Library Management System Report

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Description

The Library Management System is a web-based application designed to manage a library's resources efficiently. It allows users to browse books, search for specific titles or authors, borrow books, and manage their account information. Additionally, librarians have access to features such as adding new books and sections and managing them.

Technologies Used:

- **Flask:** Used as the backend framework for handling HTTP requests and responses.
- **Flask-SQLAlchemy**: Utilized to interact with the database and define the application's models.
- **Jinja2:** Used for rendering HTML templates with dynamic content.
- **Python:** Programming language used for backend logic and route handling.
- **SQLite:** Database management system used for storing application data.
- **HTML/CSS:** Markup language and styling used for creating web pages.

Database Schema

The application utilizes the following database schema:

Users: Stores information about library users including their name, contact(email) details, and role (e.g., admin, customer).
Sections: Represents different sections or categories of books in the library.
Books: Contains details about individual books such as title, author, content, quantity, and section association.
Carts: Tracks the items added to the user's cart for checkout purposes and current issues.

Issues: Records information about books issued to users.
Feedback: Stores feedback provided by users for books they have interacted with, including ratings and comments.

Features and Functionality:

- **User Registration and Authentication:** Users can register for an account and log in securely to access library services.
- **Browsing and Searching:** Users can browse through different sections and search for books based on titles, authors, or content.
- **Book Management**: Administrators can add new books to the library, update existing book details, and delete books as needed.
- **Section Management:**Administrators can add new sections to the library, update existing sections and delete sections as needed.
- **Issue Management:** Users can borrow books, and administrators can handle book issuance and return processes.
- **Feedback Collection:** Users can provide feedback and ratings for books they have read, helping improve the library's collection.
- **Role-Based Access Control**: Different roles such as admin and customer have distinct permissions and access levels within the system.

A short demo video link is here Video link .