Project 2

Design:

Item class

- Private data member variables for name, pounds, quantity and price
- Default constructor set name to empty string and other variables to 0
- Setter and getter member functions
- Member function that returns the value of quantity * price

List class

- Private data member variables for size, position, and sum
- Two double pointer to Item objects cart and temp
- Default constructor set size to 4, set position to 0, set sum to 0, and dynamically allocate an array of Item pointers to cart
- Member functions that add and delete items from the array
- Member function that displays the elements in the array
- Overloaded operator == that compared item name from cart to strings

Menu function

- Create List and Item object
- Create pointer to Item object and dynamically assigns new Item object to pointer
- Input validation

Problems occurred:

The problems that I had with this assignment were with deleting an element in the cart and the concept of creating a new object. I first try to reduce the size of my array which kept resulting in my program crashing. To resolve this problem, I used the delete keyword to delete a specify element at the position of the user choice. Another issue was creating more the one object with my add function. I resolved this issue by setting an Item pointer to a new object with the new keyword before I called the add function in my menu function.

Test Plan for Add function:

Test Case: N = integer M = string Z = double	Input Value	Purpose	Expected Outcome	Actual Outcome
M for all string values	M = “CatDog”	Assigns M to Item object name	Takes M and sets M to Item object name	Takes M and assigns to new Item object by pointer
N at 0	N = 0	Assigns N to object either pounds, quantity, or price	Takes N and assigns and sets N to Item object pounds, quantity, or price	Takes N and assigns to new Item object by pointer
N at negative value	N < 0	Assigns N to Item object pounds, quantity, or price	Takes N and assigns and sets N to Item object pounds, quantity, or price	Takes N and assigns to new Item object by pointer
N at large values	N > 100	Assigns N to Item object pounds, quantity, or price	Takes large N and assings and sets N to Item object pounds, quantity, or price	Takes N and assigns to new Item object by pointer