Project Report 2

**Problem Statement:**

The goal of Homework 2 was to cumulatively apply all things learned in Programming Foundations I & II with the introduction of linked lists. In more technical terms, the goal was to store information about a meal from a restaurant in a list and access/change it later. The program inputs include the restaurant name, restaurant rating, meal name, meal type, and price of multiple restaurants. The program outputs the information of the restaurants in a list form. To make sure the program could properly take in restaurant information, it needed to read input data until the new line character. This allows for information with spaces to be properly taken in.

**Design:**

The most important design decision I made was to make my linked list a doubly linked list. This made traversing the data a much simpler task as I was able to go forwards and backwards in the list. Data structures used in this assignment were classes and linked lists; both structures were required. No algorithms were used in this assignment. In the case of this assignment, I chose not to sort the linked list. Were I to sort it, a doubly linked list would e much more effective than a singly linked list.

**Implementation:**

I initially started building the RestaurantNode class I was more familiar with its structure. Then came the RestaurantList class which seemed far more difficult to implement, but I quickly realized it was almost as simple to program. There was no sample code given for this assignment; however, I used the VideoGame Doubly Linked List example as a guide to the construction of my classes. The first code I typed was a day after the homework was first published. In this time, I started coding what was to become the RestaurantNode class. A day after came the RestaurantList class. As I was unfamiliar with creating a class for a linked list, this class took me two days to finally have a project with two classes that compiled. The two days before the due date consisted of adding the menu and its functions along with much debugging.

**Testing:**

I tested my program’s inputs with multiple token strings and mismatching data types. Normal inputs I stored matched that of their ascribed data type (e.g., floating point number to a float data type). Special input cases were mismatched data type storing and multiple token strings. The program reacted better than initially expected to these tests.

**Conclusions:**

Completion of Homework 2 resulted in a working list that can store multiple types of data that can be retrieved and compared. The programming project was a success, for many aspects of the programming process went without issue. I would start slightly earlier next time and utilize the resources on Blackboard to their fullest extent. The program took a combined total of about 6 hours to complete. The creation of the typescript and Project Report took a combined hour to finalize.