**Module 1 Assessment Part 4**

Requirements—Part 4

For this assessment, you will plan and create a program for a small ice cream shop that will allow a customer to see the flavors available, select a cone size, and see the price for their order. Planning and prioritizing before creating a usable program is extremely important. To achieve your identified goals, you should first develop detailed models for a program that you will then create that fulfills requirements. Your models and program should be well organized and tested for correct output before customer usage.

Create a list to hold seven ice cream flavors.

Modify the name of one flavor.

Add one new flavor to the end of the list.

Sort the list.

Display the number of flavors and number and name of each flavor in the list.

Create two dictionaries: one to hold the cone sizes and prices and another to hold the size descriptions.

Prompt the user to enter a size and flavor.

Validate that a correct size and flavor value were entered.

Display the price, size description, and flavor.

Instructions—Part 4:

PART A - PLANNING

Using an IPO chart and pseudocode, plan the input and output data and model your processing prior to creating the code in Python for this programming scenario.

PART B - PROGRAMMING FROM THE MODELS

1. Display a welcome message on the screen:

“Welcome to The Ice Creamery”

2. Create a new list variable for storing seven ice cream flavors (i.e., flavorsList).

flavorsList = ["Vanilla", "Chocolate", "Strawberry", "Pistachio", "Butter Pecan", "Cookie Dough", "Neapolitan"]

3. Change the name of one flavor in the list of flavors just created.

Hint: Use the index value for the position of the flavor in the list and assign it a new value.

4. Use a built-in list operation to append a new flavor to the end of the list. You should now have eight flavors in the list.

5. Use a built-in list operation to sort the flavors list in alphabetical order.

6. Store the number of flavors in the list in a variable and display the number of flavors.

7. Loop through each flavor in the list using a FOR loop to display the number and name for each item in the list.

Create FOR loop to process each flavor in flavorsList list.

With each iteration, display the flavor # using the index value in the flavors list and the name of the flavor.

Hint: Remember index positions in lists start with zero. To make this more customer friendly, add one to the index value before displaying it.

8. Define dictionaries to hold the prices and descriptions for each cone size.

conePrices={"S":"$1.50","M":"$2.50","L":"$3.50"}

coneSizes={"S":"smallish","M":"more for me","L":"lotta lickin"}

9. Prompt the user to enter a cone size (S, M, or L). Store their choice in a variable (i.e., customerSize).

OPTIONAL VALIDATION: Use an IF statement to ensure a valid value was entered. Display an error message if an invalid value was entered.

10. Prompt the user to enter a flavor number. Store their choice in a number variable (i.e., customerFlavor).

Hint: Placing int ahead of the input statement will store the user input as a number. You will be using this number as the index to find the flavor value from the list.

OPTIONAL VALIDATION: Use an IF statement to ensure a valid value was entered. Display an error message if an invalid value was entered.

11. Display the price, size description, and flavor for their choice. Use your conePrices dictionary to match the size value entered to the price. Use your coneSizes dictionary to match the size to the description of the size.

Hint: Remember that index positions in lists start with zero. To make this more customer friendly, we added one to the index value before displaying it. You will need to do the same here to display the appropriate value from the list.

Use print () to print blank lines as necessary for readability.

EXAMPLE PROGRAM OUTPUT—Part 4

Welcome to The Ice Creamery

These are the 8 flavors we are serving today at The Ice Creamery:

Flavor #: 1 Blueberry Crunch

Flavor #: 2 Butter Pecan

Flavor #: 3 Chocolate

Flavor #: 4 Cookie Dough

Flavor #: 5 Neapolitan

Flavor #: 6 Strawberry

Flavor #: 7 Vanilla

Flavor #: 8 Very Berry Strawberry

Please enter the cone size of your choosing: S, M, or L: S

Please enter your flavor number: 5

Your total is: $1.50

Your smallish sized cone of The Ice Creamery's Neapolitan will arrive shortly.

Thank you for visiting the Ice Cream Creamery