**🔹 Basic Loop Programs (1–10)**

1. Print numbers from 1 to 10.
2. Print even numbers from 1 to 50.
3. Print odd numbers from 1 to 50.
4. Print the sum of numbers from 1 to N.
5. Print the table of a given number.
6. Print all alphabets from A to Z.
7. Print reverse numbers from N to 1.
8. Print squares of numbers from 1 to 10.
9. Print cubes of numbers from 1 to 10.
10. Print numbers from 1 to 100 divisible by 5.

**🔹 Pattern Printing (11–20)**

1. Print a square pattern of \* of size N.
2. Print a right-angled triangle pattern of \*.
3. Print a pyramid pattern of \*.
4. Print a reverse right-angled triangle.
5. Print number pattern (e.g., 1, 22, 333, …).
6. Print a pattern of alphabets (A, BB, CCC...).
7. Print an inverted number triangle.
8. Print a half pyramid with numbers increasing row-wise.
9. Print a Floyd’s triangle.
10. Print a binary triangle (0/1 alternate pattern).

**🔹 Mathematical Loops (21–30)**

1. Find the factorial of a number using loop.
2. Find the sum of digits of a number.
3. Reverse a number using loop.
4. Check if a number is a palindrome using loop.
5. Check if a number is an Armstrong number.
6. Find the LCM of two numbers using loop.
7. Find the GCD of two numbers using loop.
8. Generate Fibonacci series up to N terms.
9. Count the number of digits in a number.
10. Check if a number is a prime number.

**🔹 Nested Loops / Advanced Patterns (31–35)**

1. Print multiplication tables from 1 to 10 using nested loops.
2. Print all prime numbers between 1 to 100.
3. Print the pattern of Pascal’s Triangle.
4. Print a checkerboard pattern using nested loops.
5. Print a diamond pattern using loops.

**🔹 Real-Life Simulations & Misc. (36–40)**

1. Simulate a simple digital clock (hours and minutes).
2. Count how many even and odd digits are in a number.
3. Calculate the power of a number using loop (a^b).
4. Find the HCF of two numbers using a loop.
5. Simulate a basic ATM menu using a loop (withdraw, deposit, exit).