

# 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

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**

```
c1=complex(input().strip())
c2=complex(input().strip())
new_c1=complex(c1.imag,c1.real)
new_c2=complex(c2.imag,c2.real)
print(f"New first complex number: {new_c1}")
print(f"New second complex number: {new_c2}")
```

**Status :** Correct

**Marks :** 10/10

## **2. 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***

```
flight_number=int(input().strip())
delay=input().strip()
real, imag=map(float,input().strip().split())
position=complex(real,imag)
print(position)
print(f"{flight_number},{delay},{real},{imag}")
```

**Status :** Correct

**Marks :** 10/10

## **3. 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***

```
investment1=float(input().strip())
investment2=float(input().strip())
portfolio_id=int(input().strip())
print("The values in the reverse order:")
print(portfolio_id)
```

```
print(investment2)
print(investment1)
```

**Status :** Correct

**Marks :** 10/10

#### 4. 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**

```
user_name=input().strip()
total_steps=int(input().strip())
calories_burned=float(input().strip())
workout_duration=float(input().strip())
print(f"User Name: {user_name}")
print(f"total Steps: {total_steps}")
print(f"calories Burned: {calories_burned}")
print(f"workout Duration: {workout_duration} hours")
```

**Status :** Correct

**Marks : 10/10**