**Lab Report 03**

Problem

Given a grocery list driver and text file, our objective is to create files containing the grocery items’ linked list and object so that it passes the tests.

Solution Description

The GroceryItem class was easy enough to create, and I then had to program the back-end methods for the Grocery List. These methods include one to add and remove items from the list, print the entire list, add the total cost of the list items, set the pointer to different item nodes within the list, etc. In doing so, the methods satisfied the functionality of the front-end and the tests.

Problems Encountered

In creating the contains method for the list, I forgot about the equals method I created within the object class. Without it, I was unable to satisfy the third test because the parameters were never passed correctly. However, it worked as intended once I remembered to use the equals method.

4. It is easy to expand and shrink as needed

5. In using a linked list, you lose all random access

6. The method never iterates through the list itself. To fix this, set the temp node equal to its next item (link) every time the while statement loops.

7. By directly changing the node head refers to, its links are made obsolete and deleted. In order to fix this, a temporary node should be created and used instead.

8. Temp and head refer to the same node, which means the head stays intact. In order to remove the first node, you would then set head to the new temp. The initial head node would be deleted since there is no way to reference it anymore.

9. The method is trying to delete a node that is already null. The while statement should check if temp.link’s value is null because it would mean that the removed node is valid before being removed.

10. The last node value is being ignored in the calculation. To ensure it is multiplies in the equation, the while statement should check for temp’s validaty instead of the node after it. This makes sure the while statement breaks only after the last node has been reached.