Rajalakshmi Engineering College

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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

John is developing a financial application to help users manage their investment portfolios. As part of the application, he needs to write a program that receives the portfolio's main value and the values of two specific investments as inputs. The program should then display these values in reverse order for clear visualization.

Help John achieve this functionality by writing the required program.

Input Format

The first line of input consists of a float, representing the first investment value.

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

The third line of input consists of an integer, representing the portfolio ID.

Output Format

The first line of output prints "The values in the reverse order:".

The second line prints the integer, representing the portfolio ID.

The third line prints the second float, representing the second investment value.

The fourth line prints the first float, representing the first investment value.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 35.29
9374.11
48
Output: The values in the reverse order:
48
9374.11
35.29

Answer

```python
# You are using Python
a=float(input())
b=float(input())
c=int(input())
print("The values in the reverse order:")
print(c)
print(b)
print(a)
```

Status : Correct   *Marks : 10/10*

2. 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

```
# You are using Python
a=complex(input())
b=complex(input())
c=int(a.real)
d=int(a.imag)
e=int(b.real)
f=int(b.imag)
if(c<0):
    print("New first complex number: ({}{}j)".format(d,c))
```

```
else:
    print("New first complex number: ({}+{}j)".format(d,c))
if(e<0):
    print("New second complex number: ({}{}j)".format(f,e))
else:
    print("New second complex number: ({}+{}j)".format(f,e))
```

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

3. 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

```python
# You are using Python
s1=int(input())
s2=int(input())
s3=int(input())
a=(s1&s2)
b=a^s3
c=b*3
print(c%1000)
```

Status : Correct   *Marks : 10/10*

4. Problem Statement

Emily is organizing a taco party and needs to determine the total number of tacos required and the total cost. Each attendee at the party will consume 2 tacos. To ensure there are enough tacos:

If there are 10 or more attendees, Emily will need to provide an additional 5 tacos.If there are fewer than 10 attendees, Emily must ensure a minimum of 20 tacos are provided.

The cost of each taco is $25. Write a program that calculates both the total number of tacos required and the total cost based on the number of attendees.

Input Format

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

Output Format

The first line prints "Number of tacos needed: " followed by an integer representing the number of tacos needed for n attendees.

The second line prints "Total cost: " followed by an integer representing the total cost.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 10
Output: Number of tacos needed: 25
Total cost: 625

Answer

```python
# You are using Python
n=int(input())
if(n>=10):
    t=(n*2)+5
if(n<10):
    t=20
print("Number of tacos needed:",t)
print("Total cost:", t*25)
```