CS 215 INTRODUCTION TO PROGRAM DESIGN, ABSTRACTION, AND PROBLEM SOLVING

EXTERNAL DOCUMENTATION

**PROGRAMMING PROJECT NAME**

**Problem**

The goal of this program is to create a queue system that can manage incoming, awaiting, and outgoing customers.

**Design**

Create an instance of the linked list

Print Menu

Get User Menu Choice

User can either input number that corresponds to the choice or choice itself

Switch Menu

If User wanted to add a new customer

Get customer name and required service

Continue if name does not have a number

Add customer to the queue

If User wanted to serve the next customer

If there are customers in the list

Serve and Remove Next Customer

Find and Locate Next customer

Tell user the customer has been served

If User wanted to delete existing customer

Get customer name

Continue of name does not have a number

Find Customer in the list

Tell user whether customer has been found and removed or not

If User wanted to list all awaiting customers

If there are customers in the list

Go through the list and display details of each customer

Print the number of awaiting customer

If User wanted to quit

End the program

**Implementation**

I wrote the program in Visual Studio 2019 Community Edition. I used a custom-built computer, running a 6-Core Ryzen 5 3600 with 16 GB of DDR4 RAM. I tested my program by simulating different situations whether user inputs a string, integer, character, etc. during times when list is empty or filled with different customers. Previously, some unusual situations I encountered were bugs due to the lack of checking whether there are customers in the list or not. Therefore, I added a couple of if statements to prevent that issue from happening again.