

Rajalakshmi Engineering College

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 2_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 40

Section 1 : Coding

1. Problem Statement

Alex is practicing programming and is curious about prime and non-prime digits. He wants to write a program that calculates the sum of the non-prime digits in a given integer using loops.

Help Alex to complete his task.

Example:

Input:

845

output:

12

Explanation:

Digits: 8 (non-prime), 4 (non-prime), 5 (prime)

The sum of Non-Prime Digits: $8 + 4 = 12$

Output: 12

Input Format

The input consists of a single integer X.

Output Format

The output prints an integer representing the sum of non-prime digits in X.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 845

Output: 12

Answer

```
def is_prime(digit):  
    return digit in {2, 3, 5, 7}  
def sum_non_prime(x):  
    total = 0  
    while x > 0:  
        digit = x % 10  
        if not is_prime(digit):  
            total += digit  
        x //= 10  
    return total  
x = int(input())  
print(sum_non_prime(x))
```

Status : Correct

Marks : 10/10

2. Problem Statement

Taylor is tasked with a mathematical challenge that requires finding the smallest positive number divisible by all integers from 1 to n.

Help Taylor to determine the smallest positive number that is divisible by all integers from 1 to n. Make sure to employ the break statement to ensure efficiency in the program.

Input Format

The input consists of a single integer, n.

Output Format

The output displays the smallest positive number that is divisible by all integers from 1 to n.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10

Output: 2520

Answer

```
import math
def smallest_multiple(n):
    lcm = 1
    for i in range(2, n + 1):
        lcm = (lcm * i) // math.gcd(lcm, i)
    return lcm
n = int(input())
print(smallest_multiple(n))
```

Status : Correct

Marks : 10/10

3. Problem Statement

Rohith is a data analyst who needs to categorize countries based on their population growth rates. Each country is assigned a unique code. Rohith

will receive a code and corresponding data based on the code. If the data falls within specific thresholds, he needs to classify the country's priority level.

Your task is to write a program that reads a country code and its associated data, and then determines if the priority is "High" or "Low."

Thresholds: France: Priority is "High" if the percentage < 50, else "Low". Japan: Priority is "High" if life expectancy > 80, else "Low". Brazil: Priority is "High" if the urban population > 80, else "Low".

Input Format

The first line of input consists of an integer, representing the country code (1 for France, 2 for Japan, 3 for Brazil).

If the country code is 1,

- The second line consists of a floating-point value N, representing the percentage of the English-speaking population.

If the country code is 2,

- The second line consists of a floating-point value A, representing the average life expectancy in years.

If the country code is 3,

- The second line consists of a floating-point value P, representing the percentage of the urban population.

Output Format

The first line of output displays "Priority: High" or "Priority: Low" based on the input data.

If the country code is invalid, print "Invalid".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

30.0

Output: Priority: High

Answer

```
cc = int(input())
if cc == 1:
    n = float(input())
    priority = "Priority: High" if n < 50 else "Priority: Low"
    print(priority)
elif cc == 2:
    a = float(input())
    priority = "Priority: High" if a > 80 else "Priority: Low"
    print(priority)
elif cc == 3:
    p = float(input())
    priority = "Priority: High" if p > 80 else "Priority: Low"
    print(priority)
else:
    print("Invalid")
```

Status : Correct

Marks : 10/10

4. Problem Statement

John is tasked with configuring the lighting for a high-profile event, where different lighting modes affect the ambiance of the venue. He can choose from three distinct lighting modes, each requiring a specific adjustment to the initial light intensity:

Ambient Lighting (Mode 1): The intensity level is multiplied by 1.5.

Stage Lighting (Mode 2): The intensity level is multiplied by 2.0.

Spotlight (Mode 3): The intensity level is multiplied by 1.8.

In the event that an invalid mode is provided, the program should output an error message indicating the invalid selection.

Your task is to write a program that reads the selected lighting mode and the initial intensity level, applies the appropriate adjustment, and prints the final intensity.

Input Format

The first line of input is an integer n, representing the lighting mode.

The second line is a floating value m, representing the initial intensity level of the light.

Output Format

The output displays "Intensity: " followed by a float representing the adjusted intensity level, formatted to two decimal places, if the mode is valid.

If the mode is invalid, the output should display "Invalid".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

10.0

Output: Intensity: 15.00

Answer

```
n = int(input())
m = float(input())
if n == 1:
    intensity = m * 1.5
    print(f"Intensity:{intensity:.2f}")
elif n == 2:
    intensity = m * 2.0
    print(f"Intensity:{intensity:.2f}")
elif n == 3:
    intensity = m * 1.8
    print(f"Intensity:{intensity:.2f}")
else:
    print("Invalid")
```

Status : Correct

Marks : 10/10