

# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23221\_Python Programming

### REC\_Python\_Week 4\_CY

Attempt : 1  
Total Mark : 40  
Marks Obtained : 40

### Section 1 : Coding

#### 1. 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

weight=float(input())

shipping\_cost=None

if weight >0:

    destination=input()

    if destination=="Domestic":

        shipping\_cost=weight \* 5.0

```
elif destination=="International":
    shipping_cost=weight * 10.0
elif destination=="Remote":
    shipping_cost=weight * 15.0
else:
    print("Invalid destination.")

else:
    print("Invalid weight. Weight must be greater than 0.")

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

**Status :** Correct

**Marks : 10/10**

## 2. 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().split()
b=input()
count=0
for i in a:
    if i.count(b):
        count+=1
print(f"The substring '{b}' appears {count} times in the text.")
```

**Status :** Correct

**Marks :** 10/10

## **3. Problem Statement**

Meena is analyzing a list of integers and needs to count how many numbers in the list are even and how many are odd. She decides to use lambda functions to filter the even and odd numbers from the list.

Write a program that takes a list of integers, counts the number of even and odd numbers using lambda functions, and prints the results.

### **Input Format**

The first line contains an integer  $n$ , representing the number of integers in the list.

The second line contains  $n$  space-separated integers.

### **Output Format**

The first line of output prints an integer representing the count of even numbers.

The second line of output prints an integer representing the count of odd numbers.

Refer to the sample output for the formatting specifications.

### **Sample Test Case**

Input: 7

12 34 56 78 98 65 23

Output: 5

2

### **Answer**

# You are using Python

```
n=int(input())
```

```
numbers=list(map(int,input().split()))
```

```
evennumber=list(filter(lambda x: x % 2==0,numbers))
```

```
oddnumber=list(filter(lambda x: x % 2 !=0,numbers))
```

```
print(len(evennumber))
```

```
print(len(oddnumber))
```

**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()))
square= lambda x: x**2
cube= lambda x: x**3
squares=list(map(square,numbers))
cube=list(map(cube,numbers))
print(squares)
print(cube)
```

**Status :** Correct

**Marks :** 10/10