Problem C: Processing Bank Accounts with Containers in STL

(20%, related to Lab 15)

Problem Description

This problem will be provided a main() function that uses the class defined in Fig. 17.2 and Fig. 17.4. This main() function will call the following three functions:.

- **void readFromRandomFile(ifstream &, multimap<string, ClientData> &)** reads a binary data file named **inputFilePC.dat** and stores the data into a multimap container. Each line in inputFilePC.dat contains information for creating an object (i.e. an account) of ClientData. Each line in inputFilePC.dat has four fields in order of account number, last name, first name, balance. These four fields correspond to the four data members of the ClientData class defined in Fig. 17.2. The first parameter in this function is the file handle of inputFilePC.dat. The second parameter is a multimap container. last name as the key is used to store ClientData objects in the container.
- **void printAllRecords(multimap<string, ClientData>)** prints all the records stored in a multimap container on the monitor. Each record should be printed on a line. Only non-empty records are printed. Its format is just like that given in the example output.
- **void sameLastName(multimap<string, ClientData>, const string)** prints all the records with the given last name. The first parameter is a multimap container that stores all the records. The second parameter is a given last name. Each record should be printed on a line.

The main() function will be given and should not be changed. After the data being stored in a multimap container, you should perform the following transactions:
- Print all records whose last name is Brams.
- Print all records whose last name is Morzart.
- Print all records whose last name is Lin.
- QUIT for stopping printing.

Requirements:
- The class definition in Fig. 17.2 cannot be modified.
- The given main() function can not be modified.
- **The contents of output should be exactly the same as that given in the example output.** The fields among lines should be aligned well for readability, but may not be exactly the same as that given in the example output.

Hints for solving the problems:
- You need to know how to read binary file.
- To print out the records with the same key, you may find the first record with that key and then print the rest in sequence. You had better use iterators.
- The code in Fig. 17.2, Fig. 17.3 and Fig. 17.7 will be provided.

Input:
As that given in a file named inputFilePC.dat. Also some inputs come from keyboard for choosing transactions being performed by a user.

Example Output:

```
Account    Last Name        First Name      Balance
58         Adams            Vick-IX         19841.00
17         Bach             Gord-IV         25861.00
4          Brams            Han-VI           2353.00
29         Brams            Pey-IX          19181.00
81         Brams            Tom-V           12525.00
2          Hamilton         John-VII         4730.00
8          Hamilton         Mary-IV         30602.00
25         Hamilton         Berg-V          28489.00
43         Hamilton         Tom-VII         19406.00
56         Hamilton         Pey-II          29026.00
6          Heisenberg       John-VIII       17286.00
9          Heisenberg       Han-VI            149.00
68         Heisenberg       Vick-III        29022.00
74         Heisenberg       Tom-II           3598.00
7          Jhonston         Berg-V           2149.00
22         Jhonston         Han-X           26734.00
38         Jhonston         John-III         5407.00
65         Jhonston         Pey-III         12943.00
1          Monteli          Vick-I           4396.00
5          Monteli          Vick-IX         18724.00
10         Monteli          Han-I           10576.00
11         Monteli          Pey-VI          20029.00
61         Monteli          John-VII        25260.00
75         Monteli          Gord-III        20370.00
93         Monteli          Will-IV         26550.00
13         Morzart          Tom-X           28993.00
19         Morzart          Gord-I           1213.00
31         Morzart          Mary-X          30742.00
40         Morzart          Mary-IV          8441.00
70         Morzart          Mary-VI         31402.00
89         Morzart          Tom-X            7386.00
87         Smith            Gord-IV         22504.00
90         Smith            Will-VIII        1393.00
3          Subert           Mary-II          5521.00
26         Subert           John-I           6895.00
51         Subert           Han-II          25553.00
53         Subert           John-VIII       12788.00
Enter the last name of a customer (QUIT for quit):
Brams
4          Brams            Han-VI           2353.00
29         Brams            Pey-IX          19181.00
81         Brams            Tom-V           12525.00
Enter the last name of a customer (QUIT for quit):
Morzart
13         Morzart          Tom-X           28993.00
19         Morzart          Gord-I           1213.00
31         Morzart          Mary-X          30742.00
40         Morzart          Mary-IV          8441.00
70         Morzart          Mary-VI         31402.00
89         Morzart          Tom-X            7386.00
Enter the last name of a customer (QUIT for quit):
Lin
Enter the last name of a customer (QUIT for quit):
QUIT
```