Part 3: Coding Interview Question Guide

Practicing for coding questions takes a lot of time, effort, and focus. Let's break down the top Google coding questions as well as actionable advice to prepare.

We will outline the top 15 coding questions to get you familiar with the kinds of questions expected of you. To see detailed answers, check out part 2 of this series, Google Coding Interview Questions: top 18 questions explained.

Top 15 Google coding interview questions

Find the kth largest element in a number stream

Problem Statement: Design a class to efficiently find the Kth largest element in a stream of numbers. The class should have the following two things:

- The constructor of the class should accept an integer array containing initial numbers from the stream and an integer 'K'.
- The class should expose a function add(int num) which will store the given number and return the Kth largest number.

Find ‘k’ closest numbers

Problem Statement: Given a sorted number array and two integers ‘K’ and ‘X’, find ‘K’ closest numbers to ‘X’ in the array. Return the numbers in the sorted order. ‘X’ is not necessarily present in the array.

Delete node with given key

Problem statement: You are given the head of a linked list and a key. You have to delete the node that contains this given key.

Copy linked list with arbitrary pointer

Problem statement: You are given a linked list where the node has two pointers. The first is the regular ‘next’ pointer. The second pointer is called ‘arbitrary_pointer’ and it can point to any node in the linked list.

Your job is to write code to make a deep copy of the given linked list. Here, deep copy means that any operations on the original list (inserting, modifying and removing) should not affect the copied list.

Mirror binary trees

Problem statement: Given the root node of a binary tree, swap the ‘left’ and ‘right’ children for each node.

Find all paths for a sum

Problem statement: Given a binary tree and a number ‘S’, find all paths from root-to-leaf such that the sum of all the node values of each path equals ‘S’.

Longest substring with no more than ‘k’ distinct characters

Problem statement: Given a string, find the length of the longest substring in it with no more than K distinct characters.

Longest substring with no repeating characters

Problem statement: Given a string, find if its letters can be rearranged in such a way that no two same characters come next to each other.

Equal subset sum partition

Problem statement: Given a set of positive numbers, find if we can partition it into two subsets such that the sum of elements in both subsets is equal.

Determine if the number is valid

Problem statement: Given an input string, determine if it makes a valid number or not. For simplicity, assume that white spaces are not present in the input.

Print balanced brace combinations

Problem statement: Print all braces combinations for a given value ‘N’ so that they are balanced.

Given a number of tasks, determine if they can all be scheduled

Problem statement: 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.

Implement a LRU cache

Problem statement: Least Recently Used (LRU) is a common caching strategy. It defines the policy to evict elements from the cache to make room for new elements when the cache is full, meaning it discards the least recently used items first.

Find the high and low index

Problem statement: Given a sorted array of integers, return the low and high index of the given key. Return -1 if not found. The array length can be in the millions with many duplicates.

Merge overlapping intervals

Problem statement: You are given an array (list) of interval pairs as input where each interval has a start and end timestamp. The input array is sorted by starting timestamps. You are required to merge overlapping intervals and return output array (list).