

HOMEWORK #4:

The LinkedList Job.

Due Date: Wednesday, March the 2nd, 11:59:59 pm

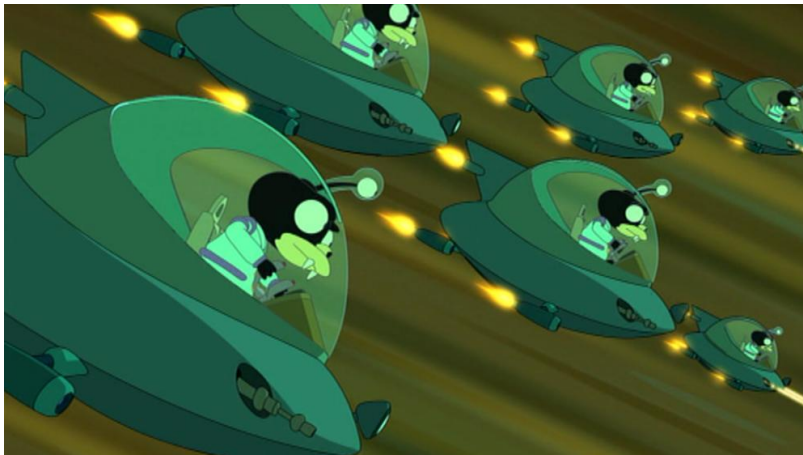
For this assignment, you need to submit a file called 'linkedlist.hpp'. Remember to put your **name** and **section** at the top of your program file.

Problem:

You were so successful with the **ASM** - Arraylist Software Module, that you have now been licensing it to planets all around the galaxy. However, The Nibblonian Council from planet Eternium finds your array implementation an example of the wastefulness of the human species.

You really want to sell something to Nibblonian Council, as they will licence many copies of a "List Abstract Data Type" for the software of their new cute ship armada.

Implement a Linked-List version of the List ADT, and show the Nibblonians that you can both save memory and wrangle a whole herd of wild pointers. A 'linkedlist.h' header file has been provided for you to the wishes and whims of the great Nibblonian Council.



Nibblonian kitten class attack ships.

Testing:

Use the provided tester files to check if your implementation is working correctly.

- The program 'tester.cpp' uses the LinkedList class and the intended output is 'testeroutput.txt'.

Useful Hints:

1. Carefully read the comments of each member function.
2. Write down an algorithm for the function before you start coding it.
3. Develop your member functions one at a time, starting from the simplest ones.
Move to the next function only after the previous one has been tested.
Trying to code the whole class and then remove the bugs may prove to be too big a task.
4. Use the provided friend function 'operator<<' to observe the status of your lists.
5. When a function encounters an error, it should behave as stated in the function comments.
6. There is an **auxiliary constructor** available, which is handy for the implementation of the insertion functions.
7. Suggestion: Implement 'insert_front()' first.

NOTE: The LinkedList is a templated class, so instead of being split in the usual .h/.cpp file pair, it is split into a .h/.hpp file pair, where the .h file #includes the .hpp file at the end, therefore, **DO NOT** #include "linkedlist.h" in your .hpp file.