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

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

```python
# You are using Python
code = int(input())
if code == 1:
    N = float(input())
    if N < 50.0:
        print("Priority: High")
    else:
```

```
    print("Priority: Low")
elif code == 2:
    A = float(input())
    if A > 80.0:
        print("Priority: High")
    else:
        print("Priority: Low")
elif code == 3:
    P = float(input())
    if P > 80.0:
        print("Priority: High")
    else:
        print("Priority: Low")
else:
    print("Invalid")
```

Status : Correct   *Marks : 10/10*

2. 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

```python
# You are using Python
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**

3. Problem Statement

Nisha is a mathematics enthusiast, eager to explore the realm of twin prime numbers. The objective is to develop a program that enables the

discovery and presentation of twin prime pairs.

The program should take an integer 'n' as input and generate 'n' pairs of twin primes, displaying the pairs with a difference of 2 between them.

Input Format

The input consists of a single integer, n.

Output Format

The output displays the 'n' pairs of twin primes, the pairs with a difference of 2 between them.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 5

Output: 3 5
5 7
11 13
17 19
29 31

Answer

```python
# You are using Python
def is_prime(num):
    if num < 2:
        return False
    for i in range(2, int(num ** 0.5) + 1):
        if num % i == 0:
            return False
    return True

def find_twin_primes(n):
    count = 0
    num = 3
    while count < n:
        if is_prime(num) and is_prime(num + 2):
            print(num, num + 2)
```

```
    count += 1
    num += 1
n = int(input())
find_twin_primes(n)
```

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

4. 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

```python
# You are using Python
def is_prime_digit(d):
    return d in [2, 3, 5, 7]
x = int(input())
non_prime_sum = 0
while x > 0:
    digit = x % 10
    if not is_prime_digit(digit):
        non_prime_sum += digit
    x = x // 10
print(non_prime_sum)
```

Status : Correct   *Marks : 10/10*