MODERN CONVENT SCHOOL

COMPUTER SCIENCE PROJECT

By - Ritu Bari

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I cannot forget to offer my profound gratitude to my parents and my classmates who helped me carry out this project work successfully, I would also like to thank them for their valuable advice and support which was showered upon me in the time of need.

CERTIFICATE

This is to certify that Ritu Bari a student of class XII has successfully completed the research on the project **"Library Management System"** under the guidance of Mrs. Monika Jain (HOD, Computer Science, Modern Convent School) during the year **2020-21** in fulfillment of the Computer Science practical examination conducted by AISSCE, New Delhi.

PRE-REQUISITES FOR THE PROGRAM

1. A file name Account_ID.log and Book_ID.log stored at the following location: “D://Library/” containing initial account and book ID’s.
2. MySQL Server with Password “admin”.
3. MySQL Connector for Python.
4. Python Shell.

CODE

```python
import mysql.connector
from datetime import date, timedelta
sql_connector=mysql.connector.connect(host="localhost",user="root",passwd="admin",database="mysql")
sql_cursor=sql_connector.cursor()
while True:
      id=str(input("Enter your Username: "))
      pwd=str(input("Enter your Password: "))
      if id=="admin" and pwd=="admin":
            try:
                  sql_cursor.execute("CREATE DATABASE Library")
                  sql_cursor.execute("USE Library")
                  sql_cursor.execute('CREATE TABLE Lended (Book_ID INT, '
                        'Account_ID INT, Date_Borrowed CHAR(10), Date_Return CHAR(10))')
                  sql_cursor.execute("CREATE TABLE Accounts (Account_ID INT, Account_Name CHAR(20), Phone BIGINT)")
                  sql_cursor.execute("CREATE TABLE Catalog (Book_ID INT, Book_Name CHAR(50), Author_Name CHAR(20), Qty INT)")
                  sql=("INSERT INTO Accounts VALUES (%s,%s,%s)")
                  val=[(100,"Ritu Bari",8798282309),
                  (101,"Vishakha Chauhan",8964382373),
                  (102,"Shivansh Goel",9872546824),
                  (103,"Mayank Chaurasia",9628423512),
                  (104,"Kanishka Jain",9234548994)]
                  sql_cursor.executemany(sql, val)
                  sql_connector.commit()
                  sql2=("INSERT INTO Catalog VALUES (%s,%s,%s,%s)")
                  val2=[(5000,"To Kill a Mockingbird","Harper Lee",3),
                  (5001,"1984","George Orwell",8),
                  (5002,"Harry Potter and the Philosopher’s Stone","J.K. Rowling",1),
                  (5003,"The Lord of the Rings","J.R.R. Tolkien",3),
                  (5004,"The Great Gatsby","F. Scott Fitzgerald",6)]
                  sql_cursor.executemany(sql2, val2)
                  sql_connector.commit()
            except:
                  pass
            finally:
                  sql_cursor.execute("USE Library")
            while True:
                  print("")
                  print("Choose an Option")
                  print("1. Lend a Book")
                  print("2. Create New Borrower Account")
                  print("3. Add a New Book to the Catalog")
                  print("4. Delete a Book from the Catalog")
                  menu1=int(input(">> "))
                  print("")
                  if menu1==1:
                        print("Lend a Book".center(130))
                        print("")
                        menu5=input("Enter Book ID: ")
                        menu6=input("Enter Account ID: ")
                        menu7=int(input("Enter No. of Days Book is borrowed for: "))
                        today=date.today()
                        date=today.strftime("%d/%m/%Y")
                        due=today+timedelta(menu7)
                        duef=due.strftime("%d/%m/%Y")
                        sql3=("INSERT INTO Lended VALUES (%s,%s,%s,%s)")
                        val3=[(menu5,menu6,date,duef)]
                        sql_cursor.executemany(sql3, val3)
                        sql_connector.commit()
                        sql_cursor.execute("UPDATE Catalog SET Qty=Qty-1 where Book_ID="+menu5)
                        sql_connector.commit()
                        print("")
                        print("Book Issued".center(130))
                  elif menu1==2:
                        print("Create New Borrower Account".center(130))
                        print("")
                        name=str(input("Name of Account Holder: "))
                        phone=int(input("Phone Number: "))
                        while True:
                              confirm=str(input("Do want to proceed (Y/N): "))
                              if confirm.lower()=="y":
                                    aid_f=open(r"D:\Library\Account_ID.log", "r")
                                    aid_l=aid_f.readlines()
                                    aid=int(aid_l[0])
                                    aid_f.close()
                                    aid+=1
                                    aid_f=open(r"D:\Library\Account_ID.log", "w")
                                    aid_f.write(str(aid))
                                    aid_f.close()
```

```
                              sql=("INSERT INTO Accounts VALUES (%s,%s,%s)")
                              val=[(aid,name,phone)]
                              sql_cursor.executemany(sql, val)
                              sql_connector.commit()

                              print(("New ID has been created with User ID: "+str(aid)).center(130))
                              print("")
                              break
                        elif confirm.lower()=="n":
                              print("Request Canceled".center(130))
                              break
                        else:
                              print("Invalid Input".center(130))
                        print("")
            elif menu1==3:
                  print("Add a New Book to the Catalog".center(130))
                  print("")
                  name=str(input("Name of the Book: "))
                  aname=str(input("Author Name: "))
                  qty=int(input("Quantity: "))
                  while True:
                        confirm=str(input("Do want to proceed (Y/N): "))
                        if confirm.lower()=="y":
                              bid_f=open(r"D:\Library\Book_ID.log", "r")
                              bid_l=bid_f.readlines()
                              bid=int(bid_l[0])
                              bid_f.close()
                              bid+=1
                              bid_f=open(r"D:\Library\Book_ID.log", "w")
                              bid_f.write(str(bid))
                              bid_f.close()
                              sql=("INSERT INTO Catalog VALUES (%s,%s,%s,%s)")
                              val=[(bid,name,aname,qty)]
                              sql_cursor.executemany(sql, val)
                              sql_connector.commit()

                              print(("New Book has been added to the Catalog with Book ID: "+\
                                    str(bid)).center(130))
                              print("")
                              break
                        elif confirm.lower()=="n":
                              print("Request Canceled".center(130))
                              break
                        else:
                              print("Invalid Input".center(130))
                        print("")
            elif menu1==4:
                  print("Delete a Book from the Catalog".center(130))
                  print("")
                  print("How do you want to Search for the Book to be Deleted?")
                  print("1. Book ID")
                  print("2. Book Name")
                  print("3. Author Name")
                  menu_2=int(input(">> "))
                  if menu_2==1:
                        while True:
                              menu3=int(input("Book ID: "))
                              try:
                                    sql_cursor.execute("SELECT * FROM Catalog WHERE Book_ID="+str(menu3))
                                    record=sql_cursor.fetchall()
                                    print("Do you wan to Delete",record[0][1],"by",record[0][2])
                                    confirm=str(input("Do want to proceed (Y/N): "))
                                    if confirm.lower()=="y":
                                          while True:
                                                menu4=int(input("Quantity to be Deleted: "))
                                                if menu4<=record[0][3]:
                                                      sql_cursor.execute("UPDATE Catalog SET Qty="+\
                                                            str(record[0][3]-menu4)+\
                                                            " WHERE Book_ID="+str(menu3))
                                                      sql_connector.commit()
                                                      print("Catalog Updated".center(130))
                                                      break
                                                else:
                                                      print("Only",record[0][3],"Books are available".center(130))
                                          break
                                    elif confirm.lower()=="n":
                                          print("Request Canceled".center(130))
                                          break
                                    else:
```

```
                                    print("Invalid Input".center(130))
                                print("")
                            except:
                                print("Book Doesn't Exists".center(130))
                    elif menu_2==2:
                        while True:
                            menu3=str(input("Book Name: "))
                            try:
                                sql_cursor.execute("SELECT * FROM Catalog WHERE Book_Name like '%"+menu3+"%'")
                                record=sql_cursor.fetchall()
                                print("Do you want to Delete",record[0][1],"by",record[0][2])
                                confirm=str(input("Do want to proceed (Y/N): "))
                                if confirm.lower()=="y":
                                    while True:
                                        menu4=int(input("Quantity to be Deleted: "))
                                        if menu4<=record[0][3]:
                                            sql_cursor.execute("UPDATE Catalog SET Qty="+\
                                                str(record[0][3]-menu4)+\
                                                " WHERE Book_Name LIKE '%"+\
                                                str(menu3)+"%'")
                                            sql_connector.commit()
                                            print("Catalog Updated".center(130))
                                            break
                                        else:
                                            print(("Only "+\
                                                str(record[0][3])+\
                                                " Books are available").center(130))
                                    break
                                elif confirm.lower()=="n":
                                    print("Request Canceled".center(130))
                                    break
                                else:
                                    print("Invalid Input".center(130))
                                print("")
                            except:
                                print("Book Doesn't Exists".center(130))
                    elif menu_2==3:
                        while True:
                            menu3=str(input("Author Name: "))
                            try:
                                sql_cursor.execute('SELECT * FROM Catalog WHERE '
                                    'Author_Name LIKE '%"+str(menu3)+"%'')
                                record=sql_cursor.fetchall()
                                print("Do you want to Delete",record[0][1],"by",record[0][2])
                                confirm=str(input("Do want to proceed (Y/N): "))
                                if confirm.lower()=="y":
                                    while True:
                                        menu4=int(input("Quantity to be Deleted: "))
                                        if menu4<=record[0][3]:
                                            sql_cursor.execute("UPDATE Catalog SET Qty="+\
                                                str(record[0][3]-menu4)+\
                                                " WHERE Author_Name like '%"+str(menu3)+"%'")
                                            sql_connector.commit()
                                            print("Catalog Updated".center(130))
                                            break
                                        else:
                                            print(("Only "+str(record[0][3])+" Books are available").center(130))
                                    break
                                elif confirm.lower()=="n":
                                    print("Request Canceled".center(130))
                                    break
                                else:
                                    print("Invalid Input".center(130))
                                print("")
                            except:
                                print("Book Doesn't Exists".center(130))
                    else:
                        print("Invalid Input".center(130))
                        print("")
                break
            elif id.lower()=="admin":
                print("")
                print("Wrong Password".center(130))
            else:
                print("")
                print("Wrong ID/Password".center(130))
```

OUTPUT

INSTANCE–1

```
C:\Windows\py.exe
Enter your Username: admin
Enter your Password: admin

Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>> 1

                                                    Lend a Book


Enter Book ID: 5001
Enter Account ID: 102
Enter No. of Days Book is borrowed for: 4

                                                    Book Issued


Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>>
```

- Database after the Command

```
MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 15
Server version: 8.0.21 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE Library
Database changed
mysql> SELECT * FROM Lended;
+---------+------------+---------------+-------------+
| Book_ID | Account_ID | Date_Borrowed | Date_Return |
+---------+------------+---------------+-------------+
|    5001 |        102 | 05/11/2020    | 09/11/2020  |
+---------+------------+---------------+-------------+
1 row in set (0.00 sec)

mysql>
```

INSTANCE–2

```
C:\Windows\py.exe
Enter your Username: admin
Enter your Password: admin

Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>> 2

                                        Create New Borrower Account


Name of Account Holder: Yash Saxena
Phone Number: 8284078654
Do want to proceed (Y/N): y
                                    New ID has been created with User ID: 105



Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>>
```

- Database after the Command

```
MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 8.0.21 MySQL Community Server - GPL

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE Library
Database changed
mysql> SELECT * FROM Accounts;
+------------+-----------------+------------+
| Account_ID | Account_Name    | Phone      |
+------------+-----------------+------------+
|        100 | Ritu Bari       | 8798282309 |
|        101 | Vishakha Chauhan | 8964382373 |
|        102 | Shivansh Goel   | 9872546824 |
|        103 | Mayank Chaurasia | 9628423512 |
|        104 | Kanishka Jain   | 9234548994 |
|        105 | Yash Saxena     | 8284078654 |
+------------+-----------------+------------+
6 rows in set (0.00 sec)

mysql>
```

INSTANCE-3

```
C:\Windows\py.exe
Enter your Username: admin
Enter your Password: admin

Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>> 3

                                        Add a New Book to the Catalog


Name of the Book: Thirteen Reasons Why
Author Name: Jay Asher
Quantity: 3
Do want to proceed (Y/N): y
                                New Book has been added to the Catalog with Book ID: 5005



Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>>
```

- Database after the Command

```
MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.21 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE Library
Database changed
mysql> SELECT * FROM Catalog;
+---------+-----------------------------------+--------------------+------+
| Book_ID | Book_Name                         | Author_Name        | Qty  |
+---------+-----------------------------------+--------------------+------+
|    5000 | To Kill a Mockingbird             | Harper Lee         |    3 |
|    5001 | 1984                              | George Orwell      |    7 |
|    5002 | Harry Potter and the Philosopher?s Stone | J.K. Rowling |    1 |
|    5003 | The Lord of the Rings             | J.R.R. Tolkien     |    3 |
|    5004 | The Great Gatsby                  | F. Scott Fitzgerald |    6 |
|    5005 | Thirteen Reasons Why              | Jay Asher          |    3 |
+---------+-----------------------------------+--------------------+------+
6 rows in set (0.00 sec)

mysql>
```
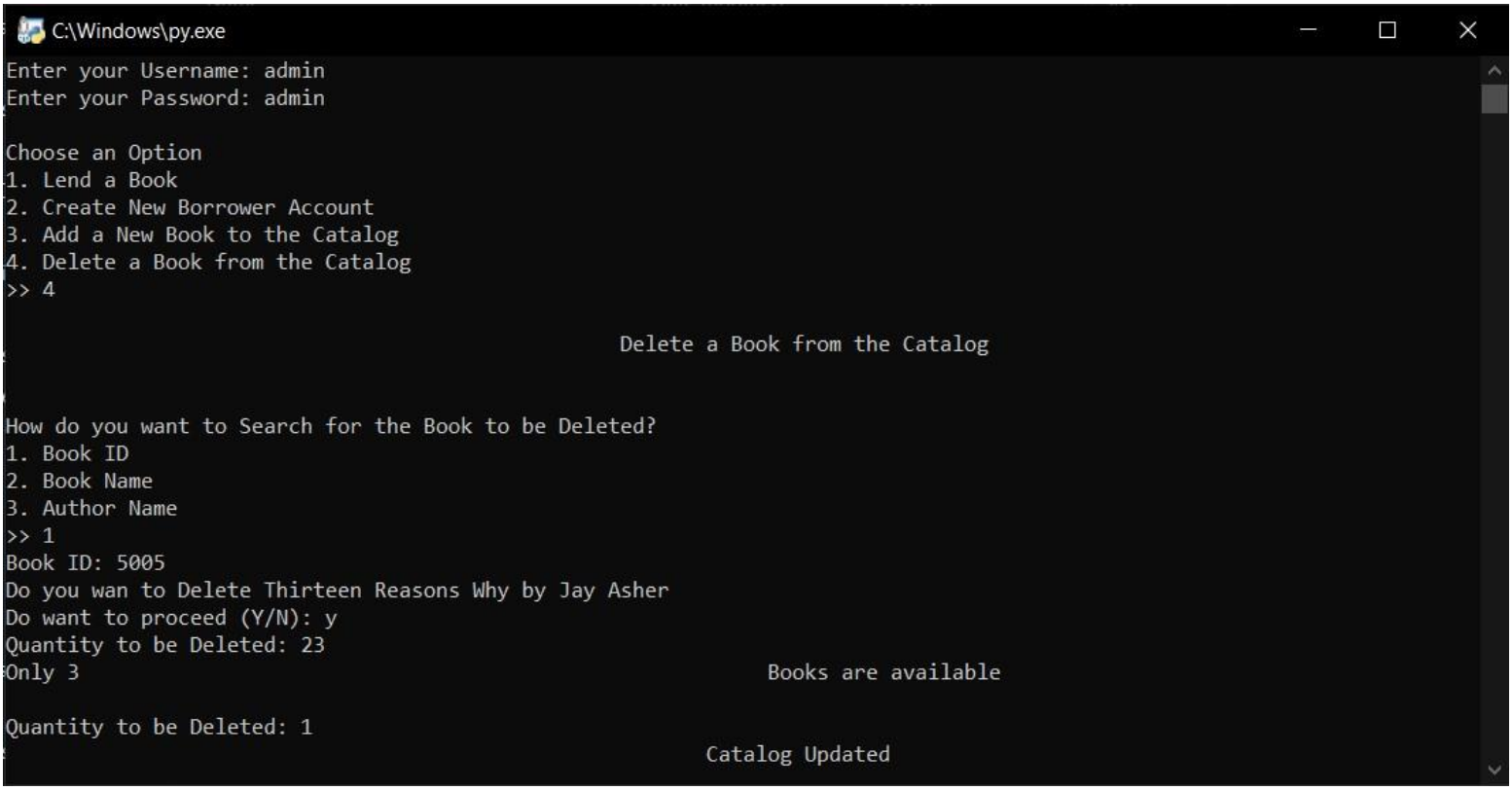
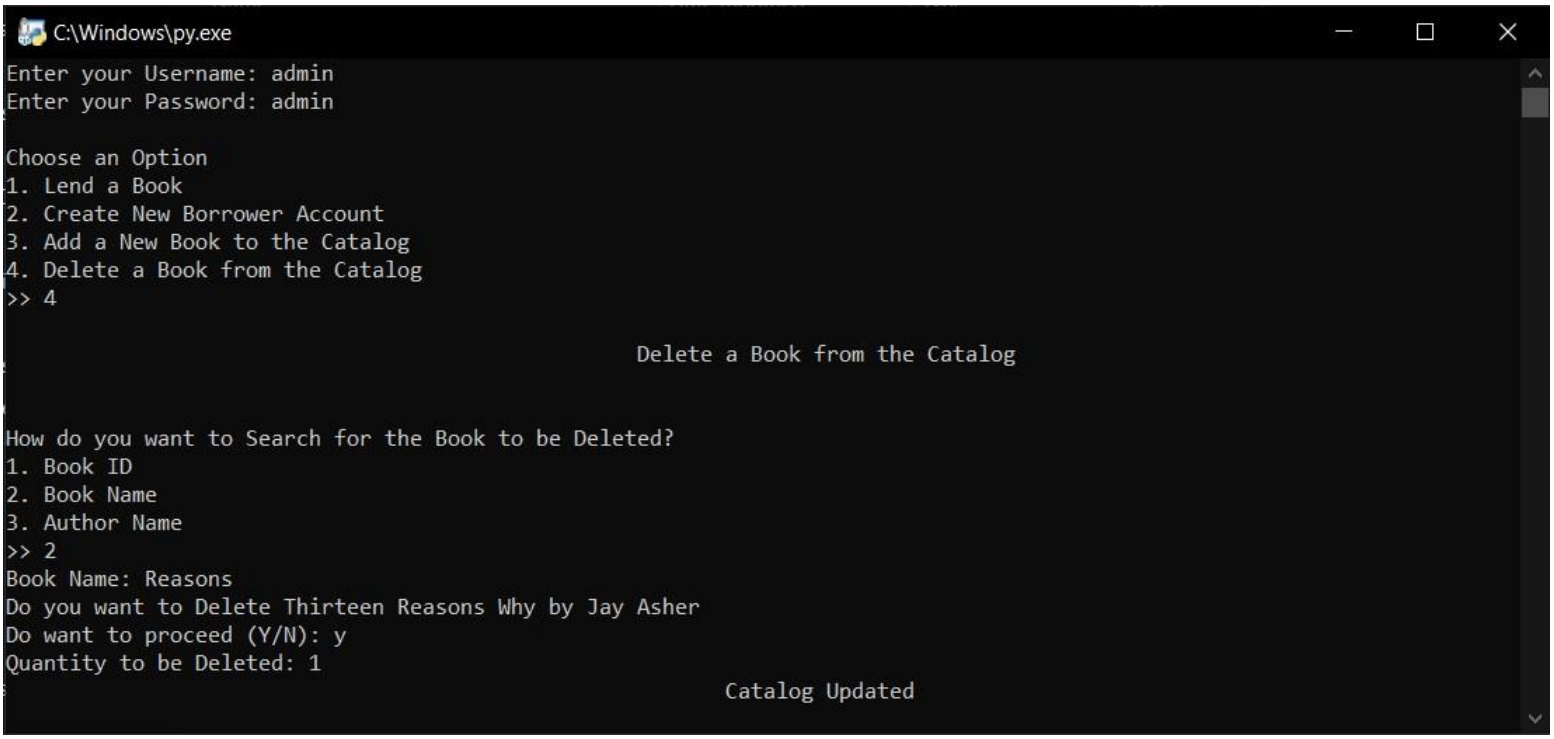
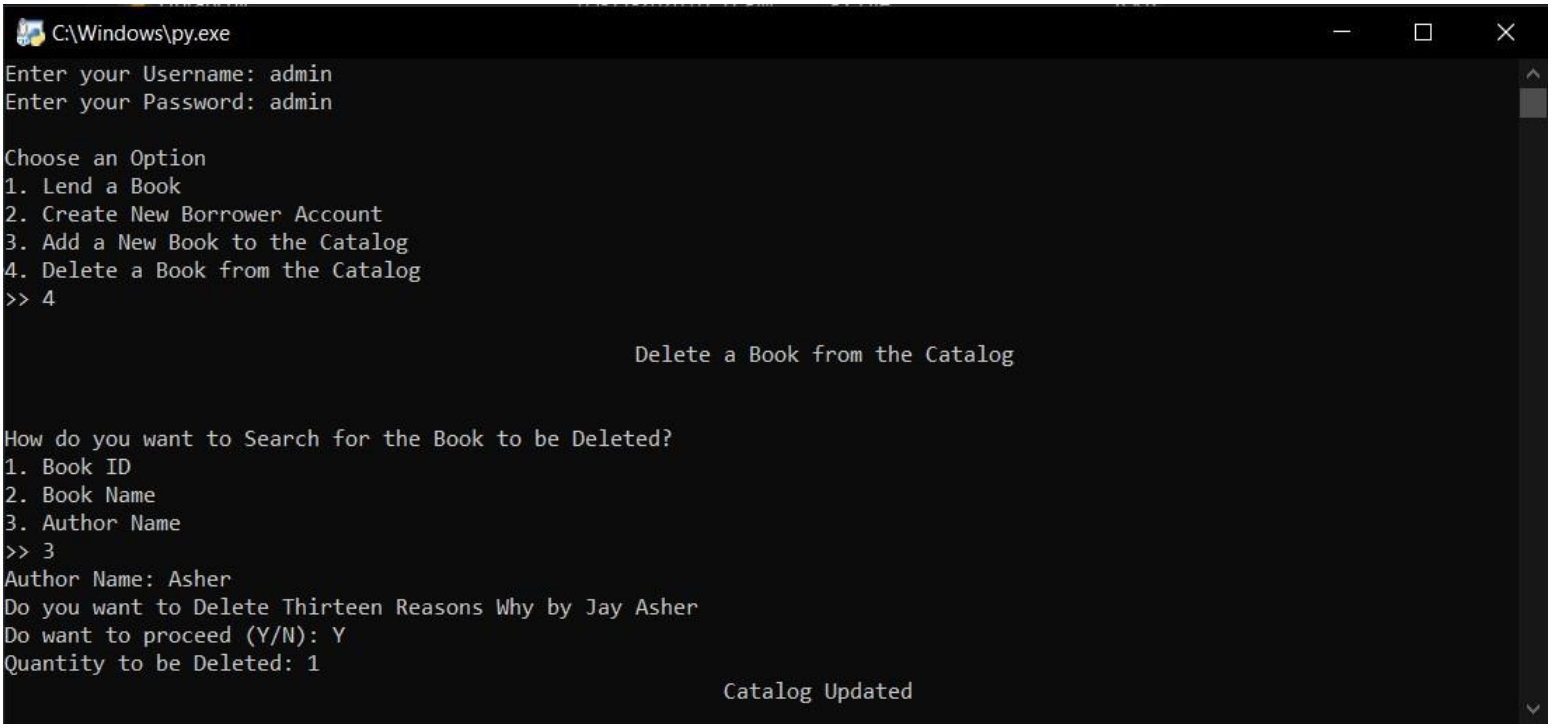

INSTANCE-4


C:\Windows\py.exe
Enter your Username: admin
Enter your Password: admin
Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>> 4
Delete a Book from the Catalog
How do you want to Search for the Book to be Deleted?
1. Book ID
2. Book Name
3. Author Name
>> 1
Book ID: 5005
Do you wan to Delete Thirteen Reasons Why by Jay Asher
Do want to proceed (Y/N): y
Quantity to be Deleted: 23
Only 3 Books are available
Quantity to be Deleted: 1
Catalog Updated


C:\Windows\py.exe
Enter your Username: admin
Enter your Password: admin
Choose an Option
1. Lend a Book
2. Create New Borrower Account
3. Add a New Book to the Catalog
4. Delete a Book from the Catalog
>> 4
Delete a Book from the Catalog
How do you want to Search for the Book to be Deleted?
1. Book ID
2. Book Name
3. Author Name
>> 2
Book Name: Reasons
Do you want to Delete Thirteen Reasons Why by Jay Asher
Do want to proceed (Y/N): y
Quantity to be Deleted: 1
Catalog Updated



- Database after the command