

MIT

Academy of Engineering

(An Autonomous Institute Affiliated to Savitribai Phule Pune University)

PYTHON MINI PROJECT

C2 BATCH

PROJECT TITLE: Library Management Using Python.

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INTRODUCTION

About Library Management System :

All the functions in the library are managed by the library management system. A person's activities in the library can be automated with the help of this system. We will create a library management system that will handle various activities in a library. Let's start developing this project.

In this project, we will develop a library management system that will help us in performing various functions like adding, issuing, and returning books. It will also store the issue and returning data of the book. Furthermore, the data of books that are stored can be edited and deleted.

The aims and objectives are as follows:

- ✧ Book issue
- ✧ Return a book
- ✧ To search availability of books

Project Prerequisites :

Good knowledge of Object oriented programming is required to start the Library Management System Project. Basic knowledge of python is also required to develop the frontend of the project.

DESCRIPTION OF PROJECT



CLASS Central library:

- ✧ Book name
- ✧ List of books available
- ✧ Issuing a book
- ✧ Returning a book

CLASS Student:

- ✧ Issuing a book
- ✧ Returning a book
- ✧ Checking book available

USED :

- ✧ Polymorphism
- ✧ While looping
- ✧ If condition statement

CODE FOR THE PROJECT:

CLASS LIBRARY

```
1 class Library:
2     def __init__(self, listOfBooks, borrowed):
3         self.books = listOfBooks
4         self.stuList = borrowed
5
6     def displayAvailableBooks(self):
7         print("Books present in this library are: ")
8         for book in self.books:
9             print(" *" + book)
10
11    def borrowBook(self, bookName):
12        if bookName in self.books:
13            print(f"You have been issued {bookName}. Please keep it safe and return it within 30 days")
14            self.stuList.append(bookName)
15            self.books.remove(bookName)
16            return True
17        else:
18            print('''Sorry, This book is either not available or has already been issued to someone else.
19            Please wait until the book is available.''' )
20            return False
21
22    def returnBook(self, bookName):
23        if bookName in self.stuList:
24            self.books.append(bookName)
25            self.stuList.remove(bookName)
26            print("Thanks for returning this book! Hope you enjoyed reading it. Have a great day ahead!")
27        else :
28            print("Sorry! You haven't borrowed this book from the central library.")
29
30    def seeList(self):
31        print(self.stuList)
```

CLASS STUDENT

```
32 class Student:
33     def requestBook(self):
34         self.book = input("Enter the name of the book you want to borrow: ")
35         return self.book
36
37     def returnBook(self):
38         self.book = input("Enter the name of the book you want to return: ")
39         return self.book
```


IF STATEMENT & WHILE LOOP FOR MENU-DRIVEN

```
42 if __name__ == "__main__":
43     centralLibrary = Library(["Algorithms", "Python for beginners", "Python for kids",
44     "Python Notes", "Python Libraries"], [])
45     student = Student()
46     # centralLibrary.displayAvailableBooks()
47     while(True):
48         welcomeMsg = '''\n ===== Welcome to Central Library =====
49         Please choose an option:
50         1. List all the books
51         2. Request a book
52         3. Return a book
53         4. List of borrowed books
54         5. Exit the Library
55         '''
56         print(welcomeMsg)
57         a = int(input("Enter a choice: "))
58         if a == 1:
59             centralLibrary.displayAvailableBooks()
60         elif a == 2:
61             centralLibrary.borrowBook(student.requestBook())
62         elif a == 3:
63             centralLibrary.returnBook(student.returnBook())
64         elif a == 4:
65             centralLibrary.seeList()
66         elif a == 5:
67             print("Thanks for choosing Central Library. Have a great day ahead!")
68             exit()
69         else:
70             print("Invalid Choice!")
```

OUTPUTS OF THE CODE

BOOK LIST, BOOK ISSUE FROM LIST, BOOK RETURNING

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\python\Object and class> python -u "d:\python\Object and class\sample3.py"
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 1
Books present in this library are:
*Algorithms
*Python for beginners
*Python for kids
*Python Notes
*Python Libraries
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 2
Enter the name of the book you want to borrow: Python Libraries
You have been issued Python Libraries. Please keep it safe and return it within 30 days
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 2
Enter the name of the book you want to borrow: Python Notes
You have been issued Python Notes. Please keep it safe and return it within 30 days
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 1
Books present in this library are:
*Algorithms
*Python for beginners
*Python for kids
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 4
['Python Libraries', 'Python Notes']
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 3
Enter the name of the book you want to return: Python Notes
Thanks for returning this book! Hope you enjoyed reading it. Have a great day ahead!
```

```
===== Welcome to Central Library =====
Please choose an option:
1. List all the books
2. Request a book
3. Return a book
4. List of borrowed books
5. Exit the Library
```

```
Enter a choice: 5
Thanks for choosing Central Library. Have a great day ahead!
PS D:\python\Object and class> █
```