

Python Assignments - 01

Topics: Python Fundamentals—Working with Variables, Data Types, type conversion, and Input/Output

1. What happens if you assign a string value to a variable that previously held an integer?
2. How can you check the data type of a variable in Python?
3. What's the difference between `int("15")` and `str(15)`?
4. Write a Python program that takes two numbers as input from the user. Performs the following arithmetic operations:
 - Addition
 - Subtraction
 - Multiplication
 - Division
 - Modulus
 - Exponentiation
5. How can you take multiple inputs from the user in a single line?
6. What happens if you try to convert a string like "hello" to an integer using `int()`?
7. Can a variable change its data type during program execution in Python?
8. What's the difference between the `print()` and `input()` functions?
9. Why does `input()` always return a string, and how do you handle it?
10. How would you convert the string "15.5" to an integer, float, boolean & complex?

Bonus Question

1. How does a variable work in memory? In Python, does it hold a reference or a value?

2. What is the difference between mutable and immutable data types? Explain with real-life examples.
3. What is the difference between type conversion and type casting in Python?
4. What data type is always returned from `input()` in Python, and how can it be used as a numeric type?
5. What happens when multiple values are given inside the `print()` function?