

# 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

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

```
squares = list(map(lambda x: x ** 2, numbers))
cubes = list(map(lambda x: x ** 3, numbers))
```

```
# Print the results
print(squares)
print(cubes)
```

**Status :** Correct

**Marks :** 10/10

## **2. Problem Statement**

Implement a program for a retail store that needs to find the highest even price in a list of product prices. Your goal is to efficiently determine the maximum even price from a series of product prices. Utilize the `max()` inbuilt function in the program.

For example, if the prices are 10 15 24 8 37 16, the even prices are 10 24 8 16. So, the maximum even price is 24.

### **Input Format**

The input consists of a series of product prices separated by a space.

The prices should be entered as a space-separated string of numbers.

### **Output Format**

If there are even prices in the input, the output prints "The maximum even price is: " followed by the maximum even price.

If there are no even prices in the input, the output prints "No even prices were found".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 10 15 24 8 37 16

Output: The maximum even price is: 24

### **Answer**

```
# You are using Python
```

```
# Read input
```

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

```
# Filter even prices
```

```
even_prices = list(filter(lambda x: x % 2 == 0, prices))
```

```
# Check and output result
```

```
if even_prices:
```

```
    print("The maximum even price is:", max(even_prices))
```

```
else:
```

```
    print("No even prices were found")
```

**Status : Correct**

**Marks : 10/10**

## **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
def count_substrings(text, substring):
    count = text.count(substring)
    print(f"The substring '{substring}' appears {count} times in the text.")
```

```
# Read input
text = input()
substring = input()
```

```
# Call the function
count_substrings(text, substring)
```

**Status :** Correct

**Marks :** 10/10

#### 4. 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
# Read input
n = int(input())
numbers = list(map(int, input().split()))

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

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

```
# Print counts
```

```
print(len(even_numbers))
```

```
print(len(odd_numbers))
```

**Status :** Correct

**Marks :** 10/10