**NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES**

**(KARACHI CAMPUS)**

**FAST School of Computing**

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**Database Project Proposal**

**Project Title**

Library Management System

**Instructor**

Ms. Fizza Mansoor

**Group Members**

21K-3279 Insha Javed

21k-4606 Sabika Shameel

**Section**

BSCS-5E

* 1. **Problem Statement**

The current manual library system is inefficient, leading to difficulties in tracking book availability, managing user records, and providing timely information to library patrons. To enhance library operations and user experience, we need to develop an automated Library Management System. This system should streamline book tracking, user management, reservation processes, circulation activities, and reporting, ultimately improving library efficiency and user satisfaction.

* 1. **Solution Statement**

The proposed solution is to develop a comprehensive Library Management System (LMS) that leverages a robust database to automate book tracking, user management, reservation processes, circulation activities, and reporting. The system will feature an intuitive user interface for both librarians and patrons, enabling efficient library operations, real-time access to book availability, seamless reservations, and streamlined circulation. The database-driven LMS will enhance accuracy, accessibility, and reporting capabilities, ultimately optimizing library resources and enhancing user satisfaction.

* 1. **Description of proposed Project**

The proposed Library Management System Database Project envisions an automated approach to traditional library systems, addressing their inherent inefficiencies and improving the overall management of library resources. The system will enable librarians to manage book information with ease, including titles, authors, genres, editions, availability status, and physical locations within the library. Each book will be assigned a unique identifier, facilitating efficient tracking and organization of the library's collection.

Moreover, the database will play a crucial role in the management of library patrons. Detailed user records, encompassing names, contact details, borrowing history, and individual preferences, will be securely stored. This centralized information will enable librarians to efficiently handle various user-related aspects, streamlining their interactions and engagement with the library.

Patrons will have the convenience of reserving books, and the system will automatically manage check-in and check-out processes, eliminating manual intervention and enhancing the overall user experience. This automation will reduce waiting times and improve the availability of requested books.

In conclusion, the successful implementation of this Library Management System Database Project holds the promise of significantly enhancing library efficiency and patron satisfaction. By providing accurate, real-time information and streamlining operations, the system is poised to reduce manual errors and contribute to a modernized and efficient library experience for both librarians and patrons alike.

* 1. **Features/Functions of the project.**

We are going to cover below functionalities in projects

* User/staff login(user id and password)
* A complete detailed record of the books.
* Book reservation
* Book return and add in available stock
* Update due date
* Staff can view borrowed books record
* Student will be able to search for books
* Librarian will be able to search for a student record.
* Add/delete/update book details
* Update availability of books.
  1. **Tools and Techniques to be used**
* Front End Technologies

ReactJS (Javascript Library)

* Back End Technologies)

Node.js

Oracle SQL Developer