Recursive List 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: To better understand

* Linked lists
* Recursion

### Instructions:

* **All functions in the List class are to be created recursively or they are given no credit**.
* Create a List class with the following functions:
  + Constructor
  + Destructor : delete all nodes
    - Use the destroy helper function
  + print : use cout to print all nodes
  + find : see if a value is in the list
  + addEnd (value)
  + insert(value)
    - only works if the list is already sorted.
    - Consider passing in two Node\* to your helper function as parameters.
    - Does not work well with the add end function.
  + Int Size()
    - Must be computed recursively not stored.
  + Any other helper functions that you need to create the above
    - Hint: most if not all need helper functions with one or more Node\* parameters.
* Create a Node Class
  + Constructor
  + data
  + next

### Turn-in:

* List.h
* List.cpp // you create this
* Node.h
* list\_test.cpp
* Windows Executable

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. Again feel free to edit the header file in order to add helper functions.