SAVEETHA SCHOOL OF ENGINEERING

DEPARTMENT OF COMPUTERSCIENCE AND ENGINEERING

CSA0889 – Python Programming

Assignment – 3

1. A bakery sells loaves of bread for 185 rupees each. Day old bread is discounted by 60 percent. Write a python program that begins by reading the number of loaves of day old bread being purchased from the user. Then your program should display the regular price for the bread, the discount because it is a day old, and the total price. All of the values should be displayed using two decimal places, and the decimal points in all of the numbers should be aligned when reasonable values are entered by the user.

Sample Input:

Enter the number of fresh loves purchased: 5

Enter the number of day-old loaves purchased: 3

Sample Output:

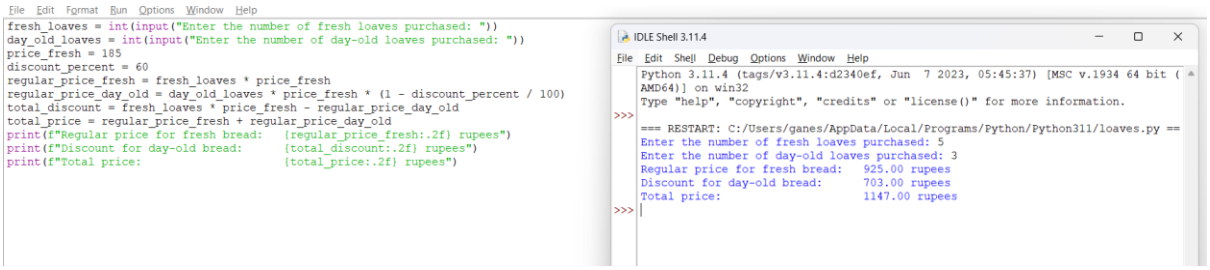
Regular price: Rs.185.00

Amount of new loaves: 925.00

Amount of day-old loaves: 333.00

Total amount: Rs. 1258.00

Test cases: 1. 4, 6 2. -1,5 3. 0,6 4. 7,8 5. 3,4



2. Given two strings “s” and “t”, determine if they are isomorphic. Two strings “s” and “t” are isomorphic if the characters in “s” can be replaced to get “t”. All occurrences of a character must be replaced with another character while preserving the order of characters. No two characters may map to the same character, but a character may map to itself.

Constraints:

✓ s and t consist of any valid ascii character**.**`

Test Cases:

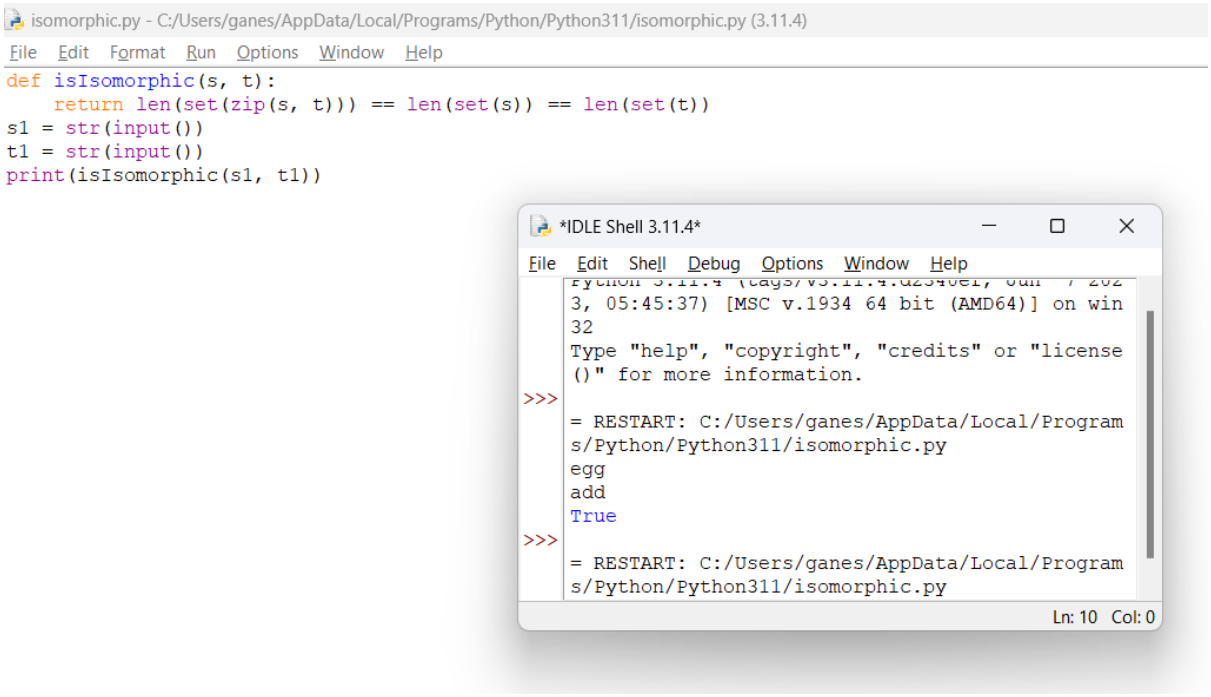
1.Input: s = "egg", t = "add" Output: true

2.Input: s = "foo", t = "bar" Output: false

3.Input: s = "paper", t = "title" Output: true

4.Input: s = "fry", t = "sky" Output: true

5. Input: s = "apples", t = "apple" Output: false



3. Given n non-negative integers a1, a2,a3,…an where each represents a point at coordinate (i, ai) . ‘ n ‘ vertical lines are drawn such that the two endpoints of line i is at (i, ai) and (i,0). Find two lines, which together with x-axis forms a container, such that the container contains the most water. The program should return an integer which corresponds to the maximum area of water that can be contained (maximum area instead of maximum volume sounds weird but this is the 2D plane we are working with for simplicity).

Note:

You may not slant the container**.**

Test case:

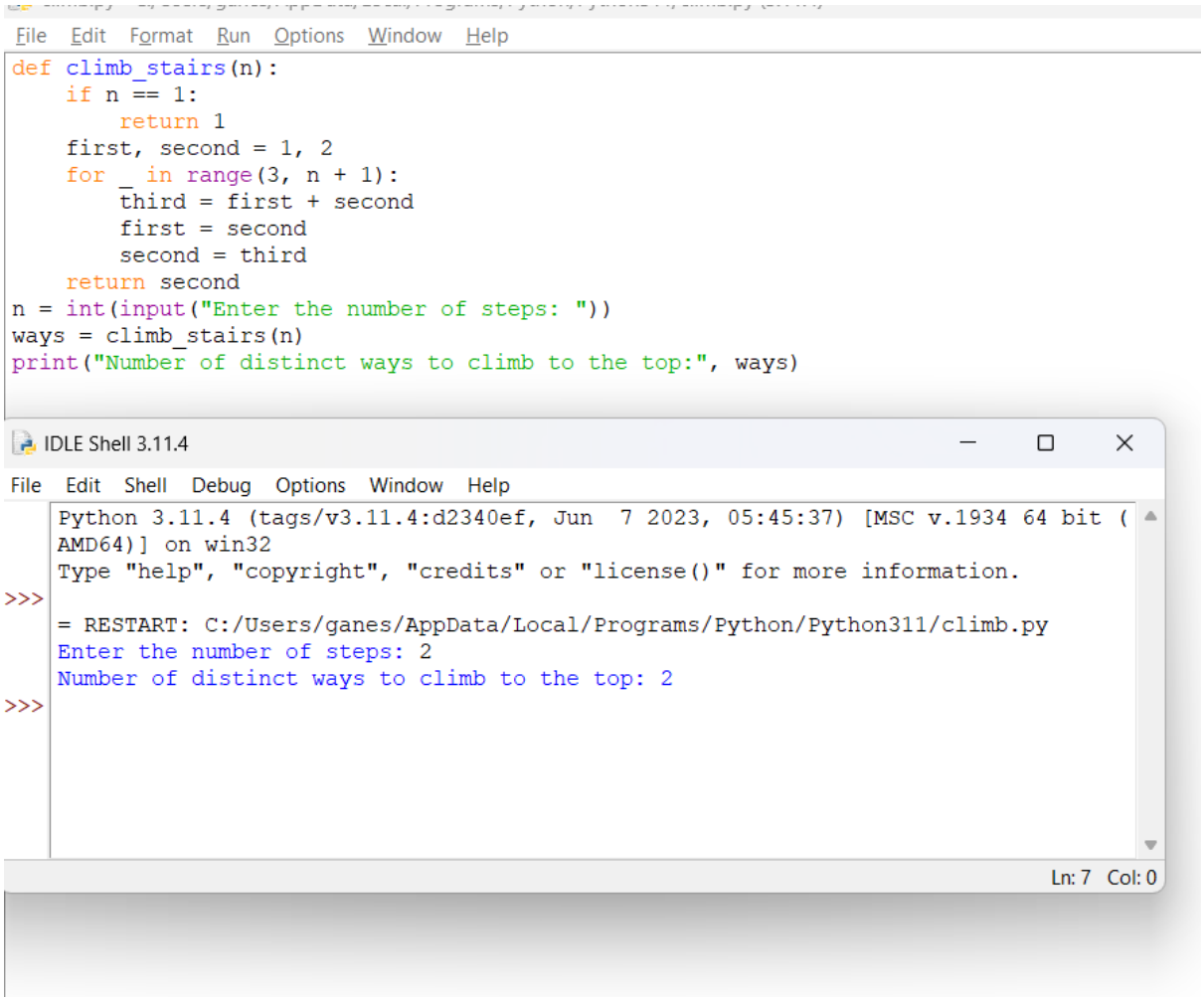
1.Input: array = [1, 5, 4, 3] Output: 6

2.Input: array = [3, 1, 2, 4, 5] Output: 12

3.Input: array = [1,8,6,2,5,4,8,3,7] Output: 49

4.Input: array = [1,1] Output: 1

5.Input: array = [7,3] Output: 3



5. In daily share trading, a buyer buys shares in the morning and sells them on the same day. If the trader is allowed to make at most 2 transactions in a day, whereas the second transaction can only start after the first one is complete (Buy->sell->Buy->sell). Given stock prices throughout the day, find out the maximum profit that a share trader could have made**.**

Test Case:

1.Input: prices = [7,1,5,3,6,4] Output: 7

2.Input: prices = [7,6,4,3,1] Output: 0

3.Input: [10, 22, 5, 75, 65, 80] Output:87

4.Input: [2, 30, 15, 10, 8, 25, 80] Output:100

5. Input: [5,25,3,10,7,9] Output:27

max_profit.py - C:/Users/ganes/AppData/Local/Programs/Python/Python311/max_profit.py (3.11.4)

File Edit Format Run Options Window Help

```
def max_profit(prices):
    if not prices:
        return 0
    n = len(prices)
    max_profit = 0
    for i in range(1, n):
        if prices[i] > prices[i - 1]:
            max_profit += prices[i] - prices[i - 1]
    return max_profit
prices = list(map(int, input("Enter stock prices separated by space: ").split()))
print("Maximum Profit: ", max_profit(prices))
```

IDLE Shell 3.11.4

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```
Python 3.11.4 (tags/v3.11.4:d2340ef, Jun  7 2023, 05:45:37) [MSC v.1934 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/ganes/AppData/Local/Programs/Python/Python311/max_profit.py
Enter stock prices separated by space: 7 1 5 3 6 4
Maximum Profit:  7
>>>
```

Ln: 7 Col: 0