Python Assignment: Variables, Operators, and Type Casting

1. **Understanding Variables**

   a. Define a variable in Python. Provide an example of how to create a variable that stores your name.

   b. What is the difference between a variable and a constant? Can we have constants in Python?

2. **Working with Different Data Types**

   a. Create variables of the following types in Python:

   1. Integer

   2. Float

   3. String

   4. Boolean

   b. **Write a Python script to display the type of each variable you created.**

3. **Arithmetic Operators**

   a. **Explain the following arithmetic operators with examples:**

   1. Addition (`+`)

   2. Subtraction (`-`)

   3. Multiplication (``)

   4. Division (`/`)

   5. Floor Division (`//`)

   6. Modulus (`%`)

   7. Exponentiation (``)

   b. **Write a Python script to calculate the area of a rectangle using variables `length` and `width` with values 5 and 10, respectively. Use the multiplication operator.**

4. **Comparison and Logical Operators**

   a. Explain the following comparison operators with examples:

   1. Equal to (`==`)

   2. Not equal to (`!=`)

   3. Greater than (`>`)

   4. Less than (`<`)

   5. Greater than or equal to (`>=`)

   6. Less than or equal to (`<=`)

   b. Using logical operators (`and`, `or`, `not`), write a Python script that checks if a number is positive and even.

5. **Type Casting in Python**

   a. What is type casting? Explain the difference between implicit and explicit type casting with examples.

   b. Write a Python script that:

   1. Converts a float to an integer.

   2. Converts an integer to a string.

   3. Converts a string to a float.

6. **Practical Exercise: Mini Calculator**

Write a Python script that asks the user to input two numbers and then:

   1. Adds the two numbers and prints the result.

   2. Subtracts the second number from the first and prints the result.

   3. Multiplies the two numbers and prints the result.

   4. Divides the first number by the second and prints the result (handle division by zero).

   5. Converts the sum of the numbers to a string and prints the type of the result.

Submission Guidelines:

- Upload on GitHub and share the link on LinkedIn with well-written content

- Make sure you mention in the post to Prachi Kabra and Analytics with Anand so that we can check your assignment

- Submit your assignment in a Python (.ipynb) file format.

- Ensure your code is well-commented and properly formatted.

- Include your name and date at the top of the script.

Good Luck!