Rajalakshmi Engineering College

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 2_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 37.5

Section 1 : Coding

1. 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

```
# You are using Python
import math
n=int(input())
lcm=1
for i in range(2,n+1):
    lcm=(lcm*i)//math.gcd(lcm,i)
print(lcm)
```

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

2. 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
n=int(input())
f=[0,1]
l=len(f)
s=[]
t=0
while t < n:
    sum1 = f[l-1]+f[l-2]
    f.append(sum1)
    l+=1
    c=0
    for i in range(1,sum1+1):
        if (sum1%i==0):
            c+=1
    if c==2:
        s.append(sum1)
        t+=1
for i in s:
    print(i,end=" ")
```

Status : Partially correct ***Marks : 7.5/10***

3. 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

```
# You are using Python
n=int(input())
p=0
i=0
s=0
while(n>0):
    c=n%10
```

```
    if(c==1):
        s+=c
    else:
        ct=0
        for i in range(1,c+1):
            if(c%i==0):
                ct+=1
            if(ct>2):
                s+=c
                break

    n=int(n/10)
print(s)
```

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

4. 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

```
# You are using Python
def is_prime(n):
    return n>1 and all(n%i for i in range(2,int(n**0.5)+1))
n,count,num=int(input()),0,3
while count<n:
    if is_prime(num) and is_prime(num+2):
        print(num,num+2)
        count+=1
    num+=2
```

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