

# 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

Alex is an air traffic controller who needs to record and manage flight delays efficiently. Given a flight number, the delay in minutes (as a string), and the coordinates of the flight's current position (as a complex number),

Help Alex convert and store this information in a structured format.

#### ***Input Format***

The first line of input consists of an integer N, representing the flight number.

The second line consists of a string representing the delay in minutes.

The third line consists of two floats separated by a space, representing the real and imaginary parts of the complex number for the flight's position.

### **Output Format**

The first line of output displays the complex number.

The second line displays a string with the flight number, delay, and the real and imaginary parts of the complex number, separated by commas.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 12345

30.5

12.3 45.6

Output: (12.3+45.6j)

12345, 30.5, 12.3, 45.6

### **Answer**

```
# You are using Python
n=int(input())
delay=input()
real,imag=map(float,input().split())
pos=complex(real,imag)
print(pos)
print(f"{n},{delay},{real},{imag}")
```

**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**

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

**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**

```
# You are using Pythonname
```

```
name=input()
```

```
step=int(input())
```

```
calories=float(input())
```

```
working_time=float(input())
```

```
print(f"User Name: {name}")
```

```
print(f"Total Steps: {step}")
```

```
print(f"Calories Burned: {calories}")
```

```
print(f"Workout Duration: {working_time} hours")
```

**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***

```
# You are using Python
```

```
a=int(input())
```

```
if a>=10:
```

```
    c=((a*2)+5)
```

```
    b=c*25
```

```
    print(f"Number of tacos needed: {c}\nTotal cost: {b}")
```

```
else:
```

```
    c=((a*2))
```

```
    if c<20:
```

```
        c=20
```

```
    b=c*25
```

```
    print(f"Number of tacos needed: {c}\nTotal cost: {b}")
```

Status : Correct

Marks : 10/10