Python Assignment: Data Types, Conditions, and Loops

Part A: Data Types

1. Create variables of type: integer, float, string, list, tuple, dictionary, and boolean. Print their values and types.

2. Create a list of 5 numbers. Replace the 3rd element, add a new number at the end, remove the first element, then print the final list.

3. Create a dictionary with keys: 'name', 'age', 'city'. Add a new key 'gender', change the value of 'age', delete the 'city' key, and print the dictionary.

4. Create a tuple with 4 elements. Try to change one of its values and observe the error.

5. Given a string `text = "Python Programming"`, print: First 6 characters, Last 6 characters, Every second character.

Part B: Conditions

6. Input a number and print whether it's positive, negative, or zero.

7. Input a number and print whether it's even or odd.

8. Input marks out of 100 and print the grade:
   - 90-100: A
   - 75-89: B
   - 50-74: C
   - Below 50: F

9. Input age and print whether the person is eligible to vote (18+).

10. Input three numbers and print the largest one.

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Part C: Loops

11. Print numbers from 1 to 10 using a loop.

12. Input `n`, and print the sum of numbers from 1 to `n`.

13. Input a number and print its multiplication table up to 10.

14. Input a number and print its factorial.

15. Input a string and print its reverse using a loop.