Library Management System

Submitted by

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Introduction

- The Library Management System is a simple Java-based application designed to manage books in a library.

- It allows users to add new books, issue books to members, return books, and view the list of available and issued books.
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  The system uses **functions (methods)** for modular code and **ArrayList** as the primary data structure for efficient book storage and management.

Working

1.Add Book – Allows the user to input the title and author of a book and store it in the system.

2.Display Books – Shows all books with their status (Available/Issued).

3.Issue Book – Marks a book as "Issued" when borrowed.

4.Return Book – Changes the status of a book from "Issued" back to "Available".

5.Exit – Terminates the application.

The system is fully menu-driven, where the user chooses an option from the menu, and the application executes the respective function.

Uses

- Manages book inventory for small libraries, schools, or colleges.

- Keeps track of which books are available and which are issued.

- Helps librarians or users efficiently manage the borrowing/return process.

- Can serve as a base model for developing larger and more complex library systems.

Advantages

- **Simple to Use** – User-friendly menu interface.
- **Fast Search & Updates** – Uses ArrayList for quick data handling.
- **No Need for Manual Records** – Reduces paper work.
- **Modular Design** – Easy to understand, maintain, and upgrade.

Disadvantages

- **No Data Persistence** – Data is lost after the program is closed (no database).
- **Limited Features** – Only basic operations are implemented.
- **Single-user Operation** – Cannot handle multiple users simultaneously.

Future Scope

•Integration with a **database (MySQL, PostgreSQL)** for storing data permanently.

•Addition of **search functionality** by book name or author.

•Implementation of **user accounts** for librarians and members.

•Adding **fine calculation** for late returns.

•Development of a **web or mobile app interface** for remote access.

THANK YOU