**Name**

**Advanced Programming in C++**

**Lab Exercise 4/12/2021**

Modifications to the NumberList class

In this lab you will modify the NumberList class to add new functionalities.

1. Write a destroyList function that will delete each node from the list and free up memory allocated in the list.
2. Write a reverseList function that rewrites the list in reverse order.
3. Write a copyList function that takes the original list and returns a copy of the list.
4. Test your functions my writing a main function, creating a simple list of numbers, copy the list to another list, then reverse the original list.

Here is the code

1. Add the following prototypes to the NumberList.h file

void destroyList();

void reverseList();

void copyList(NumberList &);

1. Add the following code to the destroyList function.

ListNode \*nodePtr;

nodePtr = head;

while (nodePtr != NULL)

{

head = head ->next;

delete nodePtr;

nodePtr = head;

}

head = NULL;

1. Add the following code to the reverseList function.

ListNode \*nodePtr;

vector<double> temp;

nodePtr = head;

while (nodePtr != NULL)

{

temp.push\_back(nodePtr -> value);

nodePtr = nodePtr -> next;

}

destroyList();

for (int i = temp.size() - 1; i >= 0; i--)

appendNode(temp[i]);

1. Add the following code to the copyList function

ListNode \*nodePtr;

nodePtr = head;

while (nodePtr != NULL)

{

other.appendNode(nodePtr->value);

nodePtr = nodePtr->next;

}

When you have completed these modifications and debugged them, submit a copy of your output.