Rajalakshmi Engineering College

Name: Rithesh Madhav S
Email: 240701428@rajalakshmi.edu.in
Roll no: 240701428
Phone: 9884267696
Branch: REC
Department: I CSE FD
Batch: 2028
Degree: B.E - CSE

Scan to verify results

NeoColab_REC_CS23221_Python Programming

REC_Python_Week 4_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 36

Section 1 : Coding

1. Problem Statement

Create a program for a mathematics competition where participants need to find the smallest positive divisor of a given integer n. Your program should efficiently determine this divisor using the min() function and display the result.

Input Format

The input consists of a single positive integer n, representing the number for which the smallest positive divisor needs to be found.

Output Format

The output prints the smallest positive divisor of the input integer in the format: "The smallest positive divisor of [n] is: [smallest divisor]".

Refer to the sample output for the exact format.

Sample Test Case

Input: 24
Output: The smallest positive divisor of 24 is: 2

Answer

```
# You are using Python
n  = int(input())

def smallest_divisor(n):
    return min([i for i in range(2, n+1) if n % i == 0])

print(f"The smallest positive divisor of {n} is: {smallest_divisor(n)}")
```

Status : Correct ***Marks : 10/10***

2. Problem Statement

You are tasked with designing a shipping cost calculator program that calculates the shipping cost for packages based on their weight and destination. The program utilizes different shipping rates for domestic, international, and remote destinations. The rates for each destination type are provided as global constants.

Constant Values:

DOMESTIC_RATE = 5.0

INTERNATIONAL_RATE = 10.0

REMOTE_RATE = 15.0

Function Signature: calculate_shipping(weight, destination)

Formula: shipping cost = weight * destination rate

Input Format

The first line of the input consists of a float representing the weight of the package.

The second line consists of a string representing the destinations(Domestic or International or Remote).

Output Format

The program outputs any one of the following:

1. If the input is valid and the destination is recognized, the output should consist of a single line stating the calculated shipping cost for the given weight and destination in the format: "Shipping cost to [destination] for a [weight] kg package: $[calculated cost]" with two decimal places.
2. If the input weight is not a positive float, print "Invalid weight. Weight must be greater than 0."
3. If the input destination is not one of the valid options, print "Invalid destination."

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 5.5
Domestic
Output: Shipping cost to Domestic for a 5.5 kg package: $27.50

Answer

#

```
# You are using Python
DOMESTIC_RATE=5.0
INTERNATIONAL_RATE=10.0
REMOTE_RATE=15.0
weight=float(input())
destination=input()
shipping_cost=None
if weight<=0:
    print("Invalid weight.")
    print("Weight must be greater than 0.")
elif destination=="Domestic":
```

```
    shipping_cost=weight*DOMESTIC_RATE
elif destination=="International":
    shipping_cost==weight*INTERNATIONAL_RATE
elif destination=="Remote":
    shipping_cost=weight*REMOTE_RATE
else:
    print("Invalid destination.")

if shipping_cost is not None:
    print(f"Shipping cost to {destination} for a {weight} kg package:
${shipping_cost:.2f}")
```

Status : Partially correct **Marks : 6/10**

3. Problem Statement

Develop a text analysis tool that needs to count the occurrences of a specific substring within a given text string.

Write a function count_substrings(text, substring) that takes two inputs: the text string and the substring to be counted. The function should count how many times the substring appears in the text string and return the count.

Function Signature: count_substrings(text, substring)

Input Format

The first line of the input consists of a string representing the text.

The second line consists of a string representing the substring.

Output Format

The output should display a single line of output containing the count of occurrences of the substring in the text string.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: programming is fun and programming is cool
programming
Output: The substring 'programming' appears 2 times in the text.

Answer

```
# You are using Python
a=input()
b=input()
result=a.count(b)
print(f"The substring '{b}' appears {result} times in the text.")
```

Status : Correct ***Marks : 10/10***

4. Problem Statement

Arjun is working on a mathematical tool to manipulate lists of numbers. He needs a program that reads a list of integers and generates two lists: one containing the squares of the input numbers, and another containing the cubes. Arjun wants to use lambda functions for both tasks.

Write a program that computes the square and cube of each number in the input list using lambda functions.

Input Format

The input consists of a single line of space-separated integers representing the list of input numbers.

Output Format

The first line contains a list of the squared values of the input numbers.

The second line contains a list of the cubed values of the input numbers.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 1 2 3
Output: [1, 4, 9]
[1, 8, 27]

Answer

```
# You are using Python
numbers = list(map(int, input().split()))
squares = list(map(lambda x: x**2, numbers))
cubes = list(map(lambda x: x**3, numbers))
print(squares)
print(cubes)
```

Status : Correct ***Marks : 10/10***