**HW-1 Write-Up: Learning Experience and Enhancements**

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**Course:** Python Programming  
**Assignment:** HW-1 Python Arithmetic and Conversion Assignment

**Learning Experience**

This assignment provided me with an opportunity to practice fundamental Python programming skills. I learned how to prompt users for input, perform arithmetic operations, and handle different types of calculations. Additionally, I practiced using conditional statements to avoid division or modulus by zero errors.

The assignment also reinforced my understanding of temperature conversion formulas and unit conversions, such as converting miles to kilometers. Writing and testing multiple conversions enhanced my confidence in handling real-world mathematical computations in Python.

**Challenges Encountered**

One of the challenges I faced was handling division and modulus operations when the second input was zero. Since division by zero is undefined, I had to implement an if condition to check whether the second number was zero before performing these operations. Another challenge was ensuring proper input handling, as users might enter non-numeric values. In the future, I plan to implement exception handling to manage such cases more effectively.

**Enhancements Implemented**

I made two key enhancements beyond the basic requirements:

1. **Calculating the Average of Three Numbers:** After performing arithmetic operations with two user-input numbers, I added an additional prompt asking the user for a third number and calculated the average of all three values.
2. **Mile to Kilometer Conversion:** In addition to temperature conversion, I included a feature that converts distances from miles to kilometers. This allows users to perform multiple types of conversions in a single execution of the program.

**Test Results and Screenshots**

I tested the program with different sets of inputs to ensure correctness. Below are sample test results:

**Test Case 1: Arithmetic Operations**

**Input:**

* First number: 10
* Second number: 5
* Third number: 15

**Output:**

* Addition: 15
* Subtraction: 5
* Multiplication: 50
* Division: 2.0
* Modulus: 0
* Average: 10.0

**Test Case 2: Temperature Conversion**

**Input:**

* Celsius: 25
* Fahrenheit: 77

**Output:**

* 25°C is equal to 77°F
* 77°F is equal to 25°C

**Test Case 3: Distance Conversion**

**Input:** Miles: 10

**Output:** 10 miles is equal to 16.0934 kilometers

**Conclusion**

This assignment was a valuable learning experience in reinforcing Python programming fundamentals. The enhancements made the program more interactive and user-friendly. Moving forward, I would like to explore adding exception handling to improve input validation and robustness. Overall, this assignment helped me improve my problem-solving skills and gain more confidence in writing Python code.