Project 7: Library Management System - Student Project Report

# 1. Introduction

The Library Management System is a console-based Python project that allows users to manage a list of books. It includes features such as adding, viewing, searching, updating, and deleting books. The project is designed for beginners to understand file handling, class-based programming, and working with real-world data structures.

# 2. Learning Objectives

* • Learn to use object-oriented programming to model a library system
* • Understand file input/output using the csv module
* • Practice creating and handling menus using conditionals and loops
* • Develop a simple but complete data management application

# 3. System Features

* The system provides the following functionalities:
* • Add new books to the system
* • View all books with full details
* • Search for a book by title or ISBN
* • Update book information such as title, author, or status
* • Delete a book record from the system

# 4. Program Design

• Book Class: Represents each book in the library.

• LibraryManager Class: Handles all file reading, writing, and book operations.

• Menu System: Provides a user-friendly way to interact with the application.

# 5. File Handling

• All book records are stored in a file named 'library.csv'.

• The csv module is used to write data in a structured and readable format.

• Records persist across program runs, making the data reusable.

# 6. Sample Output (Console)

Title: Clean Code, Author: Robert C. Martin, ISBN: 9780132350884, Status: Available

Book added successfully.  
Book updated.  
Book deleted.

# 7. Reflection

This project helped me build confidence in working with class-based code and file handling. By designing the Library Management System, I learned to structure real-life problems into code logic, use loops and conditionals effectively, and store data permanently using CSV files.

# 8. Conclusion

The Library Management System is a beginner-friendly project that applies core Python concepts. It introduces students to real-world data tracking and helps develop skills needed for larger software development projects.