

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

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

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

```
def find_max_even_price(prices):
```

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

```
    even_prices = [price for price in price_list if price % 2 == 0]
```

```
    if even_prices:
```

```
        max_even_price = max(even_prices)
```

```
        print(f"The maximum even price is: {max_even_price}")
```

```
    else:
```

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

```
prices = input()
```

```
find_max_even_price(prices)
```

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

```
#
```

```
SALES_TAX_RATE = 0.08
```

```
def total_cost(item_cost):
```

```
    tax_amount = item_cost * SALES_TAX_RATE
```

```
    total = item_cost + tax_amount
```

```
    return total
```

```
item_cost = float(input().strip())
```

```
final_cost = total_cost(item_cost)
```

```
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

```
import math
```

```
def smallest_divisor(n):
```

```
    divisors = [i for i in range(2, int(math.sqrt(n)) + 1) if n % i == 0]
```

```
    if not divisors:
```

```
        divisors = [n]
```

```
    return min(divisors)
```

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

```
smallest = smallest_divisor(n)
```

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

Status : Correct

Marks : 10/10