

Ned University of Engineering and Technology

Computer and Information Systems Engineering

DSA CS-218 Open Ended Lab



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Problem Statement

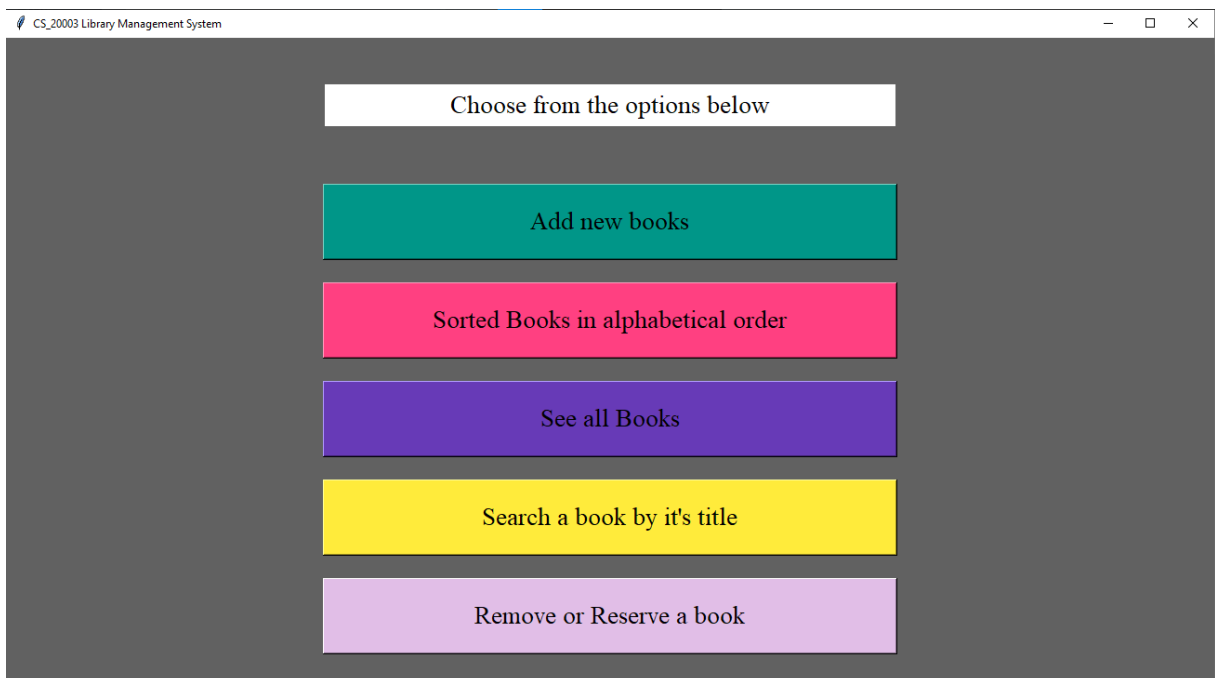
Implement a library management system.

Implement and use any sorting algorithm to sort the books on the basis of any attribute (e.g. book ID, no. of books, author, title etc.). Prepare the complete software (in Python). Insert at

About Project

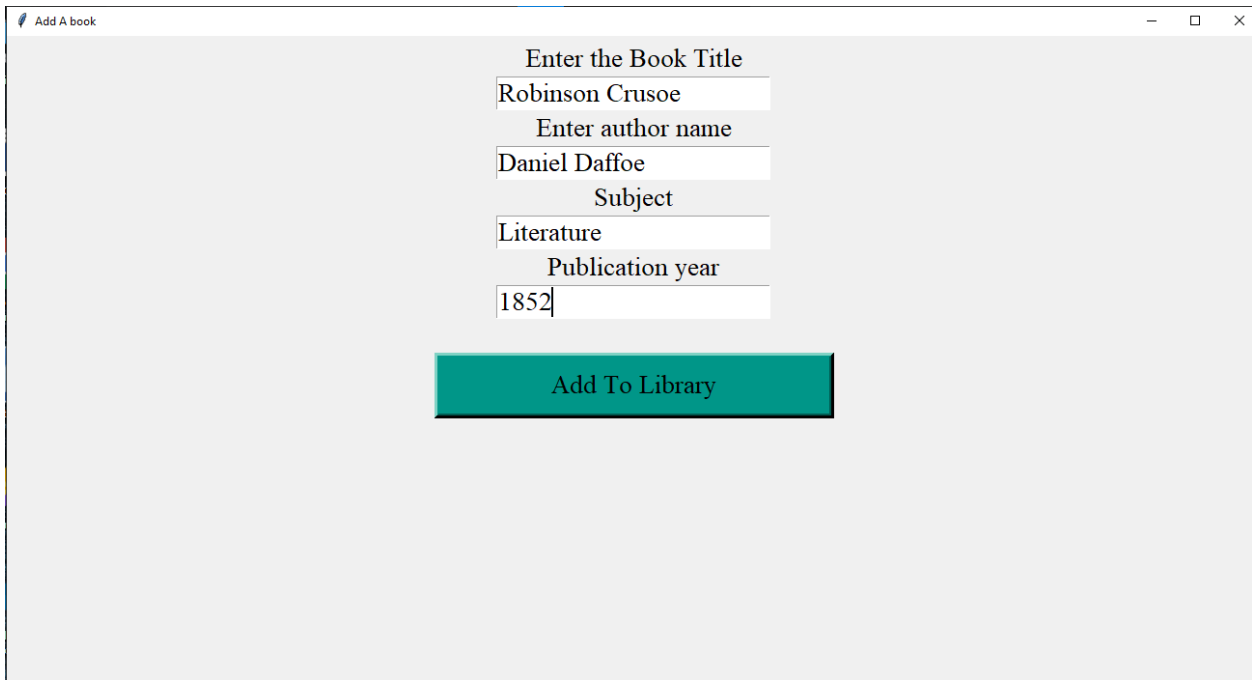
The software is developed using python. The library used for GUI is Tkinter.

The software is the library management system. It has following functionalities as shown in the screenshot below:



Add The Book

The user can add the book by filling all the fields which are book title, author, subject, publish year. I have set the availability field to available while adding a book. This option can be reserved by choosing reserve option in the software.



The screenshot shows a web application window titled "Add A book". Inside the window, there is a form with the following fields and values:

- Enter the Book Title: Robinson Crusoe
- Enter author name: Daniel Daffoe
- Subject: Literature
- Publication year: 1852

Below the input fields is a green button labeled "Add To Library".

File used

The file used to save all the records of books is CSV file using **python CSV module**.

The book record is stored in the file named **CS20003_library.csv**.

	A	B	C	D	E	F	G	H
1	title	author	subject	year	availability			
2	Beauty and the Beast	Gabrielle	Fairy Tale	1970	available			
3	Robinson Crusoe	Daniel Defoe	Literature	1719	reserved			
4	Animal Farm	George Orwell	Literature	1945	available			
5	The Alchemist	Paulo Coelho	Literature	1988	available			
6	Don Quixote	Miguel de Cervantes	romance	1612	available			
7	Lord of the Rings	J.R.R. Tolkien	tragedy	1954	available			
8	Harry Potter and the Chamber of Secrets	J.R.R. Tolkien	fantasy novel	1997	reserved			
9	And Then There Were None	Agatha Christie	Mystery	1939	available			
10	Alice's Adventures Under Ground	Lewis Carroll	Fantasy	1865	available			
11	The Lion and the Lamb	C.S. Lewis	Children's	1950	available			
12	Pinocchio	Carlo Collodi	Adventure	1940	available			
13	Catcher in the Rye	J.D. Salinger	fiction	1951	available			
14	Anne of Green Gables	L.M. Montgomery	fiction novel	1908	available			
15	Pride and Prejudice	Jane Austen	Classic Romance	1812	available			
16								
17								
18								

View all books sorted alphabetically

The software shows all the records to the user. **Tree View** is used from python Tkinter ttk library to show all the books in tabular form.

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Sorted Books

Book Title	Author	Subject	Publication year	Availability
Alice's Adventures in Wonderland	Lewis Carroll	Fantasy	1865	available
And Then There Were None	Agatha Christie	Mystery	1939	available
Animal Farm	George Orwell	Literature	1945	available
Anne of Green Gables	L. M. Montgomery	fiction novel	1908	available
Beauty And The Beast	Gabrielle-Suzanne Barbot de Villeneuve	Fairy Tale	1970	available
Catcher in the Rye	J.D. Salinger	fiction	1951	available
Don Quixote	Miguel de Cervantes	romance	1612	available
Harry Potter and the Sorcerer's Stone	J.R.R. Tolkien	fantasy novel	1997	reserved
Lord of the Rings	J.R.R. Tolkien	tragedy	1954	available
Pinocchio	Carlo Collodi	Adventures	1940	available

Search in a Book record

User can search the book by entering its title. If the book is in the record its detail shows up below otherwise the user is prompted that the book is not found in the record.

Search a book

Enter the book title to search in library

Animal farm

Search

Book Title: Animal Farm

Book Author: George Orwell

Subject: Literature

Publication Year: 1945

Availability: available

Remove or Reserve a Book:

The user can select any record in the table that is tree view and select the desired option. The book can be reserved and availability is changed to reserved in the table. If the user removes then the record is deleted from the file.

Reserve a book

Book Title	Author	Subject	Publication year	Availability
Beauty And The Beast	Gabrielle-Suzanne Barbot de Villeneuve	Fairy Tale	1970	available
Robinson Crusoe	Daniel Defoe	Literature	1719	reserved
Animal Farm	George Orwell	Literature	1945	available
The Alchemist	Paulo Coelho	Literature	1988	available
Don Quixote	Miguel de Cervantes	romance	1612	available
Lord of the Rings	J.R.R. Tolkien	tragedy	1954	available
Harry Potter and the Sorcerer's Stone	J.R.R. Tolkien	fantasy novel	1997	reserved
And Then There Were None	Agatha Christie	Mystery	1939	available
Alice's Adventures in Wonderland	Lewis Carroll	Fantasy	1865	available
The Lion, the Witch, and the Wardrobe	C.S. Lewis	Children's fantasy, Christian literature	1950	available

Select a row above and perform your desired option

Reserve book

Remove book