Python Mini-Project Based on core concept
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Project Topic-:Library Management System.

Scope-:

1. with reference to project title we can use this code to show different library module like display books, lend books, add & remove books to user very efficiently with help of python core concepts.
2. Library management system used in the libraries of schools and colleges for adding new books in the library ,issuing books to students and maintaining the record.

Abstract-:in this project, we will develop a library management system that will help us in performing various function like display books, lend books, add & return books.

Python concept & tech used for code-:Python class, function, file handling, data structure, looping concept, control statement.

Key point in code for library management system-:

- Create a library class
- Display book
- Lend book-(who owns the book if not present)
- Add book
- Return book
- ShubhamLibrary=Library(listofbooks, library_name)
- Dictionary (books-name of person)
- Created a main function and run an infinite while loop asking users for their input.

Different modules in library management system as per below-:

1.Display Books-: it shows availability and books which is present in library with the help of creating a python library class..

different choices for user as per below-:
1.Display Books
2.lend a book
3.Add a book
4.return a book

If user decide choice no-:1 it display current books in library.

Sample input-:1
Sample Output-:
Python.
Rich Daddy poor Daddy.
Harry potter
C++ basics
Algorithms by CLRS
Press q to quit and c to continue
If user press c for continue again it shows choice-:

1.Display Books
2.lend a book
3.Add a book
4.return a book

Based on concept of while loop it runs and ask to user for choices.

2.lend a book-: in this module it will assign one book which is from library to one person.
Sample input-2
Enter the name of book want to lend:Python
Enter your name-:Ram
Sample output-:
Lender-Book database has been upadated. You can take book now.

3. Add Book-:in this module it will add new book in existing library
Sample input-:3
Sample output--:Enter the name of book want to add:JAVA
It will add book in existing library and shows updated library
Python.
Rich Daddy poor Daddy.
Harry potter
C++ basics
Algorithms by CLRS
JAVA

4.Return Book-:in this module it will return book and will lend a book to new user.

Sample input-:4
Sample output-:
Enter book want to return-:Python
If we press c for continue, it will lend this book to new user.

5.invalid option-:code will assign for only choice no-;1,2,3,4 apart from this choice with help of else statement it will shows invalid option

Sample input-:6
Sample output-:Not valid option

Code for liabrary management system-:

```
class Library:
    def __init__(self,list,name):
        self.booksList=list
        self.name=name
        self.lendDict={ }
    def displayBooks(self):
        print(f"we have following books in our Library: {self.name}")
        for book in self.booksList:
            print(book)
    def lendBook(self,user,book):
        if book not in self.lendDict.keys():
            self.lendDict.update({book:user})
            print("Lender-Book database has been updated.you can take book now")
        else:
            print(f"Book is already being used by{self.lendDict[book]}")


    def addBook(self,book):
        self.booksList.append(book)
        print("Book has been added to the book list")
    def returnBook(self,book):
        self.lendDict.pop(book)
```

In continuous……

```
shubham=Library(['python','Rich Daddy poor Daddy','Harry potter','C++Basics','Algorithms by CLRS'],
while(True):
      print(f"welcome to the {shubham.name} library.Enter your choice to continue")
      print("1.Display Books")
      print("2.lend a Book")
      print("3.Add a Book")
      print("4.Return a Book")
      user_choice=int(input())

      if user_choice==1:
          shubham.displayBooks()
      elif user_choice==2:
          book=input("Enter the name of book want to lend:")
          user=input("Enter your name")
          shubham.lendBook(user,book)

      elif user_choice==3:
          book=input("Enter the name of book want to add:")
          shubham.addBook(book)
      elif user_choice==4:
          book=input("Enter the name of book want to return:")
          shubham.returnBook(book)
```

In continuous…….

```
    else:

        print("Not a valid option")
    print("press q to quit and c to continue")
    user_choice2=" "
    while(user_choice2!="c" and user_choice2!="q"):
        user_choice2=input()
        if user_choice2=="q":
            exit()
```

Output-:for choice 1. Display books

```
C:\Users\scc921053\PycharmProjects\pythonProject\venv\Scripts\python.exe C
welcome to the codewithshubham library.Enter your choice to continue
1.Display Books
2.lend a Book
3.Add a Book
4.Return a Book
1
we have following books in our Library: codewithshubham
python
Rich Daddy poor Daddy
Harry potter
C++Basics
Algorithms by CLRS
press q to quit and c to continue
```

Output-:For choice-:2.Lend a book

```
press q to quit and c to continue
c
welcome to the codewithshubham library.Enter your choice to continue
1.Display Books
2.lend a Book
3.Add a Book
4.Return a Book
2
Enter the name of book want to lend:python
Enter your nameram
Lender-Book database has been updated.you can take book now
press q to quit and c to continue
```

Output-:for choice 3.Add a book

```
3
Enter the name of book want to add:java
Book has been added to the book list
press q to quit and c to continue
c
welcome to the codewithshubham library.Enter your choice to continue
1.Display Books
2.lend a Book
3.Add a Book
4.Return a Book
1
we have following books in our Library: codewithshubham
python
Rich Daddy poor Daddy
Harry potter
C++Basics
Algorithms by CLRS
java
press q to quit and c to continue
```

Output-:for choice 4.return a book

```
welcome to the codewithshubham library.Enter your choice to continue
1.Display Books
2.lend a Book
3.Add a Book
4.Return a Book
4
Enter the name of book want to return:python
press q to quit and c to continue
c
welcome to the codewithshubham library.Enter your choice to continue
1.Display Books
2.lend a Book
3.Add a Book
4.Return a Book
2
Enter the name of book want to lend:python
Enter your namemayur\
Lender-Book database has been updated.you can take book now
press q to quit and c to continue
```