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

```
n=float(input())
m=int(n)
print("The integer value of",n,"is:",m)
```

Status : Correct   *Marks : 1/1*

2.   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

```python
# You are using Python
n=int(input())
m=float(input())
print("Initial salaries:")
print("Alice's salary =",n)
print("Bob's salary =",m)
print("New salaries after swapping:")
print("Alice's salary =",m)
print("Bob's salary =",n)
```

Status : Correct   *Marks : 1/1*

3. 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

```python
# You are using Python
n=int(input())
m=int(input())
```

```
a=int(50+(n*5))
b=int(30+(m*3))
c=a+b
print("Older child allowance: Rs.",a)
print("younger child allowance: Rs.",b)
print("Total allowance: Rs.",c)
```

Status : Correct   *Marks : 1/1*

4. 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

```python
# You are using Python
def calculate_offer(D, S):
    return D ^ S

D=int(input())
S=int(input())

offer_code = calculate_offer(D, S)
print(f"Offer code: {offer_code}")
```

Status : Correct   *Marks : 1/1*

5. 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 × (5 + 3) = 5 × 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

```python
# You are using Python
def calculate_value(a):
    val1=(a)**4
    val2=(a+1)**4
    val3=(a+2)**4
    val4=(a+3)**4
```

```
    total=(val1 + val2 + val3 + val4)
    adjusted_total = total - 4*a*(a+3)

    return adjusted_total / 4

a = int(input().strip())
result = calculate_value(a)
print(f"Constant value:{result}")
```

Status : Correct   *Marks : 1/1*

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Scan to verify results

NeoColab_REC_CS23221_Python Programming

REC_Python_Week 1_CY

Attempt : 2
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

```python
# You are using Python
n=int(input())
m=float(input())
real,imag=map(float,input().split())
print(f"({real}{imag:+}j)")
print(f"{n},{m},{real},{imag}")
```

Status : Correct   *Marks : 10/10*

2. 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

```
n=int(input())

if(n>=10):
    n*=2
    n+=5
else:
    n=20
print("Number of tacos needed: {}\nTotal cost: {}".format(n,n*25))
```

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

```
name=input()
n=int(input())
a,b=float(input()),float(input())
print("User Name:",name)
print("Total Steps:",n)
print("Calories Burned:",a)
print("Workout Duration:",b,"hours")
```

Status : Correct   *Marks : 10/10*

4. 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
n1=float(input())
n2=float(input())
n3=int(input())
print("The values in the reverse order:")
print(n3)
print(n2)
print(n1)
```

Status : Correct   *Marks : 10/10*

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m=float(input())
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print("Alice's salary =",m)
print("Bob's salary =",n)
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Output: Older child allowance: Rs.100
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Answer

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4. 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

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Answer

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print(f"Offer code: {offer_code}")
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Status : Correct   *Marks : 1/1*

5. 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.

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Example:

Input:

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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 × (5 + 3) = 5 × 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

```python
# You are using Python
def calculate_value(a):
    val1=(a)**4
    val2=(a+1)**4
    val3=(a+2)**4
    val4=(a+3)**4
```

```python
    total=(val1 + val2 + val3 + val4)
    adjusted_total = total - 4*a*(a+3)

    return adjusted_total / 4

a = int(input().strip())
result = calculate_value(a)
print(f"Constant value:{result}")
```

Status : Correct   *Marks : 1/1*