LIBRARY MANAGEMENT SYSTEM

About Me:

Name: Shreyan Saha
Roll Number: 23f2003749
Email: 23f2003749@ds.study.iitm.ac.in

PROJECT DESCRIPTION

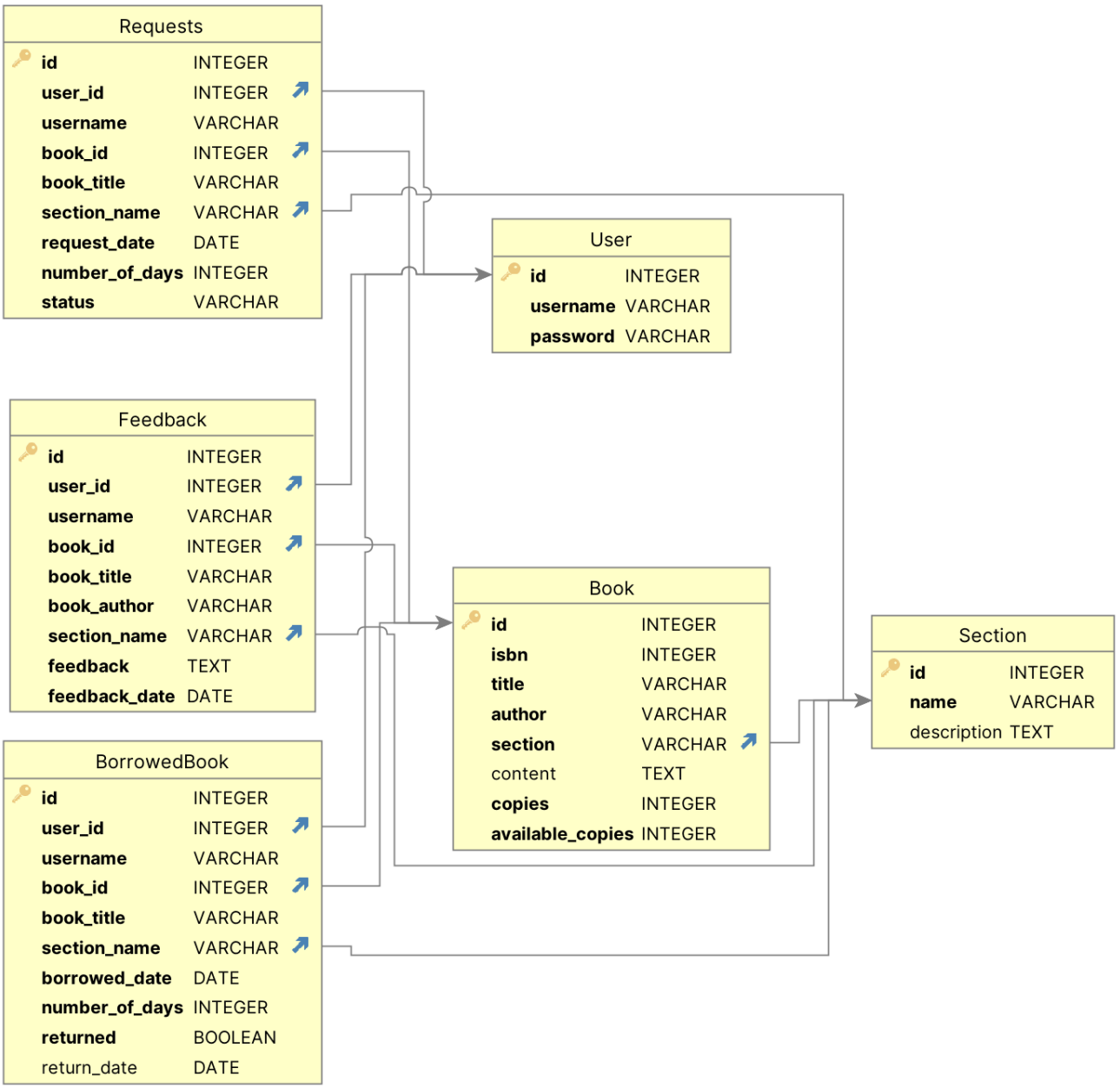
This is a library management system project which is an efficient system for the librarian and the students to borrow and read books and keep track of them.
It serves as an efficient medium for students to access all the books at one place, search for them and request access to them, whereas the librarian has the benefit of having everything at his/her dashboard like book requests, available books and sections,etc along with useful graphs and charts to keep track of the variety of books available. The same is available for students who can keep track of the books they have borrowed and returned.

Technologies Used

- **Flask**: For building the backend framework of the system and managing routes.
- **SqlAlchemy:** It is an ORM tool which helps the flask framework to interact with the database.
- **Jinja2:** It is a python based templating engine which helps to render templates with dynamic data, allow inheritance of templates and generate contents dynamically
- **HTML/CSS/Javascript:** These technologies have been used for frontend development and user interactions.
- **Charts.js**: It has been used to create interactive charts for the user and librarian

Database Schema

The database six tables named **User** (for storing user data) , **Section** (for storing the sections), **Book** (for storing all the information related to books), **Requests** (for storing the history of book requests), **BorrowedBook** (for storing information about the books borrowed), **Feedback** (for storing the feedback given by the users)



ARCHITECTURE

1. **models.py** : Contains the table models for the database which gets created (if the database does not exist) everytime the app runs.
2. **Templates** : Contains all the necessary templates (html) files for the user and the librarian

3. **app.py**: Contains the flask application which defines the routes and fetches data from the database and passes it to the html templates

FEATURES

1. User : Every user can view all the books available in the library, search for them and request to borrow the book. They can view the sections available and the number of books per section. The my books option allows the user to view the books borrowed and the books that have been returned already. The borrowed books are available for reading and returning which also asks the user for feedback before submitting the return request. The user dashboard shows its borrowed and returned statistics in the form of a pie chart.

2. Librarian: The librarian can view,edit and delete sections and books as well as add new books and sections. He/she can also delete and view users and the number of books borrowed and returned.
   The dashboard shows the requests made by the users for borrowing a book. There is an option to view the feedback given by the user. There are charts available to show the number of books available per section.

Video Link: Demonstration_Video.mkv