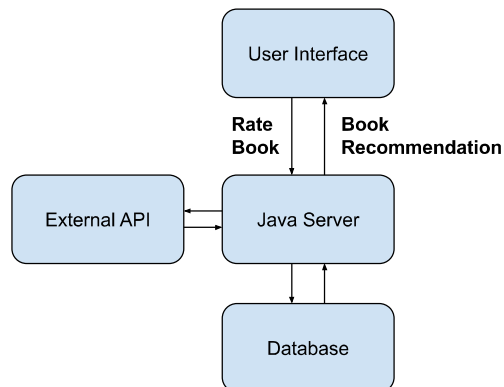
Motivation

Many readers feel overwhelmed by the sheer volume of books available and struggle to discover titles that genuinely capture their interest. While numerous platforms offer reading recommendations, they often fail to deliver personalized suggestions that reflect the unique tastes and reading histories of individual users. This leads to missed opportunities for discovering new books. Our goal is to bridge this gap by offering a sophisticated, user-centric recommendation engine.

Proposed Approach

Our app will address these issues by providing a tailored book discovery experience through algorithms that offer highly personalized book recommendations. We plan on integrating a user's reading history, ratings, preferences, and peer reviews into our recommendation engine. This comprehensive understanding of a user's reading tastes will enable our program to suggest books that are truly tailored to each reader.

However, a limitation of our approach is the initial scarcity of user data, which is critical for generating accurate and personalized recommendations. As new users join with limited interaction history, the recommendation engine may initially struggle to deliver highly personalized suggestions.



Our solution revolves around building a web application. The front-end of our website will be developed using HTML, CSS, and JavaScript, creating an intuitive and responsive interface where users can search for books, manage their reading lists, rate books, and receive personalized recommendations. The

back-end will be handled by a Java server responsible for processing user data and requests and generating book recommendations. For retrieving book metadata, the Java server will rely on external APIs, most likely the Google Books API. The Java server will also communicate with a SQL database that stores all user profile data and any useful book metadata. Finally, the entire web application itself will need to be

hosted on a cloud-based web server. This is the only “hardware” that the project will require.

Challenges and Risks

The most significant challenge in our project is the development of a responsive and intuitive user interface, which is crucial given the complex interactions driven by JavaScript on our platform. This will pose a challenge to us because we have limited JavaScript, HTML, and CSS experience. To address this, we will prioritize front-end development from the outset, conducting extensive user testing to refine functionality and ensure the interface is user-friendly. Another critical task is selecting a reliable API for book metadata, which is essential for providing up-to-date and comprehensive book recommendations. We plan to evaluate several APIs to find one that offers extensive coverage and reliability, ensuring the best possible service for our users. Finally, we will need to address the challenge of finding a web server that we can use to host our web-app. We will explore several free options available through GitHub’s Student Developer Pack.