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

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

```
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***

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

```
def count_substrings(text, substring):
    return text.count(substring)
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***

3. 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

```
n = int(input())
if n == 1:
    smallest_divisor = 1
else:
    smallest_divisor = n
    for i in range(2, int(n**0.5) + 1):
        if n % i == 0:
            smallest_divisor = min(smallest_divisor, i)
            break
print(f"The smallest positive divisor of {n} is: {smallest_divisor}")
```

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

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