CSE 4618: Artificial Intelligence Lab

Lab 0

Name: K.M.Tahlil Mahfuz Faruk

ID:200042158

Islamic University of Technology, OIC

Gazipur, Bangladesh

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Question 1 (Addition):

Introduction

The problem was regarding the addition of 2 numbers.

Analysis of the problem

- There is a function called add that takes two parameters.
- We need to add these two parameters.
- Then return the result.

Explanation of the solutions

- Send two numbers in the function add as parameters a and b.
- Return the result of a+b.

Problems that i faced and solution

During this problem no significant problem was encountered.

Interesting Findings

There were no such mentinable interesting findings.

Question 2 (buyLotsOfFruit):

Introduction

The problem was to complete a function called buyLotsOfFruit that returns the cost of the fruits that are added in the list.

Analysis of the problem

- In this problem we need to print an error message if orderList contains any fruit that is not present in fruitPrices. Also we need to return none in this case.
- Otherwise we can calculate the price iterating through orderList and and calculate the totalCost of the fruits present in orderList.

Explanation of the solutions

- First take a variable called totalCost and assign its value to 0.

- Then Iterate through orderList.
- Check if the item in orderList is present in fruitPrices.
- If it's present then multiply the price of the fruit with the number of fruits and add the value with the totalCost.
- Else print an error message and return none.
- If else statements should be inside the loop.
- At last return the totalCost.

Problems that i faced and solution

During this problem no significant problem was encountered.

Interesting Findings

There were no such mentinable interesting findings.

Question 3 (shopSmart):

Introduction

The problem statement asks us to complete a function that takes an orderList and fruitShops. We have to return the best shop among the fruitshops where the order will cost the minimum amount.

Analysis of the problem

- In this problem, there is a shop class that has been imported. If we look at the implementation we will find a function called getPriceOfOrder that takes orderList and returns the total amount of the fruits in the orderList. We can use this function to calculate the totalCost for a particular shop.
- Then we can create a map or more precisely for python a dictionary with a key and value to save the shops and the according prices of the orderList.
- Then we just have to return the key or the shop that has the minimum amount in totalCost.

Explanation of the solutions

- First we need to check if the fruitShops and orderList are not null.
- Then we create a dictionary called shopMap.
- Now we need to iterate through the fruitshops. Using the getPriceOfOrder function of fruitShops we can calculate the totalCost of the order for that particular fruitShop.

- Now save the fruitShop and the totalCost as the key and value in the dictionary.
- After the iteration is completed return the shop that has the minimum totalCost using the min function.

Problems that i faced and solution

- At first I did not solve the problem that I mentioned. I solved this using a minCost variable that used to track the lowest totalCost among all the shops in the fruitShops. The value of the minCost was assigned with 1000000000000000000000. Else the autograder could not pass all the tests.
- But during the evaluation our course teacher asked me to solve it in a different way. So this procedure came in my mind to map the shops with their corresponding totalCost.
- During this procedure, I don't have to explicitly define the value of minCost. Whatever value of totalCost i get i just have to return the key that has the minimum value from the map. And this would be a more generalized solution.

Interesting Findings

While I was googling to find the map for python, I found that a dictionary could be used for creating different data structures such as map. I didn’t know that before solving this problem as I used to do problem solving in c++. This was a new finding for me.