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60+

Must Do Coding Questions Before the Interview (Blind 75)

for

Prepared by **Design Gurus**

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Question 1

Two Sum Easy

Given an array of integers **nums** and an integer target. Find two distinct indices ***i*** and ***j*** such that the sum of nums[i] and nums[j] is equal to the target.

Solve now **See Solution**

Question 2

Contains Duplicate Easy

Given an integer array **nums**, return true if any value appears at least twice in the array, and return false if every element is distinct.

Solve now **See Solution**

Question 3

Best Time To Buy And Sell Stock Easy

Given an array **prices** where **prices[i]** is the price of a given stock on the ith day.

You want to maximize your profit by choosing a single day to buy one stock and choosing a different day in the future to sell that stock.

Return the maximum profit you can achieve from this transaction. If you cannot achieve any profit, return 0.

Solve now

Question 4

Valid Anagram Medium

Given two strings **s** and **t**, return true if t is an anagram of s, and false otherwise.

An Anagram is a word or phrase formed by rearranging the letters of a different word or phrase, typically using all the original letters exactly once.

Solve now

Question 5

Valid Parentheses Medium

Determine if an input string containing only the characters '(', ')', '{', '}', '[', and ']' is valid. A string is considered valid if:

1. Open brackets must be closed by the same type of brackets.
2. Open brackets must be closed in the correct order.
3. Each close bracket has a corresponding open bracket of the same type.

Solve now

Question 6

Maximum Sum Subarray Of Size K Medium

Given an array of positive numbers and a positive number 'k,' find the maximum sum of any contiguous subarray of size 'k'.

Solve now

Question 7

Product Of Array Except Self

Medium

Given an array of integers, return a new array where each element at index i of the new array is the product of all the numbers in the original array except the one at I

.

You must solve this problem without using division.

Solve now

Question 8

Triplet Sum To Zero

Medium

Given an array of unsorted numbers, find all unique triplets in it that add up to zero.

Solve now

Question 9

Merge Intervals Medium

Given a list of intervals, **merge all the overlapping** intervals to produce a list that has only mutually exclusive intervals.

Solve now

Question 10

Group Anagrams Medium

Given a list of strings, the task is to group the anagrams together.

An anagram is a word or phrase formed by rearranging the letters of another, such as "cinema", formed from "iceman".

Solve now

Question 11

Maximum Product Subarray

Medium

Given an integer array, find the contiguous subarray (at least one number in it) that has the maximum product. Return this maximum product.

Solve now

Question 12

Find Minimum In Rotated Sorted Array

Medium

Given an array of numbers which is sorted in ascending order and also rotated by some arbitrary number, find if a given ‘key’ is present in it.

Write a function to return the index of the ‘key’ in the rotated array. If the ‘key’ is not present, return -1. You can assume that the given array does not have any duplicates.

Solve now

Question 13

Reverse A LinkedList Easy

Given the head of a Singly LinkedList, reverse the LinkedList. Write a function to return the new head of the reversed LinkedList.

Solve now

Question 14

LinkedList Cycle Easy

Given the head of a **Singly LinkedList**, write a function to determine if the LinkedList has a **cycle** in it or not.

Solve now

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Question 15

Longest Repeating Character Replacement Medium

Given a string with lowercase letters only, if you are allowed to replace no more than ‘k’ letters with any letter, find the length of the longest substring having the same letters after replacement.

Solve now

Question 16

Container With Most Water Medium

Given an array of non-negative integers, where each integer represents the height of a vertical line positioned at index I

.

You need to find the two lines that, when combined with the x-axis, form a container that can hold the most water.

The goal is to find the maximum amount of water (area) that this container can hold.

Solve now

Question 17

Longest Substring Without Repeating Characters

Medium

Given a string s, return the maximum number of unique substrings that the given string can be split into.

You can split string s into any list of non-empty substrings, where the concatenation of the substrings forms the original string. However, you must split the substrings such that all of them are unique.

A substring is a contiguous sequence of characters within a string.

Solve now

Question 18

Find Minimum In Rotated Sorted Array

Medium

You have an array of length **n**, which was initially sorted in ascending order. This array was then rotated x times. It is given that 1 <= x <= n. For example, if you rotate [1, 2, 3, 4] array 3 times, resultant array is [2, 3, 4, 1].

Your task is to find the minimum element from this array. Note that the array contains unique elements.

Solve now

Question 19

Remove Nth Node From End Of List Medium

Given a linked list, remove the last **nth** node from the end of the list and return the head of the modified list.

Solve now

Question 20

Number Of Islands Medium

Given a 2D array (i.e., a matrix) containing only 1s (land) and 0s (water), count the number of islands in it.

An island is a connected set of 1s (land) and is surrounded by either an edge or 0s (water). Each cell is considered connected to other cells horizontally or vertically (not diagonally).

Solve now

Question 21

Minimum Window Sort Medium

Given an array, find the length of the smallest subarray in it which when sorted will sort the whole array.

Solve now

Question 22

Pacific Atlantic Water Flow Medium

Given a matrix **m x n** that represents the height of each unit cell in a Island, determine which cells can have water flow to both the Pacific and Atlantic oceans. The Pacific ocean touches the left and top edges of the continent, while the Atlantic ocean touches the right and bottom edges.

From each cell, water can only flow to adjacent cells (top, bottom, left, or right) if the adjacent cell's height is less than or equal to the current cell's height.

We need to return a list of grid coordinates where water can flow to both the Pacific and Atlantic oceans.

Solve now

Question 23

Invert Binary Tree Easy

Given the **root** of a binary tree, invert it.

Solve now

Question 24

Palindromic Substrings Medium

Given a string, determine the number of **palindromic** substrings present in it.

A palindromic substring is a sequence of characters that reads the same forwards and backward. The substring can be of any length, including 1.

Solve now

Question 25

Validate Binary Search Tree

Medium

Determine if a given binary tree is a binary search tree (BST). In a BST, for each node:

- All nodes to its left have values less than the node's value.
- All nodes to its right have values greater than the node's value.

Solve now

Question 26

Insert Interval

Medium

Given a list of non-overlapping intervals sorted by their start time, **insert a given interval at the correct position** and merge all necessary intervals to produce a list that has only mutually exclusive intervals.

Solve now

Question 27

Construct Binary Tree from Preorder and Inorder Traversal

Medium

Given the **preorder** and **inorder** traversal sequences of a binary tree, your task is to reconstruct this binary tree. Assume that the tree does not contain duplicate values.

Solve now

Question 28

Top 'K' Frequent Numbers

Medium

Given an unsorted array of numbers, find the top ‘K’ frequently occurring numbers in it.

Solve now

Question 29

Clone Graph

Medium

Given a reference of a node in a connected **undirected graph**, return a deep copy (clone) of the graph. Each node in the graph contains a value (int) and a list (List[Node]) of its neighbors.

Solve now

Question 30

Tasks Scheduling

Medium

There are ‘N’ tasks, labeled from ‘0’ to ‘N-1’. Each task can have some prerequisite tasks which need to be completed before it can be scheduled. Given the number of tasks and a list of prerequisite pairs, find out if it is possible to schedule all the tasks.

Solve now

Question 31

Serialize And Deserialize Binary Tree

Hard

Given a binary tree, your task is to create two functions. one for **serializing** the tree into a string format and another for **deserializing** the string back into the tree.

The serialized string should retain all the tree nodes and their connections, allowing for reconstruction without any loss of data.

Solve now

Question 32

Path With Maximum Sum

Hard

Find the path with the maximum sum in a given binary tree. Write a function that returns the maximum sum.

A path can be defined as a **sequence of nodes between any two nodes** and doesn't necessarily pass through the root. The path must contain at least one node.

Solve now

Question 33

Maximum Depth of Binary Tree Easy

Determine the **depth (or height)** of a binary tree, which refers to the number of nodes along the longest path from the root node to the farthest leaf node. If the tree is empty, the depth is 0.

Solve now

Question 34

Same Tree Easy

Given the roots of two binary trees '**p**' and '**q**', write a function to check if they are the same or not.
Two binary trees are considered the same if they met following two conditions:

1. Both tree are structurally identical.
2. Each corresponding node on both the trees have the same value.

Solve now

Question 35

Binary Tree Level Order Traversal Medium

Given a binary tree, populate an array to represent its level-by-level traversal. You should populate the values of all **nodes of each level from left to right** in separate sub-arrays.

Solve now

Question 36

Encode And Decode Strings Medium

Given a list of strings, your task is to develop two functions: one that encodes the list of strings into a single string, and another that decodes the resulting single string back into the original list of strings. It is crucial that the decoded list is identical to the original one.

It is given that you can use any encoding technique to encode list of string into the single string.

Solve now

Question 37

Subtree Of Another Tree

Easy

Given two binary trees **s** and t, determine if tree t is a subtree of tree s.

A tree t is considered a subtree of s if there exists a node in s such that the subtree of that node is identical to t. Both trees are considered identical if their structure and nodes are the same.

Solve now

Question 38

Lowest Common Ancestor of BST

Medium

Given a binary search tree (BST) and two of its nodes, find the node that is the lowest common ancestor (LCA) of the two given nodes.

The LCA of two nodes is the node that lies in between the two nodes in terms of value and is the furthest from the root.

Solve now

Question 39

Implement Trie

Medium

Design and implement a **Trie** (also known as a Prefix Tree).

A trie is a tree-like data structure that stores a dynamic set of strings, and is particularly useful for searching for words with a given prefix. Implement the following methods:

- **insert:** Add a word to the trie.
- **search:** Determine if the word exists in the trie.
- **startsWith:** Determine if any word in the trie starts with the given prefix.

Solve now

Question 40

Add and Search Word

Medium

Design a data structure that allows you to:

1. Add a word.
2. Search for a word that can include dots ('.') as wildcards, where the dot represents any single character.

Solve now

Question 41

Kth Smallest Number

Medium

Given an unsorted array of numbers, find **Kth smallest number** in it.

Please note that it is the Kth smallest number in the sorted order, not the Kth distinct element.

Solve now

Question 42

Insert Interval

Medium

Given a list of non-overlapping intervals sorted by their start time, **insert a given interval at the correct position** and merge all necessary intervals to produce a list that has only mutually exclusive intervals.

Solve now

Question 43

Merge K Sorted Lists Hard

Given an array of '**K**' sorted LinkedLists, merge them into one sorted list.

Solve now

Question 44

Find Median from Data Stream Hard

Design a class to calculate the median of a number stream. The class should have the following two methods:

1. **insertNum(int num):** stores the number in the class
2. **findMedian():** returns the median of all numbers inserted in the class

If the count of numbers inserted in the class is even, the median will be the average of the middle two numbers.

Solve now

Question 45

Minimum Meeting Rooms Easy

Given a list of intervals representing the start and end time of ‘N’ meetings, find the **minimum number of rooms** required to hold all the meetings.

Solve now

Question 46

Longest Consecutive Sequence Medium

Given an **unsorted array** of integers, find the length of the longest consecutive sequence of numbers in it.

A consecutive sequence means the numbers in the sequence are contiguous without any gaps. For instance, 1, 2, 3, 4 is a consecutive sequence, but 1, 3, 4, 5 is not.

Solve now

Question 47

Word Search Hard

Given an **m x n** grid of characters board and a string word, return true if the word exists in the grid.

The word can be constructed from letters of sequentially adjacent cells, where adjacent cells are horizontally or vertically neighboring. The same letter cell may not be used more than once.

Solve now

Question 48

Alien Dictionary Hard

There is a dictionary containing words from an alien language for which we don't know the ordering of the letters.

Write a method to find the correct order of the letters in the alien language.

It is given that the input is a valid dictionary and there exists an ordering among its letters.

Solve now

Question 49

Meeting Rooms II

Medium

Given a list of time intervals during which meetings are scheduled, determine the **minimum number of meeting rooms** that are required to ensure that none of the meetings overlap in time.

Solve now

Question 50

Graph Valid Tree

Medium

Given a number n, which indicates the number of nodes numbered from 0 to n-1, and a list of undirected edges for the graph, determine if the graph is a valid tree.

A graph qualifies as a valid tree if it meets the following criteria:

1. It has **no cycles**.
2. It is **fully connected**.

Solve now

Question 51

Climbing Stairs

Easy

Given a stair with 'n' steps, implement a method to count how many possible ways are there to reach the top of the staircase, given that, at every step you can either take 1 step, 2 steps, or 3 steps.

Solve now

Question 52

Number of Connected Components in an Undirected Graph

Medium

Given an unsorted array of integers, find the length of the longest consecutive sequence of numbers in it.

A consecutive sequence means the numbers in the sequence are contiguous without any gaps. For instance, 1, 2, 3, 4 is a consecutive sequence, but 1, 3, 4, 5 is not.

Solve now

Question 53

Coin Change Medium

Given an infinite supply of ‘n’ coin denominations and a total money amount, we are asked to find the total number of distinct ways to make up that amount.

Solve now

Question 54

Longest Increasing Subsequence Medium

Given a number sequence, find the length of its Longest Increasing Subsequence (LIS). In an increasing subsequence, all the elements are in increasing order (from lowest to highest).

Solve now

Question 55

Combination Sum

Medium

Given an array of distinct positive integers candidates and a target integer target, return a list of all unique combinations of candidates where the chosen numbers sum to target. You may return the combinations in any order.

The same number may be chosen from candidates an unlimited number of times. Two combinations are unique if the frequency of at least one of the chosen numbers is different.

Solve now

Question 56

House Thief

Medium

Given a number array representing the wealth of n houses, determine the maximum amount of money the thief can steal without alerting the security system.

Solve now

Question 57

House Robber II Medium

You are given an array representing the amount of money each house has. This array models a circle of houses, meaning that the first and last houses are adjacent. You are tasked with figuring out the maximum amount of money you can rob without alerting the neighbors.

The rule is: if you rob one house, you cannot rob its adjacent houses.

Solve now

Question 58

Decode Ways Medium

You have given a string that consists only of digits. This string can be decoded into a set of alphabets where '1' can be represented as 'A', '2' as 'B', ... , '26' as 'Z'.

The task is to determine how many ways the given digit string can be decoded into alphabets.

Solve now

Question 59

Unique Paths

Medium

You are given an array representing the amount of money each house has. This array models a circle of houses, meaning that the first and last houses are adjacent. You are tasked with figuring out the maximum amount of money you can rob without alerting the neighbors.

The rule is: if you rob one house, you cannot rob its adjacent houses.

Solve now

Question 60

Minimum Jumps To Reach The End

Medium

Given an array of positive numbers, where each element represents the max number of jumps that can be made forward from that element, write a program to find the minimum number of jumps needed to reach the end of the array (starting from the first element).

If an element is 0, then we cannot move through that element.

Solve now

Question 61

Word Break

Medium

Given a non-empty string and a dictionary containing a list of non-empty words, determine if the string can be segmented into a space-separated sequence of one or more dictionary words.

Each word in the dictionary can be reused multiple times.

Solve now

See Solution of All Questions

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