

Rajalakshmi Engineering College

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 1_COD

Attempt : 1

Total Mark : 5

Marks Obtained : 5

Section 1 : Coding

1. Problem Statement

A science experiment produces a decimal value as the result. However, the scientist needs to convert this value into an integer so that it can be used in further calculations.

Write a Python program that takes a floating-point number as input and converts it into an integer.

Input Format

The input consists of a floating point number, F.

Output Format

The output prints "The integer value of F is: {result}", followed by the integer number equivalent to the floating point number.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10.36

Output: The integer value of 10.36 is: 10

Answer

```
F=float(input())
I=int(F)
print(f"The integer value of {F} is : {I}")
```

Status : Correct

Marks : 1/1

2. Problem Statement

Bob, the owner of a popular bakery, wants to create a special offer code for his customers. To generate the code, he plans to combine the day of the month with the number of items left in stock.

Help Bob to encode these two values into a unique offer code.

Note: Use the bitwise operator to calculate the offer code.

Example

Input:

15

9

Output:

Offer code: 6

Explanation:

Given the day of the month 15th day (binary 1111) and there are 9 items

left (binary 1001), the offer code is calculated as 0110 which is 6.

Input Format

The first line of input consists of an integer D, representing the day of the month.

The second line consists of an integer S, representing the number of items left in stock.

Output Format

The output displays "Offer code: " followed by an integer representing the encoded offer code.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 15

9

Output: Offer code: 6

Answer

```
a=int(input())
b=int(input())
c=a^b
print(f"Offer code: {c}")
```

Status : **Correct**

Marks : **1/1**

3. Problem Statement

Quentin, a mathematics enthusiast, is exploring the properties of numbers. He believes that for any set of four consecutive integers, calculating the average of their fourth powers and then subtracting the product of the first and last numbers yields a constant value.

To validate his hypothesis, check if the result is indeed constant and display.

Example:

Input:

5

Output:

Constant value: 2064.5

Explanation:

Find the Average:

Average: $(625 + 1296 + 2401 + 4096)/4 = 2104.5$

Now, we calculate the product of a and $(a + 3)$:

Product = $5 \times (5 + 3) = 5 \times 8 = 40$

Final result: $2104.5 - 40 = 2064.5$

Input Format

The input consists of an integer a , representing the first of four consecutive integers.

Output Format

The output displays "Constant value: " followed by the computed result based on Quentin's formula.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5

Output: Constant value: 2064.5

Answer

```
x=int(input())
a=x**4
```

```
b=(x+1)**4  
c=(x+2)**4  
d=(x+3)**4  
avg=(a+b+c+d)/4  
prod=x*(x+3)  
res=avg-prod  
print(f"Constant value: {res}")
```

Status : Correct

Marks : 1/1

4. Problem Statement

In a family, two children receive allowances based on the gardening tasks they complete. The older child receives an allowance rate of Rs.5 for each task, with a base allowance of Rs.50. The younger child receives an allowance rate of Rs.3 for each task, with a base allowance of Rs.30.

Your task is to calculate and display the allowances for the older and younger children based on the number of gardening tasks they complete, along with the total allowance for both children combined.

Input Format

The first line of input consists of an integer n, representing the number of chores completed by the older child.

The second line consists of an integer m, representing the number of chores completed by the youngest child.

Output Format

The first line of output displays "Older child allowance: Rs." followed by an integer representing the allowance calculated for the older sibling.

The second line displays "Younger child allowance: Rs." followed by an integer representing the allowance calculated for the youngest sibling.

The third line displays "Total allowance: Rs." followed by an integer representing the sum of both siblings' allowances.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10

5

Output: Older child allowance: Rs.100

Younger child allowance: Rs.45

Total allowance: Rs.145

Answer

```
n=int(input())
m=int(input())
o=50+(5*n)
y=30+(3*m)
print("Older child allowance: Rs. ",o)
print("Younger child allowance: Rs. ",y)
print("Total allowance: Rs. ",o+y)
```

Status : Correct

Marks : 1/1

5. Problem Statement

A company has hired two employees, Alice and Bob. The company wants to swap the salaries of both employees. Alice's salary is an integer value and Bob's salary is a floating-point value.

Write a program to swap their salaries and print the new salary of each employee.

Input Format

The first line of input consists of an integer N, representing Alice's salary.

The second line consists of a float value F, representing Bob's salary.

Output Format

The first line of output displays "Initial salaries:"

The second line displays "Alice's salary = N", where N is Alice's salary.

The third line of output displays "Bob's salary = F", where F is Bob's salary.

After a new line space, the following line displays "New salaries after swapping:"

The next line displays "Alice's salary = X", where X is the swapped salary.

The last line displays "Bob's salary = Y", where Y is the swapped salary.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10000
15400.55

Output: Initial salaries:

Alice's salary = 10000
Bob's salary = 15400.55

New salaries after swapping:

Alice's salary = 15400.55
Bob's salary = 10000

Answer

```
N=int(input())
F=float(input())
print("Initial salaries:")
print(f"Alice's salary = {N}")
print(f"Bob's salary = {F}")
N,F=F,N
print("New salaries after swapping:")
print(f"Alice's salary = {N}")
print(f"Bob's salary = {F}")
```

Status : Correct

Marks : 1/1

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 1_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 40

Section 1 : Coding

1. Problem Statement

Mandy is working on a mathematical research project involving complex numbers. For her calculations, she often needs to swap the real and imaginary parts of two complex numbers.

Mandy needs a Python program that takes two complex numbers as input and swaps their real and imaginary values.

Input Format

The first line of input consists of a complex number in the format $a+bj$, representing the first complex number.

The second line consists of a complex number in the format $a+bj$, representing the second complex number.

Output Format

The first line of output displays "New first complex number: " followed by the swapped complex number.

The second line of output displays "New second complex number: " followed by the swapped complex number.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10+8j
7-9j

Output: New first complex number: (8+10j)
New second complex number: (-9+7j)

Answer

```
a=complex(input().strip())
b=complex(input().strip())
x=complex(a.imag,a.real)
y=complex(b.imag,b.real)
print(f"New first complex number: {x}")
print(f"New second complex number: {y}")
```

Status : Correct

Marks : 10/10

2. Problem Statement

Nina is working on a project involving multiple sensors. Each sensor provides a data point that needs to be processed to compute an aggregated value.

Given data points from three sensors, write a program to calculate the aggregated value using specific bitwise operations and arithmetic manipulations. The final result should be the aggregated value modulo 1000.

Example:

Input:

1 //sensor 1 data

2 //sensor 2 data

3 //sensor 3 data

Output

9

Explanation

Calculate the bitwise AND of sensor 1 data and sensor 2 data: 0

Calculate the XOR of the result from step 1 and sensor 3 data: 3

Multiply the result from step 2 by 3: 9

Compute the final aggregated value by taking the result from step 3 modulo 1000: 9

So, the aggregated value is 9.

Input Format

The first line of input consists of an integer S1, representing sensor1 data.

The second line of input consists of an integer S2, representing sensor2 data.

The third line of input consists of an integer S3, representing sensor3 data.

Output Format

The output displays an integer representing the aggregated value.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 1

2

3

Output: 9

Answer

```
a=int(input())
b=int(input())
c=int(input())
p=a&b
q=p^c
r=(q*3)%1000
print(r)
```

Status : Correct

Marks : 10/10

3. Problem Statement

Olivia is creating a wellness dashboard for her new fitness app, FitTrack. She needs a program that can capture and display key details about a user's workout. The program should read the user's full name, the total steps they ran, the energy they expended in kilojoules, and the duration of their workout in hours. After collecting this information, the program will generate a detailed summary of the user's fitness activity.

Your task is to guide Olivia through the program.

Input Format

The first line of input consists of a string, representing the user's name.

The second line consists of an integer, representing the total steps taken.

The third line consists of a float value, representing the calories burned.

The fourth line consists of a float value, representing the workout duration in hours.

Output Format

The first line of output prints "User Name: " followed by the user's name.

The second line prints "Total Steps: " followed by the total steps.

The third line prints "Calories Burned: " followed by the calories burned, rounded off to one decimal place.

The fourth line prints "Workout Duration: X hours" where X is the workout duration, rounded off to one decimal place.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: Alex
10000
350.5
1.5

Output: User Name: Alex
Total Steps: 10000
Calories Burned: 350.5
Workout Duration: 1.5 hours

Answer

```
a=input()  
b=int(input())  
c=float(input())  
d=float(input())  
print(f"User name: {a}")  
print(f"Total steps: {b}")  
print(f"Calories Burned: {c}")  
print(f"Workout Duration: {d} hours")
```

Status : Correct

Marks : 10/10

4. Problem Statement

Liam and his friends are sharing the cost of a group purchase. The total cost of the purchase is subject to a 10% discount. One of the friends receives a 35% bonus, which means they will pay a larger portion of the

discounted cost. The remaining cost is then divided equally among the other friends.

Write a program to:

Calculate the total cost after applying a 10% discount. Determine the amount paid by the friend who receives a 35% bonus. Calculate the amount each of the other friends will pay.

Input Format

The first line of input consists of a float value f , representing the total cost.

The second line contains an integer value n , representing the total number of friends.

Output Format

The first line of output displays "Cost after a 10% discount: " followed by the discounted cost of the ticket package as a float value formatted to two decimal places.

The second line displays "Friend with a 35% bonus pays: " followed by the amount paid by the friend with the bonus as a float value formatted to two decimal places.

The third line displays "Each of the other friends pays: " followed by the individual share of the remaining cost as a float value formatted to two decimal places.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10000.0

5

Output: Cost after a 10% discount: 9000.00

Friend with a 35% bonus pays: 3150.00

Each of the other friends pays: 1462.50

Answer

```
a=float(input())
```

```
b=int(input())
x=(a-(a*(10/100)))
print(f"Cost after a 10% discount: {x:.2f}")
y=((x*(35/100)))
print(f"Friend with a 35% bonus pays: {y:.2f}")
z=(x-y)/(b-1)
print(f'Each of the other friends pays: {z:.2f}')
```

Status : Correct

Marks : 10/10

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 1_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 14

Section 1 : MCQ

1. Which of the following can convert the string to a float number?

Answer

str(float,x)

Status : Wrong

Marks : 0/1

2. What will be the output of the following code?

```
x = int(34.56 - 2 * 2)  
print(x)
```

Answer

30

Status : Correct

Marks : 1/1

3. What will the following code output?

```
z = 3 + 4j  
print(abs(z))
```

Answer

5.0

Status : Correct

Marks : 1/1

4. Which of these is not a core data type?

Answer

Class

Status : Correct

Marks : 1/1

5. What is the return type of the function id?

Answer

int

Status : Correct

Marks : 1/1

6. Evaluate the expression given below if A= 16 and B = 15

A % B // A

Answer

0

Status : Correct

Marks : 1/1

7. What is the value of the following expression?

8/4/2, 8/(4/2)

Answer

(1.0,4.0)

Status : Correct

Marks : 1/1

8. What is used to concatenate two strings in Python?

Answer

+ operator

Status : Correct

Marks : 1/1

9. Which is the correct operator for power(xy)?

Answer

x**y

Status : Correct

Marks : 1/1

10. What is the output of the below expression?

```
print(3*1**3)
```

Answer

3

Status : Correct

Marks : 1/1

11. What is the value of x in the following program?

```
x = int(43.55+2/2)
print(x)
```

Answer

44

Status : Correct

Marks : 1/1

12. What is typecasting in Python?

Answer

Change data type property

Status : Correct

Marks : 1/1

13. Which of the following represents the bitwise XOR operator?

Answer

^

Status : Correct

Marks : 1/1

14. Which of the following functions converts a string to a float in Python?

Answer

float(x)

Status : Correct

Marks : 1/1

15. What will be the output of the following code?

```
X = 2+9*((3*12)-8)/10  
print(X)
```

Answer

27.2

Status : Correct

Marks : 1/1

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 1_PAH

Attempt : 1

Total Mark : 6

Marks Obtained : 6

Section 1 : Coding

1. Problem Statement

Oliver is planning a movie night with his friends and wants to download a high-definition movie. He knows the file size of the movie in megabytes (MB) and his internet speed in megabits per second (Mbps). To ensure the movie is ready in time, Oliver needs to calculate the download time.

Your task is to write a program that calculates the download time and displays it in hours, minutes, and seconds.

Example

Input:

MB = 800

mbps = 40

Output:

Download Time: 0 hours, 2 minutes, and 40 seconds

Explanation:

Convert the file size to bits ($800 \text{ MB} * 8 \text{ bits/byte} = 6400 \text{ megabits}$) and divide it by the download speed ($6400 \text{ Mbps} / 40 \text{ Mbps} = 160 \text{ seconds}$). Now, convert the download time in seconds to hours, minutes, and seconds: 160 seconds is equal to 2 minutes and 40 seconds. So, the download time is 0 hours, 2 minutes and 40 seconds.

Input Format

The first line of input consists of an integer N, representing the file size in megabytes (MB).

The second line consists of an integer S, representing the network speed in megabits per second(mbps).

Output Format

The output prints "Download Time: X hours, Y minutes, and Z seconds", where X, Y, and Z are integers representing the hours, minutes, and seconds respectively.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 180

3

Output: Download Time: 0 hours, 8 minutes, and 0 seconds

Answer

```
mb=int(input())
mbps=int(input())
b=mb*8
t=b//mbps
h=0
if(t>=3600):
    h=t//3600
```

```
m=(t%3600)//60
s=(t%3600)%60
else:
    m=t//60
    s=t%60
print(f"Download Time: {h} hours,{m} minutes, and {s} seconds")
```

Status : Correct

Marks : 1/1

2. Problem Statement

A smart home system tracks the temperature and humidity of each room. Create a program that takes the room name (string), temperature (float), and humidity (float).

Display the room's climate details.

Input Format

The first line of input consists of a string, representing the room name.

The second line consists of a float value, representing the temperature.

The third line consists of a float value, representing the humidity.

Output Format

The first line of output prints "Room: " followed by the room name (string).

The second line prints "Temperature: " followed by the temperature (float) formatted to two decimal places.

The third line prints "Humidity: " followed by the humidity (float) formatted to two decimal places and a percentage sign (%).

Refer to the sample output for formatting specifications.

Sample Test Case

Input: Living Room

23.45

45.78

Output: Room: Living Room

Temperature: 23.45

Humidity: 45.78%

Answer

```
s=input()  
t=float(input())  
h=float(input())  
print(f"Room: {s}")  
print(f"Temperature: {t:.2f}")  
print(f"Humidity: {h:.2f}%")
```

Status : Correct

Marks : 1/1

3. Problem Statement

Liam works at a car dealership and is responsible for recording the details of cars that arrive at the showroom. To make his job easier, he wants a program that can take the car's make, model, and price, and display the information in a formatted summary.

Assist him in the program.

Input Format

The first line of input contains a string, representing the car make.

The second line contains a string, representing the car model.

The third line contains a float value, representing the car price.

Output Format

The first line of output prints "Car Make: ", followed by the car make.

The second line prints "Car Model: ", followed by the car model.

The third line prints "Price: ", followed by the car price, formatted to two decimal places.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: Toyota

Camry

23450.75

Output: Car Make: Toyota

Car Model: Camry

Price: Rs.23450.75

Answer

```
s=input()  
r=input()  
p=float(input())  
print(f"Car Make: {s}\n Car Model: {r}\n Price: Rs.{p:.2f}")
```

Status : Correct

Marks : 1/1

4. Problem Statement

Mandy is debating with her friend Rachel about an interesting mathematical claim. Rachel asserts that for any positive integer n, the ratio of the sum of n and its triple to the integer itself is always 4. Mandy, intrigued by this statement, decides to validate it using logical operators and basic arithmetic.

She wants to confirm if the statement holds true for any positive integer n.

Input Format

The input consists of a positive integer n, representing the integer to be tested.

Output Format

The first line of output displays "Sum:" followed by an integer representing the calculated sum.

The second line displays "Rachel's statement is: " followed by a Boolean value

indicating whether Rachel's statement is correct.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 12

Output: Sum: 48

Rachel's statement is: True

Answer

```
n=int(input())
s=4*n
print(f"Sum: {s}")
print("Rachel's statement is: True")
```

Status : Correct

Marks : 1/1

5. Problem Statement

Shawn, a passionate baker, is planning to bake cookies for a large party. His original recipe makes 15 cookies, with the following ingredient quantities: 2.5 cups of flour, 1 cup of sugar, and 0.5 cups of butter.

Write a program to calculate the amounts of flour, sugar, and butter needed for a different number of cookies. Provide the ingredient quantities for a specified number of cookies, maintaining the original proportions of the recipe.

Input Format

The input consists of an integer n, representing the number of cookies.

Output Format

The first line prints "Flour: X cups" where X represents the amount of flour required for n cookies, as a double value rounded to two decimal places.

The second line prints "Sugar: Y cups" where Y represents the amount of Sugar

required for n, as a double value rounded to two decimal places.

The third line prints "Butter: Z cups" where Z represents the amount of flour required for n, as a double value rounded to two decimal places.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 15

Output: Flour: 2.50 cups

Sugar: 1.00 cups

Butter: 0.50 cups

Answer

```
n=int(input())
x=n*(2.5/15)
y=n*(1/15)
z=n*(0.5/15)
print(f"Flour: {x:.2f} cups\nSugar: {y:.2f} cups\nButter: {z:.2f} cups")
```

Status : Correct

Marks : 1/1

6. Problem Statement

Ella, an avid TV show enthusiast, is planning a binge-watching marathon for a new series. She has a specific routine: after watching a set number of episodes, she takes a short break.

She is provided with the following information:

Each episode of the series has a fixed duration of 45 minutes. After a certain number of episodes, there is a break of 15 minutes.

Ella wants to know the total time she will need to watch the entire series, including the breaks. Your task is to help Ella by calculating the total viewing time.

Input Format

The first line of input consists of an integer E, representing the total number of episodes in the series.

The second line consists of an integer B, representing the number of episodes watched before taking a break.

Output Format

The output prints an integer representing the total viewing time required to watch the entire series, including the breaks.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 5

2

Output: 255 minutes

Answer

```
e=int(input())
b=int(input())
c=e*45
d=(e-1)//b
a=d*15
time=a+c
print(f'{time} minutes')
```

Status : Correct

Marks : 1/1

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 2_COD_Updated

Attempt : 1
Total Mark : 50
Marks Obtained : 50

Section 1 : Coding

1. Problem Statement

Emma, a mathematics enthusiast, is exploring a range of numbers and wants to count how many of them are not Fibonacci numbers.

Help Emma determine the count of non-Fibonacci numbers within the given range [start, end] using the continue statement.

Input Format

The first line of input consists of an integer, representing the starting number of the range.

The second line consists of an integer, representing the ending number of the range.

Output Format

The output prints a single integer, representing the count of numbers in the range that are not Fibonacci numbers.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

10

Output: 5

Answer

```
def gen_fib(l):
    fib_set = set()
    a, b = 0, 1
    while a <= l:
        fib_set.add(a)
        a, b = b, a + b
    return fib_set

start = int(input())
end = int(input())

fib_nums = gen_fib(end)
non_fib_count = 0

for num in range(start, end + 1):
    if num in fib_nums:
        continue
    non_fib_count += 1

print(non_fib_count)
```

Status : Correct

Marks : 10/10

2. Problem Statement

Ethan, a curious mathematician, is fascinated by perfect numbers. A

perfect number is a number that equals the sum of its proper divisors (excluding itself). Ethan wants to identify all perfect numbers within a given range.

Help him write a program to list these numbers.

Input Format

The first line of input consists of an integer start, representing the starting number of the range.

The second line consists of an integer end, representing the ending number of the range.

Output Format

The output prints all perfect numbers in the range, separated by a space.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

100

Output: 6 28

Answer

```
def is_perfect(n):
    if n<2:
        return False
    divisors = [i for i in range(1,n) if n%i==0]
    return sum(divisors) == n
```

```
start = int(input())
end = int(input())
```

```
perfect_numbers = [num for num in range(start, end+1) if is_perfect(num)]
print(" ".join(map(str,perfect_numbers)))
```

Status : Correct

Marks : 10/10

3. Problem Statement

As a junior developer working on a text analysis project, your task is to create a program that displays the consonants in a sentence provided by the user, separated by spaces.

You need to implement a program that takes a sentence as input and prints the consonants while skipping vowels and non-alphabetic characters using only control statements.

Input Format

The input consists of a string representing the sentence.

Output Format

The output displays space-separated consonants present in the sentence.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: Hello World!

Output: H l l W r l d

Answer

```
s=input()  
v="aeiouAEIOU"  
c=[]
```

```
for char in s:  
    if not char.isalpha():  
        continue  
    if char in v:  
        continue  
    c.append(char)  
  
print(" ".join(c))
```

Status : Correct

Marks : 10/10

4. Problem Statement

You work as an instructor at a math enrichment program, and your goal is to develop a program that showcases the concept of using control statements to manipulate loops. Your task is to create a program that takes an integer 'n' as input and prints the squares of even numbers from 1 to 'n', while skipping odd numbers.

Input Format

The input consists of a single integer, which represents the upper limit of the range.

Output Format

The output displays the square of even numbers from 1 to 'n' separated by lines.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10

Output: 4

16

36

64

100

Answer

```
n=int(input())
for i in range(1,n+1):
    if(i%2==0):
        print(i**2)
```

Status : Correct

Marks : 10/10

5. Problem Statement

John, a software developer, is analyzing a sequence of numbers within a given range to calculate their digit sum. However, to simplify his task, he excludes all numbers that are palindromes (numbers that read the same backward as forward).

Help John find the total sum of the digits of non-palindromic numbers in the range [start, end] (both inclusive).

Example:

Input:

10

20

Output:

55

Explanation:

Range [10, 20]: Non-palindromic numbers are 10, 12, 13, 14, 15, 16, 17, 18, 19 and 20.

Digit sums: $1+0 + 1+2 + 1+3 + 1+4 + 1+5 + 1+6 + 1+7 + 1+8 + 1+9 + 2+0 = 55$.

Output: 55

Input Format

The first line of input consists of an integer, representing the starting number of the range.

The second line of input consists of an integer, representing the ending number of the range.

Output Format

The output prints a single integer, representing the total sum of the digits of all non-palindromic numbers in the range.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10

20

Output: 55

Answer

```
def is_pal(n):
    return str(n) == str(n)[::-1]

def dig_sum(n):
    return sum(int(digit) for digit in str(n))

start = int(input())
end = int(input())

tot_sum = 0

for num in range(start, end+1):
    if is_pal(num):
        continue
    tot_sum += dig_sum(num)

print(tot_sum)
```

Status : Correct

Marks : 10/10

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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

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

```
def isprime(num):
    if num<=1:
        return 0
    for i in range(2, int(num**0.5)+1):
        if num%i==0:
            return 0
    return 1
```

```
n=int(input())
n1,n2 = 1,1
count=0
```

```
while count<n:
    n3=n1+n2
    if isprime(n3):
        count+=1
        print(n3, end=" ")
    n1,n2=n2,n3
```

Status : Correct

Marks : 10/10

2. 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

```
n=int(input())
fd=int(str(n)[0])
l3d = n%1000
if l3d%fd==0:
    print("Logged In")
else:
    print("Incorrect code")
```

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

```
import math

def isprime(num):
    if num<2:
        return False
    for i in range(2, int(math.sqrt(num))+1):
        if num%i==0:
            return False
    return True

def find_twin(n):
    tp=[]
    num=3
    while len(tp)<n:
        if isprime(num) and isprime(num+2):
            tp.append((num, num+2))
```

```
num+=2  
return tp  
  
n=int(input())  
result=find_twin(n)  
for pair in result:  
    print(f'{pair[0]} {pair[1]}', end=' ')
```

Status : Correct

Marks : 10/10

4. 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

```
c=input()  
  
if c=='D' or c == 'd':  
    t=float(input())  
    print(f"Distance: {(t*343):.2f} m")  
  
elif c=='B' or c=='b':  
    s=float(input())  
    print(f"Weight: {(s*5.0):.2f} lb")  
  
elif c=='F' or c=='f':  
    p=float(input())  
    d=float(input())  
    print(f"Altitude: {(p*d):.2f}m")  
  
else:  
    print("Invalid")
```

Status : Correct

Marks : 10/10

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 2_MCQ

Attempt : 1
Total Mark : 15
Marks Obtained : 11

Section 1 : MCQ

- When does the else statement written after the loop execute?

Answer

When loop condition becomes false

Status : Correct

Marks : 1/1

- What will be the output of the following Python code?

```
i = 1
while True:
    if i%3 == 0:
        break
    print(i)
    i += 1
```

Answer

12

Status : Correct

Marks : 1/1

3. How many times will the inner for loop be executed in the below code?

```
i=0
while(True):
    for j in range(4,0,-2):
        print(i*j)
        print()
        i=i+1
    if(i%2==0):
        break
```

Answer

2

Status : Wrong

Marks : 0/1

4. What will be the output of the following Python code?

```
i = 1
while False:
    if i%2 == 0:
        break
    print(i)
    i += 2
```

Answer

The code runs successfully but does not print anything

Status : Correct

Marks : 1/1

5. What is the output of the following?

True = False

```
while True:  
    print(True)  
    break
```

Answer

True

Status : Wrong

Marks : 0/1

6. What will be the output of the following Python code?

```
i = 5  
while True:  
    if i%0011 == 0:  
        break  
    print(i)  
    i += 1
```

Answer

5 6 7 8

Status : Correct

Marks : 1/1

7. What will be the output of the following Python code?

```
i=0  
while i < 5:  
    print(i)  
    i += 1  
    if i == 3:  
        break  
    else:  
        print(0)
```

Answer

0120

Status : Wrong

Marks : 0/1

8. What is the output of the following program?

```
i=1
while(i<3):
    j=0
    while(j<3):
        print(i%3,end=" ")
        j=j+1
    i=i+1
```

Answer

1 1 1 2 2 2

Status : Correct

Marks : 1/1

9. What is the purpose of the pass statement in Python?

Answer

To do nothing and act as a placeholder.

Status : Correct

Marks : 1/1

10. What will be the output of the following Python code?

```
i = 5
while True:
    if i%0011 == 0:
        break
    print(i, end = " ")
    i += 1
```

Answer

5 6 7 8

Status : Correct

Marks : 1/1

11. What is the output of the following code?

```
for i in range(5):
    if i == 5:
        break
    else:
        print(i)
else:
    print("Here")
```

Answer

0 1 2 3 4

Status : Wrong

Marks : 0/1

12. What is the output of the following?

```
for i in range(10):
    if i == 5:
        break
    else:
        print(i, end=' ')
else:
    print("Here")
```

Answer

0 1 2 3 4

Status : Correct

Marks : 1/1

13. What will be the output for the following code snippet?

```
i = 0
for i in range(10):
    break
print(i)
```

Answer

0

Status : Correct

Marks : 1/1

14. What is the output of the following?

```
i = 2
while True:
    if i%3 == 0:
        break
    print(i)
    i += 2
```

Answer

2 4

Status : Correct

Marks : 1/1

15. What is the output of the following?

```
i=0
while(1):
    i++
    print i
    if(i==4):
        break
```

Answer

Syntax Error

Status : Correct

Marks : 1/1

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 2_PAH_Updated

Attempt : 1

Total Mark : 60

Marks Obtained : 0

Section 1 : Coding

1. Problem Statement

Imagine being entrusted with the responsibility of creating a program that simulates a math workshop for students. Your task is to develop an interactive program that not only calculates but also showcases the charm of factorial values. Your program should efficiently compute and present the sum of digits for factorial values of only odd numbers within a designated range. This approach will ingeniously keep even factorials at bay, allowing students to delve into the intriguing world of mathematics with enthusiasm and clarity.

Input Format

The input consists of a single integer, n.

Output Format

The output displays the factorial and sum of digits of the factorial of odd numbers within the given range.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 6

Output: 1! = 1, sum of digits = 1

3! = 6, sum of digits = 6

5! = 120, sum of digits = 3

Answer

Status : Skipped

Marks : 0/10

2. Problem Statement

Kamali recently received her electricity bill and wants to calculate the amount she needs to pay based on her usage. The electricity company charges different rates based on the number of units consumed.

For the first 100 units, there is no charge. For units consumed beyond 100 and up to 200, there is a charge of Rs. 5 per unit. For units consumed beyond 200, there is a charge of Rs. 10 per unit.

Write a program to help Kamali calculate the amount she needs to pay for her electricity bill based on the units consumed.

Input Format

The input consists of an integer, representing the number of units.

Output Format

The output prints the total amount of the electricity bill, an integer indicating the amount Kamali needs to pay in the format "Rs. amount".

Refer to the sample output for the exact format.

Sample Test Case

Input: 350

Output: Rs. 2000

Answer

-

Status : -

Marks : 0/10

3. Problem Statement

Sophia, a primary school teacher, wants to calculate the sum of numbers within a given range, excluding those that are multiples of 3.

Write a program to help Sophia compute the sum of all numbers between start and end (inclusive) that are not divisible by 3 using the continue statement.

Input Format

The first line of input consists of an integer, representing the starting number of the range.

The second line of input consists of an integer, representing the ending number of the range.

Output Format

The output prints a single integer, representing the sum of numbers in the range that are not multiples of 3.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1

10

Output: 37

Answer

-

Status : -

Marks : 0/10

4. Problem Statement

Aarav is fascinated by the concept of summing numbers separately based on their properties. He plans to write a program that calculates the sum of even numbers and odd numbers separately from 1 to a given positive integer.

Aarav wants to input an integer value to represent the upper limit of the range. Help Aarav by developing a program that computes and displays the sum of even and odd numbers separately.

Input Format

The input consists of a single integer N, where N is the upper limit of the range.

Output Format

The output consists of two lines:

- The first line displays the sum of even numbers from 1 to N.
- The second line displays the sum of odd numbers from 1 to N.

Refer to the sample output for the exact format.

Sample Test Case

Input: 10

Output: Sum of even numbers from 1 to 10 is 30

Sum of odd numbers from 1 to 10 is 25

Answer

-

Status : -

Marks : 0/10

5. Problem Statement

As a software engineer, your goal is to develop a program that facilitates the identification of leap years in a specified range. Your task is to create a program that takes two integer inputs, representing the start and end years of the range and then prints all the leap years within that range.

Input Format

The first line of the input consists of an integer, which represents the start year.

The second line consists of an integer, which represents the end year.

Output Format

The output displays the leap years within the given range, separated by lines.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 2000

2053

Output: 2000

2004

2008

2012

2016

2020

2024

2028

2032

2036

2040

2044

2048

2052

Answer

-

Status : -

Marks : 0/10

6. Problem Statement

Rajesh wants to design a program that simulates a real-time scenario based on a mathematical concept known as the Collatz Conjecture. This concept involves the repeated application of rules to a given starting number until the number becomes 1. The rules are as follows:

If the number is even, divide it by 2. If the number is odd, multiply it by 3 and add 1.

Your task is to write a program that takes a positive integer as input, applies the Collatz Conjecture rules to it, counts the number of steps taken to reach 1, and provides an output accordingly. If the process exceeds 100 steps, the program should print a message indicating so and use break to exit.

Input Format

The input consists of a single integer, n.

Output Format

The output displays the total number of steps taken to reach 1 if it's under 100.

If it's more than 100, it displays "Exceeded 100 steps. Exiting...".

Refer to sample output for the formatting specifications.

Sample Test Case

Input: 6

Output: Steps taken to reach 1: 8

Answer

Status : -

Marks : 0/10