Midterm Report: Library Management System for College

# By:- Boring Asylum

# Progress Overview

# 1. Frontend Development

* The frontend interface has been polished and enhanced to ensure a more user-friendly experience. This includes the implementation of a clean and intuitive design that simplifies navigation and improves overall usability.

# 2. Backend Development

* The backend has been fully developed using Flask, a lightweight web application framework in Python.
* There has been successful integration of the backend with the frontend, ensuring seamless communication between the two layers. This integration facilitates real-time data updates and interactions, enhancing the overall functionality of the system
* But still we have to integrate Recommendation system's to Backend.

# 3. Recommendation System

* A sophisticated recommendation system is in the process of being integrated into the backend. The system employs a combination of three advanced techniques:
  + **Content-Based Filtering:** This method recommends items based on the features of the items and a profile of the user’s preferences. It analyzes the attributes of the books and matches them to user preferences.
  + **Collaborative Filtering:** This approach leverages the preferences of multiple users to generate recommendations. It identifies similarities between users or items to suggest books that similar users have liked.
  + **Hybrid-Based Filtering:** A combination of content-based and collaborative filtering methods to provide more accurate and diverse recommendations. This method enhances the system's ability to suggest books by combining the strengths of both approaches.
* The recommendation model has been deployed online for testing, allowing for real-time evaluation and adjustments based on user interactions and feedback.

# 4. Database Management

* A MongoDB database has been successfully connected to the backend. MongoDB's flexibility and scalability make it an ideal choice for managing the varied data associated with the library system.
* Databases have been created on MongoDB to efficiently store and retrieve information. This includes user data, book information, and transaction records, ensuring quick access and robust data management.

# 5. Online Deployment

* Whole website is hosted on **render,** this is demonstration of fully working of website in real-time.
* This is URL provided to visit the website given:

https://iit-dh-library.onrender.com

# Next Steps

* Try to make the UI more smoother.
* Complete the integration of the recommendation system into the backend.
* Conduct thorough testing of the entire system to identify and fix any bugs or issues.
* Finalize the documentation to provide comprehensive user guides and technical manuals.
* Prepare the system for deployment to ensure it meets all functional and performance requirements before going live.