Book Sharing Platform

Project Domain / Category

Web Programming

Abstract:

The Book Sharing Platform is a web-based community application that allows users to share and borrow both physical and digital books. Each registered user can act as both a sharer (when listing books) and a borrower (when requesting books). For **physical books**, the system not only tracks availability but also provides a simple communication mechanism for users to schedule offline exchanges (date, time, location). For **digital books**, the system supports uploads/downloads with logical "return" tracking. The project demonstrates essential full-stack concepts: user authentication, CRUD operations, request workflows, and database design using Flask and SQLite.

Functional Requirements:

✦ **User Management**

- Users can register, log in, and manage their profile.
- User roles:
  - **Member (default):** Can share books and borrow books.
  - **Admin:** Can manage all books and users, and remove inappropriate entries.

✦ **Book Management**

- Add new books with details: title, author, category, type (physical/digital).
- For **physical books**: include location/availability notes.
- For **digital books**: upload file (e.g., PDF) or provide a download link.
- Edit or delete only books added by the logged-in user.

✦ **Borrowing & Returning Workflow**

- Members can search/filter books by title, author, or category.
- **Borrow Request:**
  - Borrower clicks *"Request to Borrow"*.
  - A small form appears to propose **date, time, and location** for exchange.
  - Request is stored in the database and sent to the owner's dashboard.
- **Owner Actions:**
  - View incoming requests.
  - Accept, reject, or suggest an alternative (edit request fields).
- **Borrow Confirmation:**
  - Once accepted, system marks book as *Borrowed*.
  - Borrow request details (date, time, location) are visible to both users.

- **Returning:**
    - *Physical books:* Owner marks as *Returned*.
    - *Digital books:* Borrower clicks *Mark as Returned* (or system auto-returns after 7 days).
- Book status always flows as: **Available → Borrowed → Returned**.

✦ **User Dashboard**

- **My Books (Shared):** Books added by the user + requests from others.
- **Borrowed Books:** Books borrowed by the user + scheduled exchange details.

✦ **Admin Dashboard**

- View all listed books.
- Remove duplicate/inappropriate entries.
- Manage or block abusive users.

How Sharing & Borrowing Works:

Physical Books:

- **Sharing:** Member adds details → marked *Available*.
- **Borrowing:** Borrower submits request with proposed date, time, and location.
- **Scheduling:** Owner reviews and accepts/rejects/suggests changes.
- **Exchange:** Actual handover offline → system marks book as *Borrowed*.
- **Returning:** Owner marks as *Returned* once the book is received back.

Digital Books:

- **Sharing:** Member uploads file or adds download link.
- **Borrowing:** Borrower clicks *Borrow* → download allowed, status *Borrowed*.
- **Returning:** Borrower clicks *Mark as Returned* (or system auto-returns).

Required Tools

Frontend

- HTML, CSS, JavaScript (UI, forms, and interactions)

Backend

- Flask (Python) – backend framework
- SQLite – database
- Flask-Login – authentication/session management
- Werkzeug – password hashing
- Jinja2 – template rendering

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