Arrays

1. Find Majority Element in an array
2. Rotate Array
3. Single Number
4. How Many Numbers Are Smaller Than the Current Number [Leetcode]
5. Sort Array by Parity: Problem Statement [Leetcode]
6. Create Target Array in the Given Order [Leetcode]
7. Replace Elements with Greatest Element on Right Side [Leetcode]
8. Shortest Unsorted Continuous Sub array [Leetcode]
9. Find Leaders in an array
10. Search in Rotated Sorted Array
11. Sort Colors
12. Inversions in an array
13. Increasing Triplet Subsequence
14. Partition Equal Subset Sum
15. Array Product Problem
16. Find two Missing Numbers in a Sequence of Consecutive Numbers
17. Find two repeating elements in an array
18. Merge Overlapping Intervals
19. Rotate Matrix by 90 degrees
20. 3 Sum : Problem Statement [Leetcode]
21. Set Matrix Zeros: Problem statement [Leetcode]
22. Count Negative numbers in a sorted matrix [Leetcode]
23. The K Weakest Rows in a Matrix [Leetcode]
24. Median Of two sorted arrays
25. First Missing Positive: Problem Statement [Leetcode]
26. Find Numbers with Even Number of Digits [Leetcode]
27. Game of Life: Problem Statement [Leetcode]

Backtracking

1. Write a Program for N Queen Problem
2. Write a Program for Sudoku
3. Write a Program for Rat in a Maze
4. Letter Combinations of a phone number: Problem Statement [Leetcode]
5. Permutations: Problem Statement [Leetcode]
6. Permutations: Backtracting Introduction [Leetcode]
7. Word Search: Problem Statement [leetcode]
8. Generate Parenthesis: Problem Statement [Leetcode]
9. Knight Probability in Chessboard: Practice Problem
10. Subsets

Divide And Conquer

1. Find the missing number in Arithmetic Progression
2. Write a Program for Median of two sorted arrays
3. Write a Program for Find a peak element
4. Write a Program for Count Inversions in an array
5. The skyline problem

Dynamic

1. Longest Palindromic sub sequence
2. Climbing stairs problem
3. Rod cutting Problem
4. Count all possible paths in a Grid
5. Coin Change Problem
6. Minimum Cost path Problem
7. Fill a N*4 wall with 1*4 bricks problem
8. Levenshtein/Edit Distance Problem
9. Egg dropping Problem
10. Longest Increasing Subsequence (O(nlogn))
11. Subset Sum Problem
12. Unique Paths: Problem Statement [Leetcode]
13. Unique Binary Search Trees: Problem Statement [Leetcode]
14. House Robber: Problem Statement [Leetcode]
15. Longest Palindromic Substring: Problem Statement [Leetcode]
16. Write a Program for Maximum size square sub-matrix with all 1s
17. Longest Valid Parentheses
18. Binary Tree Cameras
19. Write a Program for Partition problem
20. Write a Program for Maximum sum rectangle in a 2D matrix

Graph

1. Write a Program for Check whether a given graph is Bipartite or not
2. Clone Graph: Problem Statement [Leetcode]
3. Rotting Oranges: Problem Statement [Leetcode]
4. Number of Islands: Problem Statement [Leetcode]
5. Critical Connections in a Network: Problem Statement [Leetcode]
6. Bridges and Articulation points
7. Write a Program for Detect cycle in an undirected graph
8. Given a boolean 2D matrix, find the number of islands. A group of connected 1s forms an island.

Greedy

1. Given weights and values of n items, we need to put these items in a knapsack of capacity W to get the maximum total value in the knapsack.
2. Minimum Swaps for Bracket Balancing
3. Given a universe of n elements, collection of subsets. Find a minimum cost sub collection that covers all elements.
4. Water Connection Problem
5. Minimum Number of Arrows to Burst Balloons: Problem Statement [Leetcode]
6. Partition Labels: Problem Statement [Leetcode]

Heap

1. K'th Largest/Smallest Element in an array
2. K'th largest element in a stream
3. Find Median in a stream of integers (running integers) (Practice Problem)
4. Connect n ropes with minimum cost
5. Convert min heap to max heap
6. Finding K-Most frequent words in a text-file
7. K Closest points to origin: Problem Statement [Leetcode]
8. Top K Frequent Elements: Problem Statement [Leetcode]
9. Sort a nearly sorted (or K sorted) array
10. Merge k sorted arrays
11. Tournament Tree (Winner Tree) and Binary Heap

LinkedList

1. Remove Nth node from End of a linked list
2. Assignment Problem 3 on kth node of the linked list from the end of the list
3. Assignment Problem 1 on detect loop in the linked list
4. Assignment Problem 2 on detect loop in the linked list
5. Palindrome Linked List
6. Assingment Problem 1 on Palindrome linked list
7. Assignment problem 1 on Intersection of two linked list
8. Alternative split of singly Linked list
9. Assignment problem 1 Alternating split of Linked list
10. Assignment problem 2 Alternating split of linked list
11. Assignment problem 3 Alternating split of linked list
12. Clone List with Random Pointer
13. XOR Linked List - A Memory Efficient Doubly Linked List
14. Add Two numbers
15. Assignment Problem 1 on Add two linked list
16. Split a Circular Linked List into two halves
17. Reverse K alternative nodes in a linked list
18. Assignment Problem 1 on Reverse alternate k nodes
19. Assignment problem 2 on Reverse Alternative K nodes
20. Merge Two Sorted Linked Lists

21. Assignment Problem 1 on Merge Two sorted Linked lists
22. Assignment Problem 2 on Merge Two sorted Linked lists
23. Flattening a Linked List
24. Merge sort for Linked List
25. Assignment problem 1 on Merge sort
26. Union and Intersection of two Linked Lists
27. Assignment problem 1 on Union and intersection
28. Swap Nodes in pairs (practice)
29. Assignment Problem 1 on Swap Nodes in a pairs
30. Find Next Greater Node In a Linked List(practice)
31. Rotate Linked List(practice)
32. Assignment problem 1 on remove duplicates from sorted linked list.
33. Find Middle Element in a linked list
34. Remove Duplicates from Sorted linked list
35. Odd Even Linked list
36. Inserted Into a sorted circular linked list

MathAndBit

1. Single Number 11: Problem Statement [Leetcode]
2. Number of 1 Bits: Problem Statement [Leetcode]
3. Counting Bits: Problem Statement [Leetcode]
4. Maximum Product of Word Lengths: Problem Statment [Leetcode]
5. Total Hamming distance: Problem Statement [Leetcode]
6. pow(x, n) : problem statement [Leetcode]

SearchingAndSorting

1. Sort an array of 0's, 1's and 2's
2. K'th Smallest/Largest Element in Unsorted Array
3. Wiggle Sort [Leetcode]
4. Find Peak Element [Leetcode]
5. Count 1's in a sorted binary array
6. Sort a nearly sorted (or K sorted) array

StackAndQueues

1. Design a stack such that getMinium() should be O(1) time and O(1) space
2. Print Next Greater Element
3. Design and Implement Special Stack Data Structure. push(), pop(), getMinimum(), findMiddleElement(), deleteMiddleElement()
4. Check if parenthesis are balanced or not
5. Stock Span Problem
6. The Celebrity Problem

7. Reverse a stack using recursion
8. Implement two stacks in single array
9. Implement stack using Queues
10. Largest Rectangle in Histogram: Problem Statement [Leetcode]
11. Write a Program for Implement Queue using Stacks
12. Trapping Rain Water: Problem Statement [Leetcode]
13. Asteroid Collision: Problem Statement [Leetcode]

String

1. Remove all duplicates from the input string.
2. Run Length Encoding
3. Remove all adjacent duplicate characters in a string
4. First Non-repeating character in a string
5. Find first non-repeating character in a stream
6. Find the smallest window in a string containing all characters of another string
7. Print all anagrams in a list of words
8. Rearrange Characters to form a palindrome
9. Reorder Data In log files
10. Decode Ways: Problem Statement [Leetcode]
11. Longest Common Prefix: Problem Statement [Leetcode]
12. Reorganize String: Problem Statement [Leetcode]
13. Group Anagrams: Problem Statement [Leetcode]
14. Sort Characters By Frequency
15. check if strings are rotations of each other or not
16. Find all distinct palindromic sub strings of a given string
17. Find a excel column name from a given column number.
18. Write a Program for String matching where one string contains wildcard characters
19. Naive String Matching
20. KMP
21. Rabin Karp

Tree

1. Count number of nodes in the binary tree
2. Check if two trees are identical or not
3. Level Order Tree Traversal
4. Convert a Binary Tree into its Mirror Tree
5. Print Ancestors of a given node in Binary Tree
6. Find Lowest Common Ancestor in a Binary Search Tree
7. Print Lowest Common Ancestor in a Binary Tree
8. Children Sum Property in a Binary Tree
9. count leaf nodes in a binary tree
10. Construct a binary tree from in order and post order traversals
11. Convert a given tree to its Sum Tree

12. Find the maximum sum leaf to root path in a Binary Tree

13. Find Diameter of a Binary Tree

14. Convert a given Binary Tree to Doubly Linked List

15. Vertical Traversal of binary tree

16. In order Tree Traversal without recursion and without stack (Threaded binary tree)

17. Serialize and deserialize of a binary tree

18. Boundary Traversal of a Binary Tree

19. Merge Two binary trees [Leetcode]

20. Range Sum of Binary Search Tree [Leetcode]

21. Trim a BInary Search Tree (Practice Problem)

22. Search in a Binary Search Tree [Leet code]

23. Print Right View of a Binary Tree

24. Invert Binary Tree [Leetcode]

25. Given a binary tree, find its maximum depth. [Leetcode]

26. Path Sum [Leetcode]

27. Leaf-Similar Trees

28. Find the sum of all left leaves in a given binary tree. [Leetcode]

29. Given two binary trees, write a function to check if they are the same or not [Leetcode]

30. All Elements in Two Binary Search Trees [Leetcode]

31. Maximum Binary Tree: Problem Statement [Leetcode]

32. Binary Tree Pruning: Problem Statement [Leetcode]

33. Validate Binary Search Tree: Problem Statement [Leetcode]

34. Binary Tree Zigzag Level Order Traversal: Problem Statement [Leetcode]

35. Populating Next Right Pointers in Each Node: Problem Statement [Leetcode]

36. Binary Tree Right Side View: Problem Statement [Leetcode]

37. Kth Smallest Element in a BST: Problem Statement [Leetcode]