

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

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.")
text=input()
substring=input()
count_substrings(text,substring)
```

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
prices=list(map(int,input().split()))
even_prices=[price for price in prices if price%2==0]
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

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):

return item_cost+(item_cost*SALES_TAX_RATE)

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

4. 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())
divisors=[i for i in range(2,n+1)if n%i==0]
smallest_divisor=min(divisors)
print(f"The smallest positive divisor of {n} is: {smallest_divisor}")
```

Status : Correct

Marks : 10/10