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

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

```python
# You are using Python
a=float(input())
b=int(input())
c=(a/100)*10;
d=a-c
e=(d/100)*35
f=d-e
g=f/(b-1)
print(f"Cost after a 10% discount: {d:.2f}")
print(f"Friend with a 35% bonus pays: {e:.2f}")
print(f"Each of the other friends pays: {g:.2f}")
```

Status : Correct   *Marks : 10/10*

2. 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

```python
# You are using Python
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*

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

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

Status : Correct   *Marks : 10/10*

4. 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

```python
# You are using Python
n1=complex(input())
n2=complex(input())
s1=complex(n1.imag,n1.real);
s2=complex(n2.imag,n2.real);
print(f"New first complex number: ({int(s1.real)}{int(s1.imag):+}j)")
print(f"New second complex number: ({int(s2.real)}{int(s2.imag):+}j)")
```

Status : Correct   *Marks : 10/10*