# Book Exchange Django Application
## Development Document

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# 1  Overview

The Book Exchange web application facilitates a community-driven platform where users can share, discover, and manage books. The primary audience is students and general users interested in exchanging books in an organized, interactive environment.

# 2  App Purpose and Features

## 2.1  Core Functions

- **Book Listings and Details:** Browse posted books and view details including price, images, posting user, and external links.
- **User Registration & Authentication:** New users can sign up; existing users can sign in to access interactive features.
- **Book Management:** Post books to share and manage personal postings.
- **Search:** Search for books by name to streamline discovery.
- **User-Centric Lists:** Personal views for posted, purchased, and favorited books.

## 2.2  Advanced Interactive Features

- **Ratings:** Rate books from 1–5 stars. Ratings are anonymous except for the current user's own rating.
- **Favorites:** Add or remove books from a favorites list for quick access.
- **Comments:** Add comments on book detail pages; users may delete only their own comments.
- **Shopping Cart & Checkout:** Add books to a cart and check out to mark items as purchased.
- **Access Control:** Views such as *My Books* and *Checkout* require login. Unauthorized access shows a friendly "You need to log in" message rather than redirecting.

## 2.3  Student Required Features

- **About Us Page:** A dedicated page describing the app's purpose and development context.
- **Book Search:** Case-insensitive search by name with immediate results.
- **Navigation Reformat:** Responsive, user-friendly navigation bar styled with Bootstrap/CSS.

## 2.4  Chosen Additional Features

- **Message Box (Comments):** Users can add comments to books and manage their own comments.
- **Shopping Cart:** Add multiple books and manage purchases easily.
- **Ratings:** Star rating system on book detail pages for qualitative feedback.

### 2.5    Key Challenges and Solutions

- **Login Redirection 404:** *Problem:* Access to login-protected pages redirected to a non-existent `/accounts/login/`, causing 404 errors.
  *Solution:* Removed the default `@login_required` redirect. Added manual `request.user.is_authenticated` checks in views and rendered a custom login-required template.

- **Anonymous Ratings Display:** *Need:* Show ratings while preserving privacy.
  *Solution:* In templates, display "You" for the current user's rating and "Anonymous" for others.

- **Favorites Toggle:** *Need:* Seamless add/remove without confusion.
  *Solution:* Implemented a toggle button with conditional template rendering to switch between "Add to Favorites" and "Remove from Favorites."

- **Comment Ownership & Delete Control:** *Need:* Ensure users can delete only their own comments.
  *Solution:* Server-side authorization check in the delete view, returning `HttpResponseForbidden` on failure.

## 3    Summary of Implemented Requirements

| Requirement | Status | Notes |
| --- | --- | --- |
| About Us | Completed | Informational page (includes CSULA logo image) |
| Search a Book | Completed | Case-insensitive search by name |
| Reformat Nav | Completed | Bootstrap/CSS responsive navigation bar |
| Message Box (Comments) | Completed | Add/delete with ownership control |
| Shopping Cart | Completed | Add to cart, view cart, checkout |
| Ratings | Completed | 1–5 stars, anonymous display |
| Favorite List | Completed | User-specific favorites with toggle |

## 4    Usage Flow for Users

- Visit the homepage to browse or search books.

- Register or log in to access the full feature set.

- Post books to share with others.

- Add books to the shopping cart and check out.

- Rate and comment on books.

- Favorite/unfavorite books for quick access.

- Manage personal lists (posted, purchased, favorites).

- If not logged in, friendly reminder pages clarify when login is required.