2020

Simple Documentation Template

CSC 414 SOFTWARE DESIGN

CAMERON HARVEY

SECTION 1.0

1.0 Scope

This project will consist of a restaurant menu allowing users to order a pizza with various toppings and sides.

1.1 Identification

Name: Pizza Restaurant Menu

Version: 1.0

Language: C++

1.2 System Overview

This program will list a menu of items for the customer to order. These items will consist of a pizza with options for size, the toppings, and other items that can be ordered such as sides and beverages. Prices of each individual item will be listed alongside the name. This program will print the total price each time the user adds an item to their cart. Once the user completes the order the menu will print the final price.

1.3 Document Overview

This document will show the development process of the project and the requirements needed to complete it. The design of the project will be detailed, and any outside sources used to develop the project will be listed. After completion of the project, it will be tested and the results will be listed at the end of this document.

SECTION 2.0

2.0 Referenced Documents

[1] “What are the top 10 features of C++?” *Edureka.* Nov, 2019. [Online] Available: https://www.edureka.co/blog/features-of-cpp/#powerful

SECTION 3.0

3.0 Requirements

- **This program shall list a menu of items the customer may order.**

- **This list shall repeat until the customer has chosen to complete his order.**

- **This program shall return an error if the user's input is invalid.**

- **This program shall count the price of each item ordered and make the user aware of how much they are spending.**

- **This program shall print a list of items ordered as well as the total price once the order is completed.**

SECTION 4.0

4.0 Design

This program is designed in Microsoft Visual Studio, using C++ as the language of choice. C++ was chosen due to my own familiarity with the language as well as its simplicity and ease of use. C++ is also a fast language for compilation and execution, and contains a multitude of data types, functions, and operators [1]. This language contains several important features including: a vast library of built in functions, dynamic memory allocation, and object-oriented programming.

4.1 Menu Design

The main function of the program starts by printing the restaurant menu to the console for the user. The user is prompted to input a character value corresponding to the item they wish to order. The menu will repeat until the customer chooses to exit the program This is done by using a Boolean controlled while loop. When the user chooses to exit, a Boolean value of true will be returned to the main function and cause the loop to cease. Each item the customer orders is added to an array to keep track of everything in the order. The program will then use this array to print the order upon completion.

4.2 Function Design

There are three function used in this program. The first function is used to take the user's input and calculate the price of the item. This function also returns a Boolean value to tell the menu loop whether to continue prompting the customer. The second function prints a menu of toppings if the customer ordered a pizza. This lets the user choose what type of pizza they would like to buy. This will be reflected in the list of items ordered. The third and final function is used to print the order once the user has chosen to complete it.

SECTION 5.0

5.0 Tests & Results

This section contains tests performed with the program and the results obtained.

5.1 Tests

Test showing an order selected successfully.

```
E

Chicken wings selected.

Current total: $6.99

Please select an item:
-----------------------
A. Small Pizza:   $4.99
B. Medium Pizza:  $11.99
C. Large Pizza:   $14.99
D. Cheese Sticks: $5.99
E. Chicken Wings: $6.99
F. Bread Sticks:  $5.99
G. Pasta:         $7.99
H. Small Drink:   $0.99
I. Medium Drink:  $1.99
J. Large Drink:   $2.99
-----------------------
Type X to exit and complete your order.
```

Test showing order completion

```
Chicken wings: $6.99

Large drink: $2.99

Order Complete
------------------------
Order total: $9.98
------------------------
```

Test showing the toppings menu

```
Please select a topping:
------------------------
A. Pepperoni
B. Sausage
C. Jalepenos
D. Pineapple
E. Ham
F. Cheese
------------------------
```

Test showing invalid input

```
W

Unexpected input.

Current total: $0

Please select an item:
------------------------
A. Small Pizza:   $4.99
B. Medium Pizza:  $11.99
C. Large Pizza:   $14.99
D. Cheese Sticks: $5.99
E. Chicken Wings: $6.99
F. Bread Sticks:  $5.99
G. Pasta:         $7.99
H. Small Drink:   $0.99
I. Medium Drink:  $1.99
J. Large Drink:   $2.99
------------------------
Type X to exit and complete your order.
```

5.2 Results

Results of tests show that the program is able to successfully allow a customer to order multiple items and complete their order. The total price of the order is correctly calculated and displayed at the end of the order. As each item is added to the order, the list is updated and stores each item for printing upon completion. The program also gives the user an error message if the input is not accepted and will repeat the menu for them. This does not affect the order price. The program still needs a feature to allow the user to remove items from their order or cancel it altogether. Currently the toppings menu is very basic and needs to allow for multiple toppings to be added.