Library Management System Project Report

About Me

Name: Rahul Kumar

Roll No.: 23DP2000035

Subject: Modern Application Development – I Project

Course: Diploma in Programming

About The Project

This is an online Library Management System web application project based on MVC model. In this project there will a Librarian(admin) and several users. There are many Sections and each section can have multiple books, the librarian can perform CRUD operations on Sections and Books. A new user can register on Library Management System website and the he/she can start reading books. User can request librarian to issue a book. The librarian has authority to either grant or reject the request. A user can get maximum 5 books issued. Both librarian and user can search and get the search results based on Book, Section and/or Author. Both librarian and user can see some basic stats in the form of graph. User can also buy a book (only after book is issued). CRUD operation for sections can also be performed using API. The end point for it is /api/sections and for POST, PUT & DELETE(only section_id is required) request use the below JSON body data format

```
{
        "section_id": "CSE",
        "section_name": "Comp. Science",
        "section_description": "This section is for Computer Science"
}
```

Note: For running Library Management System web application, please refer to **readme.md** file present inside the root folder of the project. The database schema has already been created with Librarian login credentials mentioned below. Few sections with some books have also been created.

Librarian Credentials

- Username: **librarian**
- Password: **123**

Video Link: https://drive.google.com/file/d/1CMqGTDSrKrsJHtqRPfOW3g0KdiJ-nkdH/view?usp=drive_link

Packages/Libraries Used in the Project

- **Flask** (framework for creating this Library Management System web application)
- **Jinja2** (for generating dynamic HTML content)
- **Flask SQLAlchemy** (for working with database)
- **Flask RESTful** (for API)
- **fpdf** (for pdf generation and download)
- **Matplotlib** (for graphs)

File/Folder Structure

root
|--- application
| |--- controllers.py
| |--- database.py
| |--- model.py
| |--- resources.py
|--- instance
| |--- database file
|--- static
| |--- all static files (CSS, images, etc.)
|--- templates
| |--- all HTML files
|--- app.py
|--- README.md
|--- requirements.txt

DB Schema Design