IEEE Student Chapter, BITS Pilani

Task 2 (Backend Web Development) - Library Management System

This task aims to make you proficient in object-oriented programming as we would deal with classes a lot in actual projects. **The language to be used is Python.**

A Library Management System is a software built to handle the primary housekeeping functions of a library. Libraries rely on library management systems to manage asset collections and relationships with their members. Library management systems help libraries keep track of the books and their checkouts, as well as members' subscriptions and profiles. Library management systems also involve maintaining the database for entering new books and recording books that have been borrowed with their respective due dates.

We will focus on the following set of requirements while designing the Library Management System:

1. Any library member should be able to search books by their title, author, and subject category as well as by the publication date.
2. Each book will have a unique identification number and other details including a rack number which will help to physically locate the book.
3. There could be more than one copy of a book, and library members should be able to check out and reserve any copy. We will call each copy of a book, a book item.
4. The system should be able to retrieve information like who took a particular book or what are the books checked-out by a specific library member.
5. There should be a maximum limit (5) on how many books a member can check out.

6. There should be a maximum limit (10) on how many days a member can keep a book.
7. The system should be able to collect fines for books returned after the due date.
8. Members should be able to reserve books that are not currently available.
9. **Optional:** The system should be able to send notifications whenever the reserved books become available, as well as when the book is not returned within the due date.
10. Each book and member card will have a unique barcode. The system will be able to read barcodes from books and members' library cards.

Create a GitHub repository and push your code there and finally submit the link.

Resources:

1. VSCode installation:
   - Install and Use Visual Studio Code on Windows 10 (VS Code)
   - How to Install Visual Studio Code on Mac
2. Python installation on VSCode:

   For windows:

   - How to setup Python for VSCode in 2022 in 5mins! | Install Python a…

   For MacOS:

   - 🐍 How To Run Python in VSCode on a Mac M1 / Visual Studio Cod…
3. OOPS in Python:

   Corey Schafer's Playlist:

   Python OOP Tutorials - Working with Classes - YouTube

   Basics of OOPS for absolute beginners:

   - Intro to Object Oriented Programming - Crash Course
4. Git/GitHub tutorial:

   - Git & GitHub Tutorial For Beginners In Hindi - हिंदी में

   In English:

   - Complete Git and GitHub Tutorial