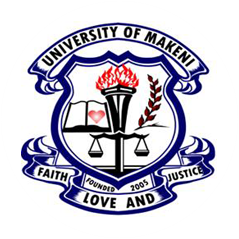
# UNIVERSITY OF MAKENI

# SYLVANU KOROMA CAMPUS

# YONI



TOPIC: LIBRARY MANAGEMENT SYSTEM

MODULE: PYTHON PROGRAMMING

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## 1. Introduction

The Library Management System is a simple application built using Python and Tkinter. It allows users to manage a library's book inventory, including adding new books, searching for existing books, deleting books, and lending books to borrowers.

## 2. Requirements

Python 3.x

Tkinter (usually included with Python installation)

CSV module (included in Python's standard library)

## 3. Installation

1. Ensure you have Python installed on your system. You can download it from python.org.

2. Clone or download the script to your local machine.

## 4. Usage

### Adding a Book

1. Open the application.  
2. Fill in the Book ID, Book Title, and Book Author fields.  
3. Click the 'Add Book' button.  
4. A message box will confirm the successful addition of the book.

### Searching for a Book

1. Open the application.  
2. Enter the Book ID, Book Title, or Book Author in the Search Book field.  
3. Click the 'Search' button.  
4. A message box will display the book details if found.

### Deleting a Book

1. Open the application.  
2. Fill in the Book ID and Book Title fields.  
3. Click the 'Delete Book' button.  
4. A message box will confirm the successful deletion of the book.

### Lending a Book

1. Open the application.  
   2. Fill in the Book ID and Borrower's Name fields.  
   3. Click the 'Lend Book' button.  
   4. A message box will confirm the successful lending of the book.

## 5. Code Explanation

### add\_book Function

The add\_book function retrieves the book details from the input fields and verifies if they are filled. It then appends the book details to the LibraryData.csv file with a status of 'Available'. A success message is shown, and the input fields are cleared.

### search\_book Function

The search\_book function reads the LibraryData.csv file and searches for the book based on the input in the Search Book field. If a match is found, the book details are displayed in a message box. If not, an error message is shown.

### delete\_book Function

The delete\_book function reads the LibraryData.csv file and removes the entry that matches the provided Book ID and Book Title. If the book is found and deleted, a success message is shown. Otherwise, an error message is displayed.

### lend\_book Function

The lend\_book function reads the LibraryData.csv file and updates the status of the book to 'Lent to [Borrower's Name]' if the book is found and available. A success message is shown if the book is lent successfully; otherwise, an error message is displayed.

## 6. GUI Components

The graphical user interface (GUI) of the application is built using Tkinter. Key components include:  
- Entry fields for Book ID, Book Title, Book Author, and Borrower's Name.  
- Buttons for 'Add Book', 'Search', and 'Lend Book'.  
- Labels for the entry fields.  
- Menu bar with options to add, delete, and lend books.

## 7. Troubleshooting

Ensure that all input fields are filled before performing any actions.  
Verify that the LibraryData.csv file exists in the same directory as the script.  
Ensure that the CSV file is not open in any other program while the script is running.