Library Management System
Documentation

This document provides an overview of the code structure and functionality of the Library Management System implemented in C++.

1. Global Constants

MAX_BOOKS: Maximum number of books that can be stored in the system.

MAX_MEMBERS: Maximum number of members that can be registered in the system.

PASSWORD_FILE: File path for storing the system password.

2. Data Structures

Book: Structure representing a book with attributes title, author, year, and id.

Member: Structure representing a member with attributes name and id.

3. Function Prototypes

logInSystem(): Function for user login.

passwordReset(): Function to reset the system password.

addBook(Book books[], int &bookCount): Function to add a book to the system.

verifyPassword(const string &inputPassword): Function to verify the entered password.

savePassword(const string &newPassword): Function to save the new password.

loadMembersFromFile(Member members[], int &memberCount): Function to load member data from file.

loadBooksFromFile(Book books[], int &bookCount): Function to load book data from file.

menuOptions(): Function to display menu options and handle user input.

listBooks(const Book books[], int bookCount): Function to list all available books.

findBook(const Book books[], int bookCount): Function to find a book by ID.

deleteBook(Book books[], int &bookCount): Function to delete a book by ID.

addMember(Member members[], int &memberCount): Function to add a new member to the system.

listMembers(const Member members[], int memberCount): Function to list all registered members.

deleteMember(Member members[], int &memberCount): Function to delete a member by ID.

saveBooksToFile(const Book books[], int bookCount): Function to save book data to file.

saveMembersToFile(const Member members[], int memberCount): Function to save member data to file.

issueBook(int issuedBooks[MAX_BOOKS][MAX_MEMBERS], int bookCount, int memberCount): Function to issue a book to a member.

listIssuedBooks(const int issuedBooks[MAX_BOOKS][MAX_MEMBERS], const Book books[], int bookCount, const Member members[], int memberCount): Function to list all issued books.

4. Main Function

The main() function initiates the program by displaying the login prompt and calling the logInSystem() function.

5. File Handling

Functions saveBooksToFile() and saveMembersToFile() are responsible for saving book and member data to separate text files respectively. Similarly, functions loadBooksFromFile() and loadMembersFromFile() are used to load data from these files into the system.

6. Password Management

The verifyPassword() function checks if the entered password matches the stored password in the password.txt file. The passwordReset() function allows the user to reset the system password.

7. Menu Options

The menuOptions() function displays a menu of options for the user to choose from and handles the user input accordingly.

8. Book and Member Management

Functions such as addBook(), deleteBook(), addMember(), and deleteMember() provide functionality for managing books and members within the system.

9. Issuing and Listing Books

The issueBook() function allows a member to issue a book, and listIssuedBooks() lists all books that have been issued to members.