Day 2 Practise Problems

Conditional Statements (if, elif, else)

1. **Positive, Negative, or Zero**
    - Write a Python program to check whether a given number is positive, negative, or zero.
2. **Odd or Even**
    - Write a program that takes an integer as input and prints whether it is odd or even.
3. **Grade Calculation**
    - Take a student's marks as input and print their grade based on the following:
        - 90-100 → A
        - 80-89 → B
        - 70-79 → C
        - 60-69 → D
        - Below 60 → Fail
4. **Leap Year Checker**
    - Write a program to check if a given year is a leap year or not.

Loops (for, while)

5. **Print Numbers from 1 to N**
    - Take an integer input N and print all numbers from 1 to N using a for loop.
6. **Sum of First N Natural Numbers**
    - Write a program that takes an integer N as input and prints the sum of the first N natural numbers.
7. **Multiplication Table**
    - Take a number as input and print its multiplication table up to 10.
8. **Factorial Calculation**
    - Write a Python program to calculate the factorial of a given number using a loop.
9. **Reversing a Number**
    - Take an integer input and print its reverse.
10. **Count Digits in a Number**
    - Write a program that takes a number and prints the count of its digits.

Nested Loops

11. **Right-Angled Triangle Pattern**

    *

    **

    ***

    ****

    - Take an integer N as input and print a right-angled triangle of stars.

12. **Number Pyramid Pattern**

     1

     121

    12321

    1234321

    - Write a program that takes an integer N and prints a pyramid pattern.

Loop Control Statements (break, continue, pass)

13. **Break Example: First 5 Odd Numbers**
    - Print the first 5 odd numbers using a loop and break statement.
14. **Continue Example: Skip Multiples of 3**
    - Print numbers from 1 to 20 but skip the ones that are multiples of 3.
15. **Pass Statement Example**
    - Write a program where pass is used in an if condition, but the loop continues execution.

More Challenges

16. **Fibonacci Series**
    - Print the first N terms of the Fibonacci sequence.
17. **Check for Prime Number**
    - Write a program to check if a given number is prime.
18. **Sum of Digits**
    - Write a program to calculate the sum of the digits of a given number.

19. **Armstrong Number Check**
    - Check if a given number is an Armstrong number (e.g., 153 → $1^3 + 5^3 + 3^3 = 153$).
20. **Reverse a String Using Loops**
    - Take a string as input and print it in reverse order using a loop.