Assignment 7:

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D15P1. F2C Conversion

Write a program that takes as input Fahrenheit temperature. It converts the input temperature to Celsius and prints out the converted temperature as shown in the example. The formula for conversion between the two is: C=5/9(F−32), Where C is the temperature in Celsius and F is the temperature in Fahrenheit.

NOTE:

1. DO NOT use any prompts in the input().
2. Use **the round()** function to round your answer to up to two decimal places. That is, use **round(VALUE, 2)**.

EXAMPLES:

INPUT: 212 OUTPUT: Fahrenheit temperature 212.0 is the same as 100.0 degrees Celsius.	INPUT: 0.555 OUTPUT: Fahrenheit temperature 0.555 is the same as -17.47 degrees Celsius.

Answer:

```
8
9  F=float(input("Temperature in Farenheit: "))
10 C=(5/9)*(F-32)
11
12 print("Farenheit temperature",F," is the same as " ,round(C,2),"degrees Celsius")
```

```
Temperature in Farenheit: 120
Farenheit temperature 120.0  is the same as  48.89 degrees Celsius
```

D15P2. Final Velocity

Write a program that takes as input three numbers, u, a, and t. Here u stands for the initial velocity, a stands for the acceleration, and t stands for the time duration. The program prints the final velocity (v).

The input will consist of three lines. The first line will contain the initial velocity u, the second line will contain acceleration a and the third line will contain time t. Recall that u and a can take any real (float) values as velocity and acceleration are continuous vector quantities (in physics). Time t can take non-negative real values only, i.e., 0 ≤ t.

NOTE:

1. DO NOT use any prompts in the input().
2. The formula for computing the final velocity: v=u+at
3. Use the **round()** function to round a VALUE to up to two decimal places: **round(VALUE, 2)**

EXAMPLE:

INPUT:
20.0
15
2

OUTPUT:

The final velocity is 50.0.

Answer:

```
17 u=float(input("Initial speed:"))
18 a=float(input("Acceleration:"))
19 t=float(input("Time:"))
20 v=u+(a*t)
21 print("The Final Velocity is", round(v,2))
```

```
Initial speed:50
Acceleration:2
Time:2
The Final Velocity is 54.0
```

D15P3. Displacement Covered

Write a program that takes as input three numbers, u, a, and t. Here u stands for the initial velocity, a stands for the acceleration, and t stands for the time duration. The program prints the displacement covered (d) in time t.

The input will consist of three lines. The first line will contain the initial velocity u, the second line will contain acceleration a and the third line will contain the time t. Recall that u and a can take any real value as velocity and acceleration are continuous vectors (in physics). Time t can take non-negative real values only, i.e., $0 \leq t$.

NOTE:

1. DO NOT use any prompts in the input().
2. The formula for computing the displacement: $d=ut+1/2at^2$
3. Use the **round()** function to round a VALUE to up to two decimal places: **round(VALUE, 2)**.

EXAMPLE:

INPUT: 20 15 2 OUTPUT: The displacement is 70.0.

Answer:

```
u=float(input("Initial speed:"))
a=float(input("Acceleration:"))
t=float(input("Time:"))
d=(u*t)+((a*t*t))/2
print("The Displacement is", round(d,2))
```

```
Initial speed:20
Acceleration:15
Time:2
The Displacement is 70.0
```

D15P4. Number of Days

Write a program that takes as input an Integer s, the number of seconds elapsed for a certain event. The program converts s to hours (hh), minutes (mm), and seconds (ss) and prints the output as hh:mm:ss.

- Convert seconds in hour, minute and seconds

EXAMPLES:

INPUT: 5 OUTPUT: 0:0:5	INPUT: 67 OUTPUT: 0:1:7	INPUT: 3692 OUTPUT: 1:1:32

Note that the input will only be positive integer values since time cannot be negative.

Answer:

```
s=int(input("Duration in second(s): "))
if s>=0:
    h = round(s // 3600)
    m = round((s-(3600*h)) // 60)
    s = round(s- (3600*h)-(m*60))
    print(h,":",m,":",s)
else:
    print("Input will only be positive integer values since time cannot be negative. Please try again."
```

```
Duration in second(s): 560
0 : 9 : 20
```

D15P5. Leap Year

Write a program to check if the given year is a leap year or not.

The program should read an integer (**year**) from a user. Display the Boolean value: **True** if the year is a leap year, **False** if not.

EXAMPLES

Input: 2024 Output: True	Input: 2025 Output: False

Answer:

```
def CheckLeap(Year):

# Check if the given year is a leap year
    if ((Year % 400 == 0) or
    (Year % 100 != 0) and
    (Year % 4 == 0)):
        print("True");

# If not a leap year
    else:
        print("False")

Year=int(input("Please Enter the Year Number:"))
CheckLeap(Year)

```

```
Please Enter the Year Number:1985
False
```

D15P6. Reverse the number

Write a program to find reverse of the number.

The program should read an integer (**number**) from a user. The program should print the reverse of the given input.

EXAMPLES

Input: 534 Output: 435

Answer:

```
num = int(input("Please enter the number:"))
print (str(num)[::-1])
print (type(num))
```

```
Please enter the number:456321
123654
<class 'int'>
```

D15P7. Display Multiplication table

Write a program to Display the multiplication table.

The program should read an integer (**Multiplier and Range**) from a user. The program should print the multiplication table for following format.

EXAMPLES

Input: 4 10

Output

1*4=4

2*4=8

3*4=12

…

10*4=40

Answer:

```
num = int(input("Multiplier: "))
upto = int(input("Up until range, i.e. 1-12: "))


# To take input from the user
# num = int(input("Display multiplication table of? "))

# Iterate 10 times from i = 1 to 10
for i in range(1, upto+1):
   print(num, 'x', i, '=', num*i)
```

```
Multiplier: 5
Up until range, i.e. 1-12: 12
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
5 x 11 = 55
5 x 12 = 60
```

D15P8. Prime number Checking

Write a program to check whether given number is prime or not.

The program should read an integer (**number**) from a user. The program should print the number is prime or not.

EXAMPLES

Input: 15 Output 15 is not a prime number	Input: 19 Output 19 is prime number

Answer:

Prime Number

```
# To take input from the user
num = int(input("Enter a number: "))

# prime numbers are greater than 1
if num > 1:
   # check for factors
   for i in range(2,num):
       if (num % i) == 0:
           print(num,"is not a prime number")
           print(i,"times",num//i,"is",num)
           break
   else:
       print(num,"is a prime number")

#if input number is less than or equal to 1, it is not prime

else:
   print(num,"is not a prime number")
```

```
Enter a number: 19
19 is a prime number
```

Not Prime Number

```python
# To take input from the user
num = int(input("Enter a number: "))

# prime numbers are greater than 1
if num > 1:
   # check for factors
   for i in range(2,num):
       if (num % i) == 0:
           print(num,"is not a prime number")
           print(i,"times",num//i,"is",num)
           break
   else:
       print(num,"is a prime number")

#if input number is less than or equal to 1, it is not prime

else:
   print(num,"is not a prime number")
```

```
Enter a number: 12
12 is not a prime number
2 times 6 is 12
```

******* ALL THE BEST *******