**National University of Computer & Emerging Sciences**

**Karachi Campus**



**Library Management System**

**Project Proposal**

**Object-Oriented Programming**

**Section: F**

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Project Proposal

**Introduction:**

In an era where digital solutions are transforming traditional processes, the Library Management System (LMS) stands as a testament to the modernization of library operations. Our project aims to develop a comprehensive LMS using C++ programming language and Text files for data storage, with the possibility of incorporating a graphical user interface (GUI) using the Simple and Fast Multimedia Library (SFML). This system will revolutionize how libraries manage their resources, enhance user experiences, and streamline administrative tasks.

**Existing System:**

Currently, many libraries rely on manual methods or outdated software for managing their operations. These systems often lack features such as real-time book availability, automated notifications, and seamless user interactions.

**Problem Statement:**

The existing systems may face issues such as:

* Lack of real-time book availability information.
* Inefficient borrowing and returning processes.
* Manual tracking of penalties for late returns.
* Limited user account management functionalities.

**Proposed Solution:**

Our Library Management System will address these issues by introducing the following new features:

* Real-time book availability status.
* Streamlined borrowing and returning processes.
* Penalty calculation and management for late returns.
* Enhanced user account management with roles (admin, user).

**Salient Features:**

Key features of the proposed Library Management System include:

* User-friendly GUI for easy navigation.
* Admin dashboard for managing books, users, and transactions.
* User accounts with login/logout functionality.
* Add, edit, and delete books from the library.
* Borrow books with due date notifications.
* Return books with penalty calculation for late returns.
* Search functionality for finding books based on various criteria.

**Tools & Technologies:**

The project will be developed using the following tools and technologies:

* Programming Language: C++
* Filing : Text files for data storage
* GUI Framework: Simple and Fast Multimedia Library (SFML)
* Operating System: Compatible with Linux and Windows platforms

**Conclusion:**

The proposed Library Management System aims to revolutionize the way libraries operate by introducing modern features for efficient book management and user interactions. By leveraging C++, txt files, and SFML, we will create a robust and user-friendly system that meets the needs of both administrators and library patrons.