Project Title: Book Shelf

A Flutter-Based Mobile Application to Manage and Track Books

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1. Abstract

The *Book Shelf* mobile application is a Flutter-based project developed to simplify personal book management for readers and students. It enables users to search for books, add them to favorites, mark them as read or unread, and organize them into personalized collections. The app offers an intuitive interface, efficient data handling, and smooth navigation across all features. The project emphasizes modern design principles, responsiveness, and user-centric functionality, aiming to enhance the digital reading experience.

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2. Introduction

In today's digital world, readers often struggle to keep track of the books they have read or plan to read. Managing physical reading lists or scattered notes can be inconvenient and inefficient. The *Book Shelf* application addresses this challenge by providing a centralized, user-friendly digital platform where users can search, organize, and manage their personal book libraries.

Built using **Flutter**—a cross-platform framework by Google—and **Dart**, the app delivers a consistent, visually appealing experience across Android and iOS devices. The project's development also reinforces essential programming concepts such as state management, widget design, data persistence, and responsive UI implementation.

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3. Objectives

The main objectives of this project are:

- To design and develop a mobile application for organizing and tracking books.
- To implement book search, favorite, and reading status management features.

· To create a clean, intuitive, and responsive UI using Flutter widgets.

· To practice team-based software development and project documentation.

· To apply theoretical knowledge from software engineering principles in a real-world mobile app context.

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4. System Requirements

Hardware Requirements

· Android smartphone or emulator

· Minimum 1 GB RAM

· 200 MB free storage space

· Stable internet connection (for API-based search, if implemented)

Software Requirements

· Flutter SDK (latest stable version)

· Dart Programming Language

· Android Studio or Visual Studio Code

· Git (for version control)

· Emulator or real Android device for testing

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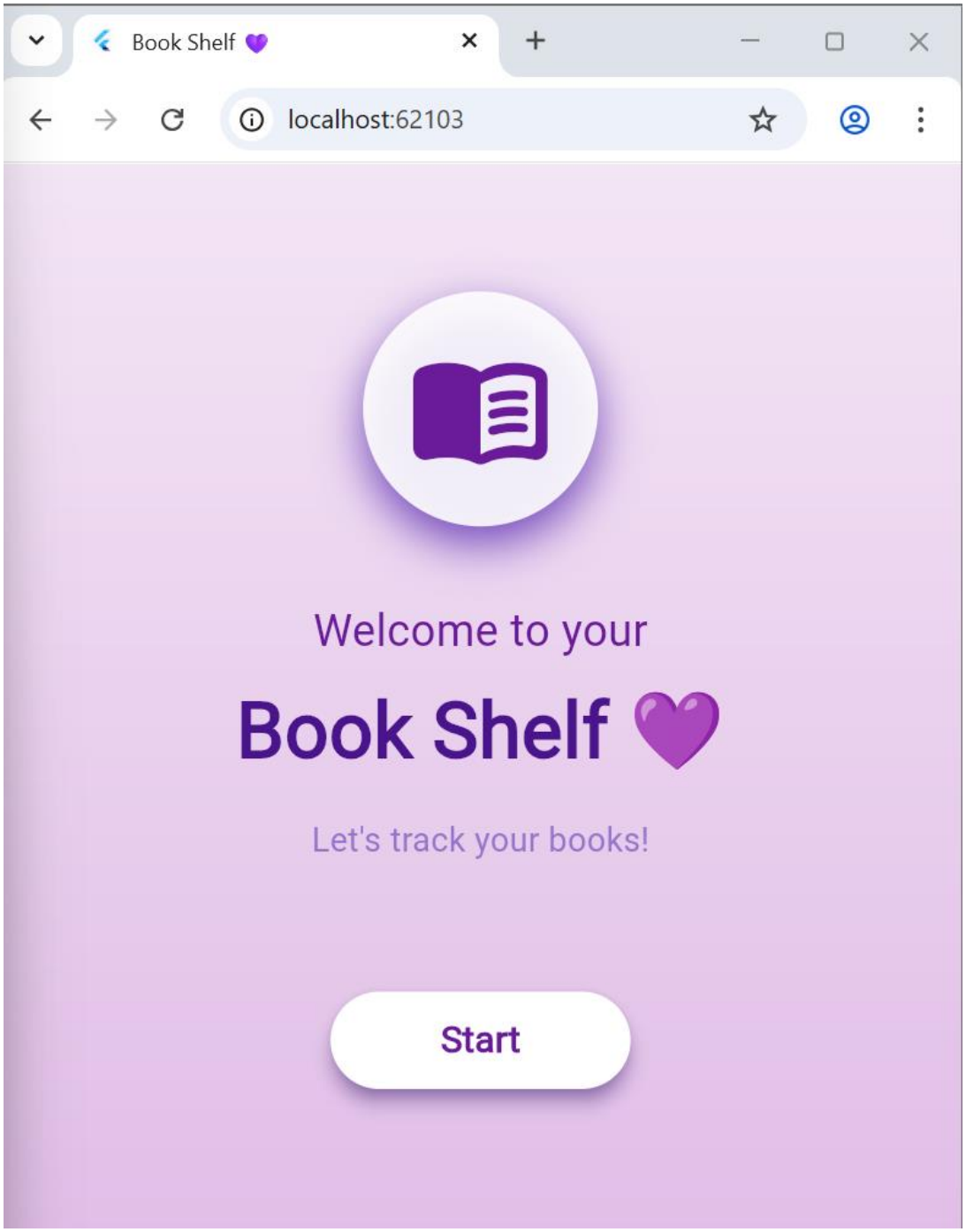
5. System Design

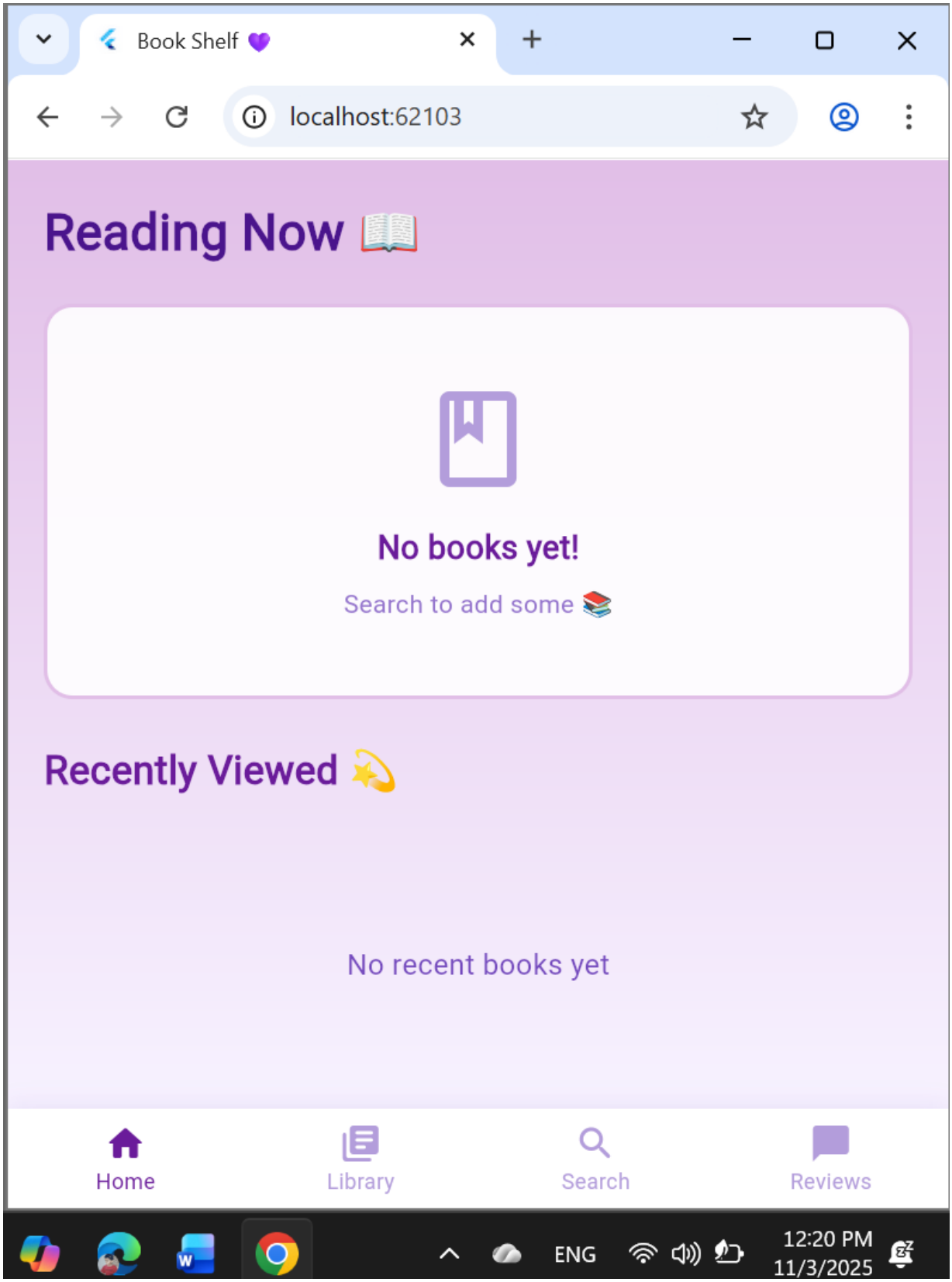
The *Book Shelf* system is designed to provide a simple yet powerful architecture that supports all core functionalities efficiently.

Designed with Flutter's Material Design components for a consistent look and feel. Key screens include:

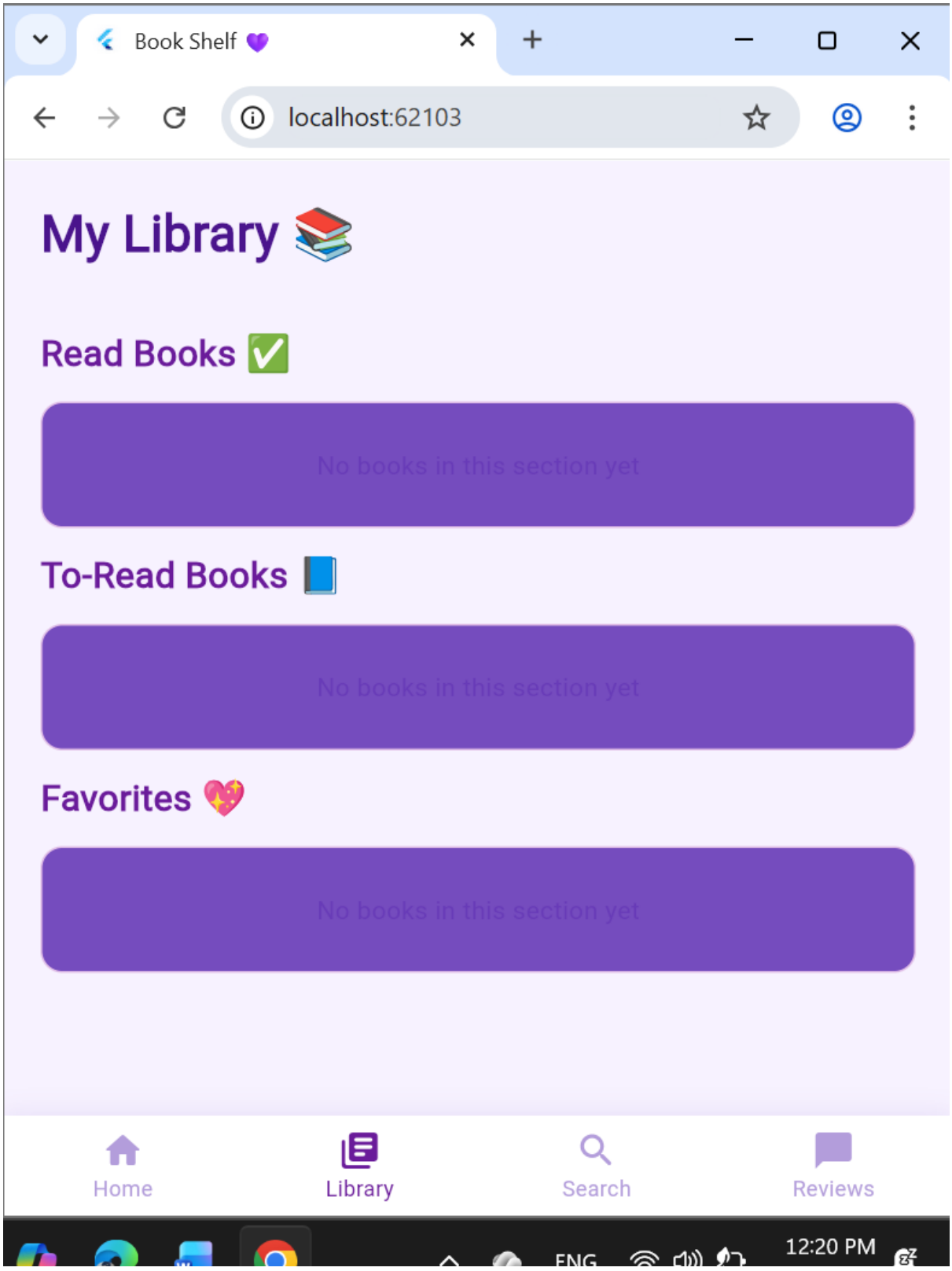
- **Welcome Screen**



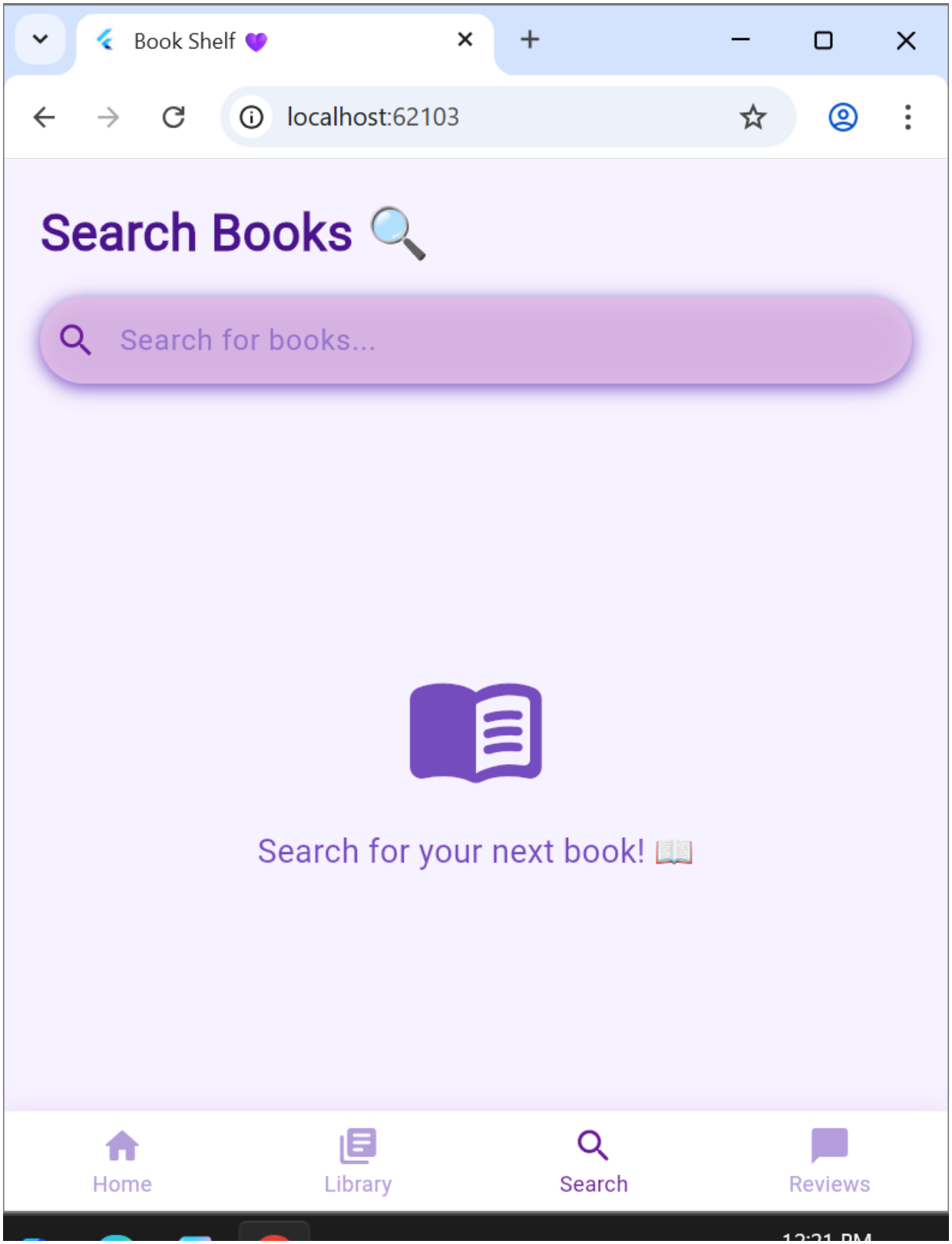
- **Home Screen (Currently Reading & Recently Viewed)**



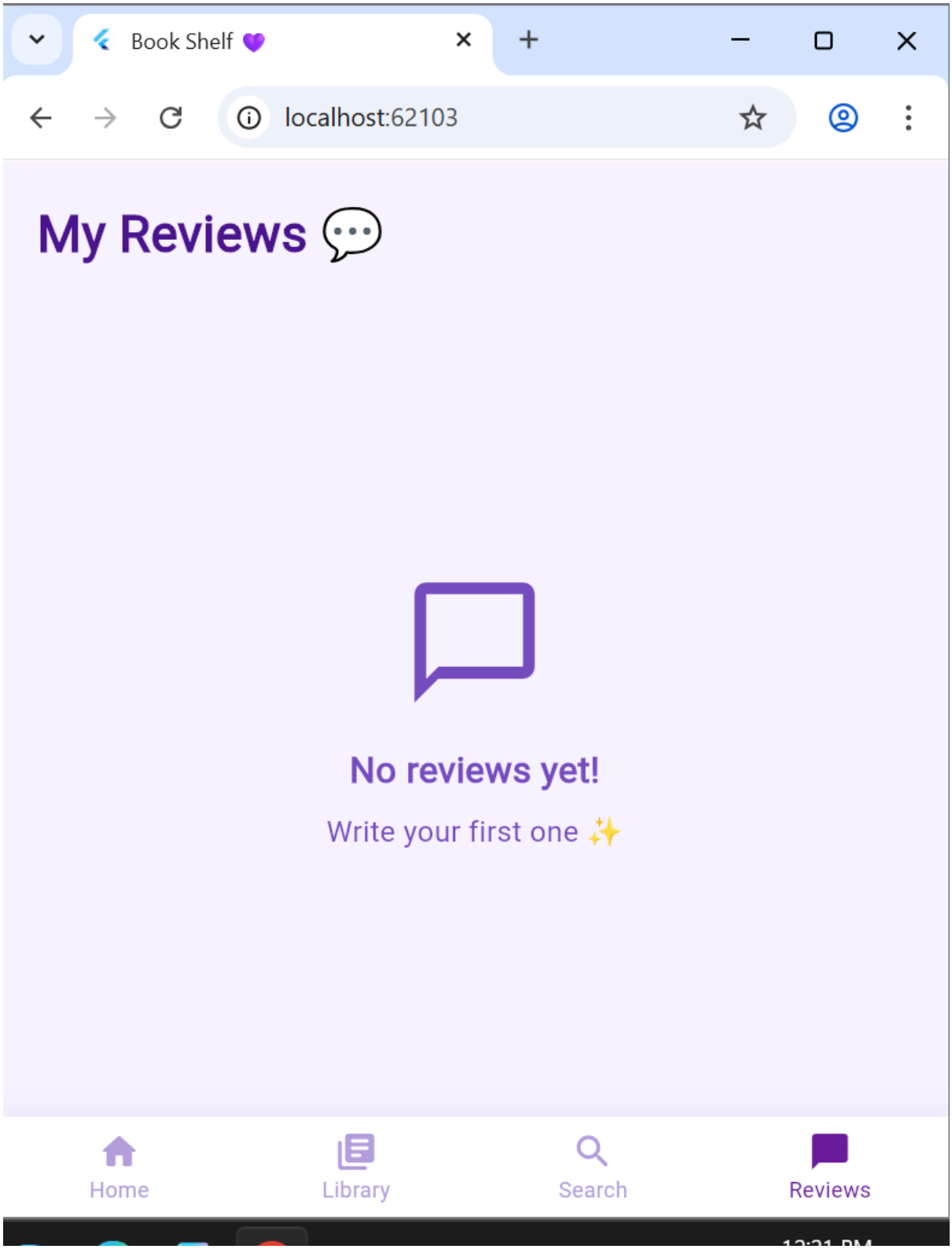
- **Library Screen (Reading lists)**



- **Search Screen (search and add to lists)**



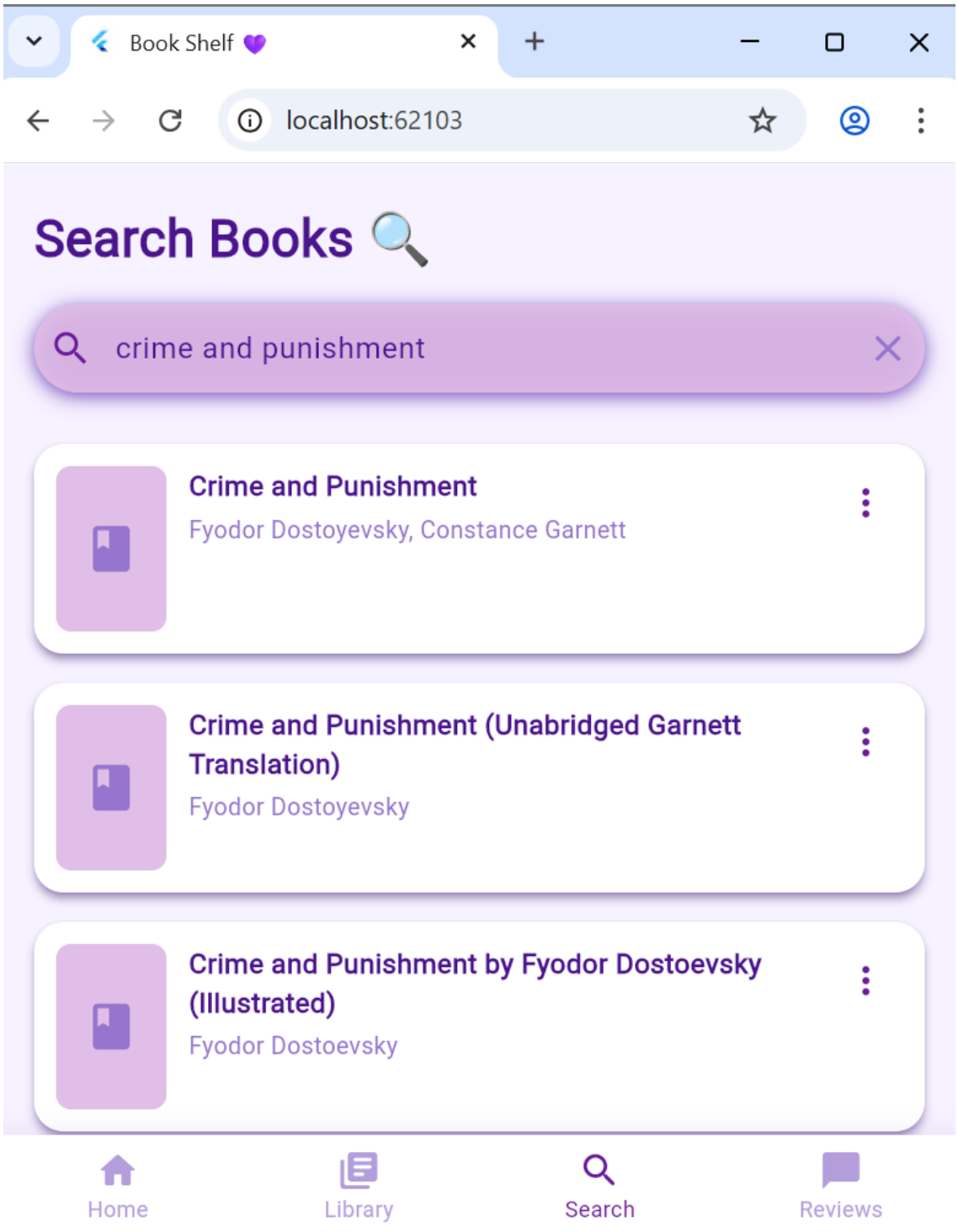
- **Review Screen (See Reviewed books)**



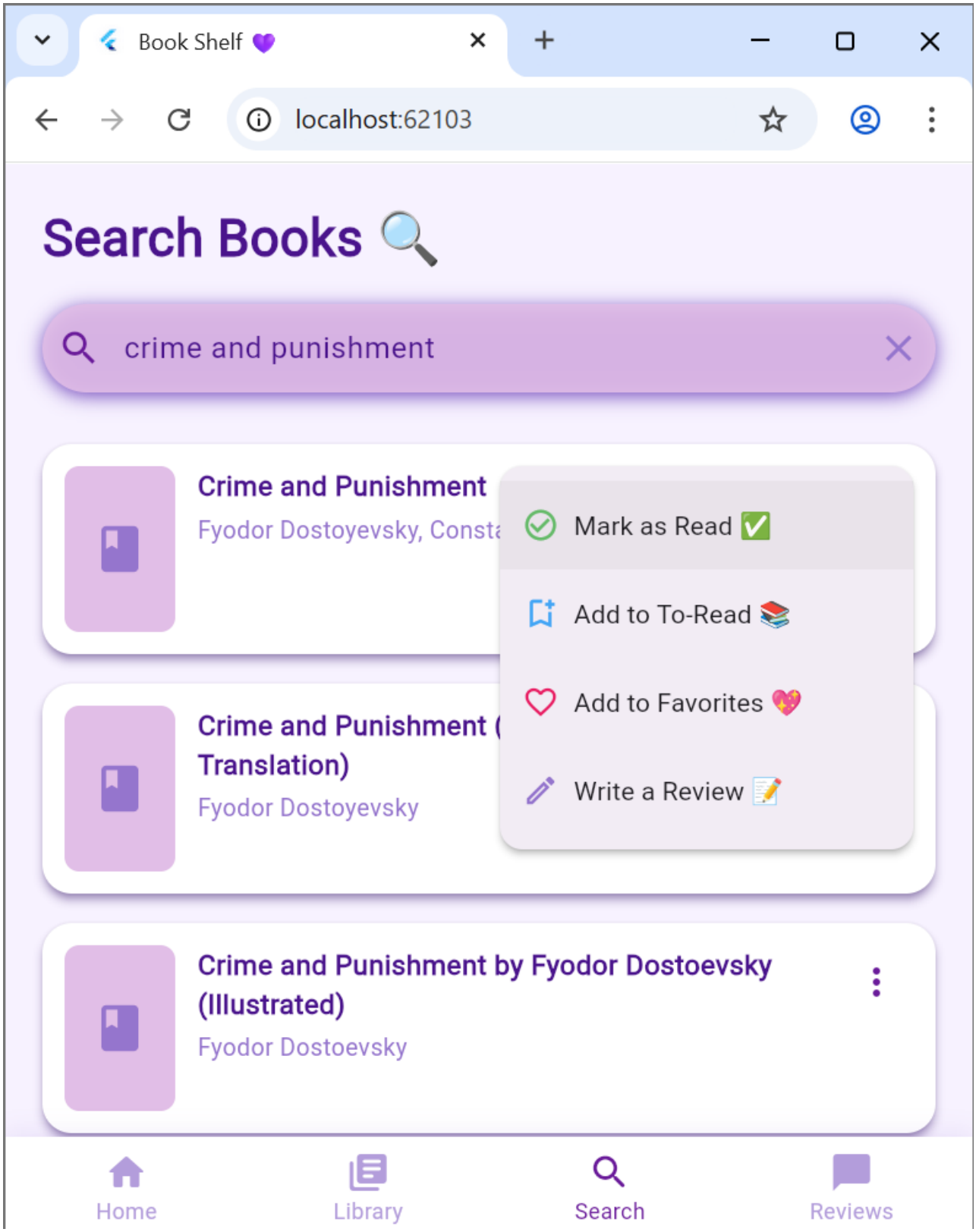
6. Functionality

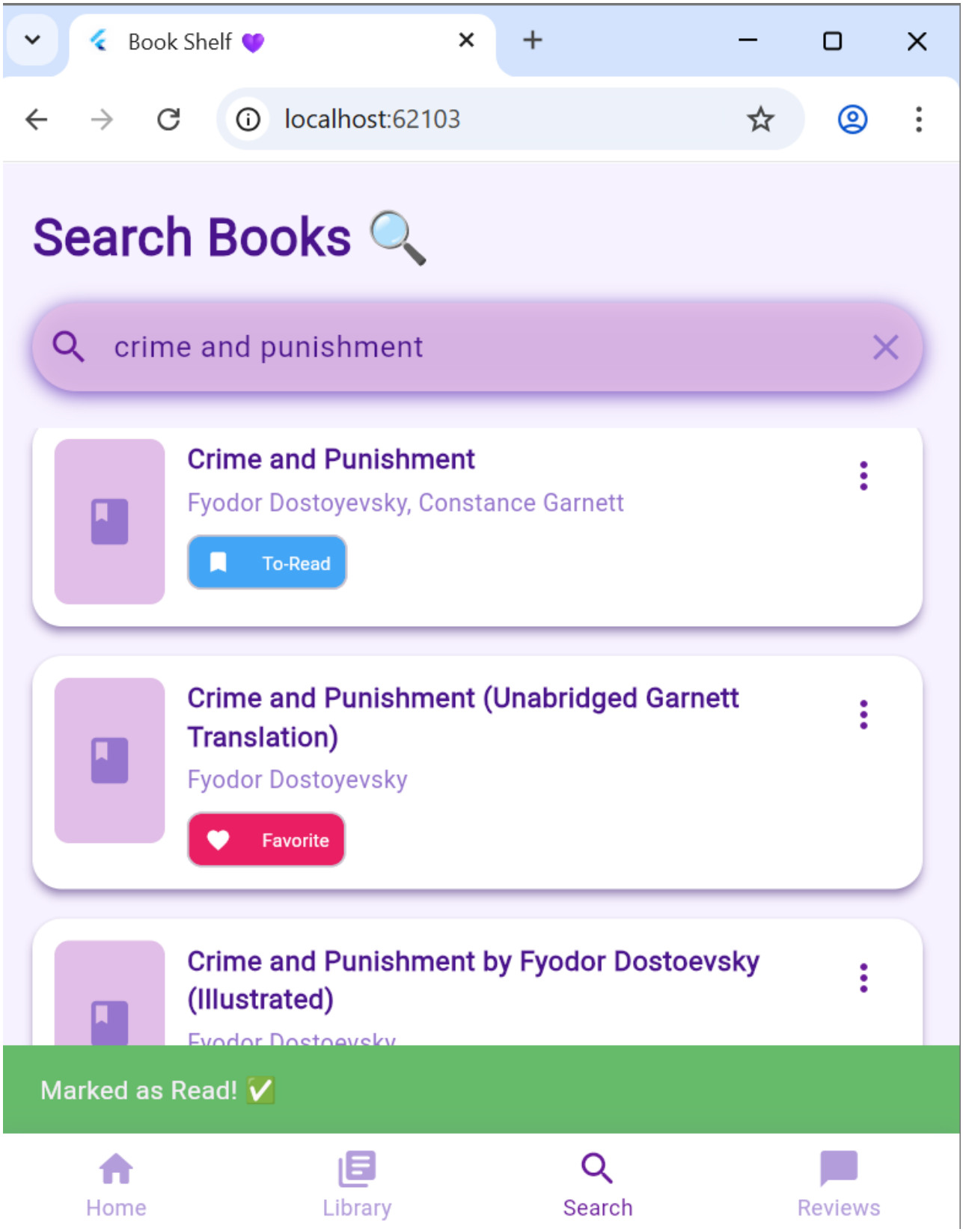
Verified that all core features (search, favorites, reviews, etc.) work as intended.

- **Searching Books**

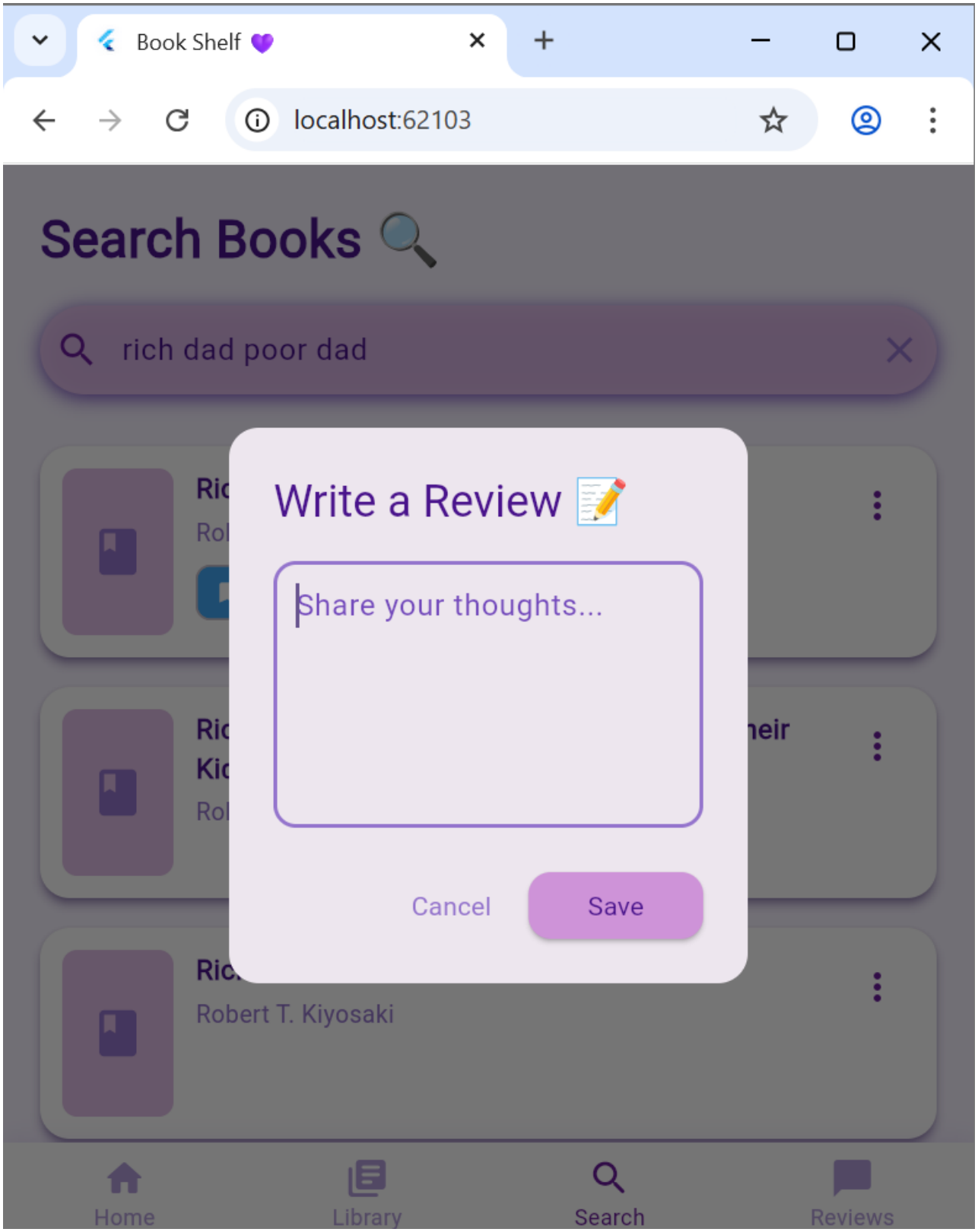


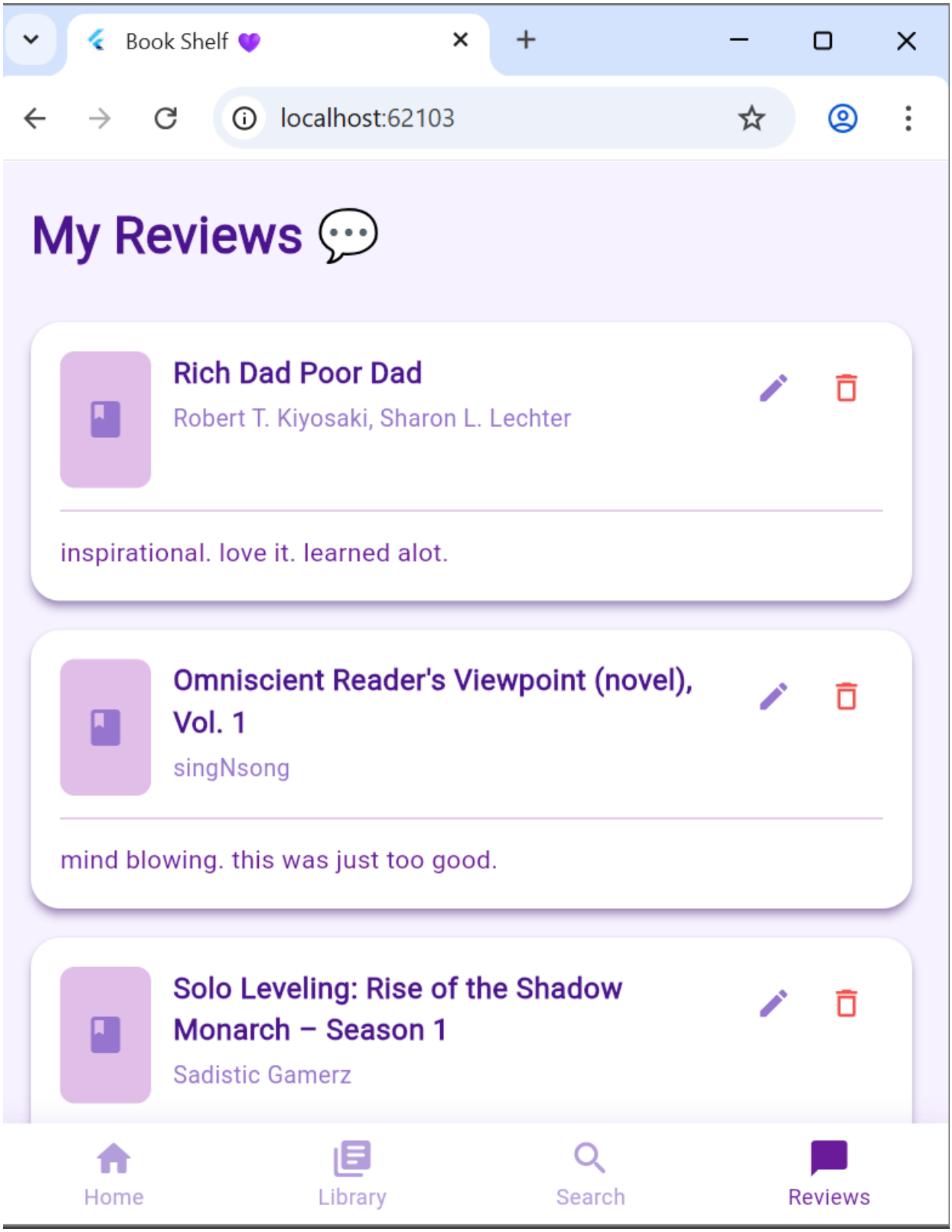
- **Adding to lists (Read, To Read, Favourites, Reviews)**



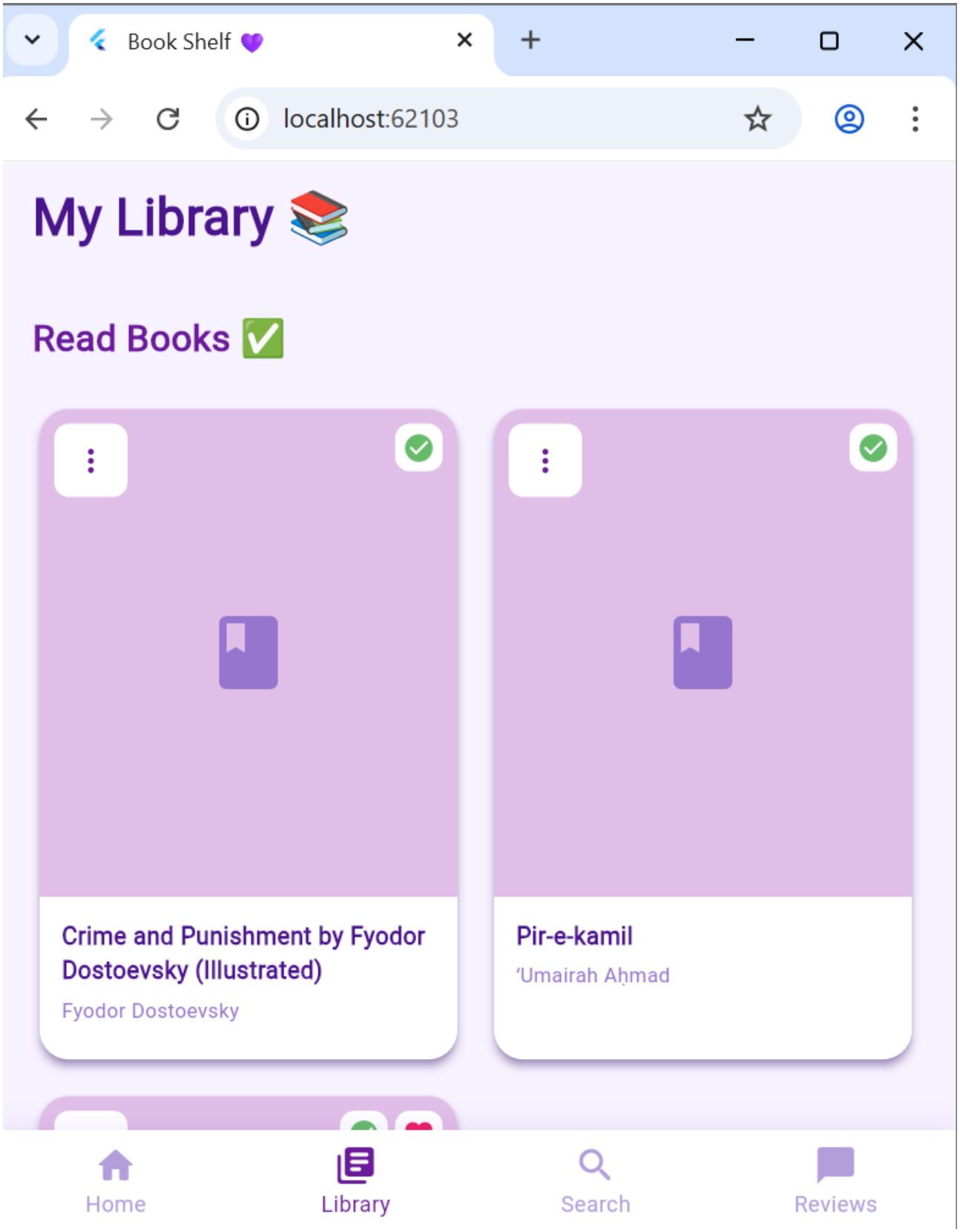

Book Shelf
localhost:62103
Search Books
crime and punishment
Crime and Punishment
Fyodor Dostoyevsky, Constance Garnett
To-Read
Crime and Punishment (Unabridged Garnett Translation)
Fyodor Dostoyevsky
Favorite
Crime and Punishment by Fyodor Dostoevsky (Illustrated)
Marked as Read!
Home
Library
Search
Reviews

- **Writing Review (Review Screen after adding reviews)**

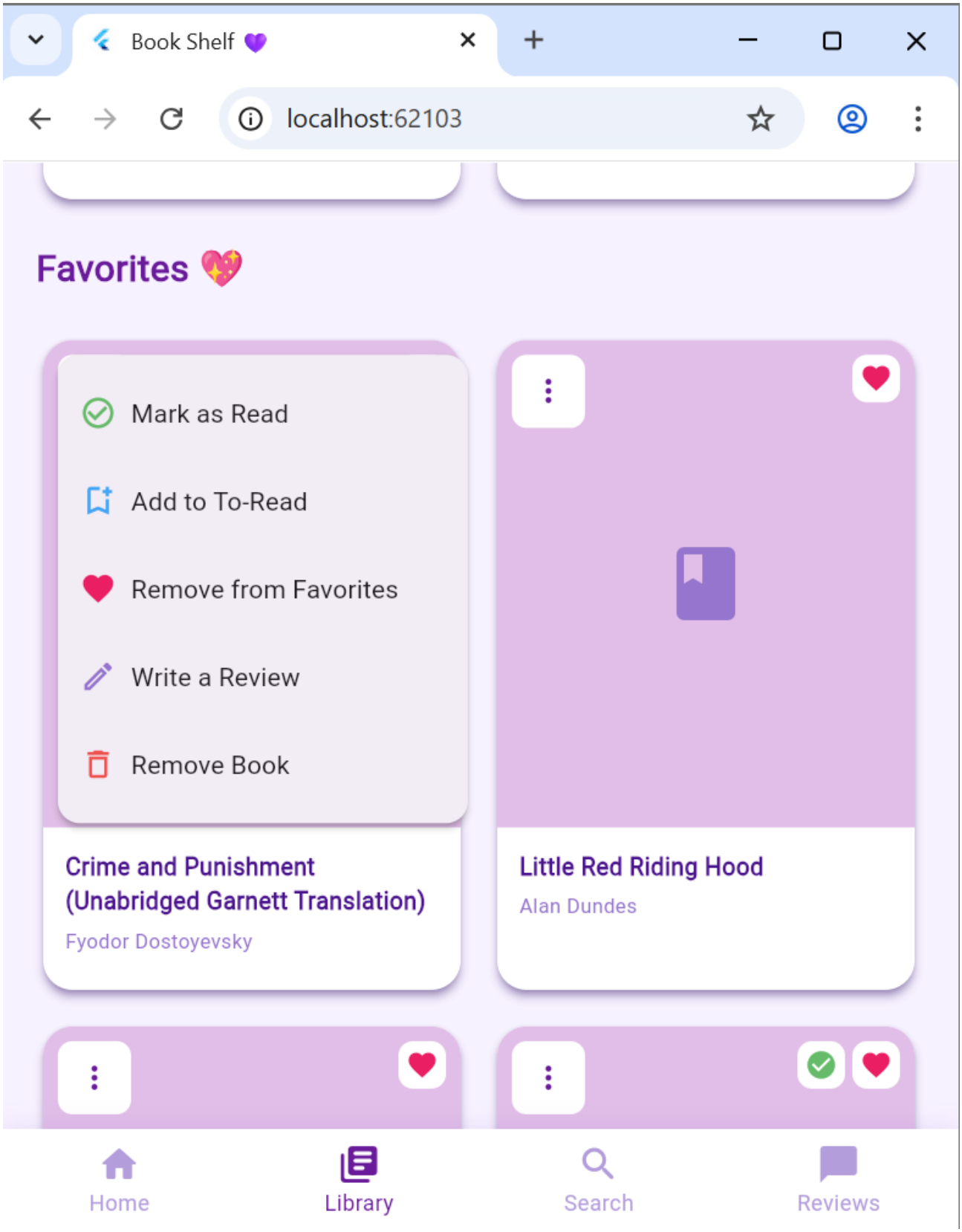


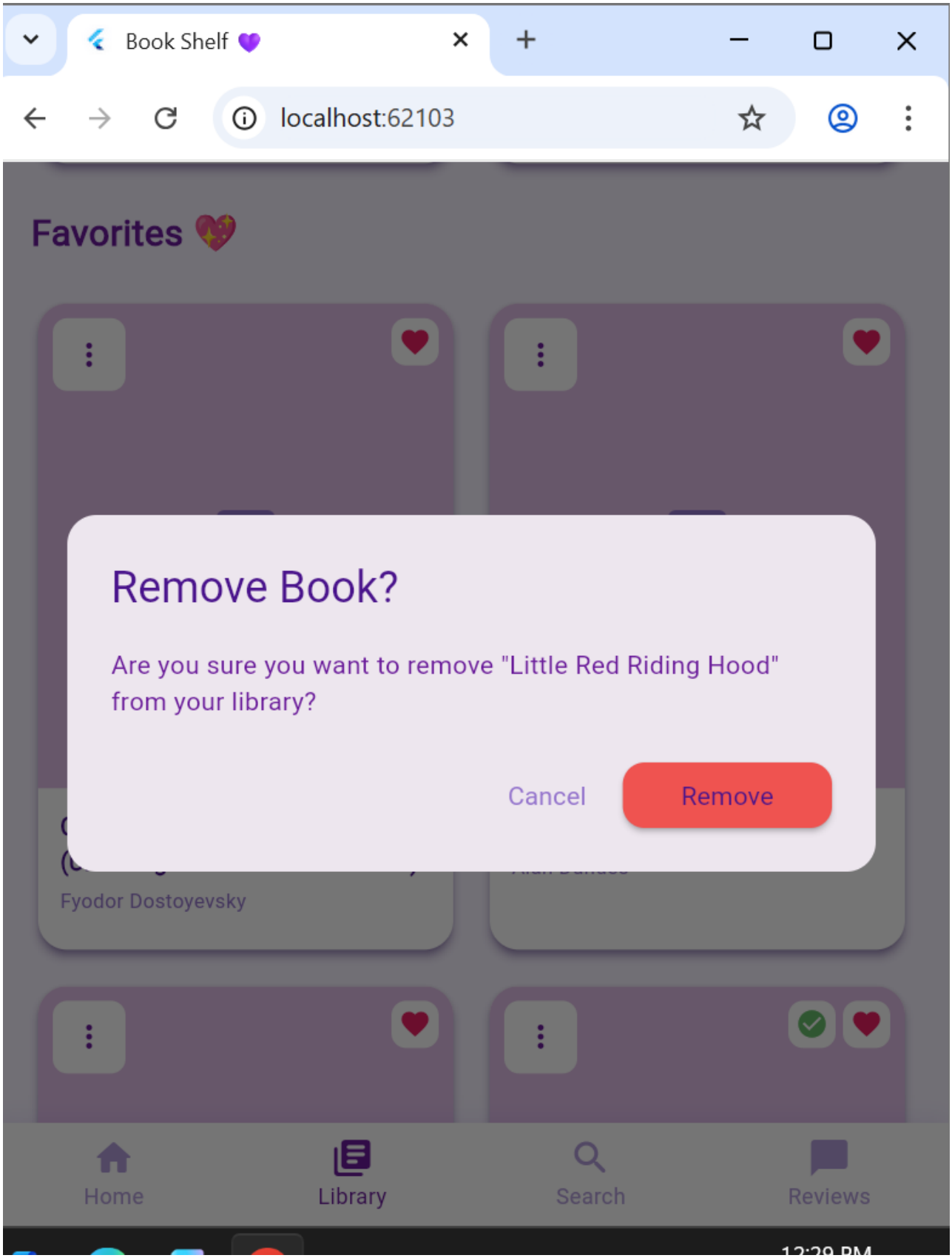

Book Shelf
localhost:62103
My Reviews
Rich Dad Poor Dad
Robert T. Kiyosaki, Sharon L. Lechter
inspirational. love it. learned alot.
Omniscient Reader's Viewpoint (novel), Vol. 1
singNsong
mind blowing. this was just too good.
Solo Leveling: Rise of the Shadow Monarch – Season 1
Sadistic Gamerz
Home
Library
Search
Reviews

- **Library screen after adding books**

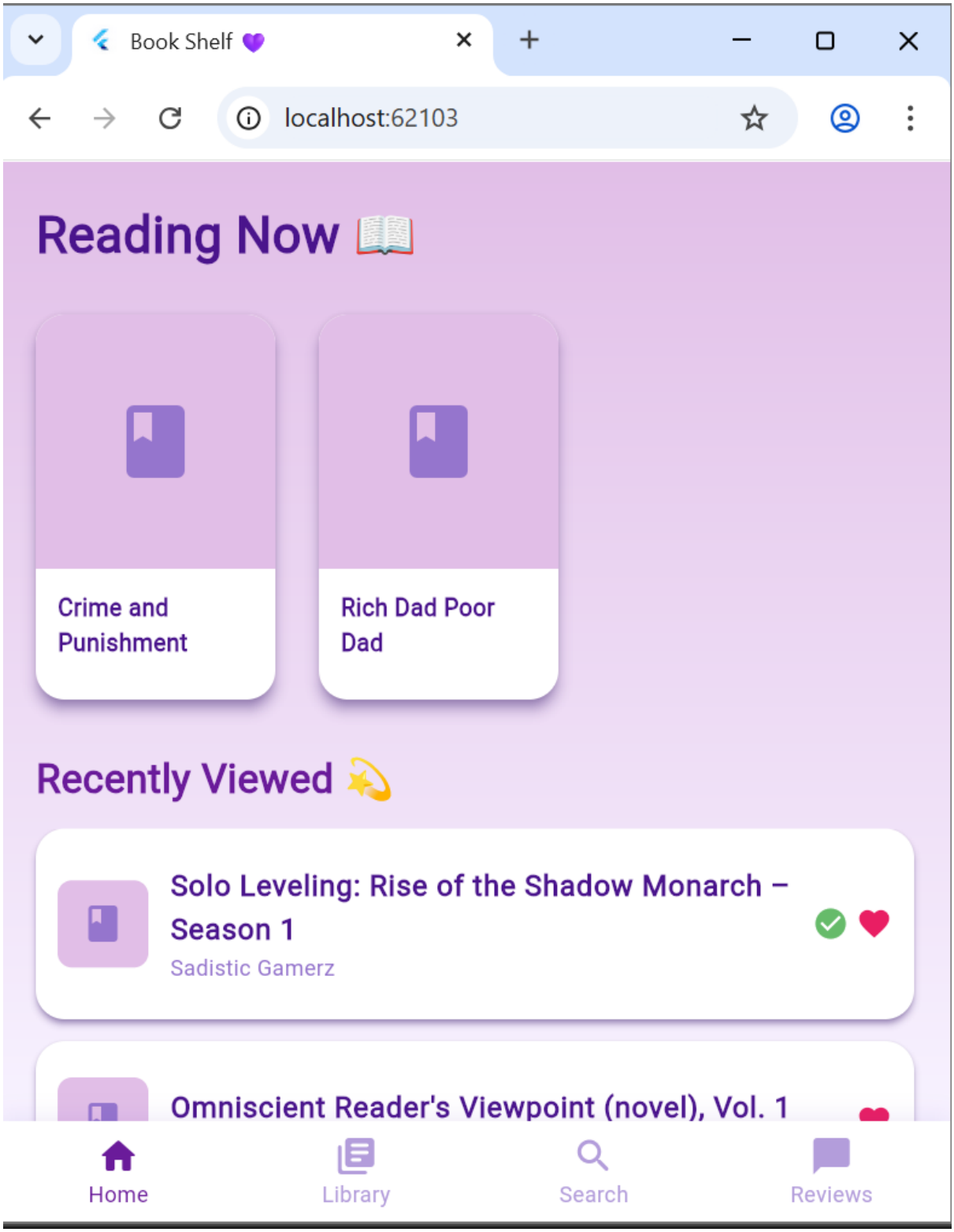


- **Removing a Book**




Book Shelf
localhost:62103
Favorites
Remove Book?
Are you sure you want to remove "Little Red Riding Hood" from your library?
Cancel
Remove
Fyodor Dostoyevsky
Home
Library
Search
Reviews

- **Home screen after using the app**



7. Results & Discussion

The final version of *Book Shelf* performs efficiently and provides a smooth user experience. Users can easily navigate through the app, manage their books, and track their reading status without performance delays.

The design maintains a minimal, visually appealing theme that highlights readability and ease of use.

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8. Conclusion

The *Book Shelf* app successfully achieves its goal of simplifying personal book management through an intuitive mobile platform. It combines functional design with responsive performance, showcasing the potential of Flutter in cross-platform development.

The project provided valuable hands-on experience in mobile UI design, state management, and teamwork. It also strengthened understanding of software development life cycles and documentation standards.

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9. Future Scope

Future improvements can include:

- Data storage and Cloud storage synchronization using Firebase.
- User authentication and personalized book recommendations.
- Dark mode and theme customization options.
- Advanced analytics to track reading trends and progress.

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10. References

- Flutter Documentation: https://flutter.dev/docs
- Dart Language: https://dart.dev
- SQLite for Flutter: https://pub.dev/packages/sqflite
- Google Books API: https://developers.google.com/books