**National University of Computer and Emerging Sciences, Karachi**

**WEB PROGRAMMING**

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**Library Management System**

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**ABSTRACT:**

The Online Library Management System simplifies the organization and maintenance of library operations, including managing books, authors, library members, issued books, returns, and staff. Manual handling of this information is complex and prone to errors. The system automates these processes by leveraging technological advancements, reducing the workload and enhancing efficiency. This computerization streamlines the management of library resources and operations, minimizing manual effort and ensuring accurate record-keeping.  
  
**INTRODUCTION:**

The Library Management System is a versatile and comprehensive solution designed to meet the needs of both small and large libraries. Its flexible design allows it to be implemented across various library settings, including public, academic, joint-use, and specialized libraries. This software efficiently handles library operations, offering seamless management of books and related tasks. Built on a Windows-based platform, it leverages the latest advancements in Information Technology to enhance library services and streamline operations.  
  
**OBJECTIVES:**

* Automate library operations to improve efficiency and reduce costs.
* Save time for users and librarians by enabling quick book searches and prompt query responses.
* Simplify database management, including member tasks like registration and cancellation.
* Expedite stock checking and book verification processes.
* Systematically organize books by author, title, and subject for effortless searching.
* Support education by providing students with easy access to accurate and authentic information.
* Enhance accessibility with a web-based system to meet the needs of the digital age.
* Manage user and book details efficiently, including student information and addresses.

**TECHNOLOGY:**

* **Front End:**  
  • PHP (for server-side scripting)  
  • Bootstrap (for responsive design and pre-built CSS classes)  
  • Tailwind CSS (a utility-first CSS framework)
* **Back End:**   
  • MySQL (managed via PHPMyAdmin)
* **Text Editor:**  
  • VS Code Editor

**OPERATIONS:**

* Staff members must register themselves before accessing the system.
* Staff members can log in using their username and password.
* They can add, delete, or update book records in the system.
* Books can be issued to members upon request, and the records are updated accordingly.
* The system generates a fine slip based on the return date when a book is returned.
* Members can search for specific books by entering relevant book information.
* Staff members can update member records within the system.

**FEATURES:**

**Librarian (Administrator):**

* Issue books to members.
* View different categories of books available in the library.
* Access the list of books under each category.
* Process book returns from members.
* Add new books and their details to the database.
* Edit information of existing books.
* Generate and view reports of issued books.
* Access and manage student accounts.
* Manage fines accrued by members for overdue books.
* Add, edit, or deactivate member accounts.
* View member profiles, borrowing history, and account status.

**Member:**

* Browse different categories of books available in the library.
* View the list of books within each category.
* Search for specific books by title, author, or subject.
* View their borrowing history, including past transactions and due dates.
* Track the status of borrowed books and receive overdue reminders.

**SOFTWARE SYSTEM ATTRIBUTES:**

**Reliability:**  
The application efficiently stores and retrieves all information related to various processes within the system, ensuring accurate and reliable outputs.

**Availability:**   
The application is accessible to authorized employees of the organization, subject to their authorization permissions, ensuring availability to those who need it.

**Security:**  
The system includes robust authentication mechanisms to ensure secure access. Reports and sensitive data are accessible only to authorized library employees based on their specific requirements.

**Maintainability:**  
The system requires minimal maintenance. In the event of errors, users can reauthenticate using their credentials. It is designed to be flexible, allowing for adding new modules and upgrading existing ones with ease.

**CONCLUSION:**

The Library Management System project has successfully delivered a comprehensive platform to streamline library operations for both librarians and members. With efficient features such as book management and user authentication, the system enhances the user experience while improving administrative efficiency. By leveraging modern technologies like PHP, MySQL, Bootstrap, and Tailwind CSS, the system ensures scalability, security, and responsiveness. Overall, this project represents a significant step forward in modernizing library services and fostering knowledge sharing within the community.