

# Library Management System Project

## Problem Statement:

You are required to develop a Library Management System using Python programming language. The system should facilitate the management of a library's collection of books and provide functionalities for adding new books, searching for books, checking out books, returning books, and more. The project aims to test your understanding of various Python concepts ranging from basic programming to Object-Oriented Programming (OOP), including file handling and exception handling.

## Instructions:

### 1. Basic Version:

- Start by implementing a basic version of the Library Management System using functions and lists to manage book data.
- Create functions to add a new book, display all books, search for a book by title, check out a book, return a book, display checked-out books, and exit the program.
- Ensure proper input validation and error handling for user inputs.

### 2. Advanced Version:

- Refactor your code to use classes and objects for a more structured approach, implementing the Library and Book classes.
- Implement additional features such as saving and loading library data to/from a file using JSON format.
- Enhance the search functionality to handle case-insensitive searches.
- Provide clear and informative user prompts and messages for each action.

### 3. Git Repository:

- Create a Git repository for your project to track changes.
- Initialize the repository with a README.md file describing the project and its functionalities.
- Commit your code regularly with descriptive commit messages.
- Ensure your project structure is organized and well-documented.

### 4. Testing and Presentation:

- Test your Library Management System thoroughly to ensure all functionalities are working as expected.
- Be ready to explain your code and answer any questions about your implementation during the presentation.

5. Submission:

- Submit the link to your Git repository along with any additional instructions or notes for running the program.
- Ensure your code is well-commented for clarity.

Note: Feel free to enhance your project further by adding extra features or improving existing functionalities beyond the specified requirements.

Best of luck with your project development!