Discipline of Computing and IT
University of Newcastle

SENG1120/6120 – Semester 2, 2017
Laboratory 4

Video guide (Node/Linked List): https://www.youtube.com/watch?v=SF6Z_n4bExQ

This laboratory develops the first class needed for a linked list-based storage. Make sure you include full documentation, macro guards, namespaces, typedefs, etc, with your code.

1. Define a class `Node` that can be used to implement a linked list-based structure. Nodes should be doubly-linked. Each instance of Node should include the private member data for storage of a data item, a pointer to the next instance of `Node` and a pointer to the previous instance of `Node`.

2. The data item is going to be an account, which was the class used in Lab 2. Add a new private member to the class `Account`, "`string name`", which will store the name of the account holder, and create/modify all supporting member functions for `Account` (getters and setters).

3. Write a test program that uses a loop to ask the user *k* account balances and names, and stores each of them in a list of nodes, adding each next node at the tail of the list.

4. Traverse the list from head to tail, printing the account's name and balance stored at each node as it is visited. You should overload the `cout <<` operator for `Account` so that is prints "(name,balance)"; e.g. (Alex,50)

5. Traverse the list from tail to head, printing its contents again.

6. Modify the program you wrote for question 3 so that each `Node` instance is added to the head of the linked list. Notice that the final printout now lists the account balances in reverse order.

<u>Good Luck!</u>