Python Programming Practice

A. Basics & Variables

1. Create variables for your name, age, and city, and print them in a single line.
2. Write a program to swap the values of two variables without using a third variable.
3. Take two numbers from the user and print their sum, difference, product, and quotient.
4. Write a program to check if a number entered by the user is even or odd.
5. Take a floating-point number as input and print it rounded to 2 decimal places.

B. Data Types & Type Conversion

6. Create a variable of type string, int, float, and boolean. Print their types.
7. Write a program to convert a string `"123"` into an integer and add 10 to it.
8. Take a number as a string from the user, convert it to a float, and multiply it by 1.5.
9. Write a program to check whether a given variable is of type list or tuple.
10. Create a tuple of numbers and print its length.

C. Operators

11. Write a program to find the remainder and quotient when dividing two numbers.
12. Take three numbers from the user and print the largest one using comparison operators.
13. Write a program to check if a number is between 10 and 50 (inclusive).

14. Given two numbers, check if both are divisible by 5 using logical operators.
15. Write a program to check if two variables refer to the same object in memory.

D. String Operations

16. Take a string as input and print it in uppercase, lowercase, and title case.
17. Write a program to find the first and last characters of a string.
18. Slice the string `"DataEngineering"` to get `"Data"` and `"Engineering"`.
19. Count how many times the letter `"a"` appears in a user-input string.
20. Replace `"Python"` with `"Java"` in the string `"Python is fun"`.

E. Lists

21. Create a list of 5 fruits and print the second and fourth fruit.
22. Append `"Mango"` to a fruit list and print it.
23. Insert `"Cherry"` at the second position in a fruit list.
24. Remove `"Apple"` from a fruit list.
25. Sort a list of integers in descending order.
26. Write a program to reverse a list without using `reverse()` method.
27. Find the number of times `"Rose"` appears in a list.
28. Merge two lists into a third list.

F. Tuples

29. Create a tuple with at least 5 country names and print the third one.
30. Convert a tuple into a list, add an item, and convert it back into a tuple.
31. Count how many times `"India"` appears in a tuple.
32. Find the index of `"Canada"` in a tuple.

G. Sets

33. Create a set of 5 unique numbers and print it.
34. Add `"Orange"` to a fruit set.
35. Remove `"Banana"` from a set using `discard()`.
36. Find the union of two sets.
37. Find the intersection of two sets.
38. Find the difference between two sets.
39. Remove duplicates from a list by converting it into a set.
40. Check if one set is a subset of another.

H. Mixed & Scenario-Based

41. Take a sentence from the user, split it into words, and store them in a list.
42. Join a list of words into a single string with `-` as a separator.
43. Given a list of numbers, create a new list containing only even numbers.
44. Create two sets from user input and print their symmetric difference.

45. Create a tuple of integers and find the sum of all elements.

46. Write a program to get all unique words from a given sentence.

47. Take a list of numbers and print only those greater than 50.

48. Store student names in a set and check if `"John"` exists in it.

49. Given two lists, find common elements without using loops (hint: sets).

50. Create a program to manage a shopping list:

    - Add items
    - Remove items
    - Display items