

# DSA College Interview Preparation Checklist

## 1. Arrays

- Traversal, Insertion, Deletion
- Two Pointers
- Sliding Window
- Prefix Sum
- Kadanes Algorithm
- Merge Intervals
- Dutch National Flag
- Rotate Array

## 2. Strings

- Palindrome Check
- Longest Common Prefix
- Anagram Check
- Remove Duplicates
- String Matching (KMP)
- Longest Palindromic Substring

## 3. Hashing

- HashMap, HashSet
- Two Sum
- Group Anagrams
- Longest Consecutive Subsequence

## 4. Searching & Sorting

- Binary Search
- Lower/Upper Bound
- Merge Sort
- Quick Sort
- Counting Sort
- Search in Rotated Sorted Array

## 5. Recursion & Backtracking

# DSA College Interview Preparation Checklist

- Subsets/Combinations
- Permutations
- N-Queens
- Sudoku Solver
- Rat in a Maze
- Word Search

## 6. Linked List

- Reverse Linked List
- Detect Loop
- Merge Two Lists
- Remove N-th Node
- Intersection of Two Lists
- Palindrome Linked List

## 7. Stack & Queue

- Next Greater Element
- Valid Parentheses
- Stack using Queue
- Min Stack
- LRU Cache
- Sliding Window Maximum

## 8. Trees

- Tree Traversals
- Height of Tree
- Lowest Common Ancestor
- Balanced Tree
- Symmetric Tree
- Diameter
- BST Basics
- BST to DLL/Array

# DSA College Interview Preparation Checklist

## 9. Heaps

- Heapify
- Build Heap
- Kth Largest Element
- Merge K Sorted Lists
- Top K Frequent Elements

## 10. Graphs

- DFS, BFS
- Detect Cycle
- Topological Sort
- Dijkstras Algorithm
- Union Find
- Kruskals, Prims

## 11. Greedy Algorithms

- Activity Selection
- Fractional Knapsack
- Job Sequencing
- Huffman Encoding

## 12. Dynamic Programming

- 0/1 Knapsack
- Subset Sum
- Coin Change
- LCS
- LIS
- Matrix Chain Multiplication
- Edit Distance

## 13. Bit Manipulation

- Power of 2
- Count Set Bits

## **DSA College Interview Preparation Checklist**

- XOR Tricks
- Find Unique Number
- Bitmasking