ASSIGNMENT - 3

SCHOOL OF ENGINEERING AND TECHNOLOGY

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SECTION : B
SUBJECT : PYTHON

Mini Project Report – Library Inventory Manager

1. Introduction

In this project, I created a simple Library Inventory Manager using Python and Object-Oriented Programming. The main idea was to build a small CLI tool that helps manage books, check availability, issue and return books, and store everything in a JSON file. It is designed to work like a basic library system that staff can use from the terminal.

2. Project Summary

The assignment focused on OOP concepts like classes, attributes, and methods, along with file handling, exception handling, and creating a small project structure. The entire system works through a menu-driven CLI, where the user can add books, search, issue, return, or view all books.

3. Work Done

Book Class

I created a Book class with attributes like title, author, ISBN, and status. Methods were added for:

- issuing a book

- returning a book

- checking availability

- converting book data to a dictionary

- printing book details

LibraryInventory Class

This class manages all books using a list of Book objects.
It supports:

- adding new books

- searching by title and ISBN

- displaying all books

4. What I Learned

This project helped me understand:

- How classes and objects actually work in Python

- Using methods, attributes, and OOP principles

- Reading/writing data

- Handling exceptions safely

- Logging errors and actions

- Organizing code into modules and folders

5. Conclusion

The Library Inventory Manager gave me hands-on experience with OOP, file handling, and building a clean command-line application. It also helped me learn how to structure a Python project properly and write more modular code.