Programming Assignment #5

Linked List of string

CS 2308.003 and 004 Fall 2018
Instructor: Jill Seaman

Due: Monday, 11/12/2018: upload electronic copy by 9:00am.

Problem: Implement an interface that manipulates a list of strings. You will be provided with the following files on TRACS (Resources/PA#5 provided code):

- **StringList.h** containing a class declaration, set up for a linked list representation.
- **ListDriver.cpp** containing a main function you can use to test your implementation.

You will be responsible for providing the StringList.cpp file, including the implementation of the StringList member functions (described below):

StringList and **~StringList**: creates an empty list, and deallocates all the nodes in the list, respectively.

add(string str) Adds a new node containing str to the end of the list.

display(): displays the strings in the list to the screen, one string per line.

findFirst(string str): returns the index of the **first** node which contains the string str (like linear search). Returns -1 if not found. Does not change the list!

findLast(string str): returns the index of the **last** node which contains the string str. Returns -1 if not found. Does not change the list!

remove(int position) removes the node at the given position from the linked list. Returns true if successful, otherwise false (if the position is not valid for the list).

reverse(): reverses the order of the values in the stringList. Hint: use 3 temporary pointers.

copy(): returns a new StringList which is an exact duplicate of this StringList.

equal(StringList &other): returns true if the other StringList is exactly the same as this one (the same size and the same values at every position. Otherwise returns false. Other must be passed by reference!

Input/Output:

Use the provided ListDriver.cpp file to test your code. I recommend trying to implement one or two functions at a time, and testing them, rather than implementing all the functions and then trying to debug them all at once.

NOTES:

- This program must be done in a **Linux or Unix** environment, using a command line compiler like g++. Do not use codeblocks, eclipse, or Xcode to compile.
- Put your code in a file named **StringList.cpp.**
- Your StringList.cpp file **must compile** with the (unchanged) provided files, otherwise you may receive a score of 0.
- You may re-use code from the **NumberList** class (source: book/slides/website).

Logistics:

For this assignment you need to submit only the **StringList.cpp** file. You do not need a zip file, you do not need a makefile, you do not need to provide your driver.

There are two steps to the turn-in process:

1. Submit an electronic copy using the Assignments tool on the TRACS website for this class.
2. Submit a printout of the source file at the beginning of class, the next class day after the assignment is due. Please **print your name on top of the front page**, and staple if there is more than one page.

See the assignment turn-in policy on the course website (cs.txstate.edu/~js236/cs2308) for more details.