DSA by Shradha Didi & Aman Bhaiya

Meet us on Youtube (Apna College)

Easy	Ideal Time : 5-10 mins
Medium	Ideal Time : 15-20 mins
Hard	Ideal Time : 40-60 mins (based on Qs) | 88 Qs

5 Questions each Day

Topics	Question (375)	Companies	Remarks
Arrays	Maximum and Minimum Element in an Array		
Arrays	Reverse the Array		
Arrays	Maximum-Subarray	Microsoft + Facebook Interview Qs	use Kadane's Algorithm
Arrays	Contains Duplicate		
Arrays	Chocolate Distribution Problem	Amazon Interview Qs	
Arrays	Search an Element in a Sorted and Pivoted Array		
Arrays	Next Permutation	Uber + Goldman Sachs + Adobe Interview Qs	
Arrays	Best time to Buy and Sell Stock		
Arrays	Repeat and Missing Number Array	Amazon Interview Qs	
Arrays	Kth-Largest Element in an Array		
Arrays	Trapping Rain Water	Samsung Interview Qs	
Arrays	Product of Array Except Self	Microsoft + Facebook Interview Qs	
Arrays	Maximum Product Subarray		
Arrays	Find Minimum in Rotated Sorted Array		
Arrays	Search in Rotated Sorted Array	Microsoft + Google + Apple Interview Qs	
Arrays	3Sum		
Arrays	Container With Most Water	Flipkart + Dunzo Interview Qs	
Arrays	Given Sum Pair	Infosys + Amazon + Flipkart Interview Qs	
Arrays	Kth - Smallest Element		
Arrays	Merge Overlapping Intervals	Google Interview Qs	
Arrays	Find Minimum Number of Merge Operations to Make an Array Palindrome		
Arrays	Given an Array of Numbers Arrange the Numbers to Form the Biggest Number	Barclays Interview Qs	
Arrays	Space Optimization Using Bit Manipulations		
Arrays	Subarray Sum Divisible K		
Arrays	Print all Possible Combinations of r Elements in a Given Array of Size n		
Arrays	Mo's Algorithm		
Strings	Valid Palindrome		
Strings	Valid Anagram		
Strings	Valid parentheses	Google Interview Qs	use Stacks (if possible)
Strings	Remove Consecutive Characters		
Strings	Longest Common Prefix	Adobe + Grofers + Dunzo Interview Qs	
Strings	Convert a Sentence into its Equivalent Mobile Numeric Keypad Sequence		
Strings	Print all the Duplicates in the Input String	Ola + Amdocs IQ	
Strings	Longest Substring without Repeating Characters	Morgan Stanley + Amazon IQ	
Strings	Longest Repeating Character Replacement		
Strings	Group Anagrams	Samsung + Adobe + Amazon Interview Qs	
Strings	Longest Palindromic Substring	Microsoft + Google + Samsung + Visa IQ	
Strings	Palindromic Substrings	Microsoft IQ	
Strings	Next Permutation		
Strings	Count Palindromic Subsequences	Myntra Interview Qs	
Strings	Smallest Window in a String Containing all the Characters of Another String	Microsoft + Amazon IQ	
Strings	Wildcard String Matching	Microsoft + Amazon + Ola IQ	
Strings	Longest Prefix Suffix	Flipkart + Swiggy IQ	
Strings	Rabin-Karp Algorithm for Pattern Searching		
Strings	Transform One String to Another using Minimum Number of Given Operation		
Strings	Minimum Window Substring		
Strings	Boyer Moore Algorithm for Pattern Searching		
Strings	Word Wrap		use Dynaming Programming
2D Arrays	Zigzag (or diagonal) Traversal of Matrix		
2D Arrays	Set Matrix Zeroes		
2D Arrays	Spiral Matrix	Flipkart + Apple + Societe Generale IQ	
2D Arrays	Rotate Image		
2D Arrays	Word Search	Google + Ola + Goldman Sachs IQ	
2D Arrays	Find the Number of Islands | Set 1 (Using DFS)	Microsoft + Uber + Apple + Amazon IQ	Read about DFS
2D Arrays	Given a Matrix of 'O' and 'X', Replace 'O' with 'X' if Surrounded by 'X'		
2D Arrays	Find a Common Element in all Rows of a Given Row-Wise Sorted Matrix		
2D Arrays	Create a Matrix with Alternating Rectangles of O and X		
2D Arrays	Maximum Size Rectangle of all 1s		
Searching & Sorting	Permute Two Arrays such that Sum of Every Pair is Greater or Equal to K		
Searching & Sorting	counting sort		
Searching & Sorting	find common elements three sorted arrays		
Searching & Sorting	Searching in an array where adjacent differ by at most k		
Searching & Sorting	ceiling in a sorted array		
Searching & Sorting	Piar with given difference		
Searching & Sorting	majority element		
Searching & Sorting	count triplets with sum smaller that a given value		

Searching & Sorting	Maximum Sum Subsequence with no adjacent elements		
Searching & Sorting	Merge Sorted Arrays using O(1) Space		
Searching & Sorting	Inversion of Array		
Searching & Sorting	Find Duplicates in O(n) Time and O(1) Extra Space		
Searching & Sorting	Radix Sort		
Searching & Sorting	Product of Array except itself		
Searching & Sorting	Make all Array Elements Equal		
Searching & Sorting	Check if Reversing a Sub Array Make the Array Sorted		
Searching & Sorting	Find Four Elements that Sum to a Given Value		
Searching & Sorting	Median of Two Sorted Array with Different Size		
Searching & Sorting	Median of Stream of Integers Running Integers		
Searching & Sorting	Print Subarrays with 0 Sum		
Searching & Sorting	Aggressive Cows		
Searching & Sorting	Allocate Minimum number of Pages		
Searching & Sorting	Minimum Swaps to Sort		
Backtracking	Backtracking Set 2 Rat in a Maze		
Backtracking	Combinational Sum		
Backtracking	Crossword-Puzzle		
Backtracking	Longest Possible Route in a Matrix with Hurdles		
Backtracking	Printing all solutions in N-Queen Problem		
Backtracking	Solve the Sudoku		
Backtracking	Partition Equal Subset Sum		
Backtracking	M Coloring Problem		
Backtracking	Knight Tour		
Backtracking	Soduko		
Backtracking	Remove Invalid Parentheses		
Backtracking	Word Break Problem using Backtracking		
Backtracking	Print all Palindromic Partitions of a String		
Backtracking	Find Shortest Safe Route in a Path with Landmines		
Backtracking	Partition of Set into K Subsets with Equal Sum		
Backtracking	Backtracking set-7 hamiltonian cycle		
Backtracking	tug-of-war		
Backtracking	Maximum Possible Number by doing at most K swaps		
Backtracking	Backtracking set-8 solving cryptarithmetic puzzles		
Backtracking	Find paths from corner cell to middle cell in maze		
Backtracking	Arithmetic Expressions		
Linked List	Reverse Linked List		
Linked List	Linked List Cycle		
Linked List	Merge Two Sorted Lists		
Linked List	Delete without Head node		
Linked List	Remove duplicates from an unsorted linked list		
Linked List	Sort a linked list of 0s-1s-or-2s		
Linked List	Multiply two numbers represented linked lists		
Linked List	Remove nth node from end of list		
Linked List	Reorder List		
Linked List	Detect and remove loop in a linked list		
Linked List	Write a Function to get the Intersection Point of two Linked Lists		
Linked List	Flatten a linked list with next and child pointers		
Linked List	Linked list in zig-zag fashion		
Linked List	Reverse a doubly linked list		
Linked List	Delete nodes which have a greater value on right side		
Linked List	Segregate even and odd Elements in a Linked List		
Linked List	Point to next higher value node in a linked list with an Arbitrary Pointer		
Linked List	Rearrange a given linked list in place		
Linked List	Sort Biotonic Doubly Linked Lists		
Linked List	Merge K Sorted Lists		
Linked List	Merge sort for linked list		Important
Linked List	Quicksort on singly-linked list		Important
Linked List	Sum of two linked lists		
Linked List	Flattening a linked list		
Linked List	Clone a linked list with next and random Pointer		
Linked List	Subtract two numbers represented as linked lists		
Stacks & Queues	Implement two stacks in an Array		
Stacks & Queues	Evaluation of Postfix Expression		
Stacks & Queues	Implement Stack using Queues		
Stacks & Queues	Queue Reversal		
Stacks & Queues	Implement Stack Queue using Deque		
Stacks & Queues	Reverse first k elements of queue		
Stacks & Queues	Design Stack with Middle Operation		
Stacks & Queues	Infix to Postfix		
Stacks & Queues	Design and Implement Special stack		
Stacks & Queues	Longest Valid String		
Stacks & Queues	Find if an expression has duplicate parenthesis or not		

Stacks & Queues	Stack permutations check if an array is stack permutation of other		
Stacks & Queues	Count natural numbers whose permutation greater number		
Stacks & Queues	Sort a stack using Recursion		
Stacks & Queues	Queue based approach for first non repeating character in a stream		
Stacks & Queues	The Celebrity Problem		
Stacks & Queues	Next larger Element		
Stacks & Queues	Distance of nearest cell		
Stacks & Queues	Rotten-oranges		
Stacks & Queues	Next smaller element		
Stacks & Queues	Circular-tour		
Stacks & Queues	Efficiently implement k-stacks single array		
Stacks & Queues	The celebrity problem		
Stacks & Queues	Iterative tower of hanoi		
Stacks & Queues	Find the maximum of minimums for every window size in a given array		
Stacks & Queues	Iru cache implementation		
Stacks & Queues	Find a tour that visits all stations		
Greedy	Activity selection problem greedy algo		
Greedy	Greedy algorithm to find minimum number of coins		
Greedy	Minimum sum two numbers formed digits array-2		
Greedy	Minimum sum absolute difference pairs two arrays		
Greedy	Find maximum height pyramid from the given array of objects		
Greedy	Minimum cost for acquiring all coins with k extra coins allowed with every coin		
Greedy	Find maximum equal sum of every three stacks		
Greedy	Job sequencing problem		
Greedy	Greedy algorithm egyptian fraction		
Greedy	Fractional knapsack problem		
Greedy	Maximum length chain of pairs		
Greedy	Find smallest number with given number of digits and digit sum		
Greedy	Maximize sum of consecutive differences circular-array		
Greedy	paper-cut minimum number squares		
Greedy	Lexicographically smallest array-k consecutive swaps		
Greedy	Problems-CHOCOLA		
Greedy	Find minimum time to finish all jobs with given constraints		
Greedy	Job sequencing using disjoint set union		
Greedy	Rearrange characters string such that no two adjacent are same		
Greedy	Minimum edges to reverse to make path from a source to a destination		
Greedy	Minimize Cash Flow among a given set of friends who have borrowed money from each other		
Greedy	Minimum Cost to cut a board into squares		
Binary Trees	Maximum Depth of Binary Tree		
Binary Trees	Reverse Level Order Traversal		
Binary Trees	Subtree of Another Tree		
Binary Trees	Invert Binary Tree		
Binary Trees	Binary Tree Level Order Traversal		
Binary Trees	Left View of Binary Tree		
Binary Trees	Right View of Binary Tree		
Binary Trees	ZigZag Tree Traversal		
Binary Trees	Create a mirror tree from the given binary tree		
Binary Trees	Leaf at same level		
Binary Trees	Check for Balanced Tree		
Binary Trees	Transform to Sum Tree		
Binary Trees	Check if Tree is Isomorphic		
Binary Trees	Same Tree		
Binary Trees	Construct Binary Tree from Preorder and Inorder Traversal		
Binary Trees	Height of Binary Tree		
Binary Trees	Diameter of a Binary Tree		
Binary Trees	Top View of Binary Tree		
Binary Trees	Bottom View of Binary Tree		
Binary Trees	Diagonal Traversal of Binary Tree		
Binary Trees	Boundary Traversal of binary tree		
Binary Trees	Construct Binary Tree from String with Brackets		
Binary Trees	Minimum swap required to convert binary tree to binary search tree		
Binary Trees	Duplicate subtree in Binary Tree		
Binary Trees	Check if a given graph is tree or not		
Binary Trees	Lowest Common Ancestor in a Binary Tree		
Binary Trees	Min distance between two given nodes of a Binary Tree		
Binary Trees	Duplicate Subtrees		
Binary Trees	Kth ancestor of a node in binary tree		
Binary Trees	Binary Tree Maximum Path Sum		
Binary Trees	Serialize and Deserialize Binary Tree		
Binary Trees	Binary Tree to DLL		
Binary Trees	Print all k-sum paths in a binary tree		
Binary Search Trees	Lowest Common Ancestor of a Binary Search Tree		
Binary Search Trees	Binary Search Tree | Set 1 (Search and Insertion)		

Binary Search Trees	Minimum element in BST		
Binary Search Trees	Predecessor and Successor		
Binary Search Trees	Check whether BST contains Dead End		
Binary Search Trees	Binary Tree to BST		
Binary Search Trees	Kth largest element in BST		
Binary Search Trees	Validate Binary Search Tree		
Binary Search Trees	Kth Smallest Element in a BST		
Binary Search Trees	Delete Node in a BST		
Binary Search Trees	Flatten BST to sorted list		
Binary Search Trees	Preorder to Postorder		
Binary Search Trees	Count BST nodes that lie in a given range		
Binary Search Trees	Populate Inorder Successor for all Nodes		
Binary Search Trees	Convert Normal BST to Balanced BST		
Binary Search Trees	Merge two BSTs		
Binary Search Trees	Given n appointments, find all conflicting appointments		
Binary Search Trees	Replace every element		
Binary Search Trees	Construct BST from given preorder traversal		
Binary Search Trees	Find median of BST in O(n) time and O(1) space		
Binary Search Trees	Largest BST in a Binary Tree		Important
Heaps & Hashing	Choose k array elements such that difference of maximum and minimum is minimized		
Heaps & Hashing	Heap Sort		
Heaps & Hashing	Top K Frequent Elements		
Heaps & Hashing	k largest elements in an array		
Heaps & Hashing	Next Greater Element		
Heaps & Hashing	K'th Smallest/Largest Element in Unsorted Array		
Heaps & Hashing	Find the maximum repeating number in O(n) time and O(1) extra space		
Heaps & Hashing	K-th smallest element after removing some integers from natural numbers		
Heaps & Hashing	Find k closest elements to a given value		
Heaps & Hashing	K'th largest element in a stream		
Heaps & Hashing	Connect Ropes		
Heaps & Hashing	Cuckoo Hashing		
Heaps & Hashing	Itinerary from a List of Tickets		
Heaps & Hashing	Largest Subarray with 0 Sum		
Heaps & Hashing	Count distinct elements in every window of size k		
Heaps & Hashing	Group Shifted Strings		
Heaps & Hashing	Merge K Sorted lists		
Heaps & Hashing	Find Median from Data Stream		
Heaps & Hashing	Sliding Window Maximum		
Heaps & Hashing	Find the smallest positive number		
Heaps & Hashing	Find Surpasser Count of each element in array		
Heaps & Hashing	Tournament Tree and Binary Heap		
Heaps & Hashing	Check for palindrome		
Heaps & Hashing	Length of the largest subarray with contiguous elements		
Heaps & Hashing	Palindrome Substring Queries		
Heaps & Hashing	Subarray distinct elements		
Heaps & Hashing	Find the recurring function		
Heaps & Hashing	K maximum sum combinations from two arrays		
Graphs	BFS		
Graphs	DFS		
Graphs	Flood Fill Algorithm		
Graphs	Number of Triangles		
Graphs	Detect cycle in a graph		
Graphs	Detect cycle in an undirected graph		
Graphs	Rat in a Maze Problem		
Graphs	Steps by Knight		
Graphs	Clone graph		
Graphs	Number of Operations to Make Network Connected		
Graphs	Dijkstra's shortest path algorithm		
Graphs	Topological Sort		
Graphs	Oliver and the Game		
Graphs	Minimum time taken by each job to be completed given by a Directed Acyclic Graph		
Graphs	Find whether it is possible to finish all tasks or not from given dependencies		
Graphs	Find the number of islands		
Graphs	Prim's Algo		
Graphs	Negative Weighted Cycle		
Graphs	Floyd Warshall		
Graphs	Graph Coloring		
Graphs	Snakes and Ladders		
Graphs	Kosaraju's Theorem		
Graphs	Journey to moon		
Graphs	Vertex Cover		
Graphs	M Coloring Problem		
Graphs	Cheapest Flights Within K Stops		
Graphs	Find if there is a path of more than k length from a source		

Graphs	Bellman Ford		
Graphs	Bipartitie Graph		
Graphs	Word-Ladder		
Graphs	Allen Dictionary		
Graphs	Kruskals MST		Important
Graphs	Total number spanning trees graph		
Graphs	Travelling Salesman		Important
Graphs	Find longest path directed acyclic graph		
Graphs	Two Clique Problem		
Graphs	Minimise the cash flow		
Graphs	Chinese postman		
Graphs	Water Jug		
Graphs	Water Jug 2		
Tries	Construct a trie from scratch		
Tries	Print unique rows in a given boolean matrix		
Tries	Word Break Problem | (Trie solution)		
Tries	Given a sequence of words, print all anagrams together		
Tries	Find shortest unique prefix for every word in a given list		
Tries	Implement a Phone Directory		
DP	Knapsack with Duplicate Items		
DP	BBT counter		
DP	Reach a given score		
DP	Maximum difference of zeros and ones in binary string		
DP	Climbing Stairs		
DP	Permutation Coefficient		
DP	Longest Repeating Subsequence		
DP	Pairs with specific difference		
DP	Longest subsequence-1		
DP	Coin Change		
DP	LIS		
DP	Longest Common Subsequence		
DP	Word Break		
DP	Combination Sum IV		
DP	House Robber		
DP	Houe Robber 2		
DP	Decode Ways		
DP	Unique Paths		
DP	Jumps Game		
DP	Knapsack Problem		
DP	nCr		
DP	Catalan Number		
DP	Edit Distance		
DP	Subset Sum		
DP	Gold mine		
DP	Assembly Line Scheduling		
DP	Maximize The Cut Segments		
DP	Maximum sum increasing subsequence		
DP	Count all subsequences having product less than K		
DP	Maximum sum increasing subsequence		
DP	Egg dropping puzzle		
DP	Max length chain		
DP	Largest Square in Matrix		
DP	Maximum Path Sum		
DP	Minimum Number of Jumps		
DP	Minimum removals from array to make max – min <= K		
DP	Longest Common Substring		
DP	Partition Equal Subset Sum		
DP	Longest Palindromic Subsequnce		
DP	Count Palindromic Subsequences		
DP	Longest Palindromic Substring		
DP	Longest Alternating Sequence		
DP	Weighted Job Scheduling		
DP	Coin Game		
DP	Coin Game Winner		
DP	Optimal Strategy for a game		
DP	Word Wrap		
DP	Mobile numeric keypad		
DP	Maximum Length of Pair Chain		
DP	Matrix Chain Multiplication		
DP	Maximum profit by buying and selling a share at most twice		
DP	Optimal BST		
DP	Largest Submatrix with sum 0		
DP	Largest area rectangular sub-matrix with equal number of 1's and 0's		

Bit Manipulation	Count set bits in an integer		
Bit Manipulation	Find the two non-repeating elements in an array of repeating elements		
Bit Manipulation	Program to find whether a no is power of two		
Bit Manipulation	Find position of the only set bit		
Bit Manipulation	Count number of bits to be flipped to convert A to B		
Bit Manipulation	Count total set bits in all numbers from 1 to n		
Bit Manipulation	Copy set bits in a range		
Bit Manipulation	Calculate square of a number without using *, / and pow()		
Bit Manipulation	Divide two integers without using multiplication, division and mod operator		
Bit Manipulation	Power Set		
Segment Trees	Range Sum Query - Immutable		
Segment Trees	Range Minimum Query	Google Interview Qs	
Segment Trees	Range Sum Query - Mutable		
Segment Trees	Create Sorted Array through Instructions		
Segment Trees	Count of Range Sum		
Segment Trees	Count of Smaller Numbers After Self		

DSA by Shradha Didi & Aman Bhaiya

Meet us on Youtube (Apna College)

Easy	**Ideal Time : 5-10 mins**	
Medium	**Ideal Time : 15-20 mins**	
Hard	**Ideal Time : 40-60 mins (based on Qs)**	

Topics	Question	Remarks
Strings	Edit Distance	use Dynaming Programming (if possible)
Searching & Sorting	Sort a Nearly Sorted (or K sorted) Array	
Searching & Sorting	How to Efficiently Sort a Big List Dates in 20's	
Searching & Sorting	find a repeating and a missing number	
Searching & Sorting	sort array according count set bits	
Searching & Sorting	Minimum Swaps to Make Two Array Identical	
Searching & Sorting	Insert in Sorted and Non-Overlapping Interval Array	
Searching & Sorting	3-Way QuickSort	
Backtracking	Find if There is a Path of More Than k Length From a Source	
Backtracking	Match a Pattern and String without Using Regular Expressions	
Linked List	Josephus Circle implementation using STL list	
Linked List	Find a triplet from three linked lists with sum equal to a given Number	
Linked List	Pair with given sum	
Linked List	Select a random node from a singly linked list	
Linked List	First non repeating character	
Stacks & Queues	Implement Stack using Queue or heap	
Stacks & Queues	Sum of minimum-maximum elements subarrays size-k	
Stacks & Queues	Minimum time required so that all oranges become rotten	
Stacks & Queues	Efficiently implement k-queues single array	
Greedy	Maximize array sum after k-negation operations	
Greedy	Program for shortest job first or sjf-cpu scheduling set 1 non-preemptive	
Binary Trees	Check Mirror in N-ary tree	
Binary Trees	Maximum sum of nodes in Binary tree such that no two are adjacent	
Binary Search Trees	Brothers From Different Roots	
Heaps & Hashing	Check the condition	
Heaps & Hashing	Check if an array can be divided into pairs whose sum is divisible by k	
Heaps & Hashing	Design a effective DSA	
Heaps & Hashing	Find number of Employees Under every Manager	
Heaps & Hashing	Pancake Sorting	

Graphs	Bride in a graph	
Graphs	Seven Bridges of Königsberg	
Graphs	Minimum edges to reverse to make path from a source to a destination	
DP	Maximum Sum Rectangle	
DP	Interleaved Strings	
DP	Painting the Fence	
DP	Largest independent Set	
DP	Minimum cost to fill given weight in a bag	
DP	Boolean Parenthesization	
DP	Maximum Profit	
DP	Palindromic Partitioning	