MAD 1 PROJECT

LIBRARY MANAGEMENT SYSTEM

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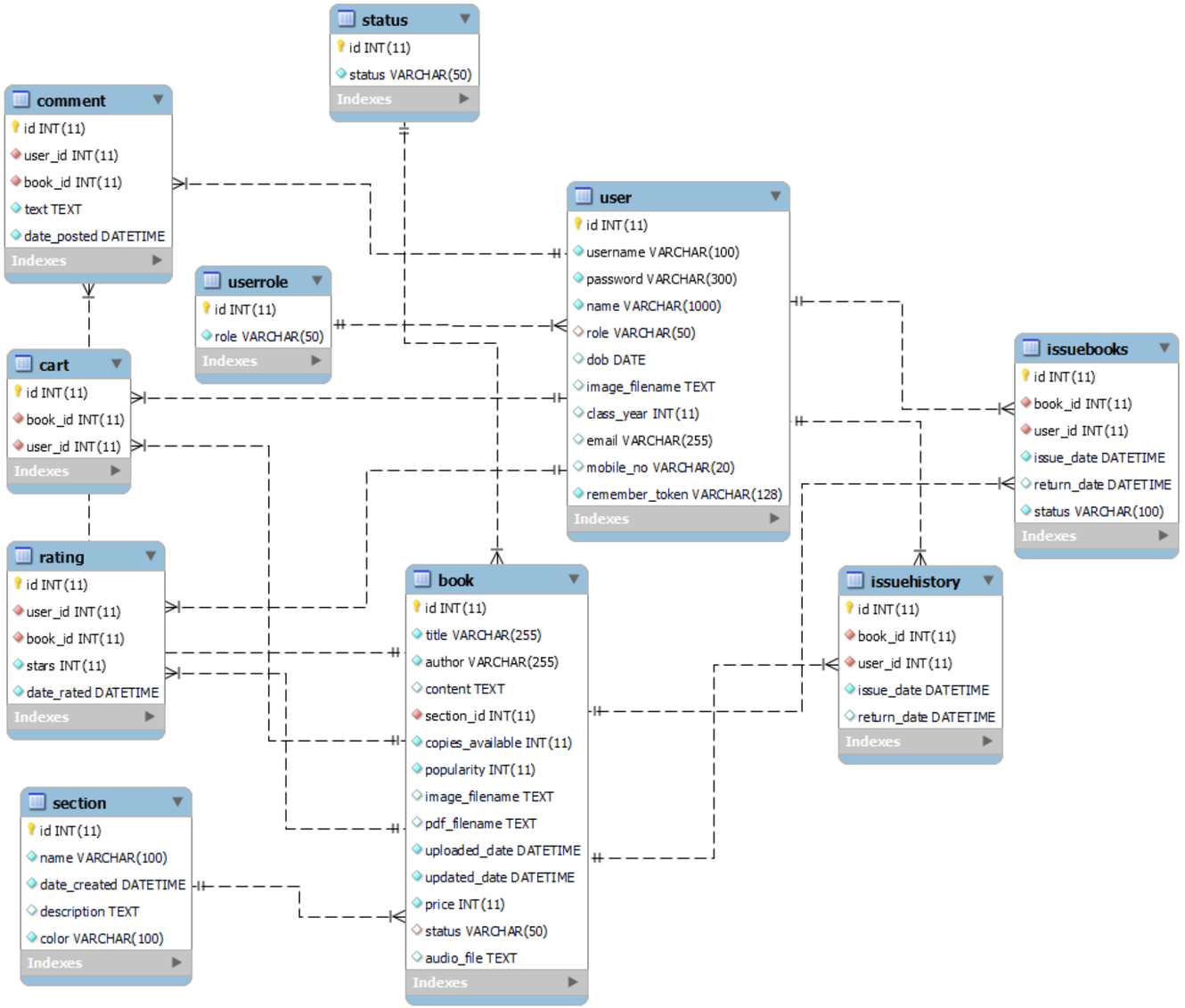
MODEL & ER DIAGRAM



INTRODUCTION

Our database model serves as the foundation for organizing and managing data within our application. It is crucial to understand the structure and relationships between entities to ensure efficient data management and retrieval. In this presentation, we provide an overview of our database model, focusing on key entities and their relationships.

MODEL & ER DIAGRAM

User Entity: The User entity represents individuals registered within our system. It captures essential user information such as username, password, name, role, date of birth, contact details, and profile picture. Users can have various roles, including Super Admin, Librarian, and regular User.

Book Entity: The Book entity encapsulates details about the books available in our system. It includes attributes like title, author, content, section ID, copies available, popularity, image and PDF filenames, upload and update dates, price, status, and optional audio file. Books are associated with sections to categorize them effectively.

Section Entity: Sections are organizational units used to categorize books. Each section has a unique name, creation date, description, and color. Sections can contain multiple books, establishing a one-to-many relationship between Section and Book entities.

IssueBooks Entity: The IssueBooks entity manages the issuance of books to users. It records details such as the book ID, user ID, issue date, return date, and status. This entity facilitates tracking borrowed books and their respective users.

Cart Entity: The Cart entity facilitates the temporary storage of books selected by users for later purchase or borrowing. It maintains associations between books and users, allowing users to add and remove items from their carts.

Comment Entity: Comments allow users to provide feedback or reviews on specific books. The Comment entity captures the user ID, book ID, comment text, and posting date, facilitating interaction and engagement within the platform.

Rating Entity: Ratings enable users to rate books based on their experience. The Rating entity records the user ID, book ID, star rating, and rating date, providing insights into the popularity and quality of books.

IssueHistory Entity: The IssueHistory entity maintains a historical record of book issuances. It stores details such as the book ID, user ID, issue date, and return date, facilitating tracking and analysis of past transactions.

Our key features

ONLY MAIN FEATURES

- User Authentication
- Cart Functionality
- Dashboard Analytics
- Rating and Comments
- Issue and Return
- Read and Text-to-Speech

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API Endpoints and Possible Outcomes

05.

/submit_comment

- Outcome: Allows users to submit comments for a specific book.
- Possible outcomes:
  - Successfully submits a comment for the book.
  - Returns an error if the comment submission fails.

/rate_book/int:id

- Outcome: Enables users to rate a book.
- Possible outcomes:
  - Successfully submits the rating for the book.
  - Returns an error if the rating submission fails.

/checkout

- Outcome: Facilitates the checkout process for users.
- Possible outcomes:
  - Generates a downloadable zip file containing selected books.
  - Returns an error if the checkout process encounters any issues.

/dashboard

- Outcome: Provides insights and statistics about the library system.
- Possible outcomes:
  - Displays a dashboard with information such as total pending books, issued books, average rating, etc.
  - Returns an error if there are issues generating the dashboard data.

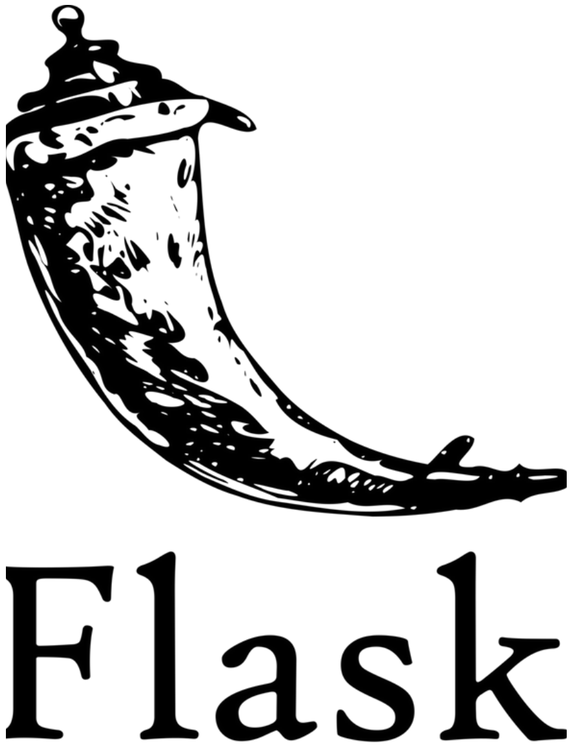
/accept_request/int:id

- Outcome: Handles the acceptance of a book issuance request.
- Possible outcomes:
  - Updates the status of the book issuance request to "issued."
  - Returns a success message upon successful acceptance of the request.
  - Returns an error if the request is not found or if the acceptance process fails.

/delete_section/int:section_id

- Outcome: Allows deletion of a section from the library.
- Possible outcomes:
  - Successfully deletes the section and associated books.
  - Returns an error if the deletion process fails.

AND MANY MORE



TECHNOLOGY USED

- Flask
- Flask-SQLAlchemy
- SQLite
- Azure Cognitive Services
- Matplotlib
- Werkzeug
- Pytz
- PyMuPDF (fitz)
- Zipfile
- pdfjsLib
- Chart.js

Additionally, the system employs HTML, CSS, and JavaScript for building and styling web pages.