

# **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**

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- 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

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## **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