

Python Programming

Assignment 02

Name: Muhammad Atiq Ur

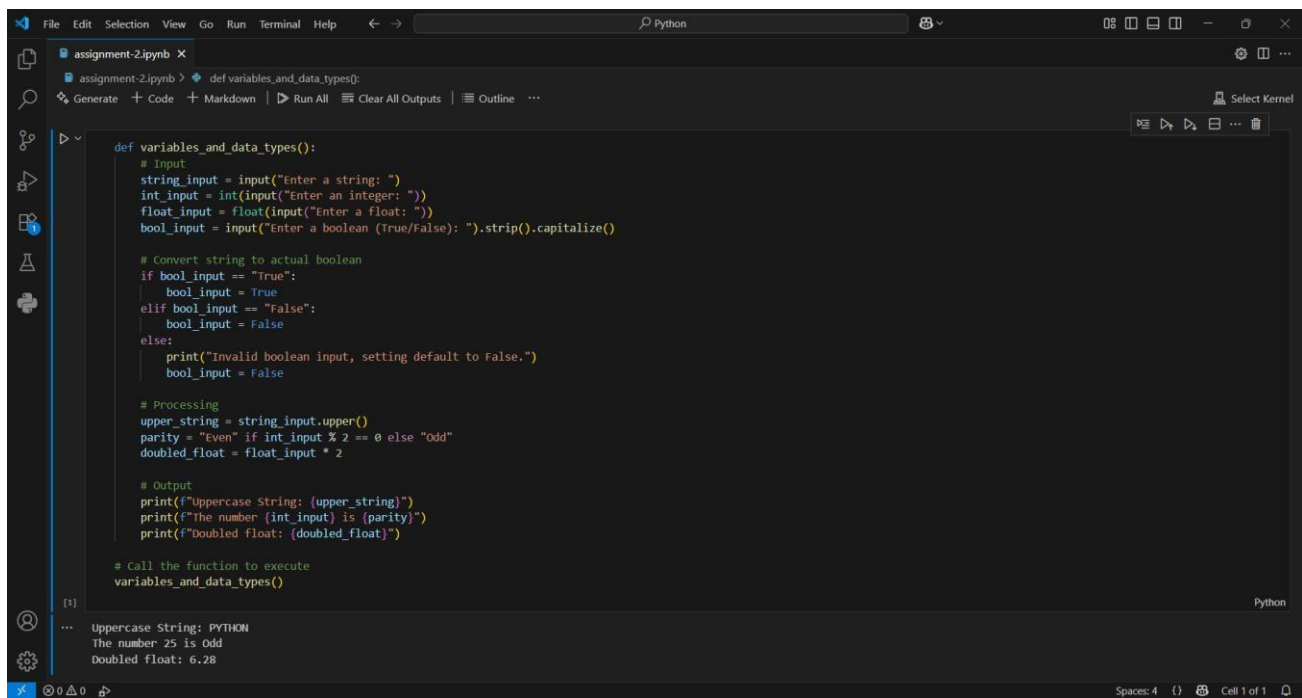
Rehman

Question No 01: 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. **Answer:**

Code/Output:



```
def variables_and_data_types():
    # Input
    string_input = input("Enter a string: ")
    int_input = int(input("Enter an integer: "))
    float_input = float(input("Enter a float: "))
    bool_input = input("Enter a boolean (True/False): ").strip().capitalize()

    # Convert string to actual boolean
    if bool_input == "True":
        bool_input = True
    elif bool_input == "False":
        bool_input = False
    else:
        print("Invalid boolean input, setting default to False.")
        bool_input = False

    # Processing
    upper_string = string_input.upper()
    parity = "Even" if int_input % 2 == 0 else "Odd"
    doubled_float = float_input * 2

    # Output
    print(f"Uppercase String: {upper_string}")
    print(f"The number {int_input} is {parity}")
    print(f"Doubled float: {doubled_float}")

# Call the function to execute
variables_and_data_types()
```

Uppercase String: PYTHON
The number 25 is Odd
Doubled float: 6.28

Question No 02: Operators Problem:

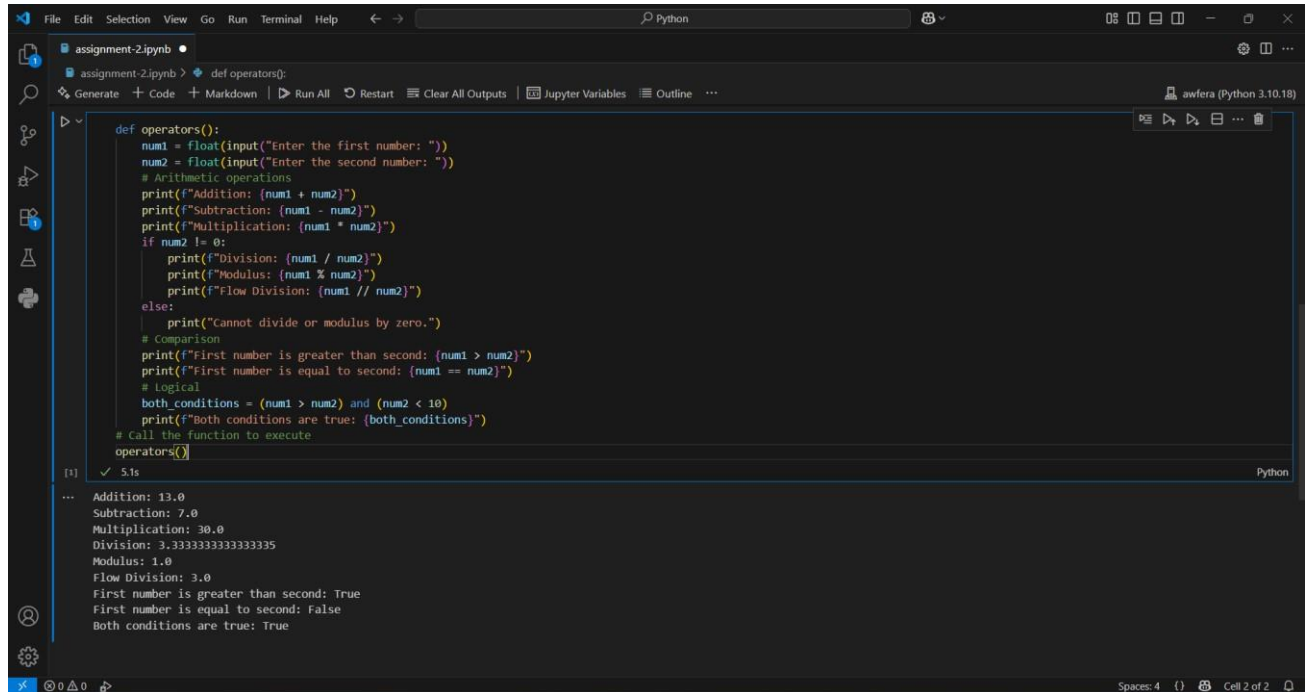
Write a Python program that:

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, floor 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 operators to combine two conditions (e.g., the first number is greater than the second, and the second number is less than 10).

Answer:

Code/Output:



```
def operators():
    num1 = float(input("Enter the first number: "))
    num2 = float(input("Enter the second number: "))
    # Arithmetic operations
    print(f"Addition: {num1 + num2}")
    print(f"Subtraction: {num1 - num2}")
    print(f"Multiplication: {num1 * num2}")
    if num2 != 0:
        print(f"Division: {num1 / num2}")
        print(f"Modulus: {num1 % num2}")
        print(f"Floor Division: {num1 // num2}")
    else:
        print("Cannot divide or modulus by zero.")
    # Comparison
    print(f"First number is greater than second: {num1 > num2}")
    print(f"First number is equal to second: {num1 == num2}")
    # Logical
    both_conditions = (num1 > num2) and (num2 < 10)
    print(f"Both conditions are true: {both_conditions}")
    # Call the function to execute
    operators()
```

✓ 5.1s Python

... Addition: 13.0
Subtraction: 7.0
Multiplication: 30.0
Division: 3.3333333333333335
Modulus: 1.0
Floor Division: 3.0
First number is greater than second: True
First number is equal to second: False
Both conditions are true: True

Question No 03: Loops 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.

Answer:

Code/Output:

File Edit Selection View Go Run Terminal Help

Python

assignment-2.ipynb

assignment-2.ipynb > def loop_with_conditions():

Generate + Code + Markdown | Run All Restart Clear All Outputs Jupyter Variables Outline

awferra (Python 3.10.18)

def loop_with_conditions():
 input_str = input("Enter a list of numbers separated by spaces: ")
 numbers = [int(x) for x in input_str.split()]

 for num in numbers:
 if num > 10 and num != 20:
 print(f"Skipping {num}")
 continue
 if num == 20:
 print("Breaking at 20")
 break
 print(num)

 print("Loop ended naturally")

 # Call the function to execute
 loop_with_conditions()

[4] ✓ 9.6s Python

...

5
10
Skipping 12
Skipping 15
Breaking at 20
Loop ended naturally

Spaces: 4 CRLF () Cell 3 of 3