Object Oriented Programming CA2

# Program

My program has a main body, several variables, 2 classes and 2 subclasses, the body consists of a menu that prompts the user for a number input (1-5).

# Input 1:

When the user starts the program, they are unable to access any of the other options unless they do option 1 first. When the user inputs 1 on the main menu, they will be prompted to Enter the name of the customer, the balance of the customer and if they are a loyal customer or a bargain hunter. Once all this information is entered, it will go to either the LoyalCustomer class or the BargainHunter class. After the customer is created the user can now access all the other options on the main menu.

# Input 2:

This input can only be accessed after a user is created. This option will display the products the user can buy, however the products will change depending on whether the user is a loyal customer or a bargain hunter. If the user is a loyal customer, they are shown the full list of products which are stored in a dictionary and printed out. However, if the user is a bargain hunter, all the products that are accessible for loyal customers will not be stored in the dictionary and displayed to the user

The products have a set quantity and price, if the user were to add items to their cart the quantity in the shop will be reduced accordingly.

# Input 3:

This input will allow the user to choose to add an item to the cart or remove an item from the cart. Firstly, it will check if the user has a customer created, then it will ask if the user wants to add or remove an item. The user inputs the product name and how much of it they want to buy, (Ex. Water 5) The program will then check if the name is in the product list dictionary and check if there is enough in the dictionary to take away, if either are not accurate an error message will appear, and the user is sent back to the main menu.

When the user chooses to add a product, it will remove the amount from the product list and go to the shopping cart class and add the item to a dictionary that represents their cart. It will also multiply the quantity add to the set price of the product and save the total price. When the user adds more items to the cart, they are added to the dictionary and all the prices are added up.

When the user chooses to remove a product, the program will add the removed amount back into the product list and go to the shopping cart class to remove the item from the dictionary representing the cart. It will also remove the price of the removed product from the total price.

This option will check if there is enough of the product in the shop to add or in the cart to remove. It will also check if the user is a loyal customer or bargain hunter and allow them to buy their respective products, (Ex Loyal customers can buy a Tv, while a Bargain hunter cannot.)

# Input 4:

This input will display all the items the user has added to their cart. It will go to the shopping cart class and will be returned the dictionary containing all the added items and the price total.

# Input 5:

Input 5 is the checkout option, the user can only access this option when they have a customer created and at least 1 item is added to their cart. The program will print out their balance that they entered when creating the customer, the price total of all the added items, and the change/ how much they are overspending. It will then ask if the user is happy to continue the transaction. If the user enters ‘no’ the user is sent back to the main menu, if user enters ‘yes’ the program ends and provides a thank you message.

# Classes:

There are 4 classes in this program, Customer, LoyalCustomer, BargainHunter and ShoppingCart.

LoyalCustomer and BargainHunter are subclasses of Customer, the only difference is that they assign a “(LC)” or “(BH)” beside the customer’s name accordingly.

Customer holds the customer’s name, balance, and status.

ShoppingCart holds most of the methods. Its adds items, removes items, displays items, displays total price of items and gets the difference in Customer’s balance and total price when checking out.

# User manual:

Firstly the user should create a customer by pressing 1 and inputting their name, balance and choose to be either a loyal customer or bargain hunter.

Then they should press 2 and look at all the products that is available for them to purchase.

After they should press 3 to add the item to their shopping cart. Repeat this step to add more items or remove items from the cart.

Press 4 to see all the items currently in their cart.

To finish off the user presses 5 to check out, if they have enough money they should approve the transaction. If they do not have enough money the should say ‘no’ and remove some items from their cart by pressing 3.

# Difficulties

For the difficulties in this CA, I had to rush making the code and did not optimize it all that well,

I still have some difficulties with classes and tried to work around this but it made my code very messy and confusing.

My remove\_item also has an error as it does not check if there is enough of the product to remove from the shopping cart, (Ex. Shopping cart currently has “3 Water at $45” in it. User wants to remove 4 Water. Instead of an error message saying, ‘not enough Water in cart’ the shopping cart will display “-1 water at $-15”.

Also, I used a split when the user wants to add or remove a product. It will prompt the user "What item do you want to add and how many? ", this input requires 2 values and crashes if only 1 or 3 values are entered. I do not know how to get around this problem.