Python Control Structures – Coding Challenges

Conditional Blocks (if, else, elif)

Challenge 1: Age Group Classifier

Write a program that:

- Takes age as input.
- Classifies the person as **Child (0–12), Teen (13–19), Adult (20–59), Senior (60+)**.
- Prints the category.

Challenge 2: Grading System

Write a program that:

- Takes marks as input.
- Assigns grade: **A (90+), B (75–89), C (50–74), Fail (<50)**.
- Prints the grade.

Simple For Loops

Challenge 3: Multiplication Table

Write a program that:

- Asks for a number.
- Prints its multiplication table (1 to 10) using a for loop.

Challenge 4: Factorial Calculator

Write a program that:

- Takes a number as input.
- Calculates its factorial using a for loop.

For Loops with Ranges, Strings, Lists, Dictionaries

Challenge 5: Even Numbers with Range

Write a program that:

- Uses `range()` to print all even numbers between 1 and 50.

Challenge 6: Word Length Counter

Write a program that:

- Takes a sentence.
- Loops through each word in the string.
- Prints the word along with its length.

While Loops

Challenge 7: Guess the Number

Write a program that:

- Generates a random number between 1 and 10.
- Asks the user to guess until they get it correct.
- Prints success message when guessed correctly.

Challenge 8: ATM Withdrawal Simulation

Write a program that:

- Starts with a balance of ₹5000.
- Keeps asking the user to withdraw money.
- Stops when balance becomes 0 or user exits.

Loop Manipulation (pass, continue, break, else)

Challenge 9: Skipping Multiples of 3

Write a program that:

- Prints numbers from 1 to 20.
- Skips multiples of 3 using `continue`.

Challenge 10: Prime Number Check

Write a program that:

- Takes a number as input.
- Checks if it's prime using a loop.
- If found divisible, use `break` and declare not prime. Otherwise print prime.

Programming with Conditional + Loops Together

Challenge 11: Student Result Analyzer

Write a program that:

- Takes marks of 5 subjects as input.
- Calculates total, average, and grade using conditions.
- Prints pass/fail message.

Challenge 12: Simple Menu-Driven Calculator

Write a program that:

- Shows menu: 1.Add, 2.Subtract, 3.Multiply, 4.Divide, 5.Exit.
- Keeps running until user selects Exit.
- Uses loops + conditions to perform operations.