

Homework #3 Data Structures

Due: February 20, 2010 (Saturday at 11:59 PM)

To-Do List via Unsorted Doubly-Linked List Class

Design an interactive To-Do list program that uses a templated unsorted doubly-linked list class to store the To-Do list items. Design and test the unsorted doubly-linked list class separately from the To-Do list application.

The list class should support the following operations:

(constructor) Construct list
(destructor) List destructor
operator= Copy container content

Iterators:

begin Return iterator to beginning
end Return iterator to end
rbegin Return reverse iterator to reverse beginning
rend Return reverse iterator to reverse end

Capacity:

empty Test whether container is empty
size Return size

Modifiers:

push_front Insert element at beginning
pop_front Delete first element
push_back Add element at the end
pop_back Delete last element
insert Insert element before a position specified by an iterator
(e.g., myList.insert (myIter, newValue))
erase Removes from the list either a single element pointed at by an iterator or a range of elements
specified by two iterators ([firstIter,lastIter]).
swap (optional) swap contents between two lists
clear Clear content removes all items from the list
remove Remove all elements with specific value

The corresponding iterator class for the list should handle operators for ++, --, * (dereferencing for input and output), = (assignment), == and !=.

I'll leave the To-Do list specifications vague except that you should be able to create an empty To-Do list or load a To-Do list from a file, and save a To-Do list to a file. You should also be able to interactively add items anywhere, delete items by position or value, view items, etc.

Submit your homework electronically at http://www.cs.uni.edu/~schafer/submit/which_course.cgi

The steps for the homework submission system are:

1. Write, debug, and test your program. Zip all files together in a file called Save it in a file called todo.zip
2. Log on to the submission system at: http://www.cs.uni.edu/~schafer/submit/which_course.cgi

(It is very likely that you will get some security certificate warnings when trying to use this. You may add an exception and accept the existing security certificate.) Use the same AD-ITS User name and password you use to log on the lab computers.

3. Select the course and section number of "810:052, Data Structures, Fienup". Click the "Continue" button.
4. Select the homework that you wish to submit: "HW 3 To-Do List". Click the "Continue" button.
5. Specify how many extra files you want to submit. Just leave it at 0. Click the "Continue" button.
6. Upload your program by Browsing and selecting your todo.zip file. Click the "Continue" button.
7. The next page reports on the status of the upload(s). You can always continue to upload a better version of the program until the deadline. The newer file will replace an older file of the same name.