

TERM 2

COMPUTER PROJECT FILE



NAME: SHOBHIT SINHA

BOARD ROLL NO: 27614639

DELHI PRIVATE SCHOOL

SHARJAH



DEPARTMENT OF COMPUTER SCIENCE

CERTIFICATE

*Certified that the work in this file is the bonafide
work of _____ of class XII
_____ Roll Number _____ recorded
in the school labs during the academic year
2021 – 2022*

Date: _____

Teacher in charge

External Examiner

INDEX

S.No	Topic	Page No.
1.	Acknowledgment	3
2.	Introduction	4
3.	Source Code	5
4.	Output	14
5.	Bibliography	19

ACKNOWLEDGEMENT

- I take this opportunity to express my profound sense of gratitude and respect to all those who helped me throughout this venture.
- I would like to sincerely thank my computer teacher Ms Daliya David for her unwavering assistance and advice.
- Without a doubt, my gratitude also goes towards our principal Mrs. Vandana Marwaha who has consistently provided us with support to complete our project.
- Last, but not the least, this project would not have been complete without the encouragement and motivation from my family and friends.

INTRODUCTION

Problem Definition:

Design a Project to analyze the data set of a library manage to add records to the library file, modify records of a binary file, add records to member file, modify address and phone numbers of existing members in member file, issue books, return books, and searching for the availability of books.

Real Life Problem/Issue targeted by the project:

Libraries have a substantial number of books and, managing the data can be tiring. Modifying member data and searching for the availability of books can be a tedious job, and thus to make it easier for librarians, I made a library management system for them to analyze the data efficiently and effectively

Objective:

- To manage the creation and updation of Book information in a Database
- To connect the Member information with the Database
- To manage issuing Books
- To calculate fines and maintain a record of issued books
- To create reports based on user entered constraints

Hardware Requirements:

- A Computer/Laptop with Operating System-Windows 7 or above x86 64-bit CPU (Intel / AMD architecture)
- 4 GB RAM.
- 5 GB free disk space

Software Requirements:

- Python 3.6.x or higher version
- MySQL

SOURCE CODE

#Importing functions and modules

```
from datetime import datetime
import mysql.connector
con=mysql.connector.connect(host="localhost", user="root",
database="12h")
if con.is_connected():
    print('successful connection')
cur=con.cursor()
```

#Function to add books

```
def addbooks():
    ans='y'
    while ans=='y':
        bno=int(input('Enter book code: '))
        subj=input('Enter subject: ')
        title=input('Enter title: ')
        aut=input('Enter author: ')
        publ=input('Enter publisher name: ')
        price=int(input('Enter price: '))
        mcode=int(input("Enter mcode (0): "))
        isd=input('Enter current date(for new data-yyyy/mm/dd):')
        status=input('Enter current status: ')
        s1="insert into books
values"+"(" +str(bno)+", "+"'" +subj+"'"+" , "+"'" +title+"'"+" , "+"'" +aut+"'"
```

```

+", "+""+publ+""+", "+str(price)+", "+str(mcode)+", "+""+isd+""+", "+""
"+status+""+")"
    cur.execute(s1)
    con.commit()
    print('Database updated')
    ans=input('Do you want to continue: ')

```

#Function to add members

```

def addmembers():
    ans='y'
    while ans=='y':
        mcode=int(input("Enter member code (mcode): "))
        name=input("Enter Name: ")
        address=input("Enter address: ")
        phone=int(input("Enter phone: "))
        maxlim=int(input("Enter Limit: "))
        nobi=int(input("Enter number of books issued: "))
        s2="insert into members values "+(" "+str(mcode)+",
"+""+name+""+", "+""+address+""+", "+
str(phone)+", "+str(maxlim)+", "+str(nobi)+")"
        cur.execute(s2)
        con.commit()
        print('Database updated')
        ans=input('Do you wish to continue: ')

```

#Function to modify details

```

def modifydetails():
    ans='y'
    while ans=='y':
        print('1. Modify address')
        print('2. Modify phone number')
        print()
        c=int(input("Select option 1 or 2: "))

```

```

if c==1:
    a=int(input("Enter mcode of row: "))
    b=input("Enter new address: ")
    d="update members set address='{}' where
Mcode={} ".format(b,a)
    cur.execute(d)
    con.commit()
elif c==2:
    a=int(input("Enter mcode of row: "))
    b=int(input("Enter new phone: "))
    d='update members set phone={} where Mcode={} '.format(b,a)
    cur.execute(d)
    con.commit()
print('Database updated')
ans=input('Do you wish to continue(y/n): ')

```

#Function to issue books

```

def issuebook():
    ans='y'
    while ans=='y':
        d=input('Enter todays date in (yyyy/mm/dd) format: ')
        s4='select Mcode from members;'
        cur.execute(s4)
        r=cur.fetchall()
        m=int(input("Enter Mcode:"))
        for i in r:
            if i[0]==m:
                b=input("Enter book name:")
                s5='select Title,mcode from books;'
                cur.execute(s5)
                w=cur.fetchall()
                for j in w:
                    if b in j[0] and j[1]==0:
                        s6='select max_limit,no_of_books_issued from members
where mcode={} '.format(m)

```

```

        cur.execute(s6)
        e=cur.fetchall()
        if e[0][0]>e[0][1]:
            s1='update members set
no_of_books_issued=no_of_books_issued+1 where
mcode={}';'.format(m)
            s2="update books set Mcode={} where
Title=' {}'.format(m,b)
            s3="update books set Issuedate=' {}'.where
Title=' {}'.format(d,b)
            s4="update books set current_status='Issued' where
Title=' {}'.format(b)
            cur.execute(s1)
            cur.execute(s2)
            cur.execute(s3)
            cur.execute(s4)
            con.commit()
            print("Database updated")
        else:
            print('Limit reached!')
            break
        break
    else:
        continue
    else:
        print('Book has been issued')
        break
    else:
        continue
    else:
        print('Mcode not found')
    ans=input('Do you wish to continue(y/n): ')

```

#Function to return books

```
def returnbook(b):
```

```

ans='y'
while ans=='y':
    cur.execute('select bcode from books;')
    j=cur.fetchall()
    d=int(input('Enter todays day(dd):'))
    m=int(input('Enter todays month(mm):'))
    y=int(input('Enter todays year(yyyy):'))
    for i in j:
        if i[0]==b:
            x="select Issuedate from books where bcode={}".format(b)
            cur.execute(x)
            w=cur.fetchall()
            for k in w:
                for n in k:
                    mo=n.strftime('%m') #assuming 30 days in a month
                    da=n.strftime('%d')
                    if int(mo)==m:
                        nod=d-int(da)
                        return nod
                    else:
                        mn=m-int(mo)
                        nod=(30-int(da))+d+(30*(mn-1))
                        return nod
                break
            else:
                continue
        else:
            print('Book not found')
    ans=input('Do you wish to return more(y/n): ')

```

#Function to search for books

```

def booksearch():
    a='y'
    while a=='y':
        b=input("Enter book name:")

```

```

s='select Title from books;'
cur.execute(s)
w=cur.fetchall()
for i in w:
    if b in i[0]:
        print('Book found')
        w="select Mcode from books where Title='{}'.format(b)
        cur.execute(w)
        f=cur.fetchall()
        if int(f[0][0])==0:
            print("This book is currently available")
        else:
            print("This book is currently unavailable")
        break
    else:
        continue
else:
    print('Book not found')
a=input("Do you wish to search for another book(y/n): ")

```

#Function to generate reports

```

def reports():
    print('Report Options')
    print()
    print()
    print('1. Subject wise book list')
    print('2. List of books issued to Members')
    print('3. List of available books')
    print('4. List of defaulters')
    print('5. List of members in the library')
    print()
    print()
    a=int(input("Choose Report (1-5): "))
    if a==1:
        s1='select*from books group by subject;'

```

```

        cur.execute(s1)
        j=cur.fetchall()
        for i in j:
            print(i)
    elif a==2:
        s2='select title as Issued_Books from books where mcode!=0;'
        cur.execute(s2)
        j=cur.fetchall()
        for i in j:
            print(i)
    elif a==3:
        s3='select title as Available_books from books where mcode=0;'
        cur.execute(s3)
        j=cur.fetchall()
        for i in j:
            print(i)
    elif a==4:
        s4='select name as defaulters from members where
no_of_books_issued>max_limit;'
        cur.execute(s4)
        j=cur.fetchall()
        for i in j:
            print(i)
    elif a==5:
        cur.execute('Select name from members;')
        j=cur.fetchall()
        for i in j:
            print(i)
    else:
        print('Select a number from 1-5:')
        print()
    return

```

#Main function

```
def main():
```

```

print('Welcome to Library Management System')
print()
print('The following functions can be done')
print()
ans='y'
while ans=='y' or ans=='Y':
    print('1. Add Books')
    print('2. Add Members')
    print('3. Modify Member Details')
    print('4. Issue book')
    print('5. Return book')
    print('6. Search Book')
    print('7. General Report')
    print()
    n=int(input('What would you like to choose:'))
    print()
    if n==1:
        addbooks()
    elif n==2:
        addmembers()
    elif n==3:
        modifydetails()
    elif n==4:
        issuebook()
    elif n==5:
        fine=0
        b=int(input('Enter book code:'))
        x=returnbook(b)
        if x<=7:
            fine=0
        elif x>7 and x<=14:
            fine+=(x*0.25)
        elif x>14 and x<=21:
            fine+=(x*-0.35)
        elif x>21 and x<=30:

```

```

        fine+=(x*0.5)
    else:
        fine+=(x*0.75)
    if fine>0:
        print("Member has to pay fine")
        print("Fine Amount -",fine)
    elif fine==0:
        print('Member has no fine')
        s="update books set Mcode=0 where Bcode={}".format(b)
        s1="update books set current_status='Not Issued' where
Bcode={}".format(b)
        cur.execute(s)
        cur.execute(s1)
        con.commit()
        print('Database updated')
    elif n==6:
        booksearch()
    elif n==7:
        reports()
    else:
        print('Choose options as mentioned above')
    print()
    ans=input('Do you wish to perform any other function(y/Y):')
    print()
    print('Thank you for choosing us!')
main()

```

Output

- **Adding books**

```
Welcome to Library Management System

The following functions can be done

1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report

What would you like to choose:1

Enter book code: 12
Enter subject: Comic
Enter title: Batman
Enter author: Bob Kane
Enter publisher name: DC
Enter price: 125
Enter mcode (0): 0
Enter current date(for new data-yyyy/mm/dd):2020/03/01
Enter current status: Not Issued
Database updated
Do you want to continue:
```

- **Adding Members**

```
What would you like to choose:2

Enter member code (mcode): 10
Enter Name: Amit Kumar
Enter address: Al Majaz 1
Enter phone: 0504554545
Enter Limit: 6
Enter number of books issued: 0
Database updated
```

● Modifying Details

```
Do you wish to perform any other function(y/Y):y
1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report

What would you like to choose:3

1. Modify address
2. Modify phone number

Select option 1 or 2: 1
Enter mcode of row: 10
Enter new address: Al Majaz 3
Database updated
Do you wish to continue(y/n): y
1. Modify address
2. Modify phone number

Select option 1 or 2: 2
Enter mcode of row: 11
Enter new phone: 551221212
Database updated
Do you wish to continue(y/n): |
```

● Issuing Books

```
The following functions can be done

1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report
```

● Returning Books

```
The following functions can be done

1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report

What would you like to choose:5

Enter book code:34
Enter todays day(dd):01
Enter todays month(mm):03
Enter todays year(yyyy):2022
Member has no fine
Database updated
```

● Searching Books

```
1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report

What would you like to choose:6

Enter book name:Time
Book not found
Do you wish to search for another book(y/n): y
Enter book name:Batman
Book found
This book is currently unavailable
Do you wish to search for another book(y/n): y
Enter book name:Sherlock Holmes
Book found
```

● Reports

1. Add Books
2. Add Members
3. Modify Member Details
4. Issue book
5. Return book
6. Search Book
7. General Report

What would you like to choose:7

Report Options

1. Subject wise book list
2. List of books issued to Members
3. List of available books
4. List of defaulters
5. List of members in the library

Choose Report (1-5): 1

```
(12, 'Comic', 'Batman', 'Bob Kane', 'DC', 125, 10, datetime.date(2022, 3, 1),  
'Issued')  
(45, 'Mystery', 'Sherlock Holmes', 'Sir Arthus CD', 'Penguin LTD', 200, 3, da  
tetime.date(2022, 3, 4), 'Issued')  
(34, 'Non Fiction', 'Harry Potter', 'JK Rowling', 'Penguin LTD', 175, 0, date  
time.date(2020, 3, 3), 'Not Issued')
```

Report Options

1. Subject wise book list
2. List of books issued to Members
3. List of available books
4. List of defaulters
5. List of members in the library

Choose Report (1-5): 2

```
('Batman',)  
( 'Spider Man',)  
( 'Sherlock Holmes',)
```

Report Options

1. Subject wise book list
2. List of books issued to Members
3. List of available books
4. List of defaulters
5. List of members in the library

Choose Report (1-5): 3
('Harry Potter',)

Report Options

1. Subject wise book list
2. List of books issued to Members
3. List of available books
4. List of defaulters
5. List of members in the library

Choose Report (1-5): 4

Report Options

1. Subject wise book list
2. List of books issued to Members
3. List of available books
4. List of defaulters
5. List of members in the library

Choose Report (1-5): 5
('Amit Kumar',)
('Ramu Kumar',)
('Shamu Kumar',)
('Supandi Kumar',)

Bibliography

- Thonny Software-For python programming
- MYSQL-For SQL tables
- Textbook for Class XI and XII – Information Practices NCERT by Sumita Arora
- Google.com – For extra information