Library Management System

Venkatachalam Subramanian Periya Subbu
21f3001922@ds.study.iitm.ac.in
21F3001922

1 Introduction

A library management system is software that organizes library resources, facilitates borrowing, and manages administrative functions for efficient library operation. It is an application built using Python-Flask, SQLAlchemy,Java Script, Vue.js, HTML, and CSS.LMS ensures scalability, security, and user-friendly interfaces. It optimizes library workflows, improves resource discovery, and empowers librarians to provide better services to patrons.

2 Technologies Used

2.1 Python-Flask

It is a web framework written in Python implemented on Werkzeug and Jinja2.Flask was used for back-end framework.

2.2 Java Script and Vue.js

JavaScript is a versatile programming language used for web development, enabling dynamic and interactive features. Vue.js is a progressive JavaScript framework for building user interfaces, offering simplicity, flexibility, and performance optimization, making it popular for creating modern web applications and single-page applications.

2.3 SQLite and SQLAlchemy

SQLite is a database engine written in the C programming language. It was mainly used for storing data of the web application.
SQLAlchemy is a Python SQL toolkit and Object Relational Mapper used for data access and manipulation.

2.4 HTML and CSS

HTML is a markup language used for creating web pages and CSS is used for web page styling. HTML and CSS make the backbone of front-end development of Blog Lite.

3 Models Used

3.1 Member

It is a class that represents the use personal and user credentials data. It contains the attributes: Member ID, Name, Date of Birth, Email, Username, Password, Last Visited etc. The Primary Key is the UserId and all attributes are non-null able. Further, Username, Password, and Email is unique.

3.2 Books

It is a class that represents the information of books created by librarian. It contains the attributes: Book ID, Section ID, Title, Description,File Path etc. The Primary Key is the Book ID, which is incremental and unique. The Foreign Key is the Section ID which is the primary key (Section) in Section model and all attributes are non-null able.

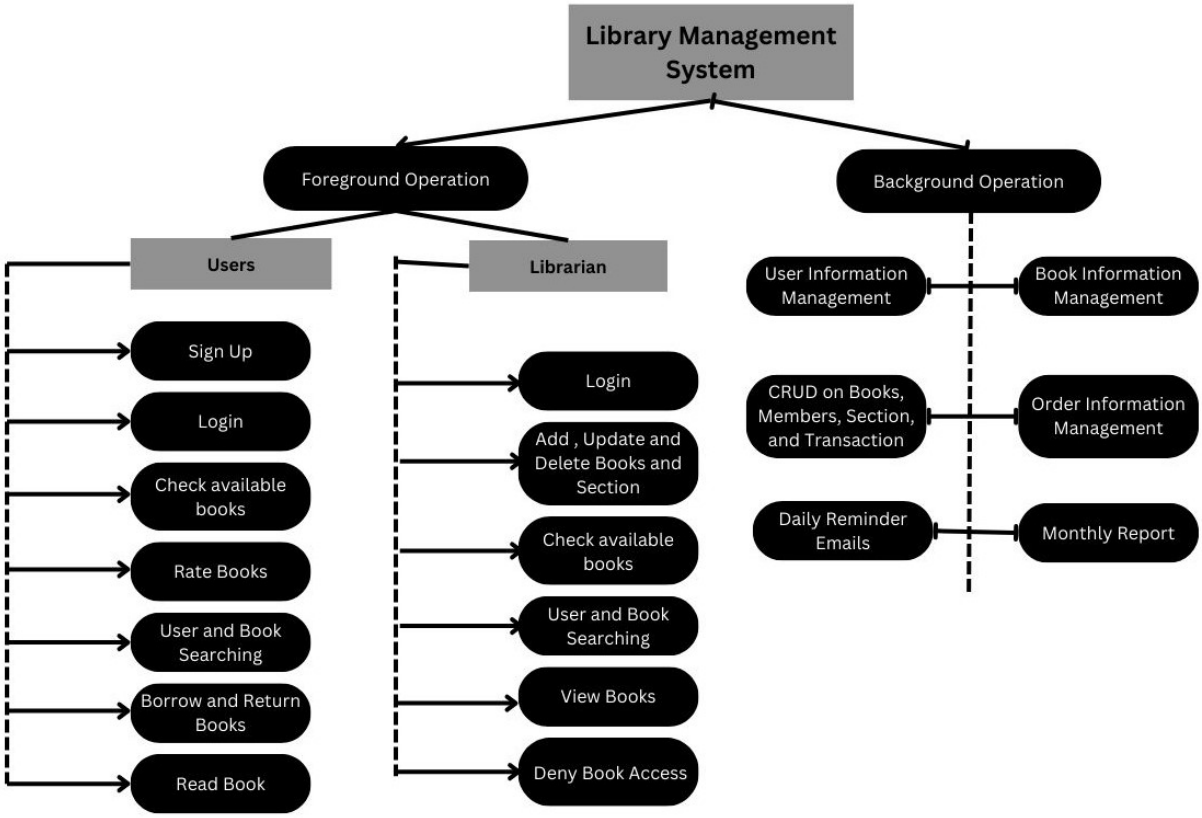
3.3 Section

It is a class that represents the information of each section in the library. It contains the attributes: Section ID, Name, Description and Date Created. The Primary Key is the Section ID, which is incremental and unique and all attributes are non-null able.

3.4 Transaction

It is a class that represents the data of all orders.It shows who which book. The attributes are transaction id, book id, issue date, return date, overdue, etc.

4 System Design



5 Video

https://drive.google.com/file/d/1yncWVdmm0tbXM1K4Kwe6NmMfnmGWHP-g/view?usp=drive$_{l}ink$