Library Management System

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Objective: To develop a console-based Library Management System using C++ and Object-Oriented Programming (OOP), allowing management of books including issuing, returning, adding, deleting, and viewing.

Features: Add Book: Add new books with title, author, and ID. **Delete Book:** Remove a book using its ID. **Search Book:** Search by title or author. **Issue Book:** Issue a book to a user and update status. **Return Book:** Mark a book as returned. **Display All Books:** Show all books with details.

Classes Used: Book - Attributes: bookID, title, author, status. Methods: addBook(), displayBook(), issueBook(), returnBook() **Library** - Attributes: collection of Book objects. Methods: addBook(), deleteBook(), searchBook(), displayAllBooks()

Technologies Used: C++, Object-Oriented Programming, File Handling

File Structure: Book data is saved to a text file (e.g., library.txt) with status updates on issue and return. Data persists between sessions.

Sample File Format:
Book ID: 101
Title: The Alchemist
Author: Paulo Coelho
Status: Available

Sample Console Menu:
1. Add New Book
2. Delete Book
3. Search Book
4. Issue Book
5. Return Book
6. Display All Books
7. Exit

Future Enhancements: Add login for students Track due dates and late fines Convert to GUI version using Qt or Python Store data using binary files or database

Conclusion: This project showcases key OOP concepts in C++ and practical implementation of file-based data management for libraries.