

Linkedin DSA Previous Year Questions

Easy

- Write the code for this: Maximum Units on a Truck
(Given different box types—each with a count and units per box—and a truck's capacity, determine the maximum total units you can load.)
- Write the code for this: Maximum Depth of Binary Tree
(Find the longest path from the root down to any leaf in a binary tree.)
- Write the code for this: Maximum Depth of N-ary Tree
(Compute the greatest number of levels in a tree where each node can have many children.)
- Write the code for this: Intersection of Two Arrays
(Return the unique common elements shared by two integer arrays.)
- Write the code for this: Fizz Buzz
(Print numbers from 1 to n, substituting "Fizz" for multiples of 3, "Buzz" for multiples of 5, and "FizzBuzz" for multiples of both.)
- Write the code for this: Design HashMap
(Implement a simple hash map supporting put, get, and remove operations without using built-in maps.)
- Write the code for this: Shortest Word Distance
(Given a list of words and two target words, find the smallest index distance between any occurrence of the two targets.)
- Write the code for this: Two Sum IV – Input is a BST
(Given a binary search tree and a target, determine if there exist two

nodes whose values add up to that target.)

- Write the code for this: Lowest Common Ancestor of a Binary Search Tree
(In BST, find the lowest node that has two given nodes as descendants.)
- Write the code for this: Same Tree
(Check whether two binary trees are structurally identical and have the same node values.)
- Write the code for this: Kth Largest Element in a Stream
(Design a data structure that returns the k^{th} largest element in a running stream of integers.)
- Write the code for this: Rotate String
(Given two strings, check if one can become the other by rotating its characters.)
- Write the code for this: Verifying an Alien Dictionary
(Given a list of words and an alien alphabet order, determine if the words are sorted lexicographically.)
- Write the code for this: Symmetric Tree
(Check if a binary tree is a mirror of itself around its center.)
- Write the code for this: Intersection of Two Linked Lists
(Find the node at which two singly linked lists intersect or return null if they do not.)
- Write the code for this: Remove Duplicates from Sorted Array
(Given a sorted array, remove the duplicates in-place and return the new length.)



- Write the code for this: Merge Sorted Array
(Merge two sorted integer arrays into one sorted array in place.)
- Write the code for this: Find Smallest Letter Greater Than Target
(In a sorted list of letters, find the smallest letter strictly greater than a given target letter, wrapping around if necessary.)
- Write the code for this: Second Minimum Node In a Binary Tree
(In a binary tree where each parent's value equals the smaller of its two children, find the second smallest unique value.)
- Write the code for this: Valid Perfect Square
(Determine whether a given integer is a perfect square without using built-in sqrt.)
- Write the code for this: Valid Palindrome
(Check if a string reads the same forwards and backwards, ignoring non-alphanumeric characters.)
- Write the code for this: Isomorphic Strings
(Determine if two strings can be mapped to each other by renaming their characters consistently.)
- Write the code for this: Search Insert Position
(Given a sorted array and a target, return the index where the target would be inserted.)
- Write the code for this: Valid Parentheses
(Check if an expression containing '() [] {}' is properly balanced.)
- Write the code for this: Sqrt(x)

(Compute and return the integer square root of a non-negative integer.)

- Write the code for this: Can Place Flowers
(Given a flowerbed represented by 0s and 1s, and a number n, determine if you can plant n new flowers without adjacent planting.)

Medium

- Write the code for this: Nested List Weight Sum
(Given a nested list of integers, return the sum of all integers weighted by their depth.)
- Write the code for this: Find Leaves of Binary Tree
(Collect and remove the leaves of a binary tree layer by layer until the tree is empty.)
- Write the code for this: Lowest Common Ancestor of a Binary Tree III
(Given a node in a binary tree that has parent pointers, find its lowest common ancestor with another node.)
- Write the code for this: Insert into a Binary Search Tree
(Insert a value into a BST and return the tree's root.)
- Write the code for this: Permutations
(Generate all possible permutations of a list of distinct integers.)
- Write the code for this: Design Bounded Blocking Queue
(Implement a thread-safe queue with a fixed capacity that blocks on enqueue/dequeue when full/empty.)
- Write the code for this: Max Area of Island

(In a grid of 0s and 1s, find the largest connected region of 1s.)

- Write the code for this: Remove All Ones with Row and Column Flips II
(Given a binary matrix, determine the minimum flips of entire rows or columns to make all entries the same.)
- Write the code for this: Kth Smallest Element in a BST
(Find the k^{th} smallest value in a binary search tree.)
- Write the code for this: Nested List Weight Sum II
(Weight each integer by $(\text{maxDepth} - \text{currentDepth} + 1)$ instead of its depth.)
- Write the code for this: Combination Sum
(Find all unique combinations of candidates where the chosen numbers sum to a target, using unlimited repeats.)
- Write the code for this: K Closest Points to Origin
(Given points on a plane, return the k closest to the origin.)
- Write the code for this: Kth Largest Element in an Array
(Return the k^{th} largest element in an unsorted array.)
- Write the code for this: Top K Frequent Elements
(Return the most frequent elements in an array.)
- Write the code for this: Beautiful Arrangement
(Count permutations of $1 \dots n$ where at index i the number is divisible by i or vice versa.)
- Write the code for this: Binary Tree Level Order Traversal
(Return a list of node values level by level for a binary tree.)

- Write the code for this: Different Ways to Add Parentheses
(Given a string of numbers and ops, return all possible results by adding parentheses in all valid ways.)
- Write the code for this: Number of Connected Components in an Undirected Graph

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- Write the code for this: Different Ways to Add Parentheses
(Given a string of numbers and ops, return all possible results by adding parentheses in all valid ways.)
- Write the code for this: Number of Connected Components in an Undirected Graph
(Count how many disconnected subgraphs exist in an undirected graph.)
- Write the code for this: Binary Tree Upside Down
(Flip a binary tree so that all right nodes become left leaves.)
- Write the code for this: Flatten Nested List Iterator
(Design an iterator that flattens a nested list of integers on the fly.)
- Write the code for this: Print Binary Tree
(Return a 2D string representation of a binary tree.)
- Write the code for this: Convert to Base -2
(Convert an integer to its representation in base -2 .)
- Write the code for this: Exclusive Time of Functions
(Given logs of function calls with timestamps, compute each function's exclusive execution time.)
- Write the code for this: Shortest Word Distance II
(Given a list of words, preprocess it; then repeatedly find the shortest distance between two given words.)
- Write the code for this: Longest Palindromic Subsequence
(Find the length of the longest palindromic subsequence in a string.)

- Write the code for this: Integer to Roman
(Convert an integer to its Roman numeral representation.)
- Write the code for this: Paint House
(Given costs to paint each house in 3 colors with no two adjacent houses the same color, minimize total cost.)
- Write the code for this: Flatten a Multilevel Doubly Linked List
- Write the code for this: Integer to Roman
(Convert an integer to its Roman numeral representation.)
- Write the code for this: Paint House
(Given costs to paint each house in 3 colors with no two adjacent houses the same color, minimize total cost.)
- Write the code for this: Flatten a Multilevel Doubly Linked List
(Flatten a list where nodes may have child pointers to a separate doubly linked list.)
- Write the code for this: Delete and Earn
(Given an array of ints, maximize points by “earning” values and deleting neighbors—reduce to house-robber pattern.)
- Write the code for this: Shortest Word Distance III
(Like Word Distance II, but words may be the same.)
- Write the code for this: Lowest Common Ancestor of a Binary Tree
(Find the LCA of two nodes in a binary tree without BST properties.)
- Write the code for this: Serialize and Deserialize BST
(Design methods to encode a BST to a string and decode it back.)
- Write the code for this: Accounts Merge

(Merge multiple accounts by common email addresses.)

- Write the code for this: Building H₂O
(Synchronize threads representing H and O atoms to form H₂O molecules.)
- Write the code for this: Number of Islands
(Count connected components of 1s in a grid.)
- Write the code for this: Binary Tree Zigzag Level Order Traversal
(Alternate the direction of traversal at each level.)
- Write the code for this: Sort Transformed Array
(Apply a quadratic function to each number in a sorted array and return the new sorted array.)
- Write the code for this: Find and Replace in String
(Perform multiple non-overlapping substring replacements in a string.)
- Write the code for this: Maximum Points You Can Obtain from Cards
(Pick k cards from either end of an array to maximize sum.)
- Write the code for this: Is Graph Bipartite?
(Check if you can color nodes in two colors so no adjacent nodes share a color.)
- Write the code for this: Rotting Oranges
(Compute minutes until all fresh oranges rot given spread rules, or -1 if impossible.)
- Write the code for this: Insert Delete GetRandom O(1)



(Design a set with $O(1)$ insert, delete, and getRandom operations.)

- Write the code for this: Bomb Enemy
(Place a bomb in a 2D grid to maximize enemies eliminated in row/column.)
- Write the code for this: Valid Triangle Number
(Count triplets that can form triangle sides.)
- Write the code for this: Maximum Subarray
(Find the contiguous subarray with the largest sum.)
- Write the code for this: Minimum Insertions to Balance a Parentheses String
(Compute the minimum insertions to make parentheses string valid.)
- Write the code for this: Delete Node in a BST
(Delete a value from a BST and return the new root.)
- Write the code for this: Longest Consecutive Sequence
(Find the length of the longest set of consecutive integers in an array.)
- Write the code for this: Factor Combinations
(Return all unique combinations of factors (excluding 1 and itself) for a number.)
- Write the code for this: Bulb Switcher
(Given n bulbs toggled in rounds, find count of bulbs left on after n rounds.)

- Write the code for this: Find the Celebrity
(In a crowd, find the “celebrity” who everyone knows but who knows no one.)
- Write the code for this: Partition Equal Subset Sum
(Determine if an array can be partitioned into two subsets with equal sum.)
- Write the code for this: Implement Rand10() Using Rand7()
(Use a 1–7 RNG to simulate a uniform 1–10 RNG.)
- Write the code for this: Graph Valid Tree
(Check if nodes and a list of edges form a valid tree.)
- Write the code for this: Jump Game VI
(Maximize score by jumping through an array with cost based on value.)
- Write the code for this: Random Pick with Weight
(Given weights, pick an index randomly proportionally to its weight.)
- Write the code for this: Repeated DNA Sequences
(Find all length-10 substrings that occur more than once in a DNA string.)
- Write the code for this: Merge Intervals
(Merge all overlapping intervals in a list.)
- Write the code for this: Subarray Product Less Than K
(Count contiguous subarrays whose product is less than k.)
- Write the code for this: Subarray Sum Equals K
(Count subarrays summing to a target.)

- Write the code for this: Evaluate Reverse Polish Notation
(Evaluate an expression in postfix notation.)
- Write the code for this: Shortest Path with Alternating Colors
(Find shortest paths in a graph where edges alternate between red and blue.)
- Write the code for this: Partition to K Equal Sum Subsets
(Partition an array into k subsets each with equal sum.)
- Write the code for this: Basic Calculator II
(Evaluate a string expression with $+-\times\div$ and no parentheses.)
- Write the code for this: Find First and Last Position of Element in Sorted Array
(Return the start and end indices of a target value in a sorted array.)
- Write the code for this: LRU Cache
(Implement an LRU (least-recently used) cache with $O(1)$ get/put.)
- Write the code for this: Minimum Knight Moves
(Compute minimum chess knight moves from $(0,0)$ to (x,y) .)
- Write the code for this: Encode and Decode Strings
(Design methods to encode a list of strings to a single string and decode it back.)
- Write the code for this: Rotate Array
(Rotate an array right by k steps.)
- Write the code for this: Find K Pairs with Smallest Sums
(Given two sorted arrays, find k pairs with the smallest sums.)

- Write the code for this: Search in Rotated Sorted Array
(Search in a sorted array rotated at an unknown pivot.)
- Write the code for this: Insert Interval
(Insert a new interval into a set of non-overlapping intervals, merging if needed.)
- Write the code for this: 4Sum
(Find all unique quadruplets that sum to a target.)
- Write the code for this: Search in Rotated Sorted Array II
(Search in a rotated sorted array that may contain duplicates.)
- Write the code for this: Rotate List
(Rotate a linked list to the right by k places.)
- Write the code for this: Maximum Product Subarray
(Find contiguous subarray with maximum product.)
- Write the code for this: Valid Parenthesis String
(Check if a parentheses string with '*' wildcards can be valid.)
- Write the code for this: Minimum Insertion Steps to Make a String Palindrome
(Find min insertions to make a string read the same forwards and backwards.)
- Write the code for this: Vertical Order Traversal of a Binary Tree
(Return nodes in a binary tree by vertical order, left to right, top to bottom.)
- Write the code for this: Basic Calculator
(Evaluate a string with +, -, and parentheses, without using eval.)

- Write the code for this: Maximum Sum Circular Subarray
(Find max subarray sum in a circular array.)

Hard

- Write the code for this: Maximum Frequency Stack
(Implement a stack that pops the most frequent element, breaking ties by recency.)
- Write the code for this: Minimum Insertion Steps to Make a String Palindrome
(Find the fewest insertions to convert a string into a palindrome.)
- Write the code for this: Closest Binary Search Tree Value II
(Given a target and k, return k values in a BST closest to the target.)
- Write the code for this: Serialize and Deserialize Binary Tree
(Design algorithms to encode a binary tree to a string and decode it back.)
- Write the code for this: Edit Distance
(Compute the minimum number of edits to convert one string into another.)
- Write the code for this: Maximum Profit in Job Scheduling
(Select non-overlapping jobs with start, end, profit to maximize total profit.)
- Write the code for this: Find Median from Data Stream
(Maintain a data structure to return the median of a growing stream of numbers.)

- Write the code for this: Design Search Autocomplete System
(Given historical sentences and their frequencies, suggest top-3 completions as you type.)
- Write the code for this: Merge k Sorted Lists
(Merge k sorted linked lists into one sorted list.)
- Write the code for this: Maximal Rectangle
(In a binary matrix, find the largest rectangle containing only 1's.)
- Write the code for this: Trapping Rain Water
(Given an elevation map, compute how much water it can trap after raining.)
- Write the code for this: Word Ladder II
(Find all shortest transformation sequences from beginWord to endWord.)
- Write the code for this: Minimum Window Substring
(Find the smallest substring of s containing all characters of t.)
- Write the code for this: Count Unique Characters of All Substrings of a Given String
(Sum the count of unique characters over all substrings of a string.)
- Write the code for this: Sudoku Solver
(Fill a 9×9 board so that each row, column, and 3×3 box contains digits 1–9.)
- Write the code for this: Longest Palindromic Subsequence
(Find the length of the longest palindromic subsequence in a string.)
- Write the code for this: All O`one Data Structure
(Design a data structure supporting inc/dec keys and retrieving max/min key in O(1).)

- Write the code for this: Expression Add Operators
(Insert $+$ $-$ $\times$ between digits to reach a target value.)
- Write the code for this: Interleaving String
(Check if one string is formed by interleaving two others.)
- Write the code for this: Count Integers in Intervals
(Maintain a set of disjoint intervals supporting `addInterval` and `count` total covered integers.)
- Write the code for this: Range Module
(Implement a module to add, remove, and query ranges of real numbers.)
- Write the code for this: Basic Calculator
(Evaluate a string with $+$ $-$ and parentheses, without using `eval`—harder constraints.)
- Write the code for this: LFU Cache
(Design a cache that evicts the least-frequently used item in $O(1)$.)
- Write the code for this: Text Justification
(Format a list of words into fully justified text with a given line width.)
- Write the code for this: Word Ladder
(Find the length of the shortest transformation sequence between two words.)
- Write the code for this: All Nodes Distance K in Binary Tree
(Return all nodes at distance K from a target node in a binary tree.)



- Write the code for this: Vertical Order Traversal of a Binary Tree
(Return nodes in a binary tree by vertical order, left to right, top to bottom.)
- Write the code for this: Best Time to Buy and Sell Stock III
(Maximize profit with at most two transactions on stock prices.)
- Write the code for this: Shortest Distance from All Buildings
(In a grid with buildings and empty land, find a spot minimizing total distance to all buildings.)
- Write the code for this: Shortest Common Supersequence
(Return the shortest string that has two given strings as subsequences.)
- Write the code for this: N-Queens
(Place n queens on an $n \times n$ chessboard so that no two attack each other.)
- Write the code for this: Count of Smaller Numbers After Self
(For each element, count how many smaller elements are to its right.)
- Write the code for this: Russian Doll Envelopes
(Maximally stack envelopes by increasing width and height.)
- Write the code for this: Binary Tree Maximum Path Sum
(Find the path in a binary tree that yields the largest sum of node values.)
- Write the code for this: Regular Expression Matching
(Implement regex matching with support for '.' and '*').

