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

Students are allowed to work on our computer center machines only after entering the correct secret code. If the code is correct, the message "Logged In" is displayed. They are not allowed to log in to the machine until they enter the correct secret code.

Write a program to allow the student to work only if he/she enters the correct secret code.

Note: Here, secret code means the last three digits should be divisible by the first digit of the number.

Input Format

The input consists of an integer n, which represents the secret code.

Output Format

The output displays either "Logged In" or "Incorrect code" based on the given condition.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 2345

Output: Incorrect code

Answer

```
# Read input
n = int(input())

# Initialize variables
reversed_n = 0
last_three_digits = n % 1000  # Extract last three digits
original_n = n  # Store original value for later

# Reverse the number
while n > 0:
    reversed_n = reversed_n * 10 + (n % 10)
    n //= 10

# Extract first digit of reversed number (which is the last digit of the original)
first_digit = reversed_n % 10

# Check condition
if last_three_digits % first_digit == 0:
    print("Logged In")
else:
    print("Incorrect code")
```

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

2. 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

```
# Read the input number
number = int(input())
```

```
# Initialize variables
sum_non_prime_digits = 0
absolute_number = number if number > 0 else -number  # Equivalent to
abs(number)

# Process each digit
while absolute_number > 0:
    digit = absolute_number % 10  # Extract last digit

    # Check if the digit is non-prime
    if digit == 0 or digit == 1 or digit == 4 or digit == 6 or digit == 8 or digit == 9:
        sum_non_prime_digits += digit

    absolute_number //= 10  # Remove last digit

# Print the sum of non-prime digits
print(sum_non_prime_digits)
```

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

```
# Read country code
n = int(input())

# Check if the country code is valid
if n in [1, 2, 3]:
    f = float(input())

    # Determine priority based on conditions
    if (n == 1 and f < 50.0) or (n in [2, 3] and f > 80.0):
        print("Priority: High")
    else:
```

```
    print("Priority: Low")
else:
    print("Invalid")
```

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

4. 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

```
# Read input
n = int(input())

# Initialize variables
result = 1
i = 1
```

```
while i <= n:
    a = result
    b = i

    # Compute GCD using Euclidean Algorithm
    while b:
        a, b = b, a % b

    # Compute LCM
    result = (result * i) // a

    # Stop if the number exceeds 10^18
    if result > 10**18:
        break

    i += 1

# Print final result
print(result)
```

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