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SDE SHEET – A Complete Guide for SDE Preparation

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Here is a curated list of the most popular questions among important topics, such as Programming Languages, Data Structure and Algorithms (DSA), CS Subjects, Aptitude, etc, asked in the Software Development Engineer Interviews.

- This sheet contains a wide range of coding questions from different Data Structures and Algorithms.
- It covers all the segments round-wise like MCQs, DSA (Coding Questions), CS Subjects, Puzzles, System Design, Projects.
- It is helpful for both **Students and Experienced**.

Data Structures and Algorithms (250)

Below are the list of top problems topic wise:

Arrays (21)

Find Missing and Repeating element	Easy
Stock Buy and Sell – Max one Transaction Allowed	Easy

Convert Array into Zig-Zag fashion	Easy
Find third largest element	Easy
Check Pair Sum in a Sorted and Rotated Array	Medium
Sort an array of 0s, 1s, and 2s	Medium
Rotate Array K times	Medium
Find Majority Element	Medium
Maximum Subarray Sum – Kadane's Algorithm	Medium
Stock Buy and Sell – Multiple Transaction Allowed	Medium
Next Permutation	Medium
Maximum Product Subarray	Medium
Maximize i*arr[i] among all Rotations of Array	Medium
Rearrange Array in Max Min Form	Medium
Find Smallest Missing Positive Number	Medium
Minimum Jumps to Reach End	Medium
Trapping Rain Water	Hard

Maximum Circular Subarray Sum	Hard
Closest Palindrome Number	Hard
Stock Buy and Sell – Max 2 Transactions Allowed	Hard

Sorting (13)

Important Sorting Algorithms: Bubble Sort, Selection Sort, Insertion Sort, Merge Sort, Quick Sort, Cycle Sort, Counting Sort, Bucket Sort, Heap Sort, Radix Sort

Maximum Meetings in One Room	Easy
Chocolate Distribution Problem	Easy
Find a Pair with the given difference	Easy
Form the Largest Number	Medium
Merge Two Sorted Arrays Without Extra Space	Medium
Count Inversions of an Array	Medium
Meeting Rooms – II	Medium
Merge Overlapping Intervals	Medium
Minimum Swaps to Sort	Medium

Minimize the Maximum Difference between the Heights	Medium
Find k largest elements in an array (Quick Sort Method)	Medium
3 Sum – Triplet Sum in Array	Medium
4 Sum – All Quadruples	Medium

Strings (14)

First Repeated Character	Easy
Reverse Words	Easy
Roman Number to Integer	Easy
Check Anagram	Easy
Remove Duplicates	Easy
Longest Substring Without Repeating Characters	Medium
Rabin-Karp Algorithm	Medium
Z algorithm	Medium
Longest Palindromic Substring	Medium

Look-and-Say Sequence	Medium
Number to English Words	Medium
KMP Algorithm	Hard
Minimum Characters to Add at Front for Palindrome	Hard
Smallest Window Containing All Characters of Another String	Hard

Hashing (15)

At least K Occurences	Easy
Common Elements in Two Arrays	Easy
Longest Subarray with 0 Sum	Medium
Count Distinct Elements In Every Window of Size K	Medium
4 Sum – Count Quadruplets with Given Sum	Medium
Check If Array Pair Sums Divisible by k	Medium
Longest Consecutive Subsequence	Medium
Count Subarrays having Sum K	Medium

Longest Subarray With Sum K	Medium
Longest Subarray With Sum Divisible By K	Medium
Sort according to an Array	Medium
Group Anagrams Together	Medium
Count Maximum Points on Same Line	Hard
LFU cache	Hard
Minimum Window Substring	Hard

Binary Search (10)

Binary Search Algorithm	Easy
N-th root of a number	Easy
Single Element in a Sorted Array	Medium
Search in a Sorted and Rotated Array	Medium
Sum of Middle Elements of two Sorted Arrays	Medium
First and Last Occurrence	Medium

Median of two Sorted Arrays	Hard
Median in a Row-wise sorted Matrix	Hard
Allocate Minimum Pages	Hard
Aggressive Cows	Hard

Matrix (6)

Find the row with maximum number of 1s	Easy
Rotate an Image 90 Degree Clockwise	Medium
Spirally traversing a matrix	Medium
Search in a Sorted Matrix	Medium
Set Matrix Rows and Columns to Zeroes	Medium
Max rectangle in Binary Matrix	Hard

Recursion and Backtracking (13)

Find all Unique Subsets	Medium
Generate Sums of all Subsets	Medium

Tower of Hanoi	Medium
Generate all Unique Permutations	Medium
Rat in a Maze	Medium
Combination Sum (Repeated Selection)	Medium
Combination Sum II (Single Selection)	Medium
Generate all Palindromic Partitions	Medium
Generate Valid IP Addresses	Medium
Word Search	Medium
N-Queen Problem	Hard
Solve Sudoku	Hard
Word Break	Hard

Stack (10)

Validate Parentheses	Easy
Implement two Stacks in an Array	Medium

The Stock Span Problem	Medium
Next Greater Element	Medium
Get Min from Stack	Medium
Evaluation of Postfix Expression	Medium
Longest Valid Parentheses Substring	Medium
Largest Rectangular Area in a Histogram	Hard
Maximum of Minimum for Every Window Size	Hard
Implement K Stacks in an Array	Hard

Queue (3)

Moving Average from Data Stream	Easy
Design Circular Queue	Medium
Stream First Non-repeating	Medium

Deque (3)

Maximum of all subarrays of size K	Medium

Longest Subarray with Absolute Difference Less than or Equal to K	Medium
Shortest Subarray with Sum at Least K	Hard

Stack + Queue (2)

Stack using Queues	Easy
Queue using Stacks	Easy

Heap (10)

Connect Ropes with Minimum Cost	Easy
Implement Binary Heap	Medium
Rearrange String to Avoid Adjacent Duplicates	Medium
Kth Largest Element	Medium
Merge k Sorted Arrays	Medium
Top K Frequent Elements	Medium
Merge K Sorted Linked Lists	Medium
Kth Smallest Element in Matrix	Medium

Sort a K Sorted Array	Medium
Find Median in Stream	Hard

Bit Manipulation (12)

Important Bit operations: Set, Clear and Toggle a Bit, Strip Last Set Bit, Count Set Bits

K-th Bit is Set or Not	Easy
Swap 2 Numbers using XOR	Easy
Check if a Number is a Power of 2	Easy
Rightmost Set Bit	Easy
Rightmost Different Bit	Easy
Toggle Bits in Given Range	Easy
Single in Couples	Easy
Division without *, /, or %	Medium
Count Set Bits from 1 to N	Medium
Generate Subsets using Bit Manipulation	Medium

Find Two Numbers with Odd Occurrences	Medium
Maximum Subset XOR	Hard

Linked List (16)

Find Middle of the Linked List	Easy
Reverse a Linked List	Easy
Kth from End of Linked List	Easy
Pairwise Swap Elements of Linked List	Easy
Sort a linked list of 0s, 1s and 2s	Medium
Rotate a Linked List K times	Medium
Intersection in Y Shaped Lists	Medium
Detect Loop in Linked List	Medium
Remove loop in Linked List	Medium
Flattening a Linked List	Medium
Merge two Sorted Linked Lists	Medium

Add Two Numbers Represented as Linked List	Medium
Palindrome Linked List	Medium
Linked List Group Reverse	Hard
Clone a Linked List with Next and Random Pointer	Hard
LRU Cache	Hard

Binary Tree (19)

Important Traversal: Inorder, Preorder, Postorder, Level Order

Level Order Traversal in Spiral Form	Easy
Height of Binary Tree	Easy
Balanced Tree Check	Easy
Check Symmetric Tree	Easy

Check Identical Trees	Easy
Left View of Binary Tree	Easy
Top View of Binary Tree	Medium
Bottom View of Binary Tree	Medium
Diagonal Tree Traversal	Medium
Vertical Tree Traversal	Medium
LCA in Binary Tree	Medium
Tree Boundary Traversal	Medium
Diameter of a Binary Tree	Medium
Connect Nodes of Levels	Medium
Serialize and Deserialize a Binary Tree	Medium
Construct Tree from Inorder & Preorder	Medium
Maximum Path Sum between 2 Nodes	Medium
Max Path Sum between 2 Leaf Nodes	Hard
Convert Binary Tree to Doubly Linked List	Hard

Binary Search Tree (12)

Check for BST	Easy
LCA in BST	Easy
Sorted Array to BST	Easy
Kth Largest Element in BST	Easy
Ceil in BST	Medium
Largest BST	Medium
Merge two BST ‘s	Medium
Preorder to BST	Medium
Predecessor and Successor in BST	Medium
Binary Search Tree Iterator	Medium
Delete a Node from BST	Medium
Balance a Binary Search Tree	Medium

Greedy (9)

Minimize the Sum of Product	Easy

Largest Number Possible	Easy
Minimum Number of Coins	Easy
Assign Cookies	Easy
Gas Station	Medium
Activity Selection	Medium
Fractional Knapsack	Medium
Job Sequencing	Medium
Huffman Encoding	Hard

Dynamic Programming (21)

Ways to Reach the Nth Stair	Medium
House Robber II	Medium
Coin Change (Minimum Coins)	Medium
Coin Change (Count Ways)	Medium
Longest Common Substring	Medium

Longest Increasing Subsequence	Medium
Longest Common Subsequence	Medium
0 – 1 Knapsack Problem	Medium
Partition Equal Subset Sum	Medium
Minimum Insertions to Form Palindrome	Medium
Maximize The Cut Segments	Medium
Maximum Path Sum in Matrix	Medium
Rod Cutting	Medium
Egg Dropping Puzzle	Medium
Word Break	Medium
Optimal Strategy For A Game	Medium
Wildcard Pattern Matching	Medium
Edit Distance	Medium
Matrix Chain Multiplication	Hard
Palindromic Partitioning	Hard

Boolean Parenthesization	Hard

Graph (32)

DFS of Graph	Easy
BFS of Graph	Easy
Detect Cycle in Undirected Graph	Medium
Detect Cycle in a Directed Graph	Medium
Detect a Negative Cycle	Medium
Topological Sorting	Medium
Shortest Path in Directed Acyclic Graph	Medium
Kahn's Algorithm	Medium
Dijkstra Algorithm	Medium
Bellman-Ford Algorithm	Medium
Floyd Warshall Algorithm	Medium
Prim's Algorithm	Medium

Kruskal's Algorithm	Medium
Euler Path and Circuit	Medium
Hamiltonian Path and Circuit	Medium
Kosaraju's Algorithm	Hard
Tarjan's Algorithm	Hard
Bridges in Graph	Hard
Articulation Points in Graph	Hard
Disjoint Set (Union Find Algorithm)	Hard
Mother Vertex	Medium
Rotten Oranges	Medium
Flood fill Algorithm	Medium
Replace O's with X's	Medium
Steps by Knight	Medium
Bipartite Graph	Medium

Number of Islands	Medium
Clone an Undirected Graph	Medium
M-Coloring Problem	Medium
Alien Dictionary	Hard
Circle of Strings	Hard
Minimum Cost Path	Hard

Trie (6)

Insert, Search and Delete in Trie	Medium
Longest Common Prefix of Strings	Medium
Prefix Suffix String	Medium
Word Break (Trie)	Hard
Phone Directory	Hard
Maximum XOR Subarray	Hard