

# **LIBRARY MANAGEMENT SYSTEM – PROJECT REPORT**

## **1. Project Title:**

Library Management System in C

## **2. Introduction:**

The Library Management System is a console-based application written in C. It helps manage library operations such as adding, listing, deleting books, issuing books to students, and viewing issued books. The system uses binary file handling to store permanent records.

## **3. Objectives:**

- To provide a simple system for managing books in a library.
- To record student information for book issuance.
- To implement file handling and structure concepts in C.
- To create a user-friendly, menu-driven interface.

## **4. System Requirements:**

- **Hardware:** Basic PC with 1GB RAM and 100MB free disk space.
- **Software:**
  - Compiler: GCC or any C compiler
  - Operating System: Windows/Linux

## **5. Features:**

1. **Add Book:** Add a new book with ID, Name, Author, and Date.
2. **List All Books:** Display all book records from books.bin.

3. **Delete Book:** Remove a book record based on Book ID.
4. **Issue Book:** Assign a book to a student and save details in issued.bin.
5. **List Issued Books:** Display all issued book records.

## 6. Tools and Technologies:

- Programming Language: C
- Concepts: Structures, File Handling, Functions, Loops, Conditional Statements
- Libraries: stdio.h, stdlib.h, string.h, time.h

## 7. System Design:

### A. Structures:

- **Book:** Stores Book ID, Name, Author, and Added Date.
- **Student:** Stores Book ID, Book Name, Student Name, Class, Roll No, and Issue Date.

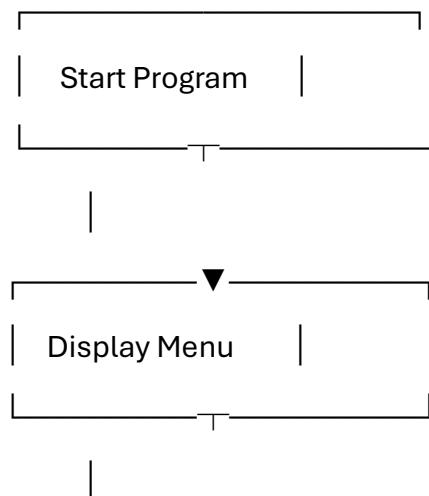
### B. Files:

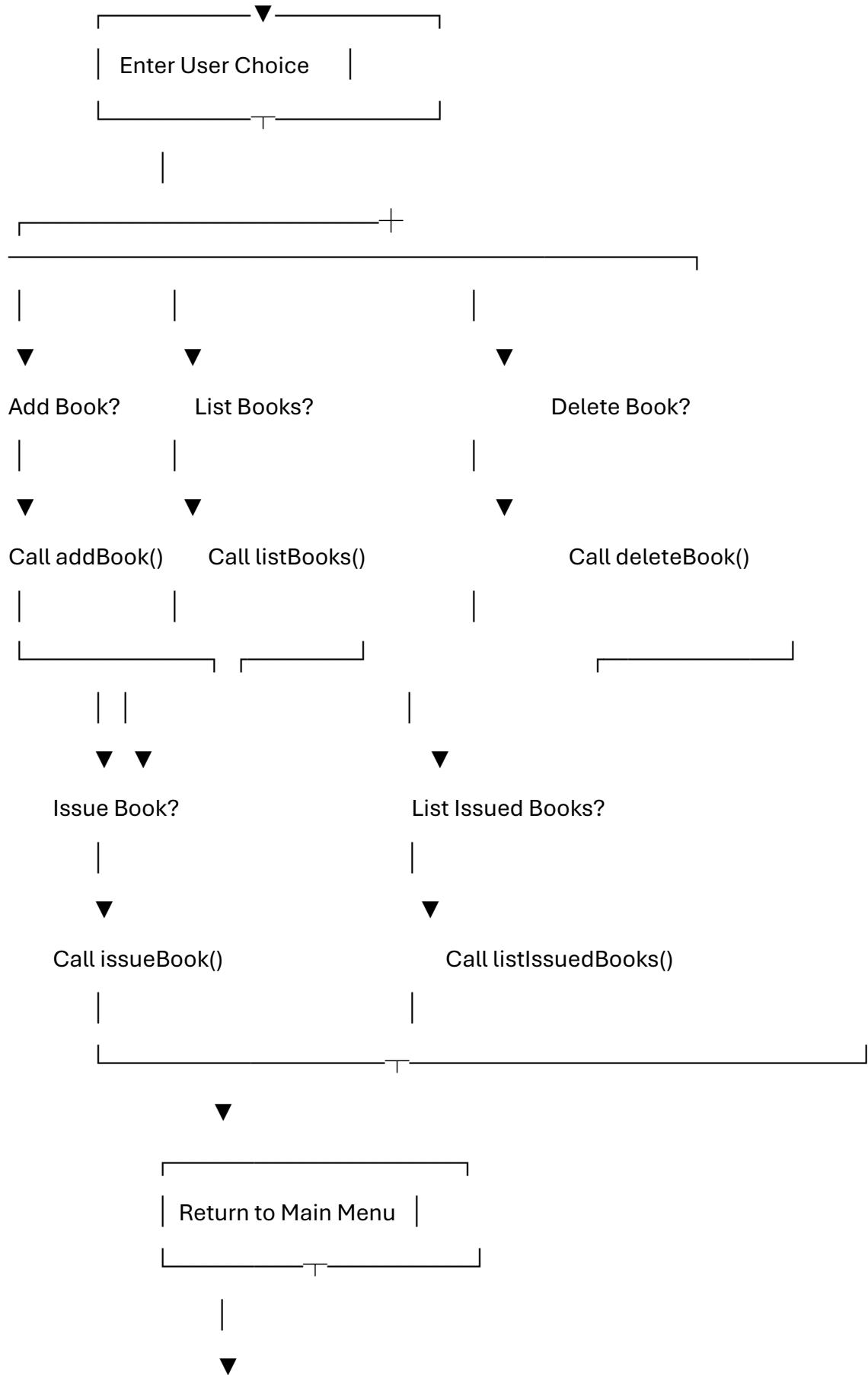
- books.bin – Stores book records.
- issued.bin – Stores issued book records.

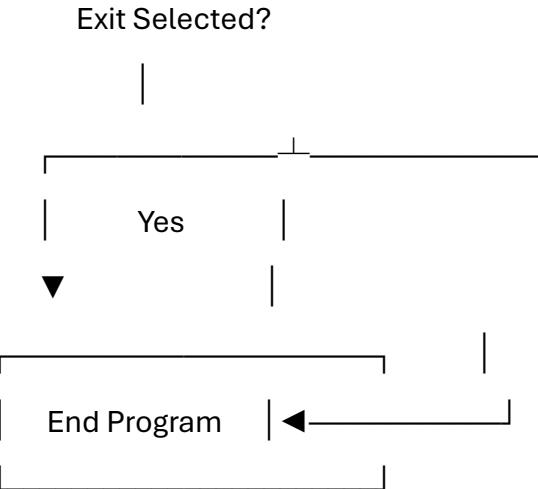
### C. Functions:

- addBook(), listBooks(), deleteBook(), issueBook(), listIssuedBooks(), clearBuffer()

## 8. Flowchart:







## 9. Program Logic:

1. Start program and display menu.
2. Accept user choice.
3. Perform corresponding operation:
  - o Add, List, Delete books
  - o Issue books
  - o Display issued books
4. Use binary file handling for permanent record storage.
5. Repeat menu until user exits.

## 10. Conclusion:

This Library Management System demonstrates practical use of C programming concepts like structures, file handling, and modular programming. It provides a simple, menu-driven interface for managing a small library and is a good example for beginners to understand data management in C.