CS372 Assignment #2: Containers: Vectors, Bags, and Lists

This assignment has 3 problems, for a total of 100 points.

Submission Instructions

To submit, please push your code and any documentation to Github.
Place a note in the assignment submission in Blackboard indicating that your code is ready to be evaluated.
Points will be deducted if you do not follow these instructions.

1. (40 points) Implement the `Bag` class discussed in lecture in your class library. However, rather than using `vectors`, implement the class using the linked list class provided in the starter code.

2. (30 points) Provide one or more test programs that tests the behavior of your **Bag** class. Start by writing a test plan using the Unit Test template attached to the assignment on Blackboard. Implement the required code to show those tests executing. Add the Excel file to your GitHub repository.

3. (30 points) Suppose we adjust the definition of the `Bag` class to implement a *bag with receipts*. This bag operates in the same matter as with regular bags except the insert function returns a unique integer known as a *receipt*. On deletion, you must pass the remove function a copy of this receipt. The function removes the item matching the receipt and turns a reference to the removed item. Implement `ReceiptBag` class, with appropriate test scripts, in your library that implements this ADT (HINT: think about using parallel arrays or vectors).