Linked-List Sequence Project  
CS 2420: Section 1

## Instructor: Todd Peterson

## Due: date shown on Canvas. Turn in to canvas.

You may **not** usethe standard **template** library for this or any other project this semester unless specifically mentioned in the instructions -- Even though the book does.

**Disclaimer:**I <name> have not used any code other than my own (or that in the textbook) for this project. I also have not used any function or data-structure from the Standard-Template Library. I understand that any violation of this disclaimer will result in a 0 for the project.

Purpose:

Understanding external iterators, linked lists and templates.

### Instructions:

* All classes are templates
* Optionally you may turn in your assignment without templates.
  + But you will learn more if you use the template
  + No difference in the number of points you will receive.
* Create a List class with the following functions:
  + Constructor
  + Insert\_front(value)
  + Add\_back (value)
  + Remove\_all(value)
  + Iterator Begin()
  + Int Size()
* Create an External Iterator class called “Iterator”
  + Constructor (Node \*) : The iterator initially points to the beginning of the list.
  + Value type Operator\* : dereference the iterator
  + Operator++: advance the iterator
  + bool Is\_item (): returns if there is a valid item
* Create a Node Class
  + Constructor
  + data
  + next

### Turn-in:

* Iterator.h
* List.h
* Node.h
* List\_test.cpp
* Windows Executable

**Or**

* **C++ Project**

**Instructions:**Complete the implementation of all of the functions in the header file using a Linked List as the underlying implementation.  
You will be graded on how well the program performs according to the specifications given in the header file. **Do not do more or less than this.**