Rajalakshmi Engineering College

Name: ABDULLA SABITH A
Email: 241501005@rajalakshmi.edu.in
Roll no: 2116241501005
Phone: 9384105719
Branch: REC
Department: I AIML AD
Batch: 2028
Degree: B.E - AI & ML

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
cc=int(input())
if cc==1:
    pc=float(input())
    if pc<50:
        print("Priority: High")
    else:
```

```
    print("Priority: Low")
elif cc==2:
  le=float(input())
  if le>80:
      print("Priority: High")
  else:
      print("Priority: Low")
elif cc==3:
  up=float(input())
  if up>80:
      print("Priority: High")
  else:
      print("Priority: Low")
else:
  print("Invalid")
```

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

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 isprime(n):
    if n==0 or n==1:
        return False
    for i in range(2,int(n**0.5)+1):
        if n%i==0:
            return False
    return True
n=int(input())
add=0
while n!=0:
    rem=n%10
    if(not isprime(rem)):
        add+=rem
    n//=10
print(add)
```

Status : Correct   *Marks : 10/10*

3. Problem Statement

Gabriel is working on a wildlife research project where he needs to compute various metrics for different animals based on their characteristics. Each animal type requires a different calculation: a deer's distance traveled, a bear's weight based on footprint size, or a bird's altitude based on its flying pattern.

Conditions:

For Deer (Mode 'D' or 'd'): Distance = speed of sound * time taken, where the speed of sound in air is 343 meters per second.For Bear (Mode 'B' or 'b'): Weight = footprint size * average weight, where the average weight per square inch for a bear is 5.0 pounds.For Bird (Mode 'F' or 'f'): Altitude = flying pattern * distance covered (in meters).

Write a program to help Gabriel analyze the characteristics of animals based on the given inputs.

Input Format

The first line of input consists of a character, representing the type of animal 'D/d' for deer, 'B/b' for bear, and 'F/f' for bird.

If the choice is 'D' or 'd':

 The second line of input consists of a floating-point value T, representing the time taken from the deer's location to the observer.

If the choice is 'B' or 'b':

 The second line of input consists of a floating-point value S, representing the size of the bear's footprint in square inches.

If the choice is 'F' or 'f':

1. The second line of input consists of a floating-point value P, representing the bird's flying pattern.
2. The third line consists of a floating-point value D, representing the distance covered by the bird in meters.

Output Format

The output prints one of the following:

If the choice is 'D' or 'd':

 The output prints "Distance: X m" where X is a floating point value rounded off to two decimal places, representing the calculated distance traveled by the sound wave in meters.

If the choice is 'B' or 'b':

 The output prints "Weight: Y lb" where Y is a floating point value rounded off to two decimal places, representing the estimated weight of the bear in pounds.

If the choice is 'F' or 'f':

 The output prints "Altitude: Z m" where Z is a floating point value rounded off to two decimal places, representing the calculated altitude of the bird's flight in meters.

If the given choice is invalid, print "Invalid".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: d
2.5
Output: Distance: 857.50 m

Answer

```python
# You are using Python
ani=input()
if ani in "Dd":
  dist=float(input())
  print(f"Distance: {(dist*343):.2f} m")
elif ani in "Bb":
  weig=float(input())
  print(f"Weight: {(weig*5.0):.2f} lb")
elif ani in "Ff":
  patt=float(input())
  disb=float(input())
  alti=patt*disb
```

```
    print(f"Altitude: {alti:.2f} m")
else:
    print("Invalid")
```

Status : Correct   *Marks : 10/10*

4. Problem Statement

Max is fascinated by prime numbers and the Fibonacci sequence. He
wants to combine these two interests by creating a program that outputs
the first n prime numbers within the Fibonacci sequence.

Your task is to help Max by writing a program that prints the first n prime
numbers in the Fibonacci sequence using a while loop along with the break
statement to achieve the desired functionality.

Input Format

The input consists of an integer n, representing the number of prime Fibonacci
numbers to generate.

Output Format

The output displays space-separated first n prime numbers found in the
Fibonacci sequence.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 5
Output: 2 3 5 13 89

Answer

```
# You are using Python
def isprime(n):
    if n==0 or n==1:
      return False
    for i in range(2,int(n**0.5)+1):
```

```python
        if n%i==0:
            return False
    return True
n=int(input())
a,b=1,1
count=0
while count!=n:
    a,b=b,a+b
    if isprime(b):
        print(f"{b} ",end="")
    else:
        continue
    count+=1
```

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