LIBRARY MANAGEMENT SYSTEM USING PYTHON

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OBJECTIVE

To create a library management system using basic python oops concepts. 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.

PROPOSED SYSTEM:

- Creating simple library management system software without any cost.
- We don't need to use database; All we need is a text file with some list of books.
- By using file handling concepts and oops concepts this software will be created.
- Simple commands will be enough to do all activities related to Library Management System(LMS)

TOOLS:

- Jupyter Notebook
- Oops Concepts
- File handling concept

CODE:

```
import datetime
import os


class LMS:

    def __init__(self, list_of_books, library_name):
        self.list_of_books = "list_of_books.txt"
        self.library_name = library_name
        self.books_dict = {}
        id = 101
        with open(self.list_of_books) as b:
            content = b.readlines()
        for line in content:
            self.books_dict.update({str(id):{'books_title':line.replace("\n",""),'lender_name':'','lend_date':'',
'status':'Available'}})
            id += 1

    def display_books(self):
        print("-----------------------List of Books----------------------")
        print("Books ID","\t", "Title")
```

```
        print("-------------------------------------------------------")
        for key, value in self.books_dict.items():
            print(key,"\t\t", value.get("books_title"), "- [", value.get("status"),"]")

    def Issue_books(self):
        books_id = input("Enter Books ID : ")
        current_date = datetime.datetime.now().strftime("%Y-%m-%d %H:%M:%S")
        if books_id in self.books_dict.keys():
            if not self.books_dict[books_id]['status'] == 'Available':
                print(f"This book is already issued to {self.books_dict[books_id]['lender_name']} on
{self.books_dict[books_id]['lend_date']}")
                return self.lend_books()
            elif self.books_dict[books_id]['status'] == 'Available':
                your_name = input("Enter Your Name : ")
                self.books_dict[books_id]['lender_name'] = your_name
                self.books_dict[books_id]['lend_date'] = current_date
                self.books_dict[books_id]['status']= 'Already Issued'
                print("Book Issued Successfully !!!\n")
        else:
            print("Book ID Not Found !!!")
            return self.Issue_books()

    def add_books(self):
        new_books = input("Enter Books Title : ")
        if new_books == "":
            return self.add_books()
        elif len(new_books) > 20:
            print("Books title length is too long !!! Title length limit is 20 characters")
            return self.add_books()
        else:
            with open(self.list_of_books, "a") as b:
                b.writelines(f"{new_books}\n")

self.books_dict.update({str(int(max(self.books_dict))+1):{'books_title':new_books,'lender_name':'','lend_
date':'', 'status':'Available'}})
            print(f"The books '{new_books}' has been added successfully !!!")

    def return_books(self):
        books_id = input("Enter Books ID : ")
        if books_id in self.books_dict.keys():
            if self.books_dict[books_id]['status'] == 'Available':
                print("This book is already available in library. Please check book id. !!! ")
                return self.return_books()
            elif not self.books_dict[books_id]['status'] == 'Available':
                self.books_dict[books_id]['lender_name'] = ''
                self.books_dict[books_id]['lend_date'] = ''
                self.books_dict[books_id]['status']= 'Available'
                print("Successfully Updated !!!\n")
```

```
        else:
            print("Book ID Not Found !!!")

if __name__ == "__main__":
    try:
        mylms = LMS("list_of_books.txt", "Python's")
        press_key_list = {"D": "Display Books", "I": "Issue Books", "A": "Add Books", "R": "Return Books",
"Q": "Quit"}

        key_press = False
        while not (key_press == "q"):
            print(f"\n----------Welcome To {mylms.library_name} Library Management System---------\n")
            for key, value in press_key_list.items():
                print("Press", key, "To", value)
            key_press = input("Press Key : ").lower()
            if key_press == "i":
                print("\nCurrent Selection : ISSUE BOOK\n")
                mylms.Issue_books()

            elif key_press == "a":
                print("\nCurrent Selection : ADD BOOK\n")
                mylms.add_books()

            elif key_press == "d":
                print("\nCurrent Selection : DISPLAY BOOKS\n")
                mylms.display_books()

            elif key_press == "r":
                print("\nCurrent Selection : RETURN BOOK\n")
                mylms.return_books()
            elif key_press == "q":
                break
            else:
                continue
    except Exception as e:
        print("Something went wrong. Please check. !!!")
```

OUTPUT

```
----------Welcome To Python's Library Management System---------

Press D To Display Books
Press I To Issue Books
Press A To Add Books
Press R To Return Books
Press Q To Quit
Press Key : D

Current Selection : DISPLAY BOOKS

------------------------List of Books----------------------
Books ID         Title
-----------------------------------------------------------
101              A Passage to India - [ Available ]
102              Invisible Man - [ Available ]
103              Don Quixote - [ Available ]
104              Harry Potter - [ Available ]
105              Beloved - [ Available ]
106              Mrs. Dalloway - [ Available ]
107              Things Fall Apart - [ Available ]
108              Jane Eyre  - [ Available ]
109              The Color Purple - [ Available ]
110              Hald Girlfriend110 - [ Available ]
111              2 States104 - [ Available ]
112              The wings of Fire - [ Available ]
```

CONCLUSION:

The Library Management system has been created successfully by using simple oops concepts and file handling concept.