

Project Name: Library Management System

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Description:

This library management app offers a comprehensive solution tailored to the needs of both librarian and students. Librarians can efficiently manage sections and e-books while controlling access, ensuring smooth operations. Meanwhile, students benefit from easy e-book requests, reading, and downloads, with additional features like audio versions for enhanced accessibility. This app supports multiple user roles, including librarian and students.

Technologies Used:

Flask: Utilized as the core backend framework for routing and request handling.

Flask-SQLAlchemy: Implemented for efficient database management, provides structured data storage.

HTML/CSS: Utilized for the frontend development and user interface.

Jinja2: Integrated for template rendering, enabling the dynamic generation of HTML content. Bootstrap: Integrated to enhance the application's visual design.

SQLite: Selected as the database management system, ensuring data storage and retrieval.

Flask-Login: Implemented to manage user authentication and session handling.

Flask-RESTful: Implemented to create a set of RESTful APIs.

API Design:

The project includes APIs for managing books and sections. It allows creating, updating, and deleting records using RESTful endpoints.

Book API: /api/book: CRUD operations for books.

/api/book/<int: book_id>: Get, update, or delete book details.

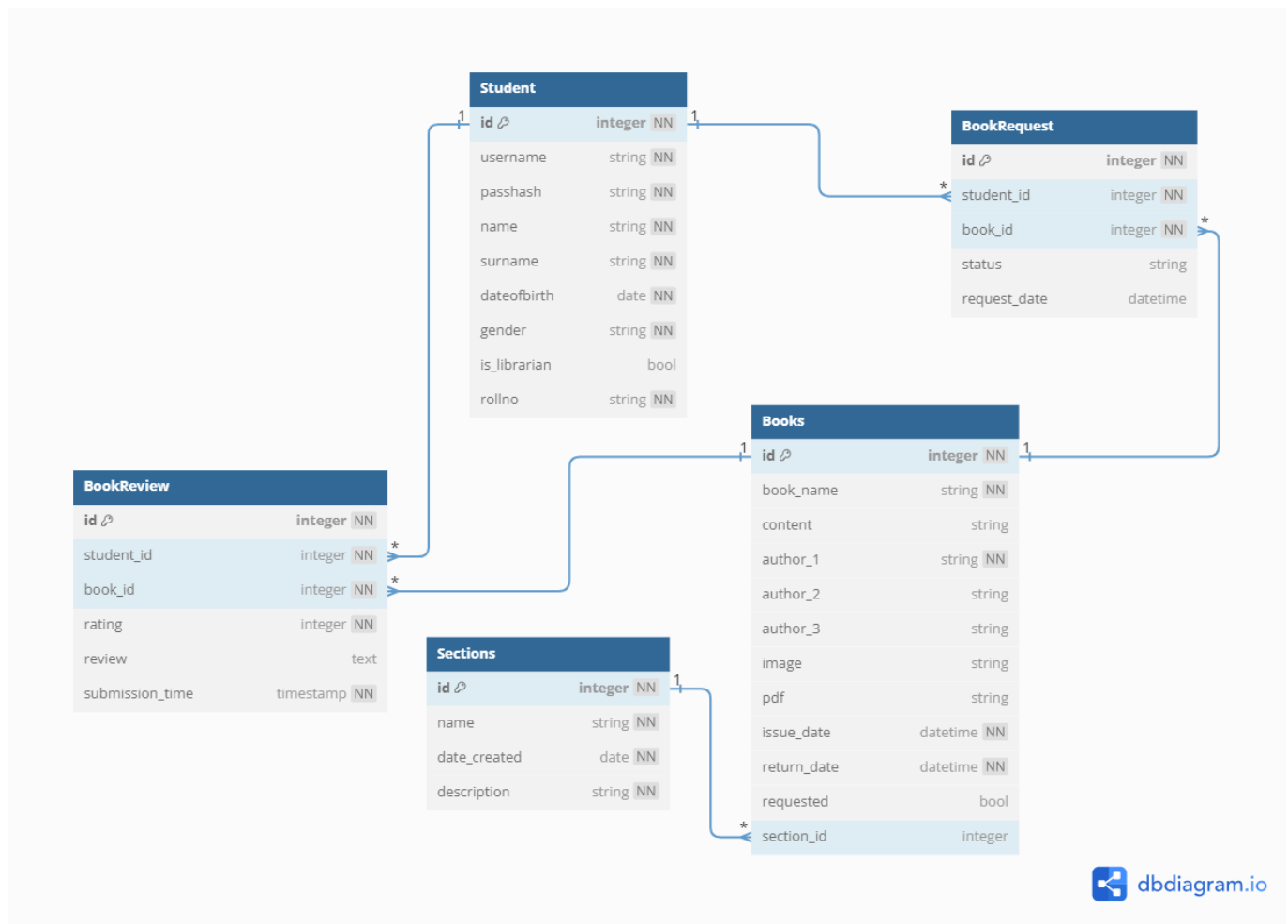
Section API: /api/section: CRUD operations for sections.

/api/section/<int: section_id>: Get, update, or delete section details.

Architecture:

- app.py: Contains the main application logic and routes.
- templates/: HTML templates for rendering pages.
- static/: CSS, images and pdf files.
- models.py: Defines the database models.
- api.py: Defines the RESTful APIs.

Database Schema Design:



Features:

- Student Registration and Login: Student can register them, log in, and have personalized experience.
- Librarian Login: Librarian can login and manage all the activities related to Library Management System.
- Sections and Books Management: Student can browse a vast collection of e-books with different sections, read them online, can pay money and download pdf file of the e-book, and even can listen it as an audio book also. Librarian can create and manage different sections and add different books to different sections.
- e-Books reviews: Student can provide ratings and reviews for their book and app calculates average ratings for each e-Book.
- Search Functionality: Student can search for e-Books based on e-Book name, section name, author name.
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