Homework 2

Due date: Thursday, September 11, 2014.

Ex. 1. a. Download the following files into a folder especially created for this assignment (don't mix them with the previous homework):
Makefile
main.cc
List.cc
List.h
ListIterator.cc
ListIterator.h
ListNode.cc
ListNode.h
interface.cc
interface.h
general.cc
general.h

If you ssh into your Linux account, you can copy all the files (the whole folder) with the command
```
cp /home/danav/public_html/teach/c243/p2 ./ -R
```

Compile the project with the command "make" and run the program with the command "testlist" or "./testlist". Note that not all the options in this program are working yet because you will need to supply the code for some of the functions.

b. You will have to supply the code for 8 functions in the class List and for 2 functions in the class ListIterator.

The first function you must write for the ListIterator class is the one finding the location of the minimal number in the list pointed to by the current pointer of the target object. This should not change the content of the target object. The function returns a ListIterator object that contains the pointer to that node, or NULL if the list was empty. This is the last entry both in the header file and the source file for the ListIterator class.

The second function in the class ListIterator moves forward by a number of steps. It is a repetition of the ++ operation for a given number of steps.

The prototypes for the functions to be written for the class List are preceded by the

comment "Functions to be written by the student" and their implementation contains the comment "Code to be supplied by the student."

c. Modify the interface with the following changes:

- Add an option (16) to compute the sum of all the numbers in the list.
- Add an option (17) returning the element at a given position in the first list (which will need to be input from the user) and printing it out. If the list is shorter than required, then print a message telling the user that there is no element at that position in the list.
- Replace the call to the bubble sort with a call to the selection sort for option 14.
- Add an option to locate a number in the first list. The number will have to be input from the user.
- If there is a homework function for which we don't have a test in the interface, feel free to add one after option 17.

Notes.

- To add an option to the interface, you need to change the function printing the menu, the function executing the menu, and a constant (!).
- Upload all the files that you modify as attachments to Assignments, Homework 2 in Canvas, meaning at least "List.cc", "ListIterator.cc", and "interface.cc".