

# Rajalakshmi Engineering College

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## NeoColab\_REC\_CS23221\_Python Programming

### REC\_Python\_Week 4\_CY

Attempt : 2  
Total Mark : 40  
Marks Obtained : 40

### 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())
```

```
small=n
```

```
for i in range(2,n+1):
```

```
    if n%i == 0:
```

```
        small=min(small,i)
```

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

**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
n=list(map(int,input().split()))
lst=[]
for i in n:
    if i%2==0:
        lst.append(i)

if lst:
    print(f"The maximum even price is: {max(lst)}")
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)
    return count
text=input()
substring=input()
count=count_substrings(text,substring)
print(f"The substring '{substring}' appears {count} times in the text.")
```

**Status :** Correct

**Marks :** 10/10

## **4. Problem Statement**

Imagine you are tasked with developing a function for calculating the total cost of an item after applying a sales tax. The sales tax rate is equal to 0.08 and it is defined as a global variable.

The function should accept the cost of the item as a parameter, calculate the tax amount, and return the total cost.

Additionally, the program should display the item cost, sales tax rate, and

total cost to the user.

Function Signature: `total_cost(item_cost)`

### ***Input Format***

The input consists of a single line containing a positive floating-point number representing the cost of the item.

### ***Output Format***

The output consists of three lines:

"Item Cost:" followed by the cost of the item formatted to two decimal places.

"Sales Tax Rate:" followed by the sales tax rate in percentage.

"Total Cost:" followed by the calculated total cost after applying the sales tax, formatted to two decimal places.

Refer to the sample output for formatting specifications.

### ***Sample Test Case***

Input: 50.00

Output: Item Cost: \$50.00

Sales Tax Rate: 8.0%

Total Cost: \$54.00

### ***Answer***

#

# You are using Python

SALES\_TAX\_RATE=0.08

```
def total_cost(item_cost):  
    tax_amt=item_cost*SALES_TAX_RATE  
    total=item_cost+tax_amt  
    return total
```

```
item_cost=float(input())
total_cost = total_cost(item_cost)
print(f"Item Cost: ${item_cost:.2f}")
print(f"Sales Tax Rate: {SALES_TAX_RATE * 100}%")
print(f"Total Cost: ${total_cost:.2f}")
```

**Status :** Correct

**Marks : 10/10**