

## *School of Computer Science and Engineering*



### **Online Library Management System**

### **Project Report Card** **B. Tech- III Sem (2023-2024)** **JAVA (E1UA307C)**

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## **Problem Statement**

The Online Library Management System (OLMS) is a comprehensive platform designed to streamline library operations and provide a seamless experience for both librarians and members. The primary aim is to enhance the efficiency of managing books, member accounts, and transactions while offering users the ability to search for books, borrow/return them, and view their borrowing history. Additionally, the system offers notifications for due dates and new book arrivals, improving communication between the library and its members.

## **Objectives**

The objectives of the OLMS are as follows:

- ❖ Simplify the process of managing books, members, and transactions for library staff.
- ❖ Provide members with easy access to the library catalog and borrowing services.
- ❖ Automate the notification process for due dates and new arrivals to reduce manual intervention.
- ❖ Track borrowing trends and generate inventory reports for better decision-making.

## **User Types**

### **1. Librarian:**

- Manages the library catalog, member accounts, and borrowing/returning transactions.
- Handles book inventory, updates, and notifications.

### **2. Member:**

- Can search for books, borrow and return books, and manage personal profiles.
- Receives alerts for due dates and new arrivals.

## **Key Functionalities**

### **For Librarians :**

- **Book Management:**
- **Member Management:**
- **Transaction Management:**

### **For Members :**

- **Book Search**
- **Borrow Book**
- **Return Book**
- **Borrowing History**
- **Notification Alerts**

## **System Dashboards**

### **Librarian Dashboard:**

1. **Book Management:** Display a list of books with options for adding, editing, or deleting.
2. **Member Management:** Manage members with options to create and update accounts.
3. **Transaction Management:** View and manage borrowing and returning transactions.
4. **Notification Management:** A panel for sending notifications to members.
5. **Inventory Reports:** Generate visual reports showing inventory status and borrowing trends.

## **Member Dashboard:**

- **Book Search History:** A table showing previously searched books.
- **Borrowing History:** A table of borrowed books and transaction details.
- **Profile Information:** Form to update personal information.
- **Notification Alerts:** Real-time alerts and settings to manage notification preferences.

## **Technologies Used :**

- **Frontend Technologies :**

We will use HTML/CSS/JavaScript Core web technologies for creating the user interface.

- **Backend Technologies :**

We will use Java to build the server-side logic.

- **Database Management Systems (DBMS) :**

Relational Databases Systems like MySQL or SQL Server we will use to store information about books, users, transactions, and other library-related data

## **Problems Solved by an Online Library Management System**

### **Inefficient Manual Processes**

- Problem: Traditional library management involves manual record-keeping, which makes tasks like tracking books, issuing or returning records, and maintaining inventory time-consuming and prone to errors.
- Solution: The system automates tasks such as cataloging, issuing, returning, and inventory management, leading to time savings and reduced errors.

### **High Chances of Human Error**

- Problem: Manual processes are prone to errors, including mistakes in data entry, book issuance, return dates, and fine calculations.
- Solution: Automation reduces human error by ensuring accurate record-keeping for book transactions, due dates, fines, and member information.

## **Summary:**

Overall, an online library management system addresses inefficiencies, accessibility challenges, and human error in traditional library operations. It enhances user-friendliness, operational efficiency, and digital capabilities, transforming the library into a more modern and effective resource center.