

DAV PUBLIC SCHOOL

BISTUPUR,JSR

**LIBRARY
MANAGEMENT
SYSTEM**

By Student of

XII 'A1'

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CERTIFICATE

This is to certify that Sudiksha Roy Kanungoe of class XII-A1, roll no 50 has
successfully completed the

project on LIBRARY MANAGEMENT SYSTEM of subject COMPUTER

SCIENCE, session 2021-22 under the guidance of Mrs. R. Padma

Lakshmi.

Signature Of Examiner

ACKNOWLEDGEMENT

We would like to express our sincere thanks of
gratitude to
our teacher incharge of the subject, Mrs. R. Padma
Lakshmi
for giving us this assignment for the academic year
2021-22.

The outcome of this assignment is due to the able
guidance and
support of our teacher incharge and our group as a
whole whose
members, individually have equal amount of
contribution in
finalizing this project within the given time frame.

OVERVIEW OF PYTHON

Python is an interpreted, object-oriented high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very

attractive for Rapid Application

Development, as well as for use as a scripting or glue language to connect existing components together.

Python is simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and

code reuse. The Python interpreter can be freely distributed.

NEED FOR THE PROJECT

In the current times, organisations come across the problems of arranging bulk information in a way that it's easy to access and update.

This project will help in solving such a problem faced by a school/public library to a great extent.

The project introduces and implements the concept of file handling as well as user-defined functions in Python.

This project helps you keeping track of the details of books present in the library as well as the people's details who own a membership there.

HARDWARE REQUIREMENTS

1. Computer
2. Mouse
3. CD/pendrive
4. A minimum of 2GB RAM

The program provides us with the options of adding, removing, issuing, returning and finding out details of books .

Also, in case of the membership of a person in the library, there are the options of registering, cancelling as well as updating the membership.

SOFTWARE REQUIREMENTS

You just can't start a project empty-handed
Following are the requirements you need to look
after or before getting started:

- **Modern operating System:**

- 1) **Windows 7,8,8.1 or 10**
- 2) **Mac OS X 10.11 or higher,64 bit**
- 3) **Linux: RHEL 6/7,64 bit (almost all libraries also work in Ubuntu)**
- 4) **X86 64-bit CPU(Intel Celeron/AMD architecture)**
- 5) **2 GB RAM**
- 6) **2GB free disk space**

For better user experience use the latest version of the IDLE or IDE available, with complete and latest updates.

For more info and installation process

visit: <https://www.jetbrains.com/pycharm/download>

PACKAGES AND DATA STRUCTURE

1. Packages used:

- a) CSV
- b) os

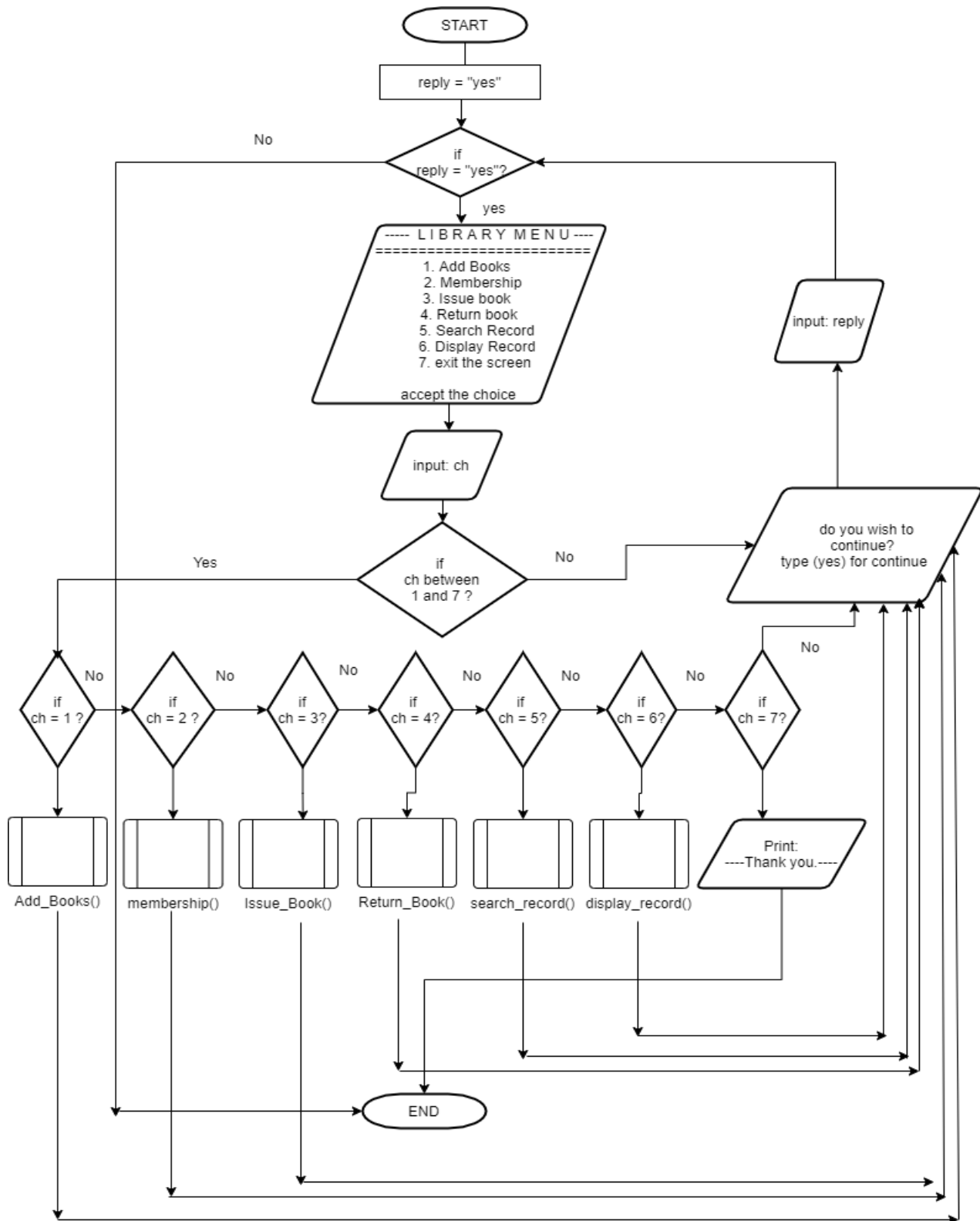
2. Data structure used:

- a) List

FUNCTIONS DESCRIPTION

- 1. Add_books()**- To add book's data
- 2. membership()**-To register, cancel or update membership
- 3. Issue_book()**-To accept book id and member id from the user and check whether that particular book is already issued or not and it also verifies whether that member has already issued a book or not. If the conditions are false then it successfully issues the book whose book id is accepted from the user
- 4. Return_Book()**-It accepts member id from the user and verifies whether that particular member has issued any book or not. If the member has issued a book, it accepts the number of days since the book was with the member, date of issue, book id, member id, and member name. If the number of days exceed 14, then it will charge the fine according to the number of days the member has kept the book, following the rules of the library and the book will be finally returned.
- 5. search_record()**- To search and print records of a particular book or a member according to the choice accepted by the user.
- 6. display_record()**-To display the records of all books and members in the library according to the choice accepted by the user.

FLOW CHART OF THE PROGRAM



SOURCE CODE

```

import csv
import os
print("##### LIBRARY MANAGEMENT SYSTEM #####")
#fields for book
fields = ['Book Id','Book Title','Author Name','Publisher','Edition','Price']
fb="Book.csv" #variable name=file name
#fields for member
field=['Member Id','Member name','Member email','Member phone no']
fm="Member.csv"
#fields for book2
field_2=['Date of Issue','Book ID','Member ID','Member Name']
fb2="Book_2.csv"

def Add_Books():
    print("=====")
    print("----- ADD BOOK SCREEN -----")
    print("=====")
    book=[]
    csvfile = open(fb,'a+',newline="")#EOL suppressed
    csvw=csv.writer(csvfile)          # writer object
    #csvw.writerow(fields)
    ans='y'
    while ans=='y' or ans=='Y':
        B_id=input("Enter Book id:")
        B_title=input("enter Book title:")
        author=input("Enter author name:")
        publisher=input("Enter publisher name:")
        edition=input("Enter edition:")
        price=int(input("enter price of the book:"))
        book.extend([B_id,B_title,author,publisher,edition,price])
        #print(book)
        csvw.writerow(book)
        book=[]
        print("Book added successfully")
        ans=input("do you wish to continue adding book type (y)-for yes")
    csvfile.close()

def membership():
    print("=====")
    print("----- MEMBERSHIP SCREEN-----")
    print("=====")
    while True:
        print("MENU FOR MEMBERSHIP")
        print("1.Do you want to register a member?...press 1")
        print("2.Do you want to cancel a membership?...press 2")
        print("3.Do you want to update a membership?...press 3")

```

SOURCE CODE

```

print("MENU FOR MEMBERSHIP")
print("1.Do you want to register a member?...press 1")
print("2.Do you want to cancel a membership?...press 2")
print("3.Do you want to update a membership?...press 3")
print("4.Do you want to exit?...press any number")
ch=int(input("Enter your choice:"))
if ch==1:
    print("-----Register a member-----")
    member=[]
    csvfilew = open(fm,'a+')
    csvw=csv.writer(csvfilew,lineterminator='\n')#EOL suppressed
    #csvw.writerow(field)
    print("--Registered member name--")
    csvfiler = open(fm,'r+')
    csvr=csv.reader(csvfiler,lineterminator='\n')
    for i in csvr:
        print(i)
    csvfiler.close()
    ans='y'
    while ans=='y' or ans=='Y':
        M_Id=input("Enter Member Id")
        M_Name=input("enter Member name")
        M_Email=input("Enter Member\'s email id")
        M_phone=input("Enter Member\'s phone no")
        member.extend([M_Id,M_Name,M_Email,M_phone])
        csvw.writerow(member)
        member=[]
        print("Member registered successfully")
        ans=input("do you wish to continue type (y)-for yes (n) - for no")
    csvfilew.close()

```

SOURCE CODE

```

elif ch==2:
    print("-----cancel a membership-----")
    csvfilew = open("newmember.csv", 'a+', newline="") #EOL suppressed
    csvw=csv.writer(csvfilew)
    #csvw.writerow(fields)
    id=input("enter the Member\'s id whose membership you want to cancel")
    k=0
    with open(fm, 'r+') as csvfiler:
        csvr=csv.reader(csvfiler, lineterminator='\n')
        for row in csvr:
            if id!=row[0]:
                csvw.writerow(row)
            if id==row[0]:
                k=1
                print("Membership cancelled successfully")
        if k==0:
            print("No matching record found! Could not delete anything!!!")
    csvfilew.close()
    os.remove(fm)
    os.rename("newmember.csv", fm)

elif ch==3:
    print("-----update a membership-----")
    member=[]
    id=input("Enter Member\'s id which is to be updated")
    csvfilew = open("newm.csv", 'a+', newline="")
    csvw=csv.writer(csvfilew)
    csvfiler=open(fm, 'r+')
    csvr=csv.reader(csvfiler, lineterminator='\n')
    for row in csvr:
        if id!=row[0]:
            csvw.writerow(row)
        elif id==row[0]:
            print("--Previous Data--")
            print(field)
            print(row)
            M_Id=input("Enter Member Id")
            M_Name=input("Enter Member name")
            M_Email=input("Enter Member\'s email id")
            M_phone=input("Enter Member\'s phone no")
            member.extend([M_Id, M_Name, M_Email, M_phone])
            csvw.writerow(member)
            member=[]

```

SOURCE CODE

```

        member.extend([M_Id,M_Name,M_Email,M_phone])
        csvw.writerow(member)
        member=[]

        print("Membership updated successfully")
    csvfiler.close()
    csvfilew.close()
    os.remove(fm)
    os.rename("newm.csv",fm)

else:
    break;

def Issue_Book():
    Book=[]
    csvfiler=open(fb2,'r+')
    csvr=csv.reader(csvfiler,lineterminator='\n')

    print("=====")
    print("----- ISSUE BOOK SCREEN-----")
    print("=====")
    Book_id=input("Enter Book ID:")
    mem_id=input("Enter Member ID:") #mem_id is member ID
    c=0

    for i in csvr:
        if (i[1])==Book_id:
            print("Sorry!! Book is already issued")
            c=1
            break
        elif (i[2])==mem_id:
            print("you had already issued a book")
            c=1
            break

```

SOURCE CODE

```

        break

if c!=1:
    csvfilew=open(fb2,'a+',newline="")
    csvw=csv.writer(csvfilew)

    Date_of_Issue=input("Enter the current Date-(DD-MM-YYYY):")
    Book_ID=Book_id
    Member_Id=mem_id
    Member_Name=input("Enter the name : ")

    Book.extend([Date_of_Issue,Book_ID,Member_Id,Member_Name])
    csvw.writerow(Book)
    Book=[]
    print("Book issued successfully")
    csvfilew.close()

csvfiler.close()

def Return_Book():
    csvfilew=open("new_Book_2.csv",'a+',newline="")
    csvw=csv.writer(csvfilew)

    print("=====")
    print("----- RETURN BOOK SCREEN-----")
    print("=====")
    mem_id=input("Enter Member ID:") #mem_id is member ID

    csvfiler=open(fb2,'r+',newline="")
    csvr=csv.reader(csvfiler)

    k=0
    for i in csvr:
        if(i[2])!=mem_id :
            csvw.writerow(i)

```


SOURCE CODE

```

csvfiler=open(fb2,'r+',newline="")
csvr=csv.reader(csvfiler)

k=0
for i in csvr:
    if(i[2])!=mem_id :
        csvw.writerow(i)

    if(i[2])==mem_id :
        k=1
        no_days=int(input("How many days it have been since the book was issued?"))
        print("-----Details-----")
        print("Date of Issue :",i[0])
        print("Book ID :",i[1])
        print("Member ID :",i[2])
        print("Member Name :",i[3])
        if no_days>14:
            fine=(no_days-14)*2
        else :
            fine=0
        print("Fine :",fine)
        print("Book returned successfully")

if k==0:
    print("You have not issued any book yet")

csvfiler.close()
csvw.close()
os.remove(fb2)
os.rename("new Book 2.csv",fb2)

```

SOURCE CODE

```
def search_record():
    while True:
        print("=====")
        print("----- SEARCH RECORD SCREEN-----")
        print("=====")
        print("MENU")
        print("1.Books")
        print("2.Members")
        print("3.Exit")
        ch=int(input("Enter choice:"))
        if ch==1:
            ans='y'
            while ans=='y' or ans=='Y':
                print("-----Search Book-----")
                bn=input("Enter book name to be searched")
                k=0
                with open(fb,'r+') as csvfiler:
                    csvr=csv.reader(csvfiler,lineterminator='\n')
                    print(fields)
                    for row in csvr:
                        if bn.lower()==(row[1]).lower():
                            k=k+1
                            print(row)
                if k==0:
                    print("-----no record found!!!")
                ans=input("do you wish to continue type y-for yes n - for no")
```

SOURCE CODE

```

        print("-----no record found!!!")
        ans=input("do you wish to continue type y-for yes n - for no")
elif ch==2:
    ans='y'
    while ans=='y' or ans=='Y':
        print("-----Search Member-----")
        mn=input("Enter member name to be searched")
        k=0
        with open(fm,'r+') as csvfiler:
            csvr=csv.reader(csvfiler,lineterminator='\n')
            print(field)
            for row in csvr:
                if mn.lower()==(row[1]).lower() :
                    k=k+1
                    print(row)

            if k==0:
                print("-----no member found!!!")
        ans=input("do you wish to continue type y-for yes n - for no")
else:
    break;

```

SOURCE CODE

```
def display_record():
    while True:
        print("=====")
        print("-----DISPLAY RECORD SCREEN-----")
        print("=====")
        print("MENU")
        print("1.Books")
        print("2.Members")
        print("3.Exit")
        ch=int(input("Enter choice:"))
        if ch==1:

            print("-----Display Book-----")
            with open(fb,'r+',newline='\r\n') as csvfiler: #EOL suppressed
                csvr=csv.reader(csvfiler)
                for r in csvr:
                    print(r)

        elif ch==2:
            print("-----Display Member-----")
            with open(fm,'r+',newline='\r\n') as csvfiler:
                csvr=csv.reader(csvfiler)
                for r in csvr:
                    print(r)
        else:
            break;
```

SOURCE CODE

```

reply='yes'
while reply=="YES" or reply=="yes":
    print("=====")

    print("----- L I B R A R Y     M E N U -----")
    print("=====")
    print("1. Add Books")
    print("2. Membership")
    print("3. Issue book")
    print("4. Return book")
    print("5. Search Record")
    print("6. Display Record")
    print("7. exit the screen")
    ch=int(input("accept the choice"))

    if ch==1:
        Add_Books()
    elif ch==2:
        membership()
    elif ch==3:
        Issue_Book()
    elif ch==4:
        Return_Book()
    elif ch==5:
        search_record()
    elif ch==6:
        display_record()
    elif ch==7:
        print("-----Thank you-----")
        break;
    else:
        continue;

    reply=input("do you wish to continue type (yes) for continue")

```

OUTPUT

Python 3.9.5 (tags/v3.9.5:0a7dcdb, May 3 2021, 17:27:52) [MSC v.1928 64 bit (AMD64)] Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: D:\PYTHON\classXI\CHAPTER_4_SQL\Computer_project 12a1.py =====

LIBRARY MANAGEMENT SYSTEM

```
=====
----- L I B R A R Y      M E N U -----
=====
```

1. Add Books
 2. Membership
 3. Issue book
 4. Return book
 5. Search Record
 6. Display Record
 7. exit the screen
- accept the choice1

```
=====
----- ADD BOOK SCREEN -----
=====
```

Enter Book id:07

enter Book title:Mathematics

Enter author name:R.S.Aggarwal

Enter publisher name:Bharti Bhawan

Enter edition:1

enter price of the book:818

Book added successfully

do you wish to continue adding book type (y)-for yesn

do you wish to continue type (yes) for continueyes

OUTPUT

```

=====
-----  L I B R A R Y      M E N U  -----
=====

1. Add Books
2. Membership
3. Issue book
4. Return book
5. Search Record
6. Display Record
7. exit the screen
accept the choice2
=====
-----  MEMBERSHIP SCREEN-----
=====

MENU FOR MEMBERSHIP
1.Do you want to register a member?...press 1
2.Do you want to cancel a membership?...press 2
3.Do you want to update a membership?...press 3
4.Do you want to exit?...press any number
Enter your choice:1
-----Register a member-----
--Registered member name--
['Member Id', 'Member name', 'Member email', 'Member phone no']
['01', 'Sudha', 'sudha@gmail.com', '4581759585']
['03', 'Akhil', 'akhil@gmail.com', '8888845477']
Enter Member Id02
enter Member nameMadhu
Enter Member's email idmadhu@gmail.com
Enter Member's phone no54564552
Member registered successfully
do you wish to continue type (y)-for yes (n) - for nono
MENU FOR MEMBERSHIP
1.Do you want to register a member?...press 1
2.Do you want to cancel a membership?...press 2
3.Do you want to update a membership?...press 3
4.Do you want to exit?...press any number
Enter your choice:2
-----cancel a membership-----
enter the Member's id whose membership you want to cancel01
Membership cancelled successfully

```

OUTPUT

MENU FOR MEMBERSHIP

- 1.Do you want to register a member?...press 1
- 2.Do you want to cancel a membership?...press 2
- 3.Do you want to update a membership?...press 3
- 4.Do you want to exit?...press any number

Enter your choice:3

-----update a membership-----

Enter Member's id which is to be updated02

--Previous Data--

```
['Member Id', 'Member name', 'Member email', 'Member phone no']
['02', 'Madhu', 'madhu@gmail.com', '54564552']
```

Enter Member Id05

Enter Member nameMadhu

Enter Member's email idmadhu@gmail.com

Enter Member's phone no54564552

Membership updated successfully

MENU FOR MEMBERSHIP

- 1.Do you want to register a member?...press 1
- 2.Do you want to cancel a membership?...press 2
- 3.Do you want to update a membership?...press 3
- 4.Do you want to exit?...press any number

Enter your choice:8

do you wish to continue type (yes) for continueyes

OUTPUT

```

=====
----- L I B R A R Y      M E N U -----
=====

1. Add Books
2. Membership
3. Issue book
4. Return book
5. Search Record
6. Display Record
7. exit the screen
accept the choice3

=====
----- ISSUE BOOK SCREEN-----
=====

Enter Book ID:01
Enter Member ID:05
Enter the current Date-(DD-MM-YYYY):15-09-2021
Enter the name : Madhu
Book issued successfully
do you wish to continue type (yes) for continueyes

```

OUTPUT

```

=====
----- L I B R A R Y   M E N U -----
=====

1. Add Books
2. Membership
3. Issue book
4. Return book
5. Search Record
6. Display Record
7. exit the screen
accept the choice4
=====
----- RETURN BOOK SCREEN-----
=====

Enter Member ID:05
How many days it have been since the book was issued?17
-----Details-----
Date of Issue : 15-09-2021
Book ID : 01
Member ID : 05
Member Name : Madhu
Fine : 6
Book returned successfully
do you wish to continue type (yes) for continueyes

```

OUTPUT

```
=====
----- SEARCH RECORD SCREEN-----
=====

MENU
1.Books
2.Members
3.Exit
Enter choice:1
-----Search Book-----
Enter book name to be searchedmathematics
['Book Id', 'Book Title', 'Author Name', 'Publisher', 'Edition', 'Price']
['05', 'MATHEMATICS', 'NCERT', 'NCERT', '1', '200']
['06', 'MATHEMATICS', 'NCERT', 'NCERT', '2', '134']
['07', 'Mathematics', 'R.S.Aggarwal', 'Bharti Bhawan', '1', '818']
do you wish to continue type y-for yes n - for noyes
=====
----- SEARCH RECORD SCREEN-----
=====

MENU
1.Books
2.Members
3.Exit
Enter choice:2
-----Search Member-----
Enter member name to be searchedSudha
['Member Id', 'Member name', 'Member email', 'Member phone no']
-----no member found!!!
do you wish to continue type y-for yes n - for noy
-----Search Member-----
Enter member name to be searchedMadhu
['Member Id', 'Member name', 'Member email', 'Member phone no']
['05', 'Madhu', 'madhu@gmail.com', '54564552']
do you wish to continue type y-for yes n - for non
=====
----- SEARCH RECORD SCREEN-----
=====

MENU
1.Books
2.Members
3.Exit
Enter choice:3
do you wish to continue type (yes) for continueyes
```

OUTPUT

```

=====
----- L I B R A R Y   M E N U -----
=====

1. Add Books
2. Membership
3. Issue book
4. Return book
5. Search Record
6. Display Record
7. exit the screen
accept the choice6

=====
-----DISPLAY RECORD SCREEN-----
=====

MENU
1.Books
2.Members
3.Exit
Enter choice:1

-----Display Book-----
['Book Id', 'Book Title', 'Author Name', 'Publisher', 'Edition', 'Price']
['01', 'PHYSICS', 'DC Pandey', 'Arihant', '1', '465']
['02', 'INTEGRAL CALCULUS', 'Amit M.Agarwal', 'Arihant', '1', '198']
['03', 'A Visit from the Goon Squad', 'JENNIFER EGAN', 'Knopf', '1', '432']
['04', 'Physics', 'NCERT', 'NCERT', '1', '120']
['05', 'MATHEMATICS', 'NCERT', 'NCERT', '1', '200']
['06', 'MATHEMATICS', 'NCERT', 'NCERT', '2', '134']
['05', 'CHEMISTRY', 'NCERT', 'NCERT', '1', '230']
['06', 'VISTAS', 'NCERT', 'NCERT', '1', '50']
['07', 'Mathematics', 'R.S.Aggarwal', 'Bharti Bhawan', '1', '818']

```

OUTPUT

```
=====
-----DISPLAY RECORD SCREEN-----
=====
MENU
1.Books
2.Members
3.Exit
Enter choice:2
-----Display Member-----
['Member Id', 'Member name', 'Member email', 'Member phone no']
['04', 'Akhil', 'akhil12@gmail.com', '8888845477']
['05', 'Madhu', 'madhu@gmail.com', '54564552']
=====
-----DISPLAY RECORD SCREEN-----
=====
MENU
1.Books
2.Members
3.Exit
Enter choice:3
do you wish to continue type (yes) for continueyes
=====
----- L I B R A R Y     M E N U -----
=====
1. Add Books
2. Membership
3. Issue book
4. Return book
5. Search Record
6. Display Record
7. exit the screen
accept the choice7
-----Thank you-----
>>> |
```

SHORTCOMINGS

Following are the limitations of the project:

- Performance and speed
- Some conditional errors may be present
- Lack of support for the entire library management.
- Cannot be used as a professional management system as it lacks proper support for all requirements.

BIBLIOGRAPHY

- Google
- Computer Science with Python by Sumita Arora
- Humble guidance of Mrs. R. Padma Lakshmi