**Introduction**

The Library Management System (LMS) is a web-based application designed to help libraries manage their day-to-day operations efficiently. This system provides functionalities such as book management, user registration, and borrowing/returning books. Users can browse the catalog, search for books by title, category, or author, and view availability. For library staff, the system offers an administrative interface to manage inventory, update book details, and monitor user activities. The LMS simplifies the management of library resources while providing users with an intuitive and accessible way to engage with the library online.

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Overall, the Library Management System is designed to enhance user experience, increase operational efficiency, and create a more organized environment for managing a library's resources.

**Requirements**

**1.User Account**

The **User Account** in the Library Management System (LMS) plays a central role in managing interactions between the users and the system. The system aims to create a seamless experience by enabling easy registration, profile management, and access to key library services such as borrowing, reserving, and viewing book details.

#### **Registered Users:**

* **Profile Creation**: Users must register to gain full access to the system's functionalities. During registration, the user is required to provide personal details such as name, email address, contact information, and a password. Upon successful registration, a user profile is created and stored in the database.
* **Login & Authentication**: A registered user can log in with their credentials (username and password). The system securely verifies the credentials before granting access. A registered user can borrow books, view their borrowing history, reserve books, and manage their account details.
* **Borrowing & Reserving Books**: Once logged in, registered users can borrow or reserve available books. They can view their current borrowed books, due dates, and any associated late fees within their account.
* **Account Management**: Registered users can update their profile details, including contact information, password, and preferences. The system provides an option to reset the password in case the user forgets it.

The **User Account** feature ensures that the system remains secure while providing users with personalized services and access to the library’s resources based on their role.

### **2.Registration and User Profile**

The **Registration and User Profile** feature ensures that only registered users can borrow books. During registration, users are required to provide essential information such as their name, email address, physical address, and a password.

This information is stored securely in the system, creating a personalized user profile. Once registered, users can log in with their credentials to borrow books, view their borrowing history, reserve books, and manage their account details. The profile can be updated to reflect changes in personal information as needed.

### **3.Book Management**

The Book Management module forms the core of the Library Management System, providing essential features for organizing, maintaining, and updating the library's collection. This module ensures that the library’s resources are systematically categorized, allowing for easy access and retrieval of books by both library staff and users.

#### **Key Features:**

1. **Book Categorization**: Books can be classified into various categories like Fiction, Comedy, Thriller, and more, making it easier for users to browse and locate books by genre or category. This structured classification enhances the organization and discoverability of books.
2. **Book Inventory Management**: Library staff have access to an intuitive administrative interface where they can add, update, or remove books from the system. This includes adding new titles, modifying existing entries (such as changing the author, title, or category), and deleting outdated or unavailable books from the catalog.
3. **Tracking Availability**: The system keeps track of each book's status (available, borrowed, reserved) and updates it in real-time. Users can see if a book is currently available for borrowing or reserved by another user, and library staff can monitor the overall inventory and adjust as necessary.
4. **Book Search**: Users can search for books by various attributes such as title, author, ISBN, or category. The search function is optimized to return accurate and quick results, improving the overall user experience.
5. **Borrowing History**: For each book, the system maintains a record of its borrowing history. This feature enables staff to view previous borrowers and understand the book's demand. Users can also see their own borrowing history, ensuring transparency.
6. **Book Details**: Detailed information about each book is available within the system, including the title, author, publication date, genre, description, and current availability. Users can easily access this information when browsing the catalog or searching for specific titles.

The Book Management module significantly improves the efficiency of handling library resources, streamlining operations, and enhancing user satisfaction by providing a well-organized and easily accessible collection.