**ARRAYS**

1. GCD of 2 numbers.
2. Merge two sorted arrays
3. Merge two sorted arrays with O(1) extra space
4. Implement in-place Heap Sorting
5. Find kth largest (smallest) element in the array
6. Find the kth largest (smallest) element in a row-wise and column-wise sorted 2D array
7. Stock buy/sell to maximize profit.
8. Minimum number of platforms required for railway station.
9. Implement quick sort
10. Implement merge sort
11. Find next greater element for every element in an array
12. Find largest sum contiguous subarray in an array.
13. Find the 2 elements in an array whose sum is closest to 0.
14. Find all pairs in an array with a given sum.
15. Replace every element in an array with the least greater element on its right.
16. Check if a given array can be represented as a preorder traversal of a BST.
17. Find 2 non repeating elements in an array of repeating elements.
18. Find a peak element in an array.
19. Minimum number of swaps required for arranging pairs adjacent to each other.
20. Find the row with max number of 1’s in a 2D matrix of 1’s and 0’s with 1’s occurring after 0’s.
21. Merge overlapping intervals
22. Search in a row wise and column wise sorted matrix.
23. Find zeroes to be flipped so that number of consecutive 1’s is maximized.
24. Find largest subarray with equal number of 0’s and 1’s in an array of 0’s and 1’s.
25. Given a Boolean matrix mat[M][N] of 0’s and 1’s, modify it such that if a matrix cell mat[i][j] is 1 then make all the cells of ith row and jth column is 1.
26. Trapping rain water.
27. Count inversions in an array.
28. Equilibrium index of an array.
29. Find subarray with given sum (Non negative numbers).

**LINKED LIST**

1. Reversing a linked list
2. Reverse a linked list in groups of given size.
3. Adding two numbers represented as linked list. Eg: 1->2->3 + 4->5 = 1->6->8
4. Check if a linked list is palindrome
5. Remove duplicates from an unsorted linked list.
6. Merge Sort for Linked List.
7. Given a linked list, delete nodes which have a greater value on right side.
8. Find the intersection point of 2 linked lists.
9. Detection of loop in singly linked list and removing the loop

**STRINGS**

1. Count the frequency of each word in a sentence.
2. Reverse the order of words in a sentence.
3. Given 2 string s1 and s2. Delete from s2 all those characters which occur in s1.
4. Print all combinations of a string with both uppercase and lowercase without altering the positions of the letters. Ex. “The” -> “THE, tHE, ThE, thE, THe, tHe, The, the”
5. Print all permutations in sorted (lexicographic) order.
6. Remove all duplicates from input string.
7. Print all interleavings of given 2 strings.

**TREES**

1. Count number of leaves in a binary tree.
2. Count number of nodes in a binary tree.
3. Calculate height of a binary tree.
4. Level order traversal of a tree.
5. Finding max and min values in a BST.
6. Check if a binary tree is a BST.
7. Print all ancestors of a node in a binary tree.
8. Print lowest common ancestors of 2 nodes.
9. Check if 2 nodes are cousins in a binary tree.
10. Level order traversal of a tree in spiral form.
11. Connect nodes at same level.
12. Add all greater values to every node in a given BST.
13. Find a pair with given sum in a balanced BST.
14. Boundary traversal of a binary tree.
15. Diameter of a binary tree.
16. Maximum width of binary tree.
17. Root to leaf path sum equal to a given number.
18. Convert a binary tree into its mirror tree.
19. Check if a given binary tree is a Sum tree.

**STL Maps, Hashmap, Sets etc**

1. Print binary tree in vertical order.
2. Find number of employees under every employee
3. Find itinerary from a given list of tickets.
4. Find 4 elements a, b, c, d in an array such that a+b = c+d.

**Dynamic Programming**

1. Count all possible paths from top left to bottom right of a m x n matrix.
2. Longest common subsequence.
3. Edit distance.
4. Coin change problem.
5. Longest increasing subsequence
6. Minimum number of jumps to reach end.
7. Longest palindromic subsequence.
8. Longest palindromic substring.
9. Find maximum size square submatrix with all 1’s in a matrix of 0’s and 1’s.
10. Partition problem.

**GRAPHS**

1. BFS
2. DFS
3. Topological Sorting
4. Find number of islands.