PRACTICAL: 5

Develop a file program. The library at the Hogwarts School of Witchcraft and Wizardry has computerized its book issuing process. The relevant information is provided as text from standard input in three parts: information about books, information about borrowers and information about checkouts. Each part has a specific line format, described below.

Information about books

Line format: Accession Number~Title

Information about borrowers

Line format: Username~Full Name

Information about checkouts

Line format: Username~Accession Number~Due Date

Note: Due Date is in YYYY-MM-DD format.

You may assume that the data is internally consistent. For every checkout, there is a corresponding username and accession number in the input data, and no book is simultaneously checked out by two people.

Each section of the input starts with a line containing a single keyword. The first

section begins with a line containing Books. The second section begins with a line containing Borrowers. The third section begins with a line containing Checkouts. The end of the input is marked by a line containing EndOfInput.

Write a Python program to read the data as described above and print out details about books that have been checked out. Each line should describe to one currently issued book in the following format:

Due Date~Full Name~Accession Number~Title

Your output should be sorted in increasing order of due date. For books due on the same date, sort in increasing order of full name. If the due date and full name are both the same, sort based on the accession number, and, finally, the title of the book.

A sample input and its corresponding output is shown in appendix A.

- **CODE:**

```
def borrowers_input(b):
    x=input()
    while x!='Checkouts':
        x=x.split('~')
        b.append(x)
        x=input()


def checkouts_input(c):
    x=input()
    while x!='EndOfInput':
        x=x.split('~')
        c.append(x)
        x=input()


def output():
    global books,borrower,checkout


    date=[]
    uname=[]
    name=[]
    Anum=[]
    title=[]
```

```
for i in range(0,len(checkout)):
    date.append(checkout[i][2])

for i in range(0,len(checkout)):
    uname.append(checkout[i][0])

for i in range(0,len(uname)):
    for j in range(0,len(borrower)):
        if(uname[i] == borrower[j][0]):
            name.append(borrower[j][1])

for i in range(0,len(checkout)):
    Anum.append(checkout[i][1])

for i in range(0,len(Anum)):
    for j in range(0,len(books)):
        if(Anum[i] == books[j][0]):
            title.append(books[j][1])

final=[]
for i in range(0,len(checkout)):
    final.append(date[i]+'~'+name[i]+'~'+Anum[i]+'~'+title[i])
final.sort()
```

```
    for i in range(0,len(final)):
        print(final[i])



books=[]
borrower=[]
checkout=[]

x=input()
x=input()

while x!='Borrowers':
    x=x.split('~')
    books.append(x)
    x=input()

borrowers_input(borrower)
borrower.sort()
checkouts_input(checkout)
output()
```

- **OUTPUT:**

```
Books
APM-001~Advanced Potion-Making
GWG-001~Gadding With Ghouls
APM-002~Advanced Potion-Making
DMT-001~Defensive Magical Theory
DMT-003~Defensive Magical Theory
GWG-002~Gadding With Ghouls
DMT-002~Defensive Magical Theory
Borrowers
SLY2301~Hannah Abbott
SLY2302~Euan Abercrombie
SLY2303~Stewart Ackerley
SLY2304~Bertram Aubrey
SLY2305~Avery
SLY2306~Malcolm Baddock
SLY2307~Marcus Belby
SLY2308~Katie Bell
SLY2309~Sirius Orion Black
Checkouts
SLY2304~DMT-002~2019-03-27
SLY2301~GWG-001~2019-03-27
SLY2308~APM-002~2019-03-14
SLY2303~DMT-001~2019-04-03
SLY2301~GWG-002~2019-04-03
EndOfInput
2019-03-14~Katie Bell~APM-002~Advanced Potion-Making
2019-03-27~Bertram Aubrey~DMT-002~Defensive Magical Theory
2019-03-27~Hannah Abbott~GWG-001~Gadding With Ghouls
2019-04-03~Hannah Abbott~GWG-002~Gadding With Ghouls
2019-04-03~Stewart Ackerley~DMT-001~Defensive Magical Theory
```