CSCI 2170 OLA 4 **Electronic submission Due midnight, Monday Nov 10th**

The FlyWithUs airline company would like for you to help them develop a program that generates flight itinerary for customer requests to fly from one city to another city. To support flight itinerary generation, it is necessary to build a database of all available flights.

For this assignment, implement a pointer based **sortedListClass**. This class should keep records/nodes in ascending order of the city name.

cities.dat : First line of the data file gives the total number of cities served by the company. Next, the names of cities the airline serves, one name per line, for example:

16 ← total number of cities served by the company
Albuquerque
Chicago
San-Diego
…

Copy the data files into your own account by: ranger$ cp ~cen/data/cities.dat cities.dat

The **sortedListClass** should include at least the following member functions:

- Default constructor and copy constructor
- Destructor
- Inserts a city name into the list such that the list remains to be sorted in alphabetical order after the insertion
- Deletes a city name from the list
- Finds and returns a city name
- Print the entire list
- Returns the length of the list
- Returns whether the list is empty

A client program to test the sortedListClass. It should have at least the following:

- Create a sortedListClass object
- Read the city names, one at a time until the end of file, from **cities.dat**, and insert the names into the list in ascending order**.**
- Print the list of cities in the list (one city per row)
  - It should include an output that display the number of cities in the list
- Find and print the city from the list.
  - Prompts the user to enter the city. If there is such a city in the list, print the message "This city is found", otherwise, say "This city is not served".
- Delete a city from the list. Perform three delete operations. Each time, prompt the user to enter the name of the city. If the city exists in the list, delete it from the list. Otherwise, show a message "This city does not exit. Deletion can not be performed".
- Print the list of cities after the 3 deletion operations, i.e., this displays the final list.

Instructions to submit your program

- Create a script file by following the steps below:

  First, navigate to the directory where your program source file is located, then follow the steps below:

```
ranger$ script log4
ranger$ pr –n –t –e4 sortedListClass.h
ranger$ pr –n –t –e4 sortedListClass.cpp
ranger$ pr –n –t –e4 ola4.cc
ranger$ aCC sortedListClass.cpp ola4.cc –o run
ranger$ run
ranger$ exit
```

- To electronically turnin the program, type:

  handin ola4 sortedListClass.h sortedListClass.cpp ola4.cc cities.dat log4