PROBLEM NAME	LEVEL
Step 1 : Learn the basics	
1. User Input / Output	Easy
2. Data Types	Easy
3. If Else statements	Easy
4. Switch Statement	Easy
5. What are arrays, strings?	Easy
6. For loops	Easy
7. While loops	Easy
8. Functions (Pass by Reference and Value)	Easy
9. Time Complexity [Learn Basics, and then analyse in next Steps]	Easy
10. Patterns	Easy
11. C++ STL	Medium
12. Java Collections	Easy
13. Count Digits	Easy
14. Reverse a Number	Easy
15. Check Palindrome	Easy
16. GCD Or HCF	Easy
17. Armstrong Numbers	Easy
18. Print all Divisors	Easy
19. Check for Prime	Easy
20. Understand recursion by print something N times	Easy
21. Print name N times using recursion	Easy
22. Print 1 to N using recursion	Easy
23. Print N to 1 using recursion	Easy
24. Sum of first N numbers	Easy
25. Factorial of N numbers	Easy
26. Reverse an array	Easy
27. Check if a string is palindrome or not	Medium

28. Fibonacci Number — Easy
- 29. Hashing Theory — Medium
30. Counting frequencies of array elements — Easy
31. Find the highest/lowest frequency element — Easy

Step 2 : Learn Important Sorting Techniques

- 1.Selection Sort — Easy
2.Bubble Sort — Easy
3. Insertion Sort — Easy
4. Merge Sort — Medium
5. Recursive Bubble Sort — Easy
6. Recursive Insertion Sort — Easy
7. Quick Sort — Easy

Step 3 : Solve Problems on Arrays [Easy -> Medium -> Hard]

- 1. Largest Element in an Array — Easy
2. Second Largest Element in an Array without sorting — Easy
3. Check if the array is sorted — Easy
4. Remove duplicates from Sorted array — Easy
5. Left Rotate an array by one place — Easy
6. Left rotate an array by D places — Easy
7. Move Zeros to end — Easy
8. Linear Search — Easy
9. Find the Union — Medium
10. Find missing number in an array — Easy
11. Maximum Consecutive Ones — Easy

12. Find the number that appears once, and other numbers twice. Medium
13. Longest subarray with given sum K(positives) Medium
14. Longest subarray with sum K (Positives + Negatives) Medium
- 15. 2Sum Problem Medium
16. Sort an array of 0's 1's and 2's Medium
17. Majority Element (>n/2 times) Easy
18. Kadane's Algorithm, maximum subarray sum Easy
19. Print subarray with maximum subarray sum (extended version of above problem) Medium
20. Stock Buy and Sell Easy
21. Rearrange the array in alternating positive and negative items Medium
22. Next Permutation Medium
23. Leaders in an Array problem Easy
24. Longest Consecutive Sequence in an Array Medium
25. Set Matrix Zeros Medium
26. Rotate Matrix by 90 degrees Medium
27. Print the matrix in spiral manner Medium
28. Count subarrays with given sum Easy
- 29. Pascal's Triangle Medium
30. Majority Element (n/3 times) Medium
31. 3-Sum Problem Medium
32. 4-Sum Problem Hard
33. Largest Subarray with 0 Sum Medium
34. Count number of subarrays with given xor K Hard
35. Merge Overlapping Subintervals Medium
36. Merge two sorted arrays without extra space Medium
37. Find the repeating and missing number Hard
- 38. Count Inversions Hard
39. Reverse Pairs Hard
40. Maximum Product Subarray Easy

Step 4 : Binary Search [1D, 2D Arrays, Search Space]

1. Binary Search to find X in sorted array	Easy
2. Implement Lower Bound	Easy
3. Implement Upper Bound	Easy
4. Search Insert Position	Easy
5. Floor/Ceil in Sorted Array	Medium
6. Find the first or last occurrence of a given number in a sorted array	Easy
7. Count occurrences of a number in a sorted array with duplicates	Easy
8. Search in Rotated Sorted Array I	Medium
9. Search in Rotated Sorted Array II	Medium
10. Find minimum in Rotated Sorted Array	Medium
11. Find out how many times has an array been rotated	Easy
12. Single element in a Sorted Array	Easy
13. Find peak element	Hard
14. Find square root of a number in log n	Medium
15. Find the Nth root of a number using binary search	Medium
16. Koko Eating Bananas	Hard
17. Minimum days to make M bouquets	Hard
18. Find the smallest Divisor	Easy
19. Capacity to Ship Packages within D Days	Hard
20. Kth Missing Positive Number	Easy
21. Aggressive Cows	Hard
22. Book Allocation Problem	Hard
23. Split array - Largest Sum	Hard
24. Painter's partition	Hard
25. Minimize Max Distance to Gas Station	Hard
26. Median of 2 sorted arrays	Hard
27. Kth element of 2 sorted arrays	Medium
28. Find the row with maximum number of 1's	Easy
29. Search in a 2 D matrix	Medium
30. Search in a row and column wise sorted matrix	Medium
31. Find Peak Element (2D Matrix)	Hard

32. Matrix Median Hard

Step 5 : Strings [Basic and Medium]

- 1. Remove outermost Paranthesis Easy
  2. Reverse words in a given string / Palindrome Check Easy
  3. Largest odd number in a string Easy
  4. Longest Common Prefix Easy
  5. Isomorphic String Easy
  6. check whether one string is a rotation of another Medium
  7. Check if two strings are anagram of each other Medium
- 8. Sort Characters by frequency Easy
  9. Maximum Nesting Depth of Paranthesis Easy
  10. Roman Number to Integer and vice versa Easy
  11. Implement Atoi Medium
  12. Count Number of Substrings Medium
  13. Longest Palindromic Substring[Do it without DP] Hard
  14. Sum of Beauty of all substring Medium
  15. Reverse Every Word in A String Easy

Step 6 : Learn LinkedList [Single LL, Double LL, Medium, Hard Problems]

- 1. Introduction to LinkedList, learn about struct, and how is node represented Easy
  2. Inserting a node in LinkedList Easy
  3. Deleting a node in LinkedList Medium
  4. Find the length of the linkedlist [learn traversal] Easy
  5. Search an element in the LL Easy

- 6. Introduction to DLL, learn about struct, and how is node represented — Easy
  7. Insert a node in DLL — Easy
  8. Delete a node in DLL — Medium
  9. Reverse a DLL — Medium
  10. Middle of a LinkedList [TortoiseHare Method] — Easy
  11. Reverse a LinkedList [Iterative] — Easy
  12. Reverse a LL [Recursive] — Easy
  13. Detect a loop in LL — Medium
  14. Find the starting point in LL — Medium
- 15. Length of Loop in LL — Easy
  16. Check if LL is palindrome or not — Medium
  17. Segrregate odd and even nodes in LL — Medium
  18. Remove Nth node from the back of the LL — Medium
  19. Delete the middle node of LL Medium Sort LL — Medium
  20. Sort a LL of 0's 1's and 2's by changing links — Medium
  21. Find the intersection point of Y LL — Medium
  22. Add 1 to a number represented by LL — Medium
  23. Add 2 numbers in LL — Medium
- 24. Delete all occurrences of a key in DLL — Medium
  25. Find pairs with given sum in DLL — Medium
  26. Remove duplicates from sorted DLL — Medium
  27. Reverse LL in group of given size K — Hard
  28. Rotate a LL — Medium
  29. Flattening of LL — Hard
  30. Clone a Linked List with random and next pointer — Hard

Step 7 : Recursion [PatternWise]

- 1. Recursive Implementation of atoi() Hard
  2. Pow(x, n) Medium
  3. Count Good numbers Easy
  4. Sort a stack using recursion Medium
  5. Reverse a stack using recursion Easy
- 6. Generate all binary strings Medium
  7. Generate Paranthesis Medium
  8. Print all subsequences/Power Set Medium
  9. Learn All Patterns of Subsequences (Theory) Medium
  10. Count all subsequences with sum K Hard
  11. Check if there exists a subsequence with sum K Medium
  12. Combination Sum Medium
  13. Combination Sum-II Medium
  14. Subset Sum-I Medium
  15. Subset Sum-II Medium
  16. Combination Sum - III Hard
  17. Letter Combinations of a Phone number Medium
- 18. Palindrome Partitioning Medium
  19. Word Search Medium
  20. N Queen Hard
  21. Rat in a Maze Hard
  22. Word Break Medium
  23. M Coloring Problem Hard
  24. Sudoko Solver Hard
  25. Expression Add Operators Hard

Step 8 : Bit Manipulation [Concepts & Problems]

- 1. Introduction to Bit Manipulation [Theory] Easy
  2. Check if the i-th bit is set or not Easy
  3. Check if a number is odd or not Easy
  4. Check if a number is power of 2 or not Easy
  5. Count the number of set bits Easy
  6. Set/Unset the rightmost unset bit Easy
  7. Swap two numbers Easy
  8. Divide two integers without using multiplication, division and mod operator Medium
  9. Count number of bits to be flipped to convert A to B Medium
  10. Find the number that appears odd number of times Easy Power Set Medium
  11. Find xor of numbers from L to R Easy
  12. Find the two numbers appearing odd number of times Easy
- 13. Print Prime Factors of a Number Easy
  14. All Divisors of a Number Easy
  15. Sieve of Eratosthenes Medium
  16. Find Prime Factorisation of a Number using Sieve Medium
  17. Power(n, x) Medium

Step 9 : Stack and Queues [Learning, Pre-In-Post-fix, Monotonic Stack, Implementation]

- 1. Implement Stack using Arrays Easy
  2. Implement Queue using Arrays Easy

• 3. Implement Stack using Queue	Medium
4. Implement Queue using Stack	Medium
5. Implement stack using Linkedlist	Easy
6. Implement queue using Linkedlist	Medium
7. Check for balanced paranthesis	Medium
8. Implement Min Stack	Medium
• 9. Infix to Postfix Conversion using Stack	Medium
10. Prefix to Infix Conversion	Medium
11. Prefix to Postfix Conversion	Medium
12. Postfix to Prefix Conversion	Medium
13. Postfix to Infix	Medium
14. Convert Infix To Prefix Notation	Medium
• 15. Next Greater Element	Easy
16. Next Greater Element 2	Medium
17. Next Smaller Element	Easy
18. Number of NGEs to the right	Easy
19. Trapping Rainwater	Hard
20. Sum of subarray minimum	Medium
21. Asteroid Collision	Medium
22. Sum of subarray ranges	Medium
23. Remove k Digits	Medium
24. Largest rectangle in a histogram	Medium
25. Maximal Rectangles	Hard
• 26. Sliding Window maximum	Hard
27. Stock span problem	Medium
28. The Celebrity Problem	Hard
29. LRU cache (IMPORTANT)	Hard
30. LFU cache	Hard

Step 10 : Sliding Window & Two Pointer Combined Problems

- 1. Longest Substring Without Repeating Characters — Medium
  2. Max Consecutive Ones III — Medium
  3. Fruit Into Baskets — Medium
  4. longest repeating character replacement — Medium
  5. Binary subarray with sum — Easy
  6. Count number of nice subarrays — Medium
  7. Number of substring containing all three characters — Medium
  8. Maximum point you can obtain from cards — Medium
- 9. Longest Substring with At Most K Distinct Characters — Medium
  10. Subarray with k different integers — Hard
  11. Minimum Window Substring — Hard
  12. Minimum Window Subsequence — Hard

Step 11 : Heaps [Learning, Medium, Hard Problems]

- 1. Introduction to Priority Queues using Binary Heaps — Medium
  2. Min Heap and Max Heap Implementation — Medium
  3. Check if an array represents a min-heap or not — Medium
  4. Convert min Heap to max Heap — Medium
  5. Kth largest element in an array [use priority queue] — Easy

6. Kth smallest element in an array [use priority queue] Easy
7. Sort K sorted array Easy
8. Merge M sorted Lists Hard
9. Replace each array element by its corresponding rank Easy
10. Task Scheduler Medium
11. Hands of Straights Medium
- 12. Design twitter Medium
13. Connect `n` ropes with minimal cost Medium
14. Kth largest element in a stream of running integers Easy
15. Maximum Sum Combination Medium
16. Find Median from Data Stream Hard
17. K most frequent elements Medium

Step 12 : Greedy Algorithms [Easy, Medium/Hard]

-
1. Assign Cookies Easy
2. Fractional Knapsack Problem Medium
3. Greedy algorithm to find minimum number of coins Medium
4. Lemonade Change Easy
5. Valid Paranthesis Checker Medium
- 6. N meetings in one room Medium
7. Jump Game Medium
8. Jump Game 2 Medium
9. Minimum number of platforms required for a railway Medium
10. Job sequencing Problem Medium Candy Hard
11. Program for Shortest Job First (or SJF) CPU Scheduling Medium
12. Program for Least Recently Used (LRU) Page Replacement Algorithm Medium

13. Insert Interval	Medium
14. Merge Intervals	Medium
15. Non-overlapping Intervals	Medium

Step 13 : Binary Trees [Traversals, Medium and Hard Problems]

• 1. Introduction to Trees	Easy
2. Binary Tree Representation in C++	Easy
3. Binary Tree Representation in Java	Easy
4. Binary Tree Traversals in Binary Tree	Easy
5. Preorder Traversal of Binary Tree	Easy
6. Inorder Traversal of Binary Tree	Easy
7. Post-order Traversal of Binary Tree	Easy
8. Level order Traversal / Level order traversal in spiral form	Easy
9. Iterative Preorder Traversal of Binary Tree	Easy
10. Iterative Inorder Traversal of Binary Tree	Easy
11. Post-order Traversal of Binary Tree using 2 stack	Easy
12. Post-order Traversal of Binary Tree using 1 stack	Medium
13. Preorder, Inorder, and Postorder Traversal in one Traversal	Medium
• 14. Height of a Binary Tree	Medium
15. Check if the Binary tree is height-balanced or not	Medium
16. Diameter of Binary Tree	Medium
17. Maximum path sum	Hard

18. Check if two trees are identical or not — Medium
19. Zig Zag Traversal of Binary Tree — Easy
20. Boundary Traversal of Binary Tree — Medium
21. Vertical Order Traversal of Binary Tree — Easy
22. Top View of Binary Tree — Easy
23. Bottom View of Binary Tree — Medium
24. Right/Left View of Binary Tree — Medium
25. Symmetric Binary Tree — Medium
- 26. Root to Node Path in Binary Tree — Medium
27. LCA in Binary Tree — Medium
28. Maximum width of a Binary Tree — Medium
29. Check for Children Sum Property — Hard
30. Print all the Nodes at a distance of K in a Binary Tree — Medium
31. Minimum time taken to BURN the Binary Tree from a Node — Hard
32. Count total Nodes in a COMPLETE Binary Tree — Medium
33. Requirements needed to construct a Unique Binary Tree | Theory — Medium
34. Construct Binary Tree from inorder and preorder — Hard
35. Construct the Binary Tree from Postorder and Inorder Traversal — Hard
36. Serialize and deserialize Binary Tree — Hard
37. Morris Preorder Traversal of a Binary Tree — Medium
38. Morris Inorder Traversal of a Binary Tree — Medium
39. Flatten Binary Tree to LinkedList — Hard

Step 14 : Binary Search Trees [Concept and Problems]

- 1. Introduction to Binary Search Tree — Easy
  2. Search in a Binary Search Tree — Easy
  3. Find Min/Max in BST — Medium
  4. Ceil in a Binary Search Tree — Easy
  5. Floor in a Binary Search Tree — Easy
  6. Insert a given Node in Binary Search Tree — Easy
  7. Delete a Node in Binary Search Tree — Medium
  8. Find K-th smallest/largest element in BST — Medium
  9. Check if a tree is a BST or BT — Medium
  10. LCA in Binary Search Tree — Medium
  11. Construct a BST from a preorder traversal — Medium
  12. Inorder Successor/Predecessor in BST — Medium
  13. Merge 2 BST's — Hard
  14. Two Sum In BST | Check if there exists a pair with Sum K — Medium
  15. Recover BST | Correct BST with two nodes swapped — Hard
  16. Largest BST in Binary Tree — Hard

Step 15 : Graphs [Concepts & Problems]

- 1. Graph and Types — Easy
  2. Graph Representation | C++ — Easy
  3. Graph Representation | Java — Easy
  4. Connected Components | Logic Explanation — Hard
- 5. BFS — Medium
  6. DFS — Hard
- 7. Number of provinces (leetcode) — Medium
  8. Connected Components Problem in Matrix — Hard

9. Rotten Oranges Medium
10. Flood fill Hard
- 11. Cycle Detection in unirected Graph (bfs) Hard
12. Cycle Detection in undirected Graph (dfs) Hard
13. 0/1 Matrix (Bfs Problem) Medium
14. Surrounded Regions (dfs) Hard
15. Number of Enclaves [flood fill implementation - multisource] Hard
16. Word ladder - 1 Hard
17. Word ladder - 2 Hard
18. Number of Distinct Islands [dfs multisource] Hard
19. Bipartite Graph (DFS) Medium
20. Cycle Detection in Directed Graph (DFS) Hard
- 21. Topo Sort Hard
22. Kahn's Algorithm Hard
23. Cycle Detection in Directed Graph (BFS) Hard
24. Course Schedule - I Hard
25. Course Schedule - II Hard
26. Find eventual safe states Hard
27. Alien dictionary Hard
- 28. Shortest Path in UG with unit weights Hard
29. Shortest Path in DAG Hard
30. Djisktra's Algorithm Hard
31. Why priority Queue is used in Djisktra's Algorithm Medium
32. Shortest path in a binary maze Medium
33. Path with minimum effort Medium
34. Cheapest flights within k stops Hard
35. Network Delay time Medium
36. Number of ways to arrive at destination Medium
37. Minimum steps to reach end from start by performing multiplication and mod operations with array elements Hard
38. Bellman Ford Algorithm Hard
39. Floyd Warshal Algorithm Hard
40. Find the city with the smallest number of neighbors in a threshold distance Hard
41. Minimum Spanning Tree Hard

42. Prim's Algorithm Hard
43. Disjoint Set [Union by Rank] Hard
44. Disjoint Set [Union by Size] Hard
45. Kruskal's Algorithm Hard
46. Number of operations to make network connected Medium
47. Most stones removed with same rows or columns Medium
48. Accounts merge Hard
49. Number of island II Hard
50. Making a Large Island Hard
51. Swim in rising water Hard
- 52. Bridges in Graph Hard
53. Articulation Point Hard
54. Kosaraju's Algorithm Hard

Step 16 : Dynamic Programming [Patterns and Problems]

-
- 1. Dynamic Programming Introduction Medium
2. Climbing Stars Medium
3. Frog Jump(DP-3) Medium
4. Frog Jump with k distances(DP-4) Medium
5. Maximum sum of non-adjacent elements (DP 5) Medium
6. House Robber (DP 6) Medium
- 7. Ninja's Training (DP 7) Medium
8. Grid Unique Paths : DP on Grids (DP8) Medium
9. Grid Unique Paths 2 (DP 9) Medium
10. Minimum path sum in Grid (DP 10) Medium
11. Minimum path sum in Triangular Grid (DP 11) Medium
12. Minimum/Maximum Falling Path Sum (DP-12) Medium

13. 3-d DP : Ninja and his friends (DP-13) Medium
- 14. Subset sum equal to target (DP- 14) Medium
15. Partition Equal Subset Sum (DP- 15) Medium
16. Partition Set Into 2 Subsets With Min Absolute Sum Diff (DP- 16) Medium
17. Count Subsets with Sum K (DP - 17) Medium
18. Count Partitions with Given Difference (DP - 18) Medium
19. Assign Cookies Hard
20. Minimum Coins (DP - 20) Hard
21. Target Sum (DP - 21) Medium
22. Coin Change 2 (DP - 22) Hard
23. Unbounded Knapsack (DP - 23) Hard
24. Rod Cutting Problem | (DP - 24) Hard
25. Longest Common Subsequence | (DP - 25) Hard
26. Print Longest Common Subsequence | (DP - 26) Hard
27. Longest Common Substring | (DP - 27) Hard
28. Longest Palindromic Subsequence | (DP-28) Hard
29. Minimum insertions to make string palindrome | DP-29 Hard
30. Minimum Insertions/Deletions to Convert String | (DP- 30) Hard
31. Shortest Common Supersequence | (DP - 31) Hard
32. Distinct Subsequences| (DP-32) Hard
33. Edit Distance | (DP-33) Hard
34. Wildcard Matching | (DP-34) Medium
35. Best Time to Buy and Sell Stock |(DP-35) Hard
36. Buy and Sell Stock - II|(DP-36) Hard
37. Buy and Sell Stocks III|(DP-37) Hard
38. Buy and Stock Sell IV |(DP-38) Hard
39. Buy and Sell Stocks With Cooldown|(DP-39) Hard
40. Buy and Sell Stocks With Transaction Fee|(DP-40) Hard
41. Longest Increasing Subsequence |(DP-41) Hard
42. Printing Longest Increasing Subsequence|(DP-42) Hard
43. Longest Increasing Subsequence |(DP-43) Hard
44. Largest Divisible Subset|(DP-44) Hard
45. Longest String Chain|(DP-45) Hard

46. Longest Bitonic Subsequence |(DP-46) Hard
47. Number of Longest Increasing Subsequences|(DP-47) Hard
48. Matrix Chain Multiplication|(DP-48) Hard
49. Matrix Chain Multiplication | Bottom-Up|(DP-49) Hard
50. Minimum Cost to Cut the Stick|(DP-50) Hard
51. Burst Balloons|(DP-51) Hard
52. Evaluate Boolean Expression to True|(DP-52) Hard
53. Palindrome Partitioning - II|(DP-53) Hard
54. Partition Array for Maximum Sum|(DP-54) Hard
- 55. Maximum Rectangle Area with all 1's|(DP-55) Hard
56. Count Square Submatrices with All Ones|(DP-56) Hard

Step 17 : Tries

-
1. Implement TRIE | INSERT | SEARCH | STARTSWITH Hard
2. Implement Trie - 2 (Prefix Tree) Hard
3. Longest String with All Prefixes Medium
4. Number of Distinct Substrings in a String Hard
5. Bit PreRequisites for TRIE Problems Hard
6. Maximum XOR of two numbers in an array Medium
7. Maximum XOR With an Element From Array Hard

Step 18 : Strings

1. Minimum number of bracket reversals needed to make an expression balanced Medium
2. Count and say Medium
3. Hashing In Strings | Theory Medium
4. Rabin Karp Hard
5. Z-Function Easy
6. KMP algo / LPS(pi) array Hard
7. Shortest Palindrome Hard
8. Longest happy prefix Hard
9. Count palindromic subsequence in given string Hard