0. Topic list

1.What is Recursion.

2.Print numbers in decreasing order

3.Stack overflow video

4. Print numbers in increasing order

5. Find Factorial of N video

6. Print sum of N natural numbers

7.Print Nth Fibonacci number

8.Check if array is sorted or not

9.First Occurrence

10. Last Occurrence

11. Print x to the power n

12. Print x to the power n (Optimized)

13. Tiling Problem

14. Tiling Problem Code

15. Remove Duplicates in a String

16. Friends Pairing Problem

17. Binary Strings Problem

18. Binary Strings Problem Code

19. Stack Analysis - Binary Strings

Recursion :

Definition : → Recursion is a programming technique where a function calls itself to solve a problem by breaking it down into smaller subproblem. Until it reaches a base case that stops further calls.

>> Types of Recursion

Direct → A function calls itself directly.

Indirect → A function calls another function, which eventually calls the first one.

>> Drawback

↳ Consume extra memory

↳ Risk to stack overflow

>> Common problem solved by recursion

1. Fibonacci Series
2. Factorial calculation
3. Tower of Hanoi
4. Tree traversal (DFS)
5. Graph traversal (DFS)
6. Backtracking Problem (N-Queen, Sudoku Solver)

Recursion vs Iteration

Feature	Recursion	Iteration
Code Simplicity	More readable	Less readable (loops)
Memory Usage	Uses stack memory [O(n)]	Uses constant space (O(1))
Performance	Can be slow if not optimized	Faster (no extra calls)
Best for	Tree, graph, divide & Conquer	Loops, arrays