Project Report

# Library Management System

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## 1. Introduction

The Library Management System is a console-based C++ project designed to handle the basic operations of a library. It allows users to add books, display book lists, borrow books, and return borrowed books. This project helps in understanding fundamental concepts of arrays, functions, conditionals, and loops in C++.

## 2. Features of the System

- Add New Book: Users can add a book by entering the book ID, title, and author.

- Display All Books: Lists all books with their current status (Available/Borrowed).

- Borrow Book: Allows a user to borrow a book by entering its ID.

- Return Book: Allows returning a previously borrowed book.

- Menu System: Provides a user-friendly interface to navigate options.

## 3. Technologies Used

- Programming Language: C++

- IDE: Visual Studio Code

- Platform: Console application

## 4. System Design

- Uses arrays to store information about books.

- Uses boolean flags (true/false) to track the borrowed status.

- Loops and conditional statements are used to navigate and control the flow.

- A menu-driven interface improves usability.

## 5. Limitations

- Does not support book titles or author names with spaces.

- Data is not saved after the program closes (no file/database integration).

- Limited to 100 books due to array size.

## 6. Conclusion

The Library Management System is a helpful educational project that demonstrates how basic programming concepts can be applied to solve real-world problems. It serves as a foundation for more advanced systems that include databases and graphical interfaces.