

Test 2 Programming Component (30 pts)

Write a program “**list.cpp**” to manage a linked list of clients for a vet. Each client has a name (string), a pet (string), and an account balance (float). A client should be a struct. Each node in the list should represent one client, i.e., the data type in the list node is of a struct type representing a client. Your program should create the list of clients by reading in all data for each client from a file "clients.dat". The list should be created as a **sorted list** based on client name. Finally, the program should traverse the sorted list and print all data for each client. For example, one run of a program might be:

For example, if the file clients.dat contained:

```
TJohnson Retriever 32.56
JSmith Cat 524.35
ABledsoe Python 432.32
LJames Parrot 256.75
FDouglas Ferret 0.0
```

The program should print (note: the clients printed are in ascending order of client names):

```
ABledsoe Python 432.32
FDouglas Ferret 0.0
JSmith Cat 524.35
LJames Parrot 256.75
TJohnson Retriever 32.56
```

Make sure to de-allocate all the nodes in the list before the program terminates.

Copy the datafile to your project folder: `cp ~cen/data/clients.dat .`

Hand in the programs with the following command:

handin test2 list.cpp