Awfera LMS

Assignment 01 Python

Date:3/22/2025 Author: Hammad Zahid. MY self: I am a student of Awfera LMS. I am here to learn Python programming language.

Question 1: Variables and Data Types

Problem: Write a Python program that:

1. Accepts a string, an integer, a float, and a boolean from the user.
2. Initializes variables for each type, and prints them out.
3. Convert the string to uppercase and print it.
4. Check if the integer is even or odd and print the result.
5. Multiply the float by 2 and print the result. ##### Solution:

```
# Step 1: Accept input from the user
input_string = input("Enter a string: ")
input_integer = int(input("Enter an integer: "))
input_float = float(input("Enter a float: ").replace(',', '.'))
input_boolean = input("Enter a boolean (True/False):
").strip().lower() == "true"

# Step 2: Initialize variables and print them
print("\nStep 2: Printing the input values:")
print(f"String: {input_string}")
print(f"Integer: {input_integer}")
print(f"Float: {input_float}")
print(f"Boolean: {input_boolean}")

# Step 3: Convert the string to uppercase and print it
uppercase_string = input_string.upper()
print("\nStep 3: String in uppercase:", uppercase_string)

# Step 4: Check if the integer is even or odd and print the result
if input_integer % 2 == 0:
    print("\nStep 4: The integer is even.")
else:
    print("\nStep 4: The integer is odd.")

# Step 5: Multiply the float by 2 and print the result
multiplied_float = input_float * 2
print("\nStep 5: Float multiplied by 2:", multiplied_float)


Step 2: Printing the input values:
String: 'HAMMAD'
Integer: 8
```

```
Float: 2.5
Boolean: True

Step 3: String in uppercase: 'HAMMAD'

Step 4: The integer is even.

Step 5: Float multiplied by 2: 5.0
```

Question 2: Operators

Problem: Write a Python program that:

1. Accepts two numbers as input from the user.
2. Performs and prints the result of all the arithmetic operations(addition, subtraction, multiplication, division, modulus, flow division) between these two numbers.
3. Use comparison operators to check if the first number is greater than the second, and if they are equal.
4. Use logical operatorsto combine two conditions (e.g., the first number is greater than the second, and the second number is less than 10). Solution:

```python
# Step 1: Accept two numbers as input from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))

# Step 2: Perform and print arithmetic operations
print("\nStep 2: Arithmetic Operations:")
print(f"Addition: {num1} + {num2} = {num1 + num2}")
print(f"Subtraction: {num1} - {num2} = {num1 - num2}")
print(f"Multiplication: {num1} * {num2} = {num1 * num2}")
print(f"Division: {num1} / {num2} = {num1 / num2}")
print(f"Modulus: {num1} % {num2} = {num1 % num2}")
print(f"Floor Division: {num1} // {num2} = {num1 // num2}")

# Step 3: Use comparison operators
print("\nStep 3: Comparison Operations:")
if num1 > num2:
    print(f"{num1} is greater than {num2}.")
elif num1 < num2:
    print(f"{num1} is less than {num2}.")
else:
    print(f"{num1} is equal to {num2}.")

# Step 4: Use logical operators
print("\nStep 4: Logical Operations:")
condition1 = num1 > num2
condition2 = num2 < 10
if condition1 and condition2:
    print(f"{num1} is greater than {num2}, and {num2} is less than
10.")
```

```
else:
    print(f"Either {num1} is not greater than {num2}, or {num2} is not
less than 10 (or both).")


Step 2: Arithmetic Operations:
Addition: 88.0 + 25.0 = 113.0
Subtraction: 88.0 - 25.0 = 63.0
Multiplication: 88.0 * 25.0 = 2200.0
Division: 88.0 / 25.0 = 3.52
Modulus: 88.0 % 25.0 = 13.0
Floor Division: 88.0 // 25.0 = 3.0

Step 3: Comparison Operations:
88.0 is greater than 25.0.

Step 4: Logical Operations:
Either 88.0 is not greater than 25.0, or 25.0 is not less than 10 (or
both).
```

Question 3: Loops Problem:

Problem: Write a Python program that:

1. Accepts a list of integers from the user.
2. Loops through the list and prints out each number.
3. If a number is greater than 10, skip it using the continue statement.
4. Stop the loop if the number is 20 using the break statement.
5. After the loop ends, print a message that the loop ended naturally. Solution:

```python
# Step 1: Accept a list of integers from the user
input_list = input("Enter a list of integers separated by spaces: ")
# Convert the input string to a list of integers
integer_list = [int(num) for num in input_list.split()]
# Step 2: Print the list
print(f"\nComplete list of integers: {integer_list}")

# Step 2: Loop through the list and process each number
print("\nStep 2: Looping through the list:")
for i in integer_list:
    # Step 3: Skip numbers greater than 10
    if i > 10 and i != 20:
        print(f"Skipping {i} (greater than 10).")
        continue  # Skip to the next iteration

    # Step 4: Stop the loop if the number is 20
    if i == 20:
        print(f"Loop Break at {i} (equal to 20).")
        break  # Exit the loop
```

```
    # Step 2 (continued): Print the number
    print(f"Element of the list is: {i}")

# Step 5: Print a message after the loop ends
else:
    print("\nThe loop ended naturally (no break statement was
executed).")
#6
print("The loop Ended Naturally")


Complete list of integers: [4, 5, 6, 7, 8, 9, 10, 15, 20, 30]

Step 2: Looping through the list:
Element of the list is: 4
Element of the list is: 5
Element of the list is: 6
Element of the list is: 7
Element of the list is: 8
Element of the list is: 9
Element of the list is: 10
Skipping 15 (greater than 10).
Loop Break at 20 (equal to 20).
The loop Ended Naturally
```