PROJECT-

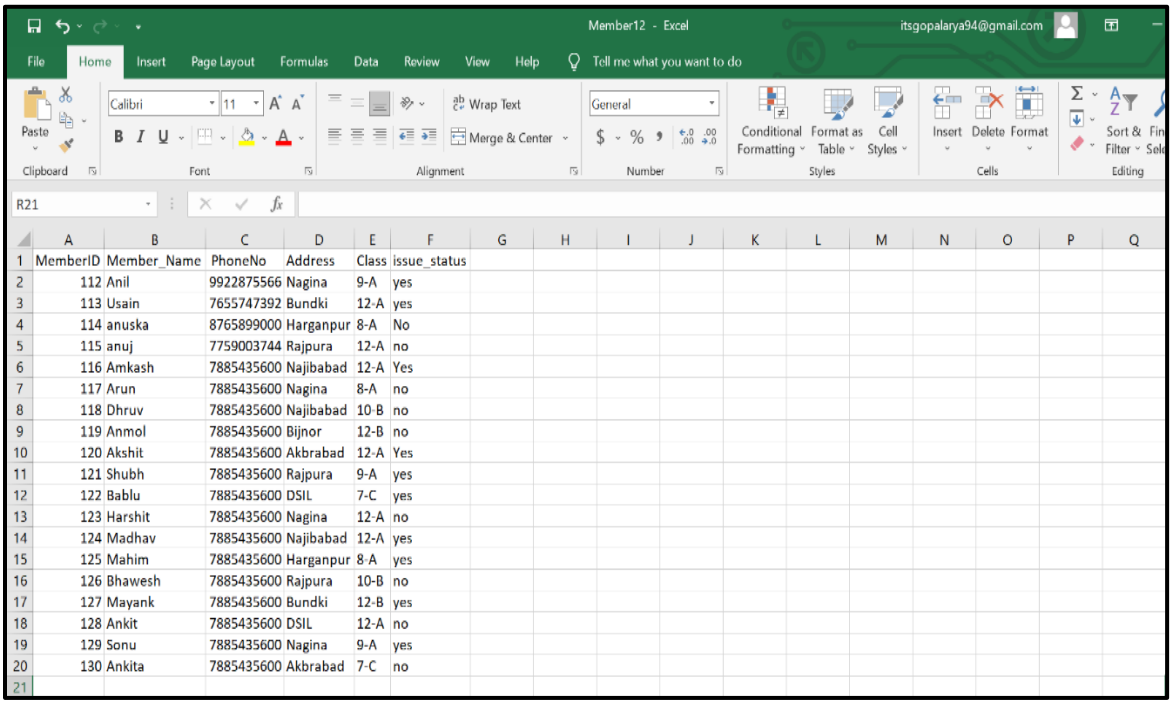
Library Management

-Gopal Arya

CSV FILES:

➢ Details of Members:

This table contains data related to the members that are registered in a library. There are six columns in this table named **Member12** i.e., MemberID, Member name, Phone number, Address, Class and issue status (it will describe that book are issued to the member or not).



Member12 - Excel — itsgopalarya94@gmail.com

File | Home | Insert | Page Layout | Formulas | Data | Review | View | Help | Tell me what you want to do

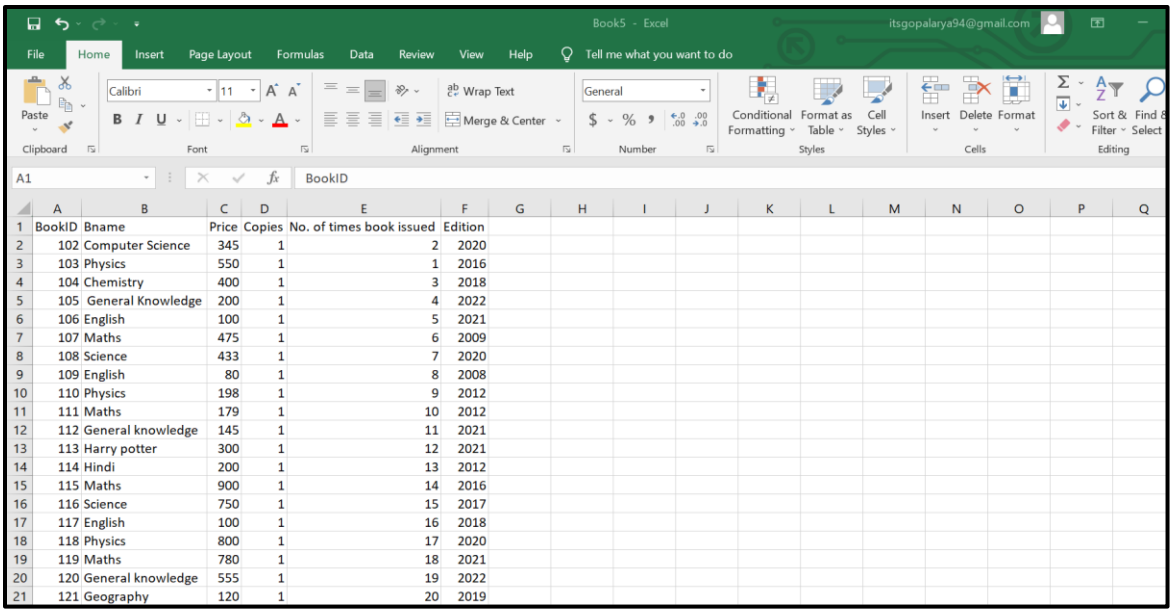
Calibri | 11 | Wrap Text | General | Merge & Center | Conditional Formatting | Format as Table | Cell Styles | Insert | Delete | Format | Sort & Filter

R21

	A	B	C	D	E	F
1	MemberID	Member_Name	PhoneNo	Address	Class	issue_status
2	112	Anil	9922875566	Nagina	9-A	yes
3	113	Usain	7655747392	Bundki	12-A	yes
4	114	anuska	8765899000	Harganpur	8-A	No
5	115	anuj	7759003744	Rajpura	12-A	no
6	116	Amkash	7885435600	Najibabad	12-A	Yes
7	117	Arun	7885435600	Nagina	8-A	no
8	118	Dhruv	7885435600	Najibabad	10-B	no
9	119	Anmol	7885435600	Bijnor	12-B	no
10	120	Akshit	7885435600	Akbrabad	12-A	Yes
11	121	Shubh	7885435600	Rajpura	9-A	yes
12	122	Bablu	7885435600	DSIL	7-C	yes
13	123	Harshit	7885435600	Nagina	12-A	no
14	124	Madhav	7885435600	Najibabad	12-A	yes
15	125	Mahim	7885435600	Harganpur	8-A	yes
16	126	Bhawesh	7885435600	Rajpura	10-B	no
17	127	Mayank	7885435600	Bundki	12-B	yes
18	128	Ankit	7885435600	DSIL	12-A	no
19	129	Sonu	7885435600	Nagina	9-A	yes
20	130	Ankita	7885435600	Akbrabad	7-C	no
21						

➢ Records of books:

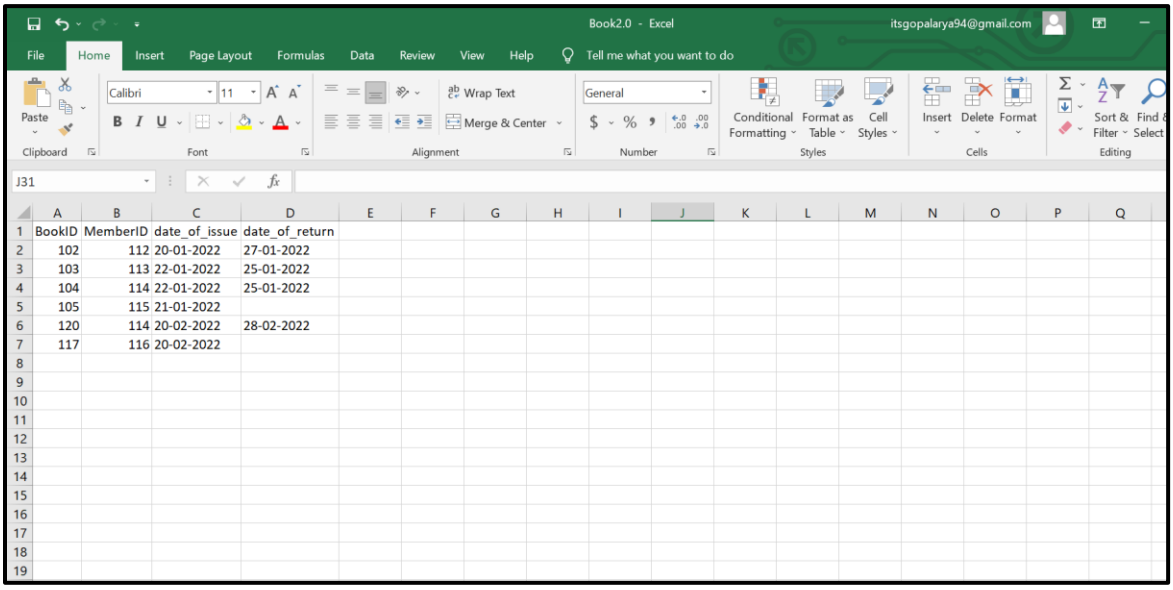
This table contain details about all the book that are in the library. There are six columns in the table named **Book5** i.e., BookID, Bname (Book name), their Price, Copies (it contains 1 because every book has a unique id), No. of times that book has been issued, and their edition.



BookID	Bname	Price	Copies	No. of times book issued	Edition
102	Computer Science	345	1	2	2020
103	Physics	550	1	1	2016
104	Chemistry	400	1	3	2018
105	General Knowledge	200	1	4	2022
106	English	100	1	5	2021
107	Maths	475	1	6	2009
108	Science	433	1	7	2020
109	English	80	1	8	2008
110	Physics	198	1	9	2012
111	Maths	179	1	10	2012
112	General knowledge	145	1	11	2021
113	Harry potter	300	1	12	2021
114	Hindi	200	1	13	2012
115	Maths	900	1	14	2016
116	Science	750	1	15	2017
117	English	100	1	16	2018
118	Physics	800	1	17	2020
119	Maths	780	1	18	2021
120	General knowledge	555	1	19	2022
121	Geography	120	1	20	2019

➢ Book issued:

This table contains details about the books that are being issued by the member. There are four columns in this table named **Book2.0** i.e., BookID, MemberID, Date of issue and Date of return.



BookID	MemberID	date_of_issue	date_of_return
102	112	20-01-2022	27-01-2022
103	113	22-01-2022	25-01-2022
104	114	22-01-2022	25-01-2022
105	115	21-01-2022	
120	114	20-02-2022	28-02-2022
117	116	20-02-2022	

SOURCE CODE AND OUTPUT:

➢ For Displaying menu:

Source Code:

```
import pandas as pd
import matplotlib.pyplot as plt
def menu ():
    print ()
    print ("       Library Management System")
    print ()
    print ("Member1 CSV File")
    print ("     1. Read csv file-member")
    print ("     2. Add new member in member file")
    print ("     3. Search Member")
    print ("     4. Delete a member")
    print ("     5. Display member name in Ascending order")
    print ("Book1 CSV File")
    print ("     6. Read 2 records from top and 2 from bottom-member")
    print ("     7. Modify data")
    print ("     8. Add new book record in Book1 file")
    print ("     9. Show Books file")
    print ("     10. Book name in Descending order")
    print ("     11. Read CSV file - book1")
    print ("     12. Find total books in Library")
    print ("     13. Save changes in Book1 file")
    print ("     14. Save changes in Member file")
    print ("     15. Search book")
    print ("     16. Delete a book")
    print ("     17. Issue Books")
    print ("     18. Return book")
    print ("     19. show issued books")
    print ("Data Visualization")
    print ("     20. Line Plot")
    print ("     21. Bar Plot")
    print ("     22. Hist chart")
menu ()
```

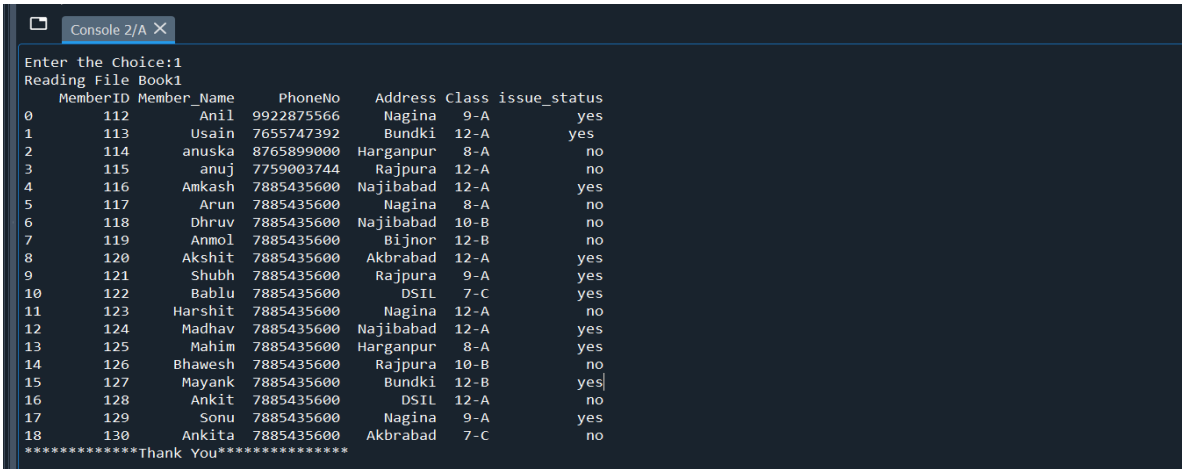
Output:

➢ Read CSV file-Member:

Source Code:

```
def member ():
    print ("Reading File Book1")
    df=pd. read_csv ("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    print(df)
```

Output:



➢ To add new member in member file:

Source Code:

```
def new_member ():
    print ("Adding new member in File member")
    df=pd. read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    print(df)
    ans='yes'
    while ans=='yes' or ans=='Yes':
        MemberID=int (input ("Enter the member id: "))
        Name=input ("Enter the name: ")
        PhoneNo=int (input ("Enter the phone number: "))
        Address=input ("Enter the address: ")
        Class=input ("Enter the class of student: ")
        issue_status="No"
        n=df["MemberID"]. count()
        df.at[n]= [MemberID, Name, PhoneNo, Address, Class, issue_status]
        df.to_csv(path_or_buf="C:\\Users\\itsgo\\Downloads\\Member12.csv", index=False )
        print ("Member added successfully")
        ans=input ("Do you want to add more books?")
    print(df)
```

Output:

```
Console 2/A
Enter the Choice:2
Adding new member in File member
    MemberID Member_Name     PhoneNo    Address Class issue_status
0        112        Anil  9922875566     Nagina   9-A          yes
1        113       Usain  7655747392     Bundki  12-A          yes
2        114      anuska  8765899000  Harganpur   8-A           no
3        115        anuj  7759003744    Rajpura  12-A           no
4        116      Amkash  7885435600  Najibabad  12-A          yes
5        117        Arun  7885435600     Nagina   8-A           no
6        118       Dhruv  7885435600  Najibabad  10-B           no
7        119       Anmol  7885435600     Bijnor  12-B           no
8        120      Akshit  7885435600   Akbrabad  12-A          yes
9        121       Shubh  7885435600    Rajpura   9-A          yes
10       122       Bablu  7885435600       DSIL   7-C          yes
11       123     Harshit  7885435600     Nagina  12-A           no
12       124      Madhav  7885435600  Najibabad  12-A          yes
13       125       Mahim  7885435600  Harganpur   8-A          yes
14       126     Bhawesh  7885435600    Rajpura  10-B           no
15       127      Mayank  7885435600     Bundki  12-B          yes
16       128       Ankit  7885435600       DSIL  12-A           no
17       129        Sonu  7885435600     Nagina   9-A          yes
18       130      Ankita  7885435600   Akbrabad   7-C           no
```

```
Console 2/A
Enter the member id: 131

Enter the name: Virat

Enter the phone number: 7823098111

Enter the address: Nagina

Enter the class of student: 10-A
Member added successfully
```

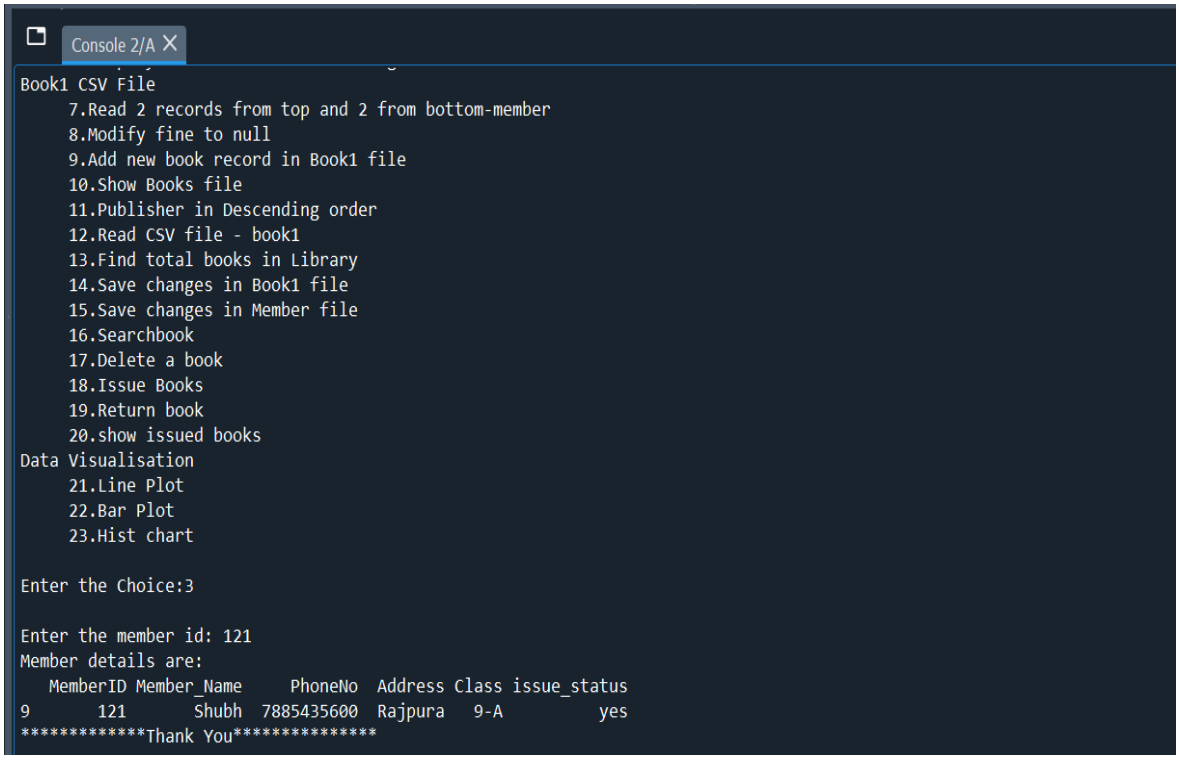
```
Console 2/A
Do you want to add more books?no
    MemberID Member_Name       PhoneNo    Address Class issue_status
0      112.0        Anil  9.922876e+09     Nagina   9-A          yes
1      113.0       Usain  7.655747e+09     Bundki  12-A          yes
2      114.0      anuska  8.765899e+09  Harganpur   8-A           no
3      115.0        anuj  7.759004e+09    Rajpura  12-A           no
4      116.0      Amkash  7.885436e+09  Najibabad  12-A          yes
5      117.0        Arun  7.885436e+09     Nagina   8-A           no
6      118.0       Dhruv  7.885436e+09  Najibabad  10-B           no
7      119.0       Anmol  7.885436e+09     Bijnor  12-B           no
8      120.0      Akshit  7.885436e+09   Akbrabad  12-A          yes
9      121.0       Shubh  7.885436e+09    Rajpura   9-A          yes
10     122.0       Bablu  7.885436e+09       DSIL   7-C          yes
11     123.0     Harshit  7.885436e+09     Nagina  12-A           no
12     124.0      Madhav  7.885436e+09  Najibabad  12-A          yes
13     125.0       Mahim  7.885436e+09  Harganpur   8-A          yes
14     126.0     Bhawesh  7.885436e+09    Rajpura  10-B           no
15     127.0      Mayank  7.885436e+09     Bundki  12-B          yes
16     128.0       Ankit  7.885436e+09       DSIL  12-A           no
17     129.0        Sonu  7.885436e+09     Nagina   9-A          yes
18     130.0      Ankita  7.885436e+09   Akbrabad   7-C           no
19     131.0       Virat  7.823098e+09     Nagina  10-A           No
************Thank You***************
```

➢ To search member:

Source Code:

```
def search_member ():
    MemberID=int (input ("Enter the member id: "))
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    df1=df.loc[df["MemberID"] ==MemberID]
    if df1.empty:
        print ("No member found with given id")
    else:
        print ("Member details are: ")
        print(df1)
```

Output:

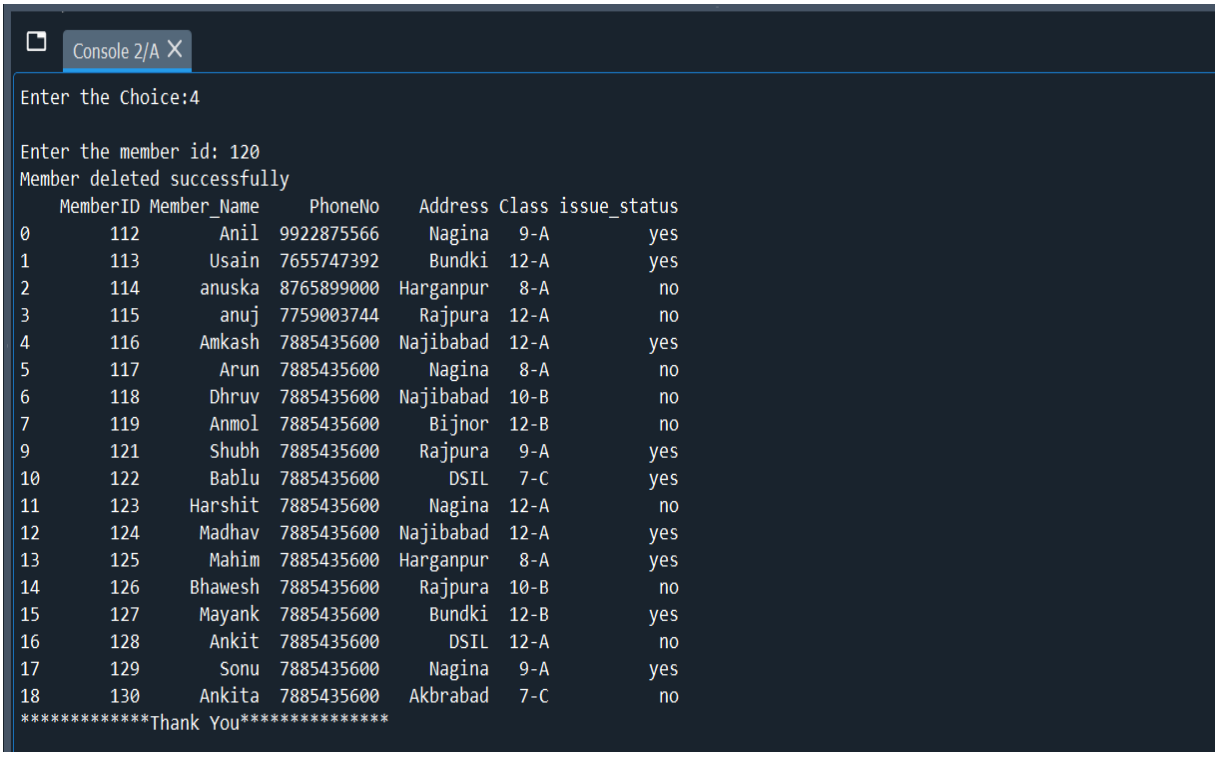


➢ To delete a member:

Source Code:

```
def delete_member ():
    MemberID=int (input ("Enter the member id: "))
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    bdf=df.drop (df[df["MemberID"] ==MemberID].index)
    df=df.to_csv ("C:\\Users\\itsgo\\Downloads\\Member12.csv", index=False)
    print ("Member deleted successfully")
    print(bdf)
```

Output:



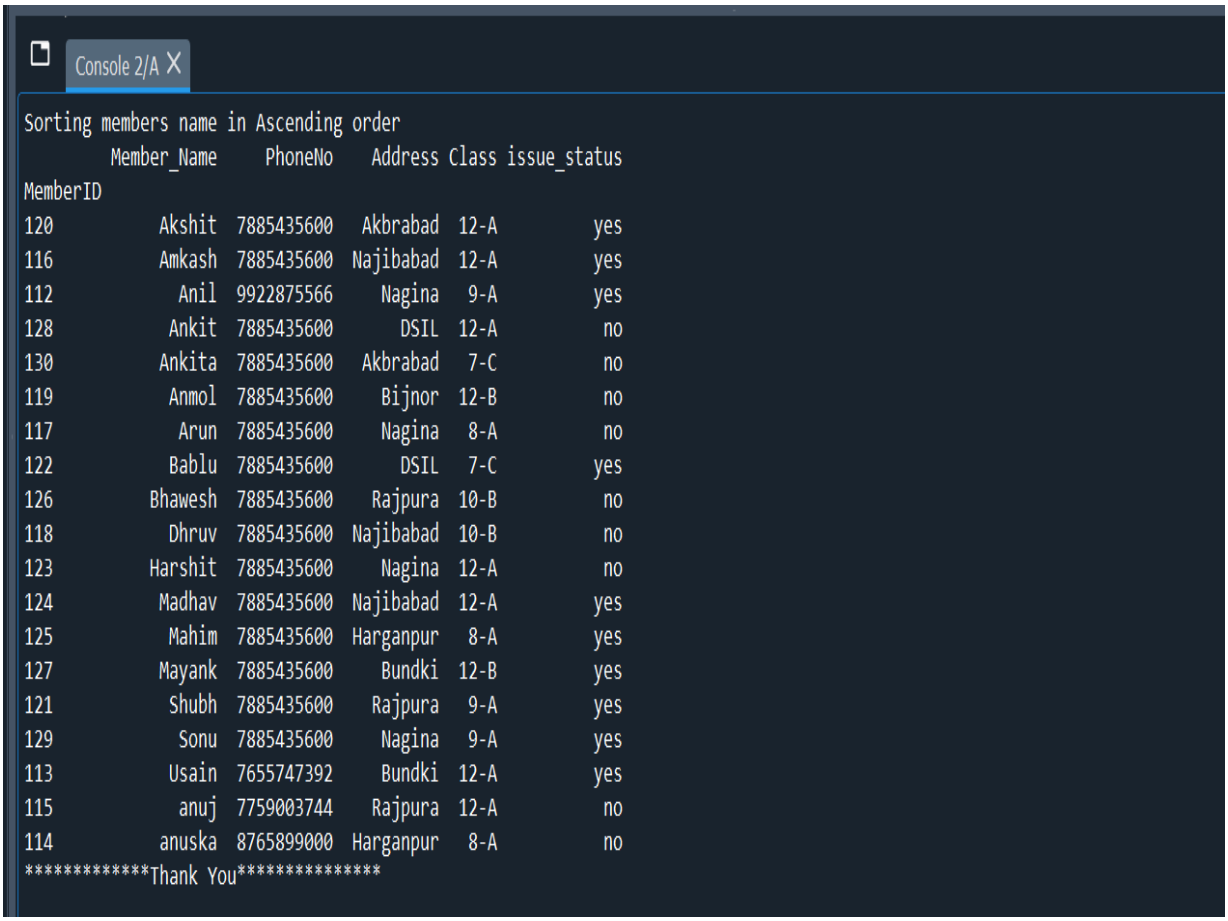
```
Console 2/A
Enter the Choice:4

Enter the member id: 120
Member deleted successfully
    MemberID Member_Name     PhoneNo    Address Class issue_status
0        112        Anil  9922875566     Nagina   9-A          yes
1        113       Usain  7655747392     Bundki  12-A          yes
2        114      anuska  8765899000  Harganpur   8-A           no
3        115        anuj  7759003744    Rajpura  12-A           no
4        116      Amkash  7885435600  Najibabad  12-A          yes
5        117        Arun  7885435600     Nagina   8-A           no
6        118       Dhruv  7885435600  Najibabad  10-B           no
7        119       Anmol  7885435600     Bijnor  12-B           no
9        121       Shubh  7885435600    Rajpura   9-A          yes
10       122       Bablu  7885435600       DSIL   7-C          yes
11       123     Harshit  7885435600     Nagina  12-A           no
12       124      Madhav  7885435600  Najibabad  12-A          yes
13       125       Mahim  7885435600  Harganpur   8-A          yes
14       126     Bhawesh  7885435600    Rajpura  10-B           no
15       127      Mayank  7885435600     Bundki  12-B          yes
16       128       Ankit  7885435600       DSIL  12-A           no
17       129        Sonu  7885435600     Nagina   9-A          yes
18       130      Ankita  7885435600   Akbrabad   7-C           no
************Thank You**************
```

➢ To Display member name in Ascending order:

Source Code:

```
def sort_member ():
    print ("Sorting members name in Ascending order")
    df=pd.read_csv ("C:\\Users\\itsgo\\Downloads\\Member12.csv", index_col=0)
    df=df.sort_values ('Member_Name', ascending=True)
    print(df)
```

Output:



Console 2/A X

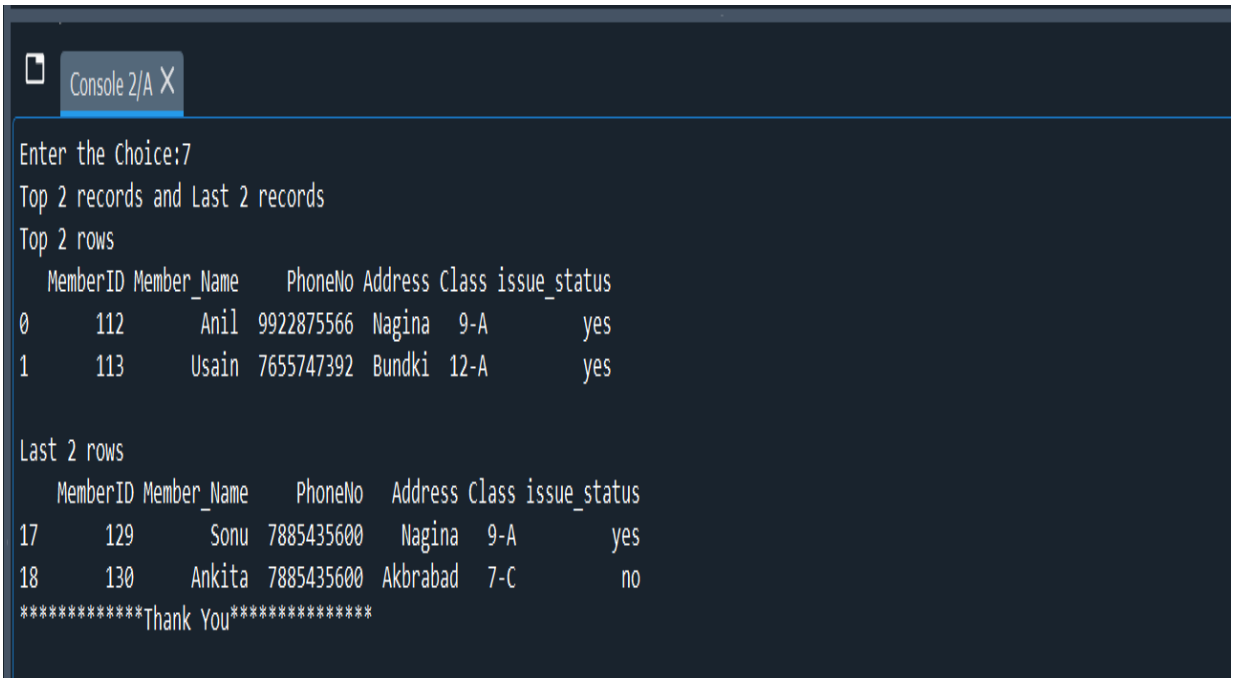
```
Sorting members name in Ascending order
        Member_Name     PhoneNo    Address Class issue_status
MemberID
120          Akshit  7885435600   Akbrabad  12-A          yes
116          Amkash  7885435600  Najibabad  12-A          yes
112            Anil  9922875566     Nagina   9-A          yes
128          Ankit   7885435600       DSIL  12-A           no
130          Ankita  7885435600   Akbrabad   7-C           no
119          Anmol   7885435600     Bijnor  12-B           no
117            Arun  7885435600     Nagina   8-A           no
122          Bablu   7885435600       DSIL   7-C          yes
126         Bhawesh  7885435600    Rajpura  10-B           no
118          Dhruv   7885435600  Najibabad  10-B           no
123         Harshit  7885435600     Nagina  12-A           no
124          Madhav  7885435600  Najibabad  12-A          yes
125          Mahim   7885435600  Harganpur   8-A          yes
127          Mayank  7885435600     Bundki  12-B          yes
121          Shubh   7885435600    Rajpura   9-A          yes
129            Sonu  7885435600     Nagina   9-A          yes
113          Usain   7655747392     Bundki  12-A          yes
115            anuj  7759003744    Rajpura  12-A           no
114          anuska  8765899000  Harganpur   8-A           no
*************Thank You**************
```

➢ To Read 2 records from top and 2 from bottom-member:

Source Code:

```
def top_bottom ():
    print ("Top 2 records and Last 2 records")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    print ('Top 2 rows')
    print (df.head (2))
    print ()
    print ('Last 2 rows')
    print (df.tail(2))
```

Output:



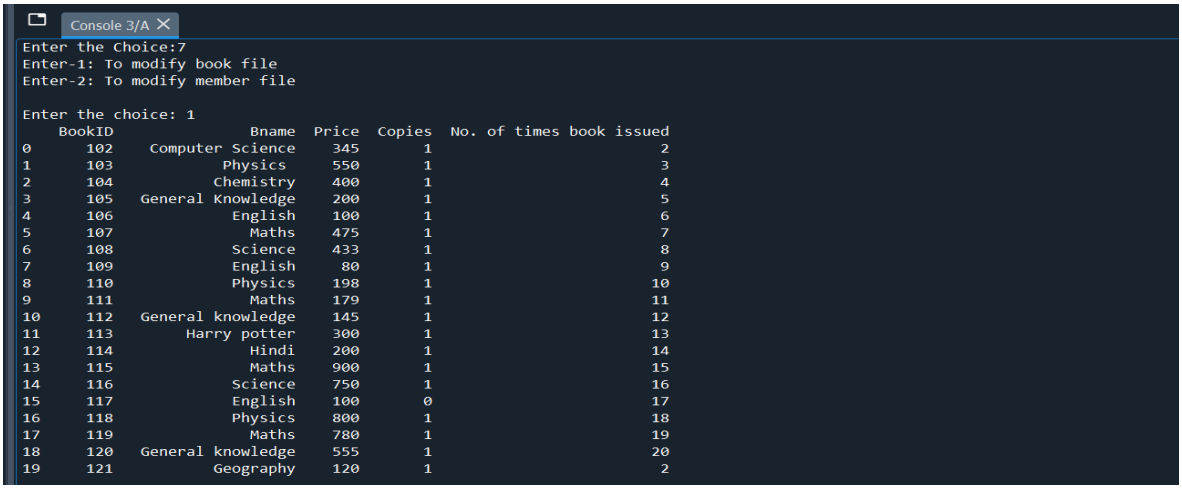
➢ Modify:

- ### Modify Book file:

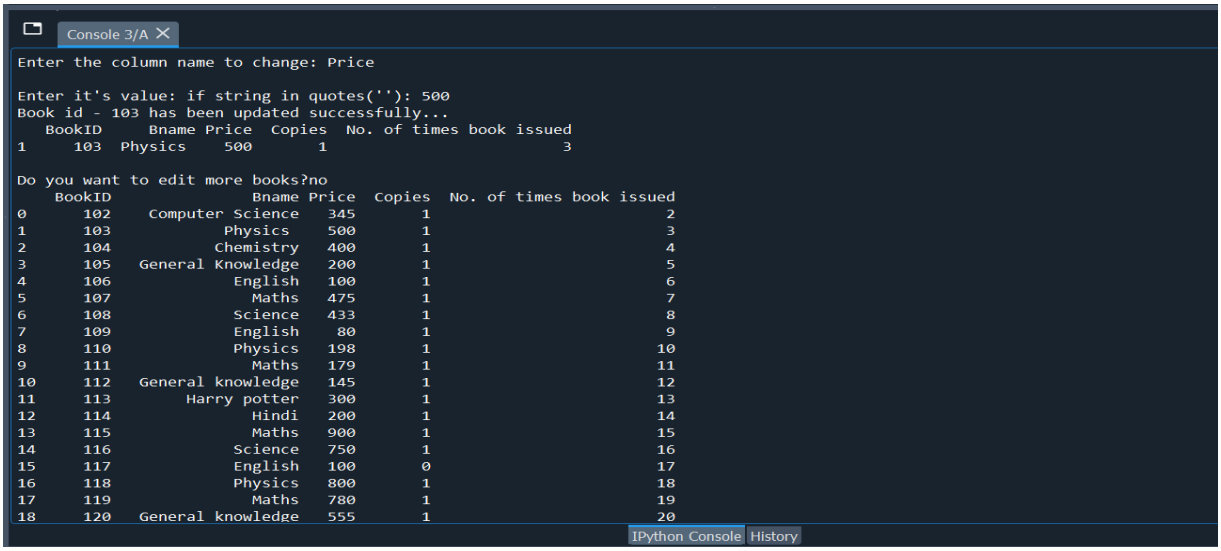
Source Code:

```
def modify():
    print ("Enter-1: To modify book file ")
    print ("Enter-2: To modify member file")
    opt=int (input ("Enter the choice: "))
    if opt==1:
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        print(df)
        ans='yes'
        BookID=0
        while ans=='yes' or ans=='Yes':
            BookID=int (input ("Enter Book id :"))
            if BookID in df['BookID'].values:
                a=input ("Enter the column name to change: ")
                b=input ("Enter it's value: if string in quotes('): ")
                df.loc[(df['BookID'] == BookID),a]=b
                print ("Book id -",BookID,"has been updated successfully...")
                print(df.loc[df['BookID']==BookID])
            else:
                print ("Book is not found...")
            df.to_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv",index=False)
            ans=input ("Do you want to edit more books?")
        print(df)
```

Output:



```
Console 3/A
Enter the Choice:7
Enter-1: To modify book file
Enter-2: To modify member file

Enter the choice: 1
    BookID              Bname  Price  Copies  No. of times book issued
0      102    Computer Science    345       1                         2
1      103             Physics    550       1                         3
2      104           Chemistry    400       1                         4
3      105   General Knowledge    200       1                         5
4      106             English    100       1                         6
5      107               Maths    475       1                         7
6      108             Science    433       1                         8
7      109             English     80       1                         9
8      110             Physics    198       1                        10
9      111               Maths    179       1                        11
10     112   General knowledge    145       1                        12
11     113        Harry potter    300       1                        13
12     114               Hindi    200       1                        14
13     115               Maths    900       1                        15
14     116             Science    750       1                        16
15     117             English    100       0                        17
16     118             Physics    800       1                        18
17     119               Maths    780       1                        19
18     120   General knowledge    555       1                        20
19     121           Geography    120       1                         2
```



- Modify Member file:

Source Code:

```
if opt==2:
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    print(df)
    ans='yes'
    MemberID=0
    while ans=='yes' or ans=='Yes':
      MemberID=int (input ("Enter Member id :"))
      if MemberID in df['MemberID'].values:
        a=input ("Enter the column name to change: ")
        b=input ("Enter it's value: if string in quotes('): "))
        df.loc[(df['MemberID'] == MemberID),a]=b
        print ("Member id -",MemberID,” has been updated successfully...")
        print(df.loc[df['MemberID']==MemberID])
      else:
        print ("Member is not found...")
      df.to_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv",index=False)
      ans=input ("Do you want to edit more member details?")
    print(df)
```

Output:

```
Console 2/A
Enter the Choice:7
Enter-1: To modify book file
Enter-2: To modify member file

Enter the choice: 2
    MemberID Member_Name       PhoneNo    Address Class issue_status
0      112.0        Anil  9.922876e+09     Nagina   9-A          yes
1      113.0       Usain  7.655747e+09     Bundki  12-A          yes
2      114.0      anuska  8.765899e+09  Harganpur   8-A           no
3      115.0        anuj  7.759004e+09    Rajpura  12-A           no
4      116.0      Amkash  7.885436e+09  Najibabad  12-A          yes
5      117.0        Arun  7.885436e+09     Nagina   8-A           no
6      118.0       Dhruv  7.885436e+09  Najibabad  10-B           no
7      119.0       Anmol  7.885436e+09     Bijnor  12-B           no
8      120.0      Akshit  7.885436e+09   Akbrabad  12-A          yes
9      121.0       Shubh  7.885436e+09    Rajpura   9-A          yes
10     122.0       Bablu  7.885436e+09       DSIL   7-C          yes
11     123.0     Harshit  7.885436e+09     Nagina  12-A           no
12     124.0      Madhav  7.885436e+09  Najibabad  12-A          yes
13     125.0       Mahim  7.885436e+09  Harganpur   8-A          yes
14     126.0     Bhawesh  7.885436e+09    Rajpura  10-B           no
15     127.0      Mayank  7.885436e+09     Bundki  12-B          yes
16     128.0       Ankit  7.885436e+09       DSIL  12-A           no
17     129.0        Sonu  7.885436e+09     Nagina   9-A          yes
18     130.0      Ankita  7.885436e+09   Akbrabad   7-C           no
19     131.0       Virat  7.823098e+09     Nagina  10-A           No
IPython Console  History
```

```
Console 2/A
Enter Member id :112

Enter the column name to change: Class

Enter it's value: if string in quotes(''): 10-A
Member id - 112 has been updated successfully...
   MemberID Member_Name       PhoneNo Address Class issue_status
0     112.0        Anil  9.922876e+09  Nagina  10-A          yes

Do you want to edit more member details?No
    MemberID Member_Name       PhoneNo    Address Class issue_status
0      112.0        Anil  9.922876e+09     Nagina  10-A          yes
1      113.0       Usain  7.655747e+09     Bundki  12-A          yes
2      114.0      anuska  8.765899e+09  Harganpur   8-A           no
3      115.0        anuj  7.759004e+09    Rajpura  12-A           no
4      116.0      Amkash  7.885436e+09  Najibabad  12-A          yes
5      117.0        Arun  7.885436e+09     Nagina   8-A           no
6      118.0       Dhruv  7.885436e+09  Najibabad  10-B           no
7      119.0       Anmol  7.885436e+09     Bijnor  12-B           no
8      120.0      Akshit  7.885436e+09   Akbrabad  12-A          yes
9      121.0       Shubh  7.885436e+09    Rajpura   9-A          yes
10     122.0       Bablu  7.885436e+09       DSIL   7-C          yes
11     123.0     Harshit  7.885436e+09     Nagina  12-A           no
12     124.0      Madhav  7.885436e+09  Najibabad  12-A          yes
13     125.0       Mahim  7.885436e+09  Harganpur   8-A          yes
14     126.0     Bhawesh  7.885436e+09    Rajpura  10-B           no
IPython Console  History
```

➢ To Add new book record in Book1 file:

Source Code:

```
def add_book ():
    print ("Adding new book record in book1 file")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    print(df)
    ans='yes'
    while ans=='yes' or ans=='Yes':
        BookID=int (input ("Enter the book id: "))
        Bname=input ("Enter the book name: ")
        Price=int (input ("Enter the Price: "))
        Copies=1
        No_of_times_book_issued=input ("Enter the No_of_times_book_issued: ")
        Edition=int (input ("Enter the edition of the book: "))
        n=df["BookID"].count()
        df.at[n]= [BookID, Bname, Price, Copies, No_of_times_book_issued, Edition ]
        df=df.to_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv",index=False)
        print ("Book added successfully")
        ans=input ("Do you want to add more books?")
    print(df)
```

Output:

Console 2/A

```
Enter the Choice:8
Adding new book record in book1 file
    BookID              Bname  ...  No. of times book issued  Edition
0      102    Computer Science  ...                         2     2020
1      103            Physics   ...                         1     2016
2      104          Chemistry  ...                         3     2018
3      105   General Knowledge  ...                         4     2022
4      106            English  ...                         5     2021
5      107              Maths  ...                         6     2009
6      108            Science  ...                         7     2020
7      109            English  ...                         8     2008
8      110            Physics  ...                         9     2012
9      111              Maths  ...                        10     2012
10     112   General knowledge  ...                        11     2021
11     113        Harry potter  ...                        12     2021
12     114              Hindi  ...                        13     2012
13     115              Maths  ...                        14     2016
14     116            Science  ...                        15     2017
15     117            English  ...                        16     2018
16     118            Physics  ...                        17     2020
17     119              Maths  ...                        18     2021
18     120   General knowledge  ...                        19     2022
19     121          Geography  ...                        20     2019
```

```
[20 rows x 6 columns]

Enter the book id: 122

Enter the book name: Civics

Enter the Price: 200

Enter the No_of_times_book_issued: 5

Enter the edition of the book: 2021
Book added successfully

Do you want to add more books?no
None
**********Thank You**********
```

IPython Console History

➢ To show Book file:

Source Code:

```
def book_name ():
    print ("Show Books list")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv",usecols=['Bname'])
    print(df)
```

Output:

Console 2/A

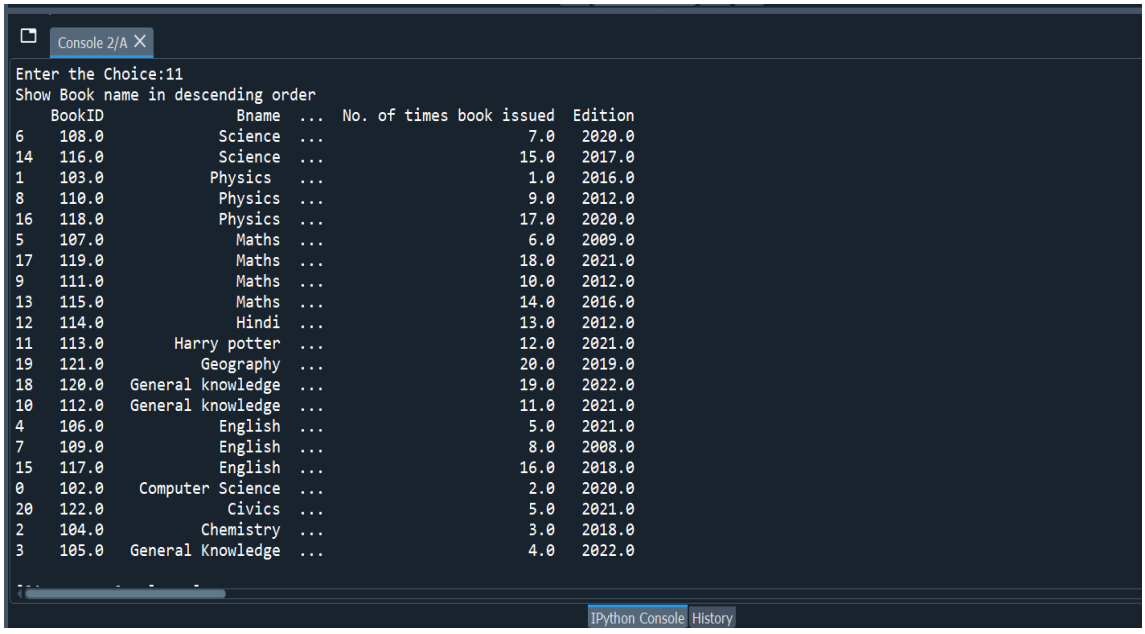
```
Enter the Choice:10
Show Books list
                Bname
0     Computer Science
1              Physics
2            Chemistry
3    General Knowledge
4              English
5                Maths
6              Science
7              English
8              Physics
9                Maths
10   General knowledge
11        Harry potter
12               Hindi
13               Maths
14             Science
15             English
16             Physics
17               Maths
18   General knowledge
19           Geography
20               Civics
**********Thank You**********
```

➢ To Print Bname in Descending order:

Source Code:

```
def sort_book ():
    print ("Show Book name in descending order")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    df=df. sort_values ('Bname', ascending=False)
    print(df)
```

Output:

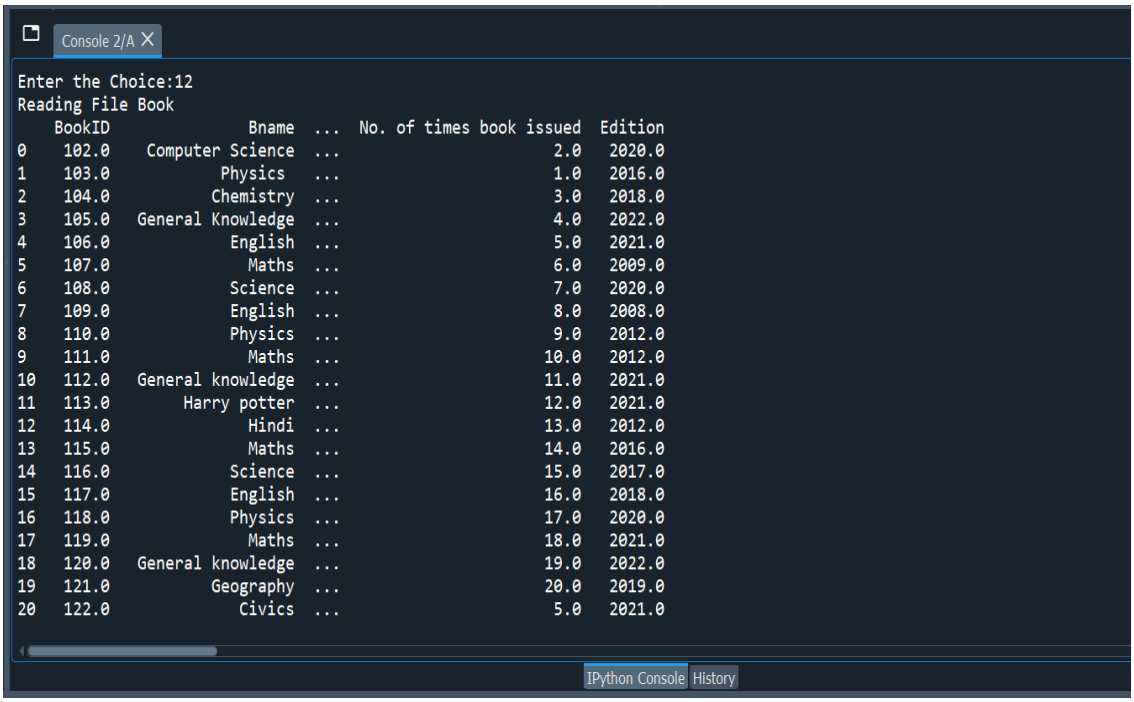


➢ To Read CSV file – book (Records of books):

Source Code:

```
def book1():
    print ("Reading File Book")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    print(df)
```

Output:

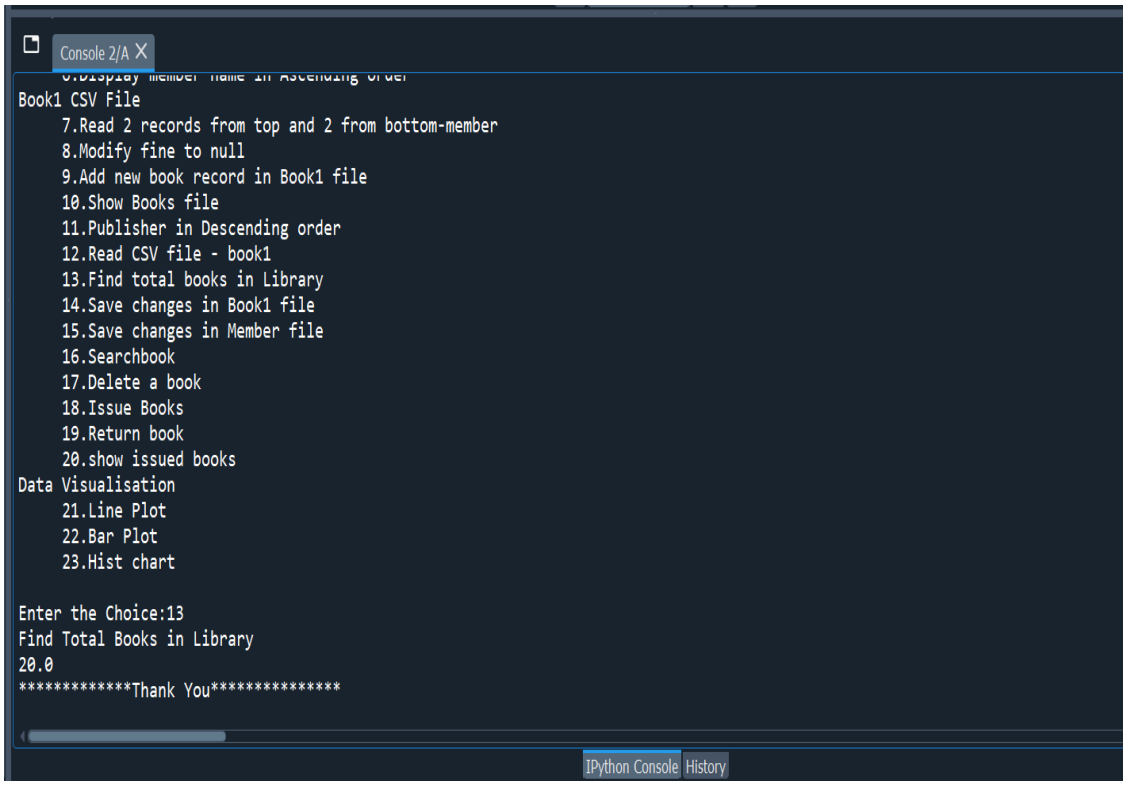


➢ To Find total books in Library:

Source Code:

```
def Totalbooks():
    print ("Find Total Books in Library")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    Totalbooks=df['Copies'].sum()
    Print (Totalbooks)
```

Output:

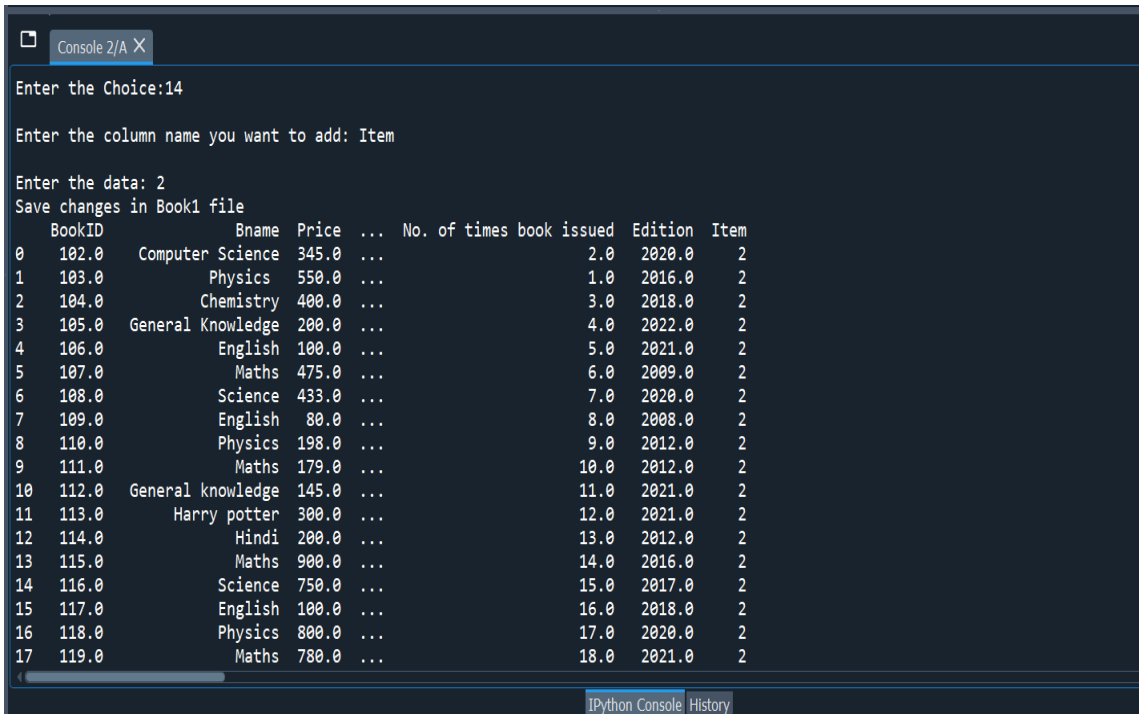


➢ To save changes in Book1 file:

Source Code:

```
def changes_book1():
    m=input ("Enter the column name you want to add: ")
    n=int (input ("Enter the data: "))
    print ("Save changes in Book1 file")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    df[m]=n
    print(df)
    df=df.to_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
```

Output:



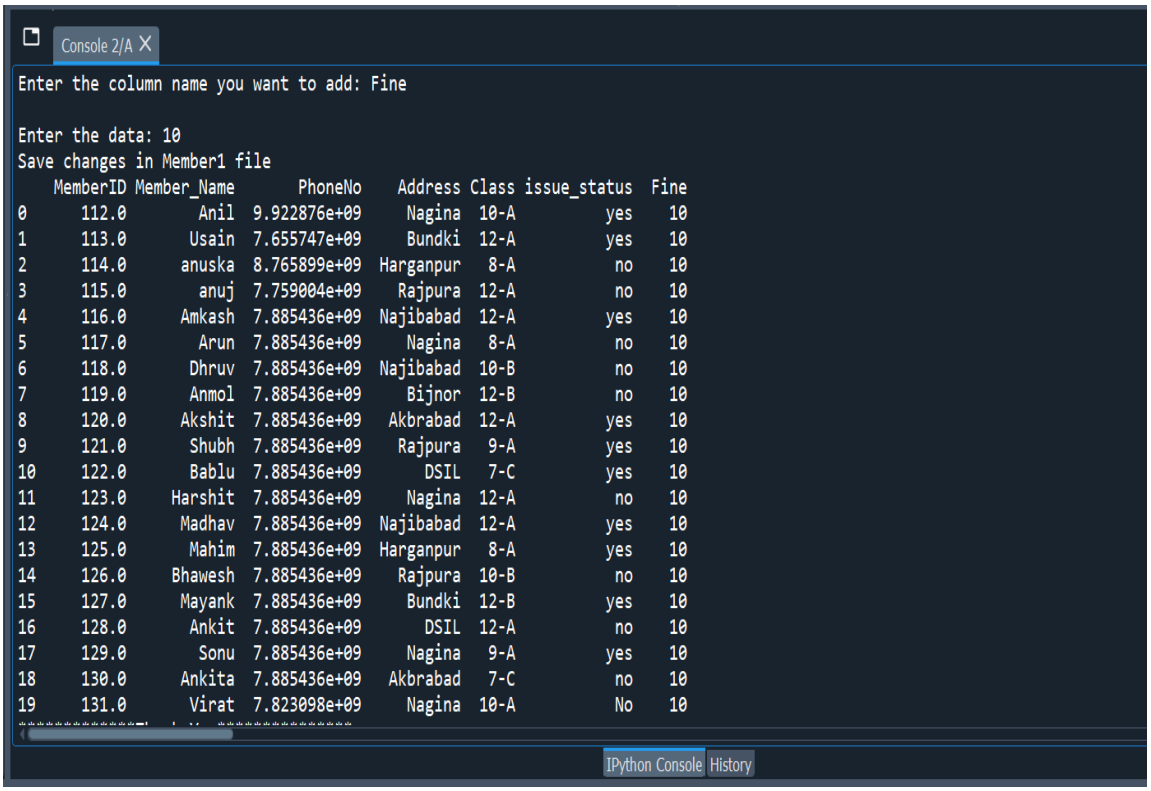
	BookID	Bname	Price	...	No. of times book issued	Edition	Item
0	102.0	Computer Science	345.0	...	2.0	2020.0	2
1	103.0	Physics	550.0	...	1.0	2016.0	2
2	104.0	Chemistry	400.0	...	3.0	2018.0	2
3	105.0	General Knowledge	200.0	...	4.0	2022.0	2
4	106.0	English	100.0	...	5.0	2021.0	2
5	107.0	Maths	475.0	...	6.0	2009.0	2
6	108.0	Science	433.0	...	7.0	2020.0	2
7	109.0	English	80.0	...	8.0	2008.0	2
8	110.0	Physics	198.0	...	9.0	2012.0	2
9	111.0	Maths	179.0	...	10.0	2012.0	2
10	112.0	General knowledge	145.0	...	11.0	2021.0	2
11	113.0	Harry potter	300.0	...	12.0	2021.0	2
12	114.0	Hindi	200.0	...	13.0	2012.0	2
13	115.0	Maths	900.0	...	14.0	2016.0	2
14	116.0	Science	750.0	...	15.0	2017.0	2
15	117.0	English	100.0	...	16.0	2018.0	2
16	118.0	Physics	800.0	...	17.0	2020.0	2
17	119.0	Maths	780.0	...	18.0	2021.0	2

➢ To save changes in Member file:

Source Code:

```
def changes_member1():
    m=input ("Enter the column name you want to add: ")
    n=int (input ("Enter the data: "))
    print ("Save changes in Member1 file")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    df[m]=n
    print(df)
    df=df.to_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
```

Output:



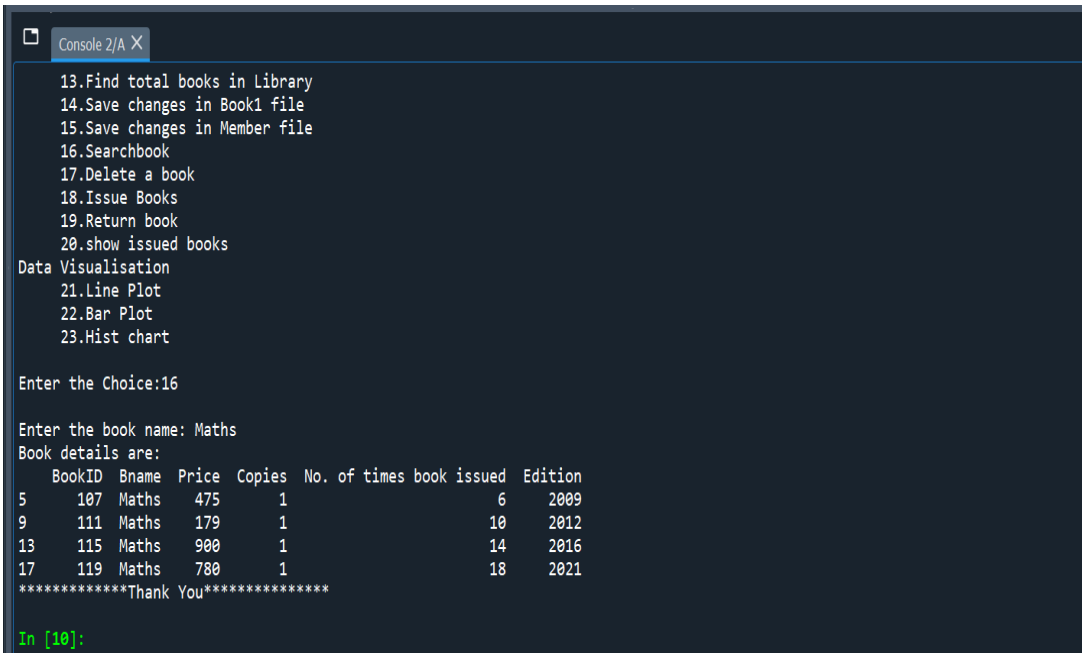
	MemberID	Member_Name	PhoneNo	Address	Class	issue_status	Fine
0	112.0	Anil	9.922876e+09	Nagina	10-A	yes	10
1	113.0	Usain	7.655747e+09	Bundki	12-A	yes	10
2	114.0	anuska	8.765899e+09	Harganpur	8-A	no	10
3	115.0	anuj	7.759004e+09	Rajpura	12-A	no	10
4	116.0	Amkash	7.885436e+09	Najibabad	12-A	yes	10
5	117.0	Arun	7.885436e+09	Nagina	8-A	no	10
6	118.0	Dhruv	7.885436e+09	Najibabad	10-B	no	10
7	119.0	Anmol	7.885436e+09	Bijnor	12-B	no	10
8	120.0	Akshit	7.885436e+09	Akbrabad	12-A	yes	10
9	121.0	Shubh	7.885436e+09	Rajpura	9-A	yes	10
10	122.0	Bablu	7.885436e+09	DSIL	7-C	yes	10
11	123.0	Harshit	7.885436e+09	Nagina	12-A	no	10
12	124.0	Madhav	7.885436e+09	Najibabad	12-A	yes	10
13	125.0	Mahim	7.885436e+09	Harganpur	8-A	yes	10
14	126.0	Bhawesh	7.885436e+09	Rajpura	10-B	no	10
15	127.0	Mayank	7.885436e+09	Bundki	12-B	yes	10
16	128.0	Ankit	7.885436e+09	DSIL	12-A	no	10
17	129.0	Sonu	7.885436e+09	Nagina	9-A	yes	10
18	130.0	Ankita	7.885436e+09	Akbrabad	7-C	no	10
19	131.0	Virat	7.823098e+09	Nagina	10-A	No	10

➢ To search a book:

Source Code:

```
def searchbook ():
    Bname=input ("Enter the book name: ")
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    df1=df.loc[df["Bname”] ==Bname]
    if df1.empty:
        print ("No book found with given name")
    else:
        print ("Book details are: ")
        print(df1)
```

Output:

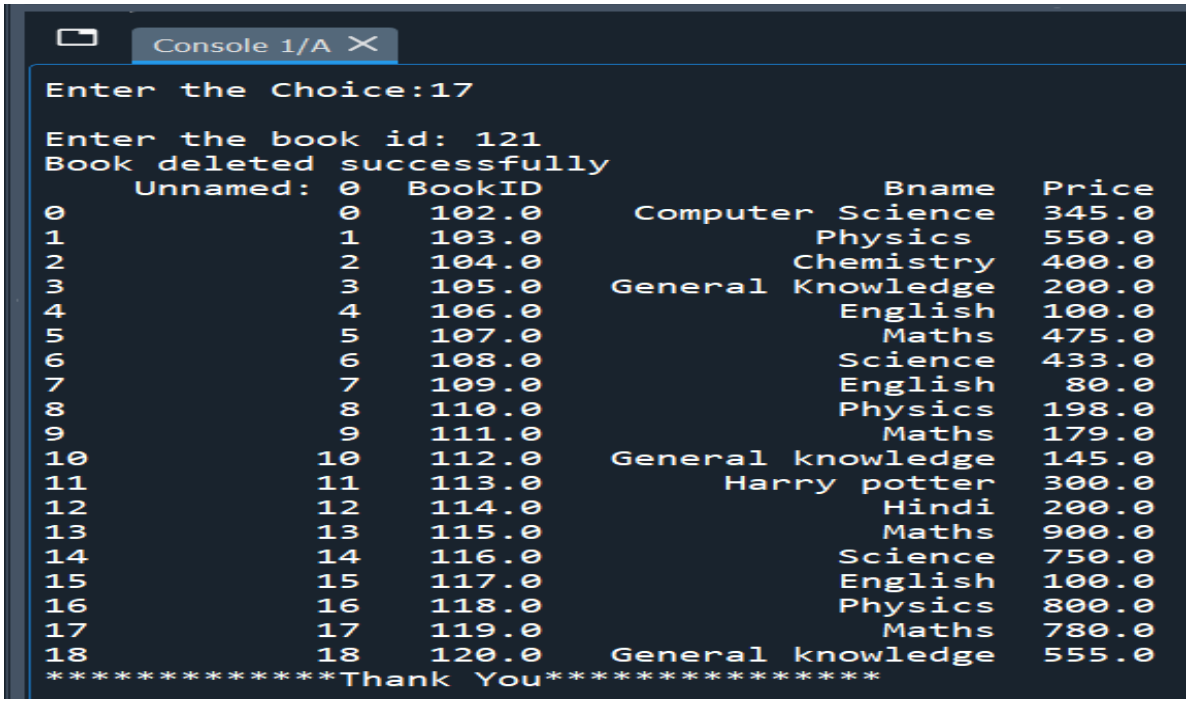


➢ To delete a book:

Source Code:

```
def delete_book ():
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    print(df)
    BookID=int (input ("Enter the book id: "))
    mdf=df.drop(df[df["BookID”] ==BookID].index())
    df=df.to_csv ("C:\\Users\\itsgo\\Downloads\\Book5.csv", index=False)
    print ("Book deleted successfully")
    print(mdf)
```

Output:

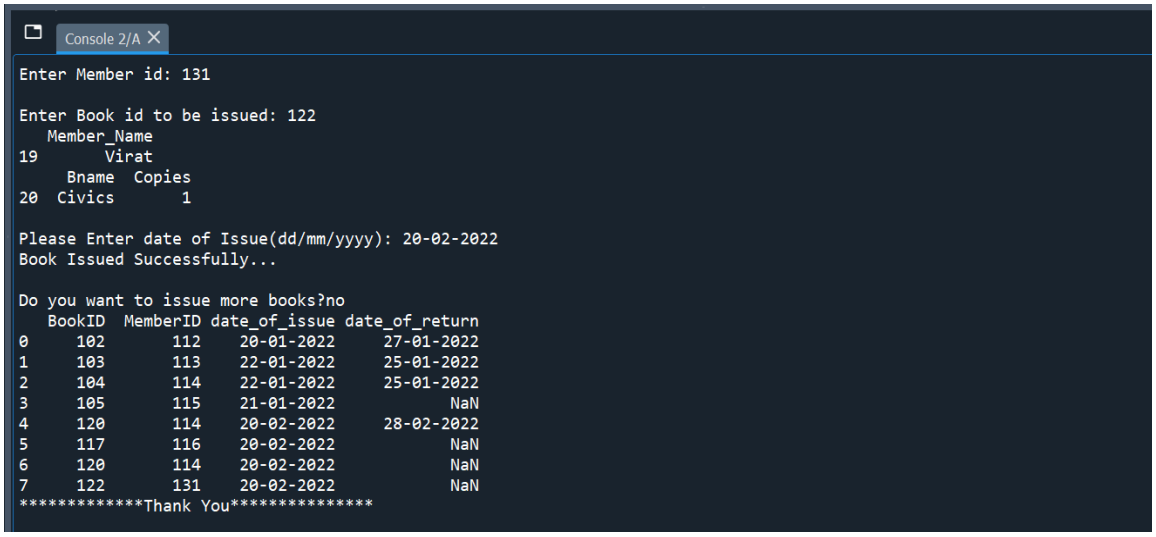


➢ To issue a book:

Source Code:

```
def issue_book ():
    dfbooks=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    dfmembers=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    dfbook=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book2.0.csv")
    ans='yes'
    while ans=='yes' or ans=='Yes':
        Mid=int (input ("Enter Member id: "))
        Bid=int (input ("Enter Book id to be issued: "))
        if Mid in dfmembers['MemberID'].values:
            print (dfmembers.loc [dfmembers. MemberID==Mid, ['Member_Name']])
            istatus=dfmembers.loc[dfmembers['MemberID'] == Mid, 'issue_status'].values[0]
            if (istatus=='no' or istatus=='No'):
                if Bid in dfbooks['BookID'].values:
                    print (dfbooks.loc [dfbooks.BookID==Bid, ['Bname','Copies']])
                    cpy=dfbooks.loc[dfbooks['BookID'] == Bid, 'Copies'].values[0]
                    if cpy>0:
                        dt_iss=input ("Please Enter date of Issue(dd/mm/yyyy): ")
                        data=[Bid, Mid,dt_iss,np.NaN]
                        dfbook.loc[len(dfbook)] =data
                        dfmembers.loc [dfmembers.MemberID == Mid,'issue_status’] ='Yes'
                        dfbooks.loc[dfbooks.BookID == Bid, 'Copies']-=1
                        print ("Book Issued Successfully...")
                    else:
                        print ("Sorry ! No. of copy is insufficient in the Library..")
                else:
                    print ("Book is not found...")
            else:
                print ("Sorry!...1-Book Already issued. First return it")
        else:
            print ("Member is not found...")
        dfbook.to_csv("C:\\Users\\itsgo\\Downloads\\Book2.0.csv",index=False)
        dfbooks.to_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv",index=False)
        dfmembers.to_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv",index=False)
        ans=input ("Do you want to issue more books?")
    print(dfbook)
```

Output:



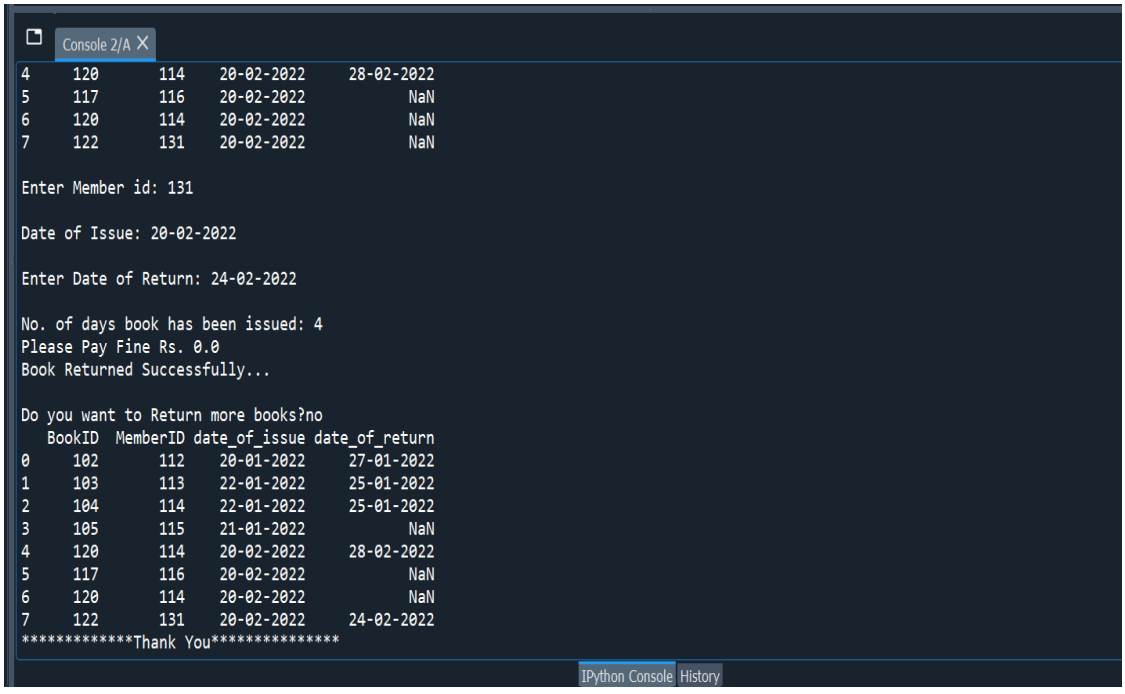
➢ To return a book:

Source Code:

```
def return_book ():
    dfbooks=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    dfmembers=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Member12.csv")
    dfbook=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book2.0.csv")
    print(dfbook)
    ans='yes'
    while ans=='yes' or ans=='Yes':
        Mid=int (input ("Enter Member id: "))
        if Mid in dfbook['MemberID'].values:
            dt_is=input ("Date of Issue: ")
            dt_rtn=input ("Enter Date of Return: ")
            Bid=dfbook.loc[(dfbook['MemberID'] == Mid) & (dfbook['date_of_issue'] ==
dt_is), 'BookID'].values[0]
            cond=(dfmembers.MemberID==Mid) & (dfmembers.issue_status=='Yes')
            if cond.any():
                dfbook.loc[(dfbook['MemberID'] == Mid) & (dfbook['date_of_issue'] ==dt_is),
'date_of_return'] =dt_rtn
                dfmembers.loc[dfmembers.MemberID == Mid, 'issue_status’] ='No'
                dfbooks.loc[dfbooks.BookID == Bid, 'Copies']+=1
                n=int (input ("No. of days book has been issued: "))
```

```
            if n>7:
                fine=(n-7) *10.00
            else:
                fine=0.00
            print ("Please Pay Fine Rs.", fine)
            print ("Book Returned Successfully...")
        else:
            print ("The book is already returned.. Action denied")
    else:
        print ("Member is not found...")
    dfbook.to_csv ("C:\\Users\\itsgo\\Downloads\\Book2.0.csv", index=False)
    dfbooks.to_csv ("C:\\Users\\itsgo\\Downloads\\Book5.csv", index=False)
    dfmembers.to_csv ("C:\\Users\\itsgo\\Downloads\\Member12.csv", index=False)
    ans=input ("Do you want to Return more books?")
print(dfbook)
```

Output:

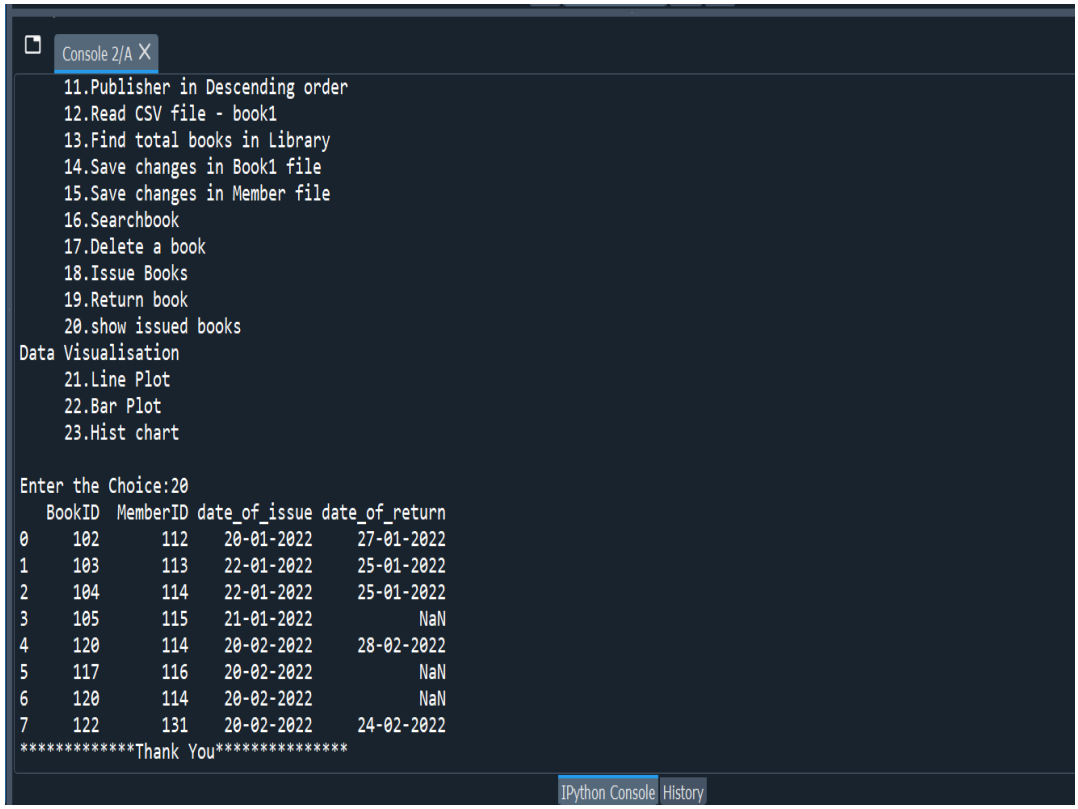


➢ To show issued books:

Source Code:

```
def show_issuedbooks ():
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book2.0.csv")
    print(df)
```

Output:

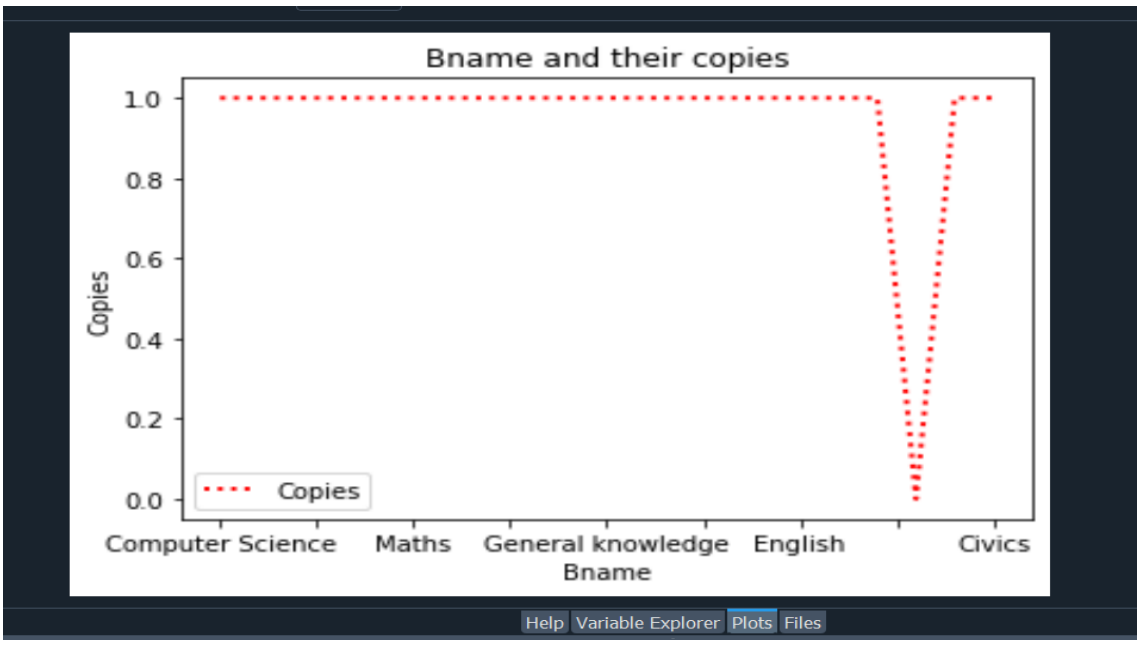


➢ To show line plot:

Source Code:

```
def line_chart ():
    print ('Line Plot (Book name and their copies)')
    df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
    df=df[["Bname","Copies"]]
    df.plot ("Bname","Copies", kind='line', color='red', linewidth='2', linestyle='dotted')
    plt.xlabel ('Bname')
    plt.ylabel('Copies')
    plt.title('Bname and their copies')
    plt.show()
```

Output:



➢ To show bar chart:

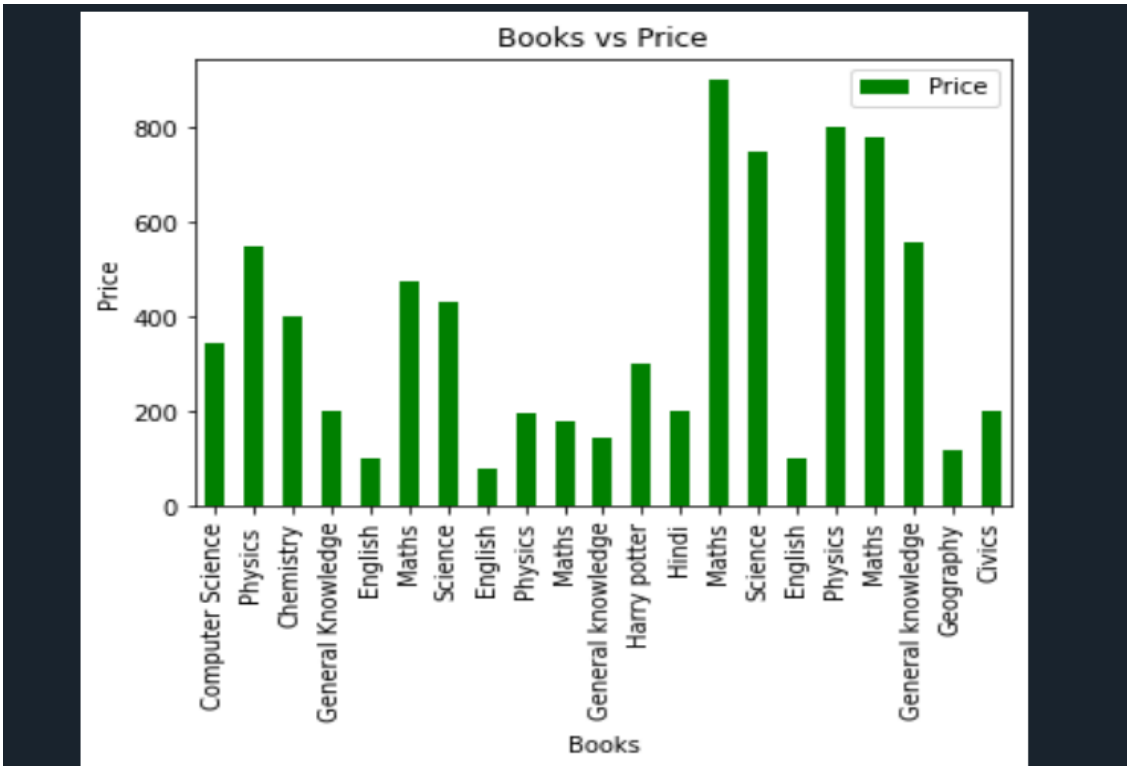
Source Code:

```
def bar_chart ():
    print ("Press 1-Books and their price")
    print ("Press 2-Bname and their copies")
    print ("Press 3-Bname and numbers of times it is issued")
    opt=int (input ("Enter the choice: "))
    if opt==1:
        print ('Bar Plot (Book vs Price)')
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        df=df[["Bname","Price"]]
        df.plot("Bname","Price",kind='bar',color='green',linewidth='5',linestyle='dashdot')
        plt.xlabel('Books')
        plt.ylabel('Price')
        plt.title('Books vs Price')
        plt.show()
    if opt==2:
        print ('Bar Plot (Bname vs Copies)')
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        df=df[["Bname","Copies"]]
        df.plot("Bname","Copies",kind='bar',color='red',linewidth='5',linestyle='dotted')
        plt.xlabel('Bname')
        plt.ylabel('Copies')
        plt.title('Bname and their copies')
        plt.show()
    if opt==3:
        print ('Bar Plot (No. of times books issued vs Bname)')
```

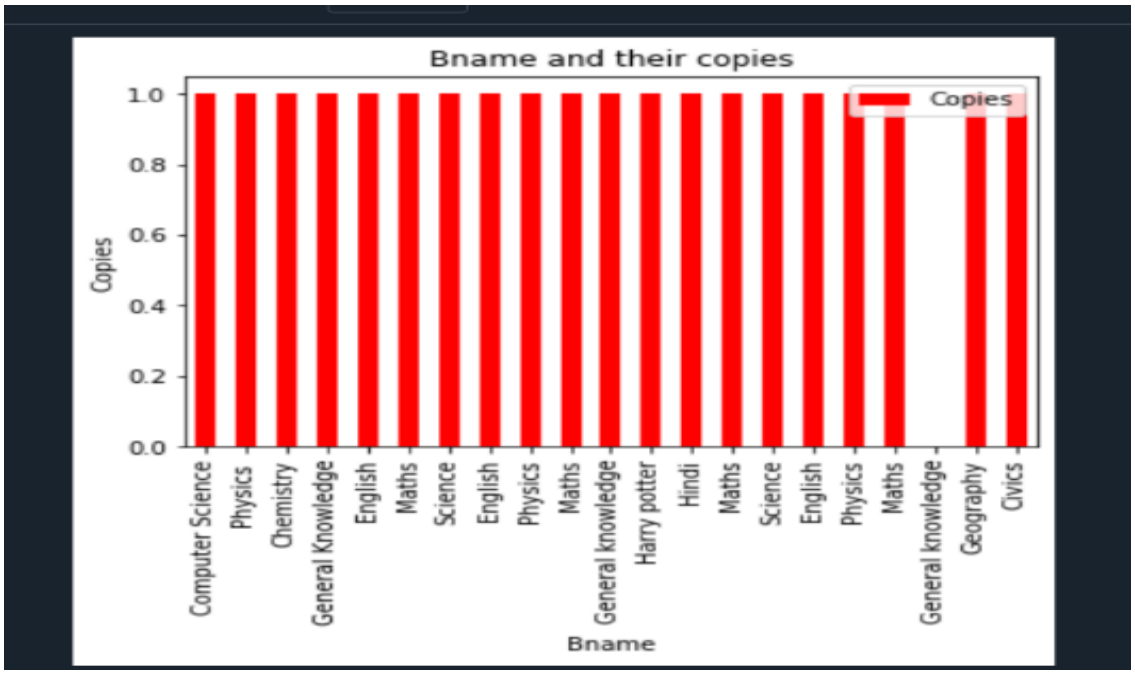
```
df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
df=df[["Bname","No. of times book issued"]]
df.plot("Bname","No. of times book issued",kind='bar',color='Magenta',linewidth='4',linestyle='dashed')
plt.xlabel('Book_Name')
plt.ylabel('No. of times books issued')
plt.title('No. of times books issued vs Book_Name')
plt.show()
```

Output:

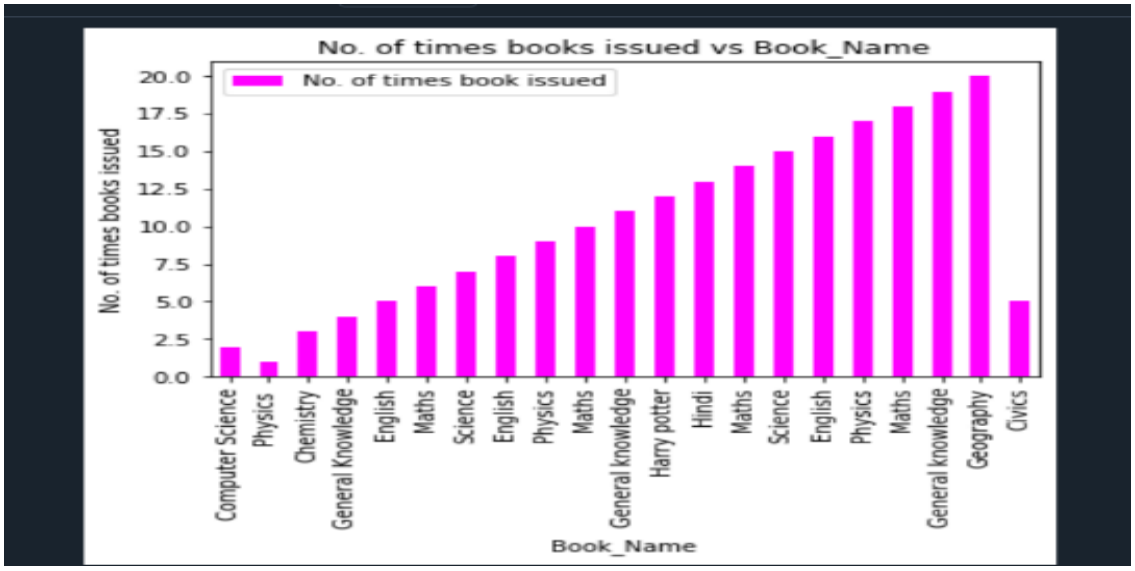
- For opt=1(Books and their price):



- For opt=2(Bname vs Copies):



- For opt=3(Bname and numbers of times it is issued):



➢ To show Histogram chart:

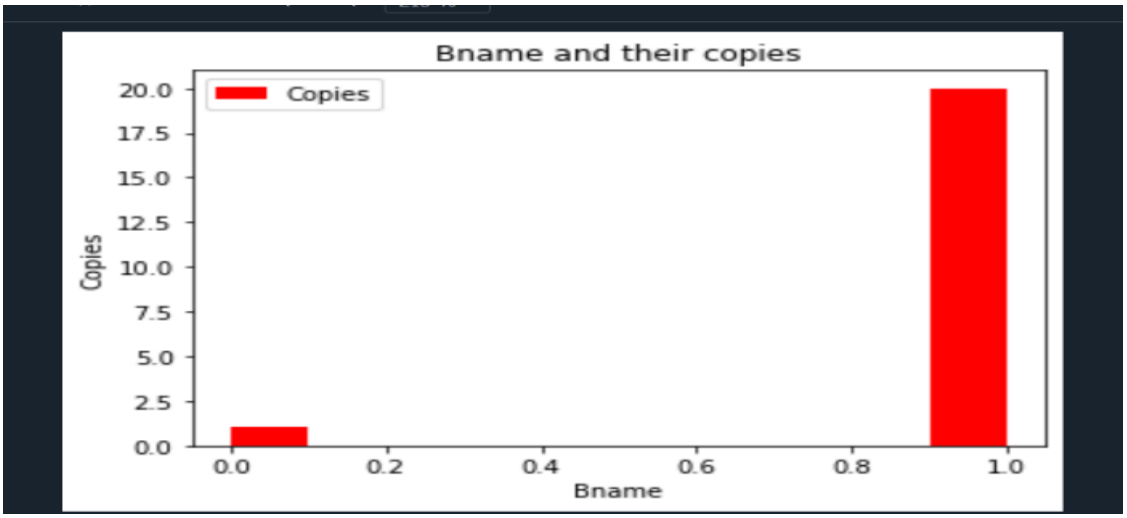
Source Code:

```
def hist_chart ():
    print ("Press 1-Books and their price")
    print ("Press 2-Bname and their copies")
    print ("Press 3-Bname and numbers of times it is issued")
    opt=int (input ("Enter the choice: "))
    if opt==1:
        print ('Hist Plot (Book vs Price)')
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        df=df[["Bname","Price"]]
df.plot("Bname","Price",kind='hist',edgecolor='green',linewidth='2',linestyle=':',fill=False
, hatch="o")
        plt.xlabel('Books')
        plt.ylabel('Price')
        plt.title('Books vs Price')
        plt.show()
    if opt==2:
        print ('Hist Plot (Bname vs Copies)')
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        df=df[["Bname","Copies"]]
        df.plot("Bname","Copies",kind='hist',color='red',linewidth='5',linestyle='dotted')
        plt.xlabel('Bname')
        plt.ylabel('Copies')
        plt.title('Bname and their copies')
        plt.show()
    if opt==3:
        print ('Hist Plot (No. of times books issued vs Book_Name)')
        df=pd.read_csv("C:\\Users\\itsgo\\Downloads\\Book5.csv")
        df=df[["Bname","No. of times book issued"]]
        df.plot("Bname","No. of times book
issued",kind='hist',edgecolor='Magenta',linewidth='2',linestyle='--',fill=False,hatch="o")
        plt.xlabel('Book name')
        plt.ylabel('No. of times books issued')
        plt.title('No. of times books issued vs Book_Name')
        plt.show()
```

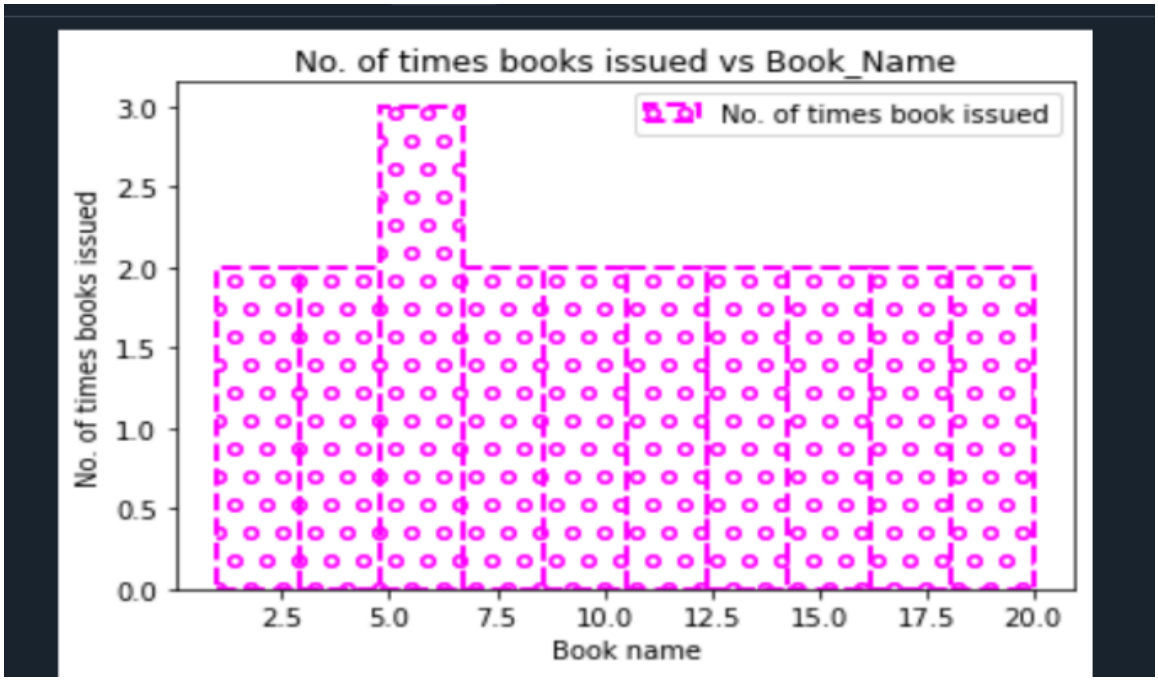
Output:

- For opt=1(Books and their price):

- For opt=2(Bname vs Copies):



- For opt=3(Bname and numbers of times it is issued):



➢ Code for running all the above programs:

Source Code:

```
opt=""
opt=int (input ("Enter the Choice:"))
if opt==1:
   member ()
elif opt==2:
   new_member ()
elif opt==3:
   search_member ()
elif opt==4:
   delete_member ()
elif opt==5:
   sort_member ()
elif opt==6:
   top_bottom ()
elif opt==7:
   modify ()
```

```
elif opt==8:
   add_book ()
elif opt==9:
   book_name ()
elif opt==10:
   sort_book ()
elif opt==11:
   book1()
elif opt==12:
   Totalbooks ()
elif opt==13:
   changes_book1()
elif opt==14:
   changes_member1()
elif opt==15:
   searchbook ()
elif opt==16:
   delete_book ()
elif opt==17:
   issue_book ()
elif opt==18:
   return_book ()
elif opt==19:
   show_issuedbooks ()
elif opt==20:
   line_chart ()
elif opt==21:
   bar_chart ()
elif opt==22:
   hist_chart ()
else:
   print ('Invalid Option')

print ("**********Thank You**********")
```

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