



IT Workshop - 1

(CSP-202)

Lab Mini Project Report (Group 8)

Library Management System

Submitted by:-

- Saurabh Mhaske (BT20ECE021)
- Sahil Ganbhoj (BT20ECE022)
- Anurag Kumar (BT20ECE055)
- Mayank Patidar (BT20ECE064)
- Bhavishya Sharma (BT20ECE107)

Under the Guidance of
(Mrs. Parnika Paranjape, Assistant Professor)

Introduction

This is a program to manage a Library. Aim of this project make the work of user and management easier by keeping record of different books. Through this program we can do a lot of things like:-

- 1) Any person can easily search any book that he/she wants to issue or purchase.
- 2) We can know the Author of any book through this program.
- 3) We can also see the Availability of all the books.
- 4) We can also know the details of a particular book by this program.
- 5) Also we can see the Name of student , Date and time for which book we issued on the date we want to Return. And the graph of data of issued of books.

Problem Statement

To create a Library management system where one can see the available books, issue a book from it, return the book and can also check the data of books lent by the library every month.

description of important libraries and functions:

libraries used are:

- 1) Numpy :- we have use numpy to
 - a) create an array
 - b) append element to array
 - c) create an array from a column of a 2d list
 - d) np.where() function to find the index of an element
 - e) create a sub array
 - f) delete an element
- 2) Pandas :- we use pandas to create the dataframe from a 2d list

- 3) Matplotlib :- we have used pyplot module of matplotlib library to show a bar graph having "Month" on X-axis and "Number of books" on Y-axis.

We have used "datetime" module to get the current date and time for our dataset.

Important Functions

Some Important Functions are:

- 1) displayAvailablebooks() : to show all the available books.
- 2) lendBook() : to issue a book. It will take book name as an argument.
- 3) addBook() : to return the book. It will take book name and book id as argument.
- 4) displayLendedbooks() : to show the information(book info, user name, date, time) of all the lended books.
- 5) lendedBooksGraph() : to get the array of number of books per month and array of month, and plotting a bar graph.
- 6) requestBook() and returnBook() : to get the book information input from the user.

Dataset

Our library management system stores the information of all the lended books. Dataset contains the book name along with the name of the book lender, date and time when book was taken out from the library. System generates the data which shows that how many books have been taken in a particular month.

(**Note:** For demo purpose we have taken short time interval of 15 sec and not of 30 days. So that we can show the graph within few minutes. However, the code is valid for a long interval (1 month) also.)

Conclusion

- This system gives choices to the user to display, issue or return the books.

```
=====LIBRARY MENU=====
        1. Display all available books
        2. Request a book
        3. Return a book
        4. Display landed books
        5. Show the graph of landed books
        6. Exit

Enter Choice:█
```

- It takes the information of user while lending the book and then helps the library management to analyse the data of books landed.

```
Enter Choice:2
Enter the name of the book you'd like to borrow >>
Let us c
Enter your name
Saurabh
The book you requested has now been borrowed
=====LIBRARY MENU=====
        1. Display all available books
        2. Request a book
        3. Return a book
        4. Display landed books
        5. Show the graph of landed books
        6. Exit

Enter Choice:4
The books we have landed are as follows:
=====
      Book   Id Username      Date      Time
1  Let us c  231  Saurabh  2021-11-10  11:33:26.984171
```

- It allows to check the number of books issued monthly.


