Microsoft Interview Coding Questions:

Easy:

Key Pair

Is Binary Number Multiple of 3

Missing number in array

Check for BST

Finding middle element in a linked list

Root to leaf path sum

Reverse a linked list

Remove every kth node

Write an Efficient Function to Convert a Binary Tree into its Mirror Tree

Determine if Two Trees are Identical

Medium:

Kadane's Algorithm

Majority Element

Search in a Rotated Array

Merge 2 sorted linked list in reverse order

Longest Even Length Substring such that Sum of First and Second Half is same

Three Sum Closest

Coin Change

Pascal Triangle

Largest Number formed from an Array

Kth Smallest

Hard:

Max Circular Subarray Sum

Strictly Increasing Array

Median of 2 Sorted Arrays of Different Sizes

Travelling Salesman Problem

Alien Dictionary

D. E. Shaw Interview Coding Questions:

Easy:

Two Mirror Trees

Stack using two queues

Reverse a Doubly Linked List

Palindrome Substring

Intersection Sorted Linked Lists

Find the element that appears once in sorted array

Print all nodes that don't have sibling

Count BST nodes that lie in a given range

Maximum no of 1s row

Medium:

Stock buy and sell II

Missing And Repeating

Sum of Middle Elements of two sorted arrays

Maximum Product Subarray

Magnet Array Problem

Spirally traversing a matrix

Check if two Nodes are Cousins

Search in a Rotated Array

Largest BST

Print Anagrams Together

Rotate by 90 degree

Water Overflow

Hard:

Longest Increasing Path in a Matrix

Find median in a stream

Clone a linked list with next and random pointer

Insert and Search in a Trie

Topological sort

Morgan Stanley Interview Coding Questions:

Easy:

Missing number in array

Remove duplicate elements from sorted Array

Minimum element in a sorted and rotated array

Next greater number set digits

Minimum Distinct Ids

Largest subarray of 0s and 1s

Palindrome Substring

Delete Middle of a Linked List

Kth from End of Linked List

Medium:

Consecutive 1s not allowed

Coin Change

Find whether path exist

Factorials of large numbers

Swap Kth nodes from ends

Circular tour

Check if subtree

Maximum sum leaf to root path

Maximum Winning score Activity Selection

Hard:

Number of subsets with product less than k

Clone a linked list with next and random pointer

Binary Tree to DLL

Find median in a stream

AVL Tree Insertion

Convex Hull

Accolite Interview Coding Questions:

Easy:

Count Squares

Sum of two numbers represented as arrays

Max sum submatrix

Root to leaf path sum

Level order traversal in spiral form

Implement Stack using Queues

n’th node from end of linked list

Product array puzzle

Medium:

Coin Change

Permutations of a given string

Stock buy and sell

Longest Palindrome in a String

Maximum sum Rectangle

Lowest Common Ancestor in a Binary Tree

Maximize Number of 1’s

Kth Smallest

Top k numbers in a stream

Tic Tac Toe

Hard:

Longest Prefix Suffix

N-Queen Problem

Cisco Interview Coding Questions:

Easy:

Missing number in array

Reverse words in a given string

Counbt set bits

Reverse a linked list

Does array represent Heap

Escape the jail

Insertion Sort

Bubble Sort

Swap two nibbles in a byte

Count all possible paths from top left to bottom right

Medium:

Permutations of a given string

Array to BST

Level order traversal

Minimum Spanning Tree

Kth largest element in a stream

K'th smallest element

Lowest Common Ancestor in a Binary Tree

ZigZag Tree Traversal

Longest Bitonic subsequence

Negative weight cycle

Visa Interview Coding Questions:

Easy:

Product Pair

Search in a matrix

Find Pair Given Difference

Does robot moves circular

Remove Duplicates from a Sorted Linked List

Medium:

Indexes of Subarray Sum

Search in a row-column sorted Matrix

Heap Sort

Maximum Intervals Overlap

Longest Palindromic Substring

Flattening a Linked List

Intersection Point in Y Shaped Linked Lists

0 – 1 Knapsack Problem

Number of Coins

Strongly Connected Components (Kosaraju's Algo)

Find the number of islands

Count of sum of consecutives

Hard:

LRU Cache

N-Queen Problem

Qualcomm Interview Coding Questions:

Easy:

Find length of Loop

Implement strstr

Left View of Binary Tree

Check for BST

Reverse Bits

Reverse a linked list

Array Subset of another array

Set Bits

Missing in Array

Medium:

Min distance between two given nodes of a Binary Tree

Delete a node from BST

Intersection Point in Y Shaped Linked Lists

Detect Loop in linked list

Next Permutation

Find Prime numbers in a range

Sort 0s, 1s and 2s

Merge Sort

Infosys Interview Coding Questions:

Easy:

Print first n Fibonacci Numbers

Find the first non-repeating character from a stream of characters

Best Time to Buy and Sell Stock (at most one transaction allowed).

Pair with given Sum (Two Sum).

Remove duplicates from Sorted Array

Sentence Palindrome (Palindrome after removing spaces, dots,.. etc).

Sort string of characters

Program for addition of two matrices

Binary Search

Program for Armstrong Numbers

Area of Rectangle. Right Angled Triangle and Circle

Program to check if two given matrices are identical

Convert from any base to decimal

Celsius to Fahrenheit Conversion

Print 1 to n without using loops

Middle of Three

Binary representation

Greatest of three numbers

Number Of Open Doors

Maximum Possible Sum of Products

Check if given four points form a square

Overlapping rectangles

Sum of all prime numbers between 1 and N.

Check if a number is power of another number

Common Divisors

Perfect Number

Sum Palindrome

Remove common characters and concatenate

Check if string is rotated by two places

Check if date is valid

The Lazy Caterer's Problem

Program to print Sum Triangle for a given array.

Party of Couples

Form largest number from digits

Print the left element

Tidy Number

Mean

Medium:

Longest Palindromic Substring.

Allocate minimum number of pages

Reverse digits of an integer with overflow handled

Longest Increasing Subsequence

Next Permutation

Minimum number of jumps

Minimize the Heights I|

Find the smallest positive integer value that cannot be represented as sum of any subset of a given array.

Rotate Array.

Minimum Platforms

House Robber

Max length chain

Find the element that appears once in a sorted array.

Fractional Knapsack

Count Number of Nodes With Value One in Undirected Tree

Job Sequencing Problem

Minimum Cost Path

Number of subarrays having sum exactly equal to k

Find K-Avoiding Array.

Generate Parentheses

Majority Element

Largest Number formed from an Array.

Hard:

0 - 1 Knapsack Problem

Partition Equal Subset Sum

Wildcard Pattern Matching

Maximize cost of forming a set of words using given set of characters

Form a palindrome

Minimize refills to reach end of path

Matrix Chain Multiplication

Count Smaller elements

Minimum number of deletions.

Probability of Knight

Maximum sum of segments among all segments formed in array after Q queries

Longest Common Substring

Max rectangle

Find all distinct subset (or subsequence) sums

Find all possible palindromic partitions of a String

WIPRO Interview Coding Questions:

Easy:

Program for factorial of a number

How to swap two numbers without using a temporary variable?

Different Methods to Reverse a String in C++

Print alternate elements of an array.

Value equal to index value

At least two greater elements

Remove Spaces

Remove vowels from string.

Program to print reciprocal of letters

Second Largest.

Armstrong Numbers.

um of Digit is Palindrome or no

Binary representation.

Remove characters from alphanumeric string

Cube root of a number

Number of Diagonals

Compound Interest

12 hour clock Multiplication

Time to Words

Java Operators (Relational)

Sum of AP series

Check if two given circles touch each other

Third Largest element

Prime Number

Maximum Occurring Character

Pythagorean Triplet

Find position of set bit.

Maximum money

Count Odd Factors.

Anagram.

Find first set bit

Bubble Sort

Key Pair.

Medium:

Binary Search

Linked List Insertion

Remove duplicate elements from sorted Array.

Merge Sort.

Perfect Numbers

Get Minimum Squares

Number of 1 Bits

Perfect Squares in a Rangs.

Minimize the Heights I|

Largest Sum Contiguous Subarray.

Majority. Element.

Count Inversions

Rotate a Linked List.

Validate an IP Address.

Reverse a Linked List in groups of given size.

Quick Sort

Stock span problem.

Hard:

Binary Tree to DLL

Reorder List

Matrix Chain Multiplication

Fixing Two nodes of a BST

Merge two BST's

N-Queen Problem.

Maximum of minimum for every window size

Maximum Profit

Count the subarrays having product loss than k

Wildcard string matching.

Distinct palindromic substrings

Quicksort on Doubly Linked List

AVL Tree Deletion.

Shortest Unique prefix for every word

Word Break (Trie)

Travelling Salesman Problem

Questions for Product Based Companies:

Math:

Missing Number in Array

Trailing Zeros in Factorial

A Simple Fraction

Nth Natural Number

Smallest Positive Integer that can not be represented as Sum

Arrays:

Rotate Array

Majority Element

Plus one

Array of alternative +ve and -ve no.s

Product Array puzzle

Frequencies of Limited Range Array Elements

Large Factorial

Jump Game

Maximum number of 1's

Stock Buy and Sell

Longest Consecutive Subsequence

Maximum value of difference of a pair of elements and their Index

Maximum index

K-th element of two sorted Arrays

Trapping Rain Water

3 sum closest

Maximum circular Subarray Sum

Merge without Extra Space

Searching:

Search insert position of K in a sorted array

Collecting Wood

Left most and right most index

Bitonic Point

Search an element in sorted and rotated array

Square root of a number

Find missing in second array

Painter's Partition Problem

Median of 2 sorted arrays of Different sizes

Allocate minimum number of pages

Sorting:

Wave array

Count the number of possible triangles

Triplets with sum with given range

Count Inversions

Relative Sorting

Minimum Platforms

Maximum Index

Matrix:

Sort a 2D vector diagonally

Spiral Matrix

Boolean matrix

Rotate matrix by 90 degrees

Search in a row-column sorted Matrix

Row with maximum 1s

String:

Reverse words in a given string

Longest Common Prefix

Roman Number to Integer

Next higher palindrome number using the same set of digits

Length of longest prefix suffix

Smallest window in string containing all characters

Validate an IP address

Implement Atoi

Look and say Pattern

Longest K unique characters substring

Hashing:

Key Pair

Top K Frequent Elements in Array

Intersection of two arrays

Array Pair Sum Divisibility Problem

Triplet Sum in Array

Length of the longest substring

Is Sudoku Valid

Print Anagrams Together

Subarrays with sum K

Longest subarray with sum divisible by K

Bit Masking:

Reverse bits

Number of set bits

Sum of two integers

Check whether K-th bit is set or not

Longest Consecutive 1's

Find the element that appears once

Gray code

Maximum AND

Maximum subset XOR

Bit Difference

Linked List:

Merge Two Sorted Linked Lists

Reverse a Linked List

Delete a Node without Head Pointer

Add two Numbers represented by linked lists

Finding middle element in a linked list

Check if linked list is palindrome

Rearrange a linked list

Detect and Remove a loop In Linked List

Merge Sort for Linked List

Intersection of Linked List

Rotate Linked List by K places

Flattening a Linked List

Reverse a linked list in groups of given size

Partition a linked list around a given value

Clone a linked list with next and random pointers

Stack:

Parenthesis Checker

Infix to Postfix

Restrictive Candy Crush

Next Larger Element

Stock span problem

The Celebrity Problem

Maximum Rectangular Area in a Histogram

Longest Valid Parentheses

Maximum of minimum for every window size

Remove K digits

132 Geeky Buildings

Queue:

Maximum of all subarrays of size K

Circular tour (Sliding Window)

Heap:

Rearrange Characters

Minimum Cost of ropes

Kth largest element of stream

Merge k sorted arrays

Median of stream

Binary Tree

Symmetric Tree

Zigzag Tree Traversal

Checked for Balanced tree

Height of Binary Tree

Diameter of Binary tree

Determine if two trees are identical

Minimum depth of binary tree

Check if subtree

Inorder Traversal (iterative)

Preorder Traversal (iterative)

Postorder Traversal(iterative)

Vertical Traversal of a Binary Tree

Construct Binary Tree from Preorder and Inorder Traversal

Connect nodes at same level

Lowest Common Ancestor of a Binary Tree

Boundary Traversal

Sum tree

Binary Tree to Doubly Linked List

Maximum sum path between two leaf nodes

Burning Tree

Binary Search Tree:

Check for BST

Array to BST

Inorder Successor in BST

Kth Largest Element in a BST

Remove BST keys outside the given range

Pair with given target in BST

Unique BSTS

Preorder Traversal and BST

Merge two BST's

Fixing two nodes of a BST

Graph:

Number of Islands

COVID Spread

Prerequisite tasks

Strongly Connected Component

Minimum swaps to sort

Shortest path

Circle of Strings

Snake and Ladder Problem

Detect cycle in an undirected graph

Detect cycle in a directed graph

Check for Bipartite graph

Unit Area of Largest region of 1s

Alien Dictionary

Word Ladder

Trie:

Minimum XOR value pair

Word Boggle - II

Most frequent word in an array of strings

Minimum XOR value pair

Greedy:

N meetings in one room

Coin Piles

Maximize Toys

Largest number with given sum

Minimize the heights

Fractional Knapsack

Job Sequencing

Police and Thieves

Water the Plants

Dynamic Programming:

Count ways to reach the n'th stair

Get Minimum Squares

0 - 1 Knapsack Problem

Number of Coins

Edit distance

Maximize The Cut Segments

Box Stacking

Longest Increasing Subsequence

Longest Palindromic Substring

Longest Common Substring

Longest Common Subsequence

Widcard Pattern Matching

Total Decoding Messages

Max length chain

Maximum sum increasing subsequenc

Minimum number of jumps

Subset Sum Problem

Maximum path sum in matrix

Player with max score

Shortest Common Supersequence

Palindrome Partitioning

Form a Palindrome

Boolean Parenthesization

Matrix Chain

Maximum Profit

Minimum Cost Path

Partition Equal Subset Sum

Recursion:

Number of Paths

Pascals Triangle

Josephus problem

Tower of Hanoi

Special Keyboard

Flood Fill Algorithm

Backtracking:

Permutations

Letter Combinations of a Phone Number

Generate Parentheses

Word Boggle - 1

Rat in a Maze Problem

Largest number in K swaps

Combination Sum

Palindrome Partitioning

N-Queen Problem

Solve the Sudoku

Algoritms:

Bubble Sort

Insertion Sort

Selection Sort

Merge Sort

Quick Sort

Heap Sort

Count Sort

Kadane Algorithm

Minimum Spanning Tree

Implementing Dijkstra Algorithm

Floyd Warshall

Bellman Ford Algorithm

Rabin-Karp Algorithm

KMP algorithm

Z Algorithm

Huffman Encoding

Design:

Stack using two queues

Queue using stack

Ternary Search

Binary Heap Operations

LRU cache

Trie | (insert and Search)

The list contains more than 200 questions according to the popularity in interview experiences of major Tech Companies.

Arrays:

Subarray with given sum

Count the triplets

Kadane's Algorithm

Missing number in array

Merge two sorted arrays

Rearrange array alternatively

Number of pairs

Inversion of Array

Sort an array of 0s, 1s and 2s

Equilibrium point

Leaders in an array

Minimum Platforms

Reverse array in groups

K'th smallest element

Trapping Rain Water

Pythagorean Triplet

Chocolate Distribution Problem

Stock buy and sell

Element with left side smaller and right side greater

Convert array into Zig-Zag fashion

Last Index of 1

Spirally traversing a matrix

Largest Number formed from an Array

Find Missing And Repeating

Maximum Index

Consecutive 1's not allowed

Majority Element

Two numbers with sum closest to zero

Nuts and Bolts Problem

Boolean Matrix Problem

Smallest Positive missing number

Jumping Caterpillars

String:

Reverse words in a given string

Permutations of a given string

Longest Palindrome in a String

Recursively remove all adjacent duplicates

Check if string is rotated by two places

Roman Number to Integer

Anagram

Remove Duplicates

Form a Palindrome

Longest Distinct Characters in the string

Implement Atoi

Implement strstr

Longest Common Prefix

Most frequent word in an array of strings

CamelCase Pattern Matching

String Ignorance

Smallest window in a string containing all the characters of another string

Design a tiny URL or URL shortener

Permutations of a given string

Non Repeating Character

Check if strings are rotations of each other or not

Save Ironman

Repeated Character

Remove common characters and concatenate

Geek and its Colored Strings

Second most repeated string in a sequence

Linked List:

Finding middle element in a linked list

Reverse a linked list

Rotate a Linked List

Reverse a Linked List in groups of given size

Intersection point in Y shaped linked lists

Detect Loop in linked list

Remove loop in Linked List

n'th node from end of linked list

Flattening a Linked List

Merge two sorted linked lists

Intersection point of two Linked Lists

Pairwise swap of a linked list

Add two numbers represented by linked lists

Check if Linked List is Palindrome

Implement Queue using Linked List

Implement Stack using Linked List

Given a linked list of 0s, 1s and 2s, sort it

Delete without head pointer

Stack and Queue:

Parenthesis Checker

Next larger element

Queue using two Stacks

Stack using two queues

Get minimum element from stack

LRU Cache

Circular tour

First non-repeating character in a stream

Rotten Oranges

Maximum of all subarrays of size k

Tree:

Print Left View of Binary Tree

Check for BST

Print Bottom View of Binary Tree

Print a Binary Tree in Vertical Order

Mirror Tree

Longest consecutive sequence in Binary tree

Bottom View of Binary Tree

Lowest Common Ancestor in a Binary Tree

Binary to DLL

Level order traversal in spiral form

Connect Nodes at Same Level

Lowest Common Ancestor in a BST

Convert a given Binary Tree to Doubly Linked List

Write Code to Determine if Two Trees are Identical or Not

Given a binary tree, check whether it is a mirror of itself

Height of Binary Tree

Maximum Path Sum

Diameter of a Binary Tree

Number of leaf nodes

Check if given Binary Tree is Height Balanced or Not

Serialize and Deserialize a Binary Tree

Heap:

Find median in a stream

Heap Sort

Operations on Binary Min Heap

Rearrange characters

Merge K sorted linked lists

Kth largest element in a stream

Recursion:

Flood fill Algorithm

Number of paths

Combination Sum – Part 2

Special Keyboard

Josephus problem

Hashing:

Relative Sorting

Sorting Elements of an Array by Frequency

Largest subarray with 0 sum

Common elements

Find all four sum numbers

Swapping pairs make sum equal

Count distinct elements in every window

Array Pair Sum Divisibility Problem

Longest consecutive subsequence

Array Subset of another array

Find all pairs with a given sum

Find first repeated character

Zero Sum Subarrays

Minimum indexed character

Check if two arrays are equal or not

Uncommon characters

Smallest window in a string containing all the characters of another string

First element to occur k times

Check if frequencies can be equal

Graph:

Depth First Traversal

Breadth First Traversal

Detect cycle in undirected graph

Detect cycle in a directed graph

Topological sort

Find the number of islands

Implementing Dijkstra

Minimum Swaps

Strongly Connected Components

Shortest Source to Destination Path

Find whether path exist

Minimum Cost Path

Circle of Strings

Floyd Warshall

Alien Dictionary

Snake and Ladder Problem

Greedy:

Activity Selection

N meetings in one room

Coin Piles

Maximize Toys

Page Faults in LRU

Largest number possible

Minimize the heights

Minimize the sum of product

Huffman Decoding

Minimum Spanning Tree

Shop in Candy Store

Geek collects the balls

Dynamic Programming:

Minimum Operations

Max length chain

Minimum number of Coins

Longest Common Substring

Longest Increasing Subsequence

Longest Common Subsequence

0 – 1 Knapsack Problem

Maximum sum increasing subsequencez

Minimum number of jumps

Edit Distance

Coin Change Problem

Subset Sum Problem

Box Stacking

Rod Cutting

Path in Matrix

Minimum sum partition

Count number of ways to cover a distance

Egg Dropping Puzzle

Optimal Strategy for a Game

Shortest Common Supersequence

Divide and Conquer:

Find the element that appears once in sorted array

Search in a Rotated Array

Binary Search

Sum of Middle Elements of two sorted arrays

Quick Sort

Merge Sort

K-th element of two sorted Arrays

Backtracking:

N-Queen Problem

Solve the Sudoku

Rat in a Maze Problem

Word Boggle

Generate IP Addresses

Bit Magic:

Find first set bit

Rightmost different bit

Check whether K-th bit is set or not

Toggle bits given range

Set kth bit

Power of 2

Bit Difference

Rotate Bits

Swap all odd and even bits

Count total set bits

Longest Consecutive 1's

Sparse Number

Alone in a couple

Maximum subset XOR

Companywise Questions for Companies that participated in Placement Drive:

rtCamp

Frontend or Backend Preference:

Clarifying my technical preferences, I was asked whether I leaned towards Frontend, Backend, or both.

GitHub and Git:

A series of questions unfolded, probing my understanding of Git and GitHub:

1. Can we use GitHub without Git?

2. Features of Git.
3. Where is all the Git data stored?
4. Difference between .git and .github directory.
5. Explanation of Gitignore.

Repository and Code Upload Scenarios:

The conversation delved into scenarios related to repositories and code upload dynamics:

1. Can another person push code in a private repository?
2. How does GitHub identify a user uploading data?
3. Implications of copying authorized Git and GitHub into code.

Technical Frameworks and Libraries:

1. Difference between jQuery and React.
2. Distinction between DOM and Virtual DOM.
3. Preference between React and jQuery for a website with 50 pages.
4. JavaScript and Session Handling:

JavaScript:

1. Difference between JavaScript and vanilla JavaScript.
2. Speed considerations for building a slider using pure JavaScript or React.
3. Feasibility of using sessions without cookies.
4. Security and Validation.

Security aspects:

1. Authorization of user logins.
2. Data is stored in JWT (JSON Web Token).
3. Encryption versus hashing for password security.
4. Significance of salt in hashing.
5. Understanding Rainbow tables.
6. Form Validation and HTTP Methods:

Form Validation & HTTP methods:

1. Validation preferences for a form with name, email, and a message box.
2. Security considerations of server-side versus client-side validation.
3. Implications of disabling JavaScript on client-side validation.
4. Differences between GET and POST methods.

TVS Motor Company

Technical Interview Questions

1. Tell me about yourself?
2. Explain about your projects in general
3. and what is the difference between session and cookies.
4. How to find Nth highest salary from a table?
5. Explain different types of joins?
6. What are all data types does sql have?
7. what is the type of architecture used in Django?
8. what is the role of PHP in web development?
9. explain different constraints in sql?

Amagi:

2nd Round Details (F2F technical round 1): Introduced myself and jumped right into coding. The following 4 questions were asked.

1. Given 3 points on a 2-D plane, check if the three points are collinear. This was a pretty straight forward question and can be solved with O(1) time complexity.
2. Given a number ‘n’, get the first ‘n’ numbers in the Fibonacci series, and return the sum of all the numbers in the prime number indices of the series.
3. Given a binary tree, find the sum of all leaf nodes.
4. Given an array of integers, find the longest subarray whose sum is zero. This was a dynamic programming question that could be solved with space complexity of O(n) and time complexity of O(n).

In this round, I had to explain my approach first and then code it from scratch and execute it without any errors, covering all the edge cases. I was able to get all the questions right.

3rd Round Details (F2F technical round 2): After an elaborate introduction, the interviewer asked me basic questions on DBMS(subqueries, joins, and normalization), CN(routing algorithms), OS(deadlocks and semaphores), DSA(binary trees, heaps). After this, I was asked to code 2 problems.

1. Given an array of integers that represent the stock price of a commodity, find the days on which a person should buy and sell stock to maximize the profit. This was again a dynamic programming question that could be solved with time complexity of O(n) and space complexity of O(n).
2. Given a binary search tree, print the right view. I was asked to cover all edge cases and optimize the code. This was done with the time complexity of O(n).

Zopsmart:

Round 1

It was an online assessment that consisted of 4 easy coding questions.

Time Duration: 45 min(s)

- Checking whether a number is Palindrome or not.
- IP address.

Round 3 (45 min Technical interview)

For me, the discussion revolved majorly around Data Structures, Object Oriented Programming (OOPs), Operating Systems and a little bit of the projects that were mentioned in my resume.

Questions that I was asked were:

- What is a Peer to peer network, What is a client-server Architecture
- What are the Operating System, Deadlock, and Bankers algorithms, How can a user view system UI when the system is switched ON, What is BIOS, Round Robin Scheduling
- Detect loop in a linked list
- Given a tree finds its maximum depth
- Bottom View of a Binary Tree
- Given an array consisting of digits from 1 to N, with one digit missing. Find the missing digit.
- Polymorphism, types, overloading and overriding, Abstraction
- Doubly linked list and circular linked list

Round 4 (45 min Technical interview)

The discussion was majorly around concepts from DBMS, Data Structures, and what's mentioned in the resume

Some questions that I was asked were:

- AVL tree and how do you balance it, Rotations in an AVL tree
- Red black tree and uses
- Applications of a circular linked list
- Nearly 10-12 differences and similarities between Java and Python programming language
- In-depth questions related to projects
- Comparison of inheritance types that are supported In both Java and Python
- Normalization forms in DBMS.

- 1 SQL Query involving the use of Aggregate functions, Enums, and Joins. I couldn't solve this question completely.
- Given an IP Address the interviewer asked me to calculate the number of subnets of the IP Address.

My other friends who got shortlisted for the last round were asked the code for:

- Given a linked list: 1->2->3->4->5->6->7->8.
- Swap elements and the modified LinkedList should be 3->4->1->2->7->8->5->6.

Cognizant:

Array:

Rotate Array

Largest Element in Array

Find Second largest element in an array.

Print alternate elements of an array.

Program to find sum of elements in a given array.

Palindromic Array.

Count of smaller elements

Find the Index of an array.

Element with left side smaller and right side greater

Missing number in array.

Count the Zeros

Sort elements by frequency.

Counting elements in two arrays

Two Repeated Elements

Elements in the Range

Remove minimum elements

Buildings receiving sunlight

Last duplicate element in a sorted array.

Adding Array_Elements

Program for average of an array. (Iterative and Recursive)

Given an array of pairs, find all symmetric pairs in it

Remove duplicates from unsorted array using Map data structure

Find whether an array is subset of another array

Program to syslically rotate an array.by ong

Rearrange Array Alternately.

Swap kth elements

Sum of Middle Elements of two sorted arrays

String:

Reverse a String

Non Repeating Character

Sum of numbers in string

Remove character

Remove Spaces

Check for Binary.

Upper case conversion

Count Substrings

Remove duplicates from a given string

Reverse words in a given string

Program to find Smallest and Largest Word in a String

Return maximum occurring character in an input string

Palindrome String

Check for Binary.

Same characters in two strings

Check whether two strings are an anagram of each other

Length of the longest valid substring

Converting Roman Numerals to Decimal lying between 1 to 3999

Given a binary string, count number of substrings that start and end with 1.

Round the given number to nearest multiple of 10

Alternatively Merge two Strings in Java

Most frequent word in an array of strings

Alternate Lower Upper String Sort

program to concatenate a string given number of times

Searching and Sorting:

Binary Search

Linear Search

Bubble Sort

Insertion Sont

Merge Sort

Selection Sont

Quick Sort

Heap Sort

Number Series:

Crack the series

Change Bits

Odd Game

Program to find LCM of two numbers

Check if a numbenis Palindrome

Program for Armstrong Numbers

Program for Fibonacci numbers

Primitive Abundant Number

Write a program Perfect Number

Sum of all prime numbers between 1 and N.

program to check whether a given number is even or odd

Program to Check Whether a Number is Prime or not

Program to check if a given year is leap year

Program for factorial of a number

Program for sum of geometric series

Program for N-th term of Geometric Progression series

Automorphic Number

Program to find area of a circle

Find all divisors of a natural number

Program to find GCD or HCF of two numbers

How to swap two numbers without using a temporary variable

Find the Largest Number Among Three Numbers

Given a number N, the task is to find the Prime Numbers from 1 to N

DeltaX:

DSA:

Print K largest(or smallest) elements in an array.

Check if two arrays are equal or not

Find the Missing Number

Inversion count in Array using Merge Sort

Merge two sorted arrays

Equilibrium index of an array.

Median of two Sorted Arrays of Different Sizes

Searching in Binary Search Tree (BST).

Binary Heap Operations

Convert a given tree to its Sum Tree

Segment Tree | Sum of given range

Find the element that appears once

Binary Search - Data Structure and Algorithm Tutorials

Detect cycle in an undirected graph

Topological Sort

Strongly Connected Components in a Graph

How to find Shortest Paths from Source to all Vertices using Dijkstra's Algorithm

Minimum number of nodes to be selected to light up all the edges of the tree (Select Nodes).

Floyd-Warshall Algorithm

Minimum Spanning Tree

Total number of Spanning Trees in a Graph

Minimum Initial Points to Reach Destination

Longest Common Subsequence

Edit Distance

Minimum Sum Path in a Triangle

Count number of coins required to make a given value (Coin Change |)

The Painter's Partition Problem

Rod Cutting Problem

Matrix Chain Multiplication

Huffman Coding

Find Subarray with given sum

Smallest subarray with sum greater than x

N-Queens Problem

Find ith Index character in a binary string obtained after n iterations

Rabin-Karp Alaorithm for Pattern Searching

Trie I (Insert and Search)

Count of strings whose prefix match with the given string to a given length k

Partition problem.

Matrix Chain Multiplication

Tarjan's Algorithm to find Strongly Connected Components

Insertion in an AVI. Tres

Kith largest clement in a stream

Longsst Increasing Subsequence. (LIS)

Program for array left rotation by d positions.

Stock Buy Sell to Maximize Profit

0/1 Knapsack Problem

Trapping Rain Water

Word Break Problem.

Wildcard Pattern Matching

Implementing Regular Expression Matching

OS:

Difference between contiguous and non-contiguous memory allocation.

Compare and contrast synchronous and asynchronous I/O operations.

Describe the benefits and drawbacks of thread pools in multithreaded programming.

Different types of disk scheduling algorithms and their performance characteristics.

How does paging work in virtual memory systems? What are the page table and TLB?

Concept of system calls and their role in the interaction between user programs and the kernel.

Discuss the various types of file system locks and their purpose in preventing data corruption.

How does user authentication and authorization work in an operating system?

Explain the advantages and limitations of different types of distributed file systems.

DBMS:

Database Management System is a software or technology used to manage data from a database. Some popular databases are MySQL, Oracle, MongoDB, etc.

Explain the ACID properties of transactions and provide real-world examples.

Differentiate between primary key, candidate key, and unique key.

Write an efficient SQL query to find the top N highest salaries in a Employees table.

Explain the concept of joins (inner, outer, left, right) and when to use each type.

Discuss different types of database normalization (1NF, 2NF, 3NF) and their benefits.

How would you handle concurrency issues in a database like deadlocks and lost updates?

Explain the difference between B-Tree and Hash indexing and their performance implications.

Advantages and disadvantages of NoSQL databases compared to traditional relational databases.

Explain the concept of database transactions and isolation levels

Computer Networks

A computer network is a collection of computers or devices connected to share resources. Any device which can share or receive the data is called a Node.

Explain the difference between Unicasting, Anycasting, Multicasting, and Broadcasting.

Describe the OSI Model and the different layers involved.

What is the role of TCP and UDP protocols in data transmission?

How does routing work in a network? Explain different routing protocols.

Discuss the concept of subnetting and its benefits.

Explain the working of DHCP and its importance in assigning IP addresses.

What are firewalls and how do they protect networks from security threats?

Describe different types of network attacks and methods to mitigate them.

Explain the concept of virtual networks and their applications.

Compare and contrast wired and wireless network technologies.

OOPS:

Object-oriented programming – As the name suggests uses objects in programming. Object-oriented programming aims to implement real-world entities like inheritance, hiding, polymorphism, etc. in programming.

Explain the four pillars of object-oriented programming (OOP)

Differentiate between classes and objects.

Different types of inheritance (Single, Multilevel, Hierarchical, Hybrid)

Different forms (Method Overloading and Overriding).

Benefits and drawbacks of using abstract classes and interfaces.

Explain the concept of access modifiers (public, private, protected) and their usage.

Describe the difference between constructor and destructor

Explain the concept of exception handling and its importance in error management.

Discuss the difference between shallow copy and deep copy in object cloning.

Concept of operator overloading and its applications in customizing operation behaviour.

Global Logic:

Given an array of integers arr[] of size n, the task is to rotate the array elements to the left by d positions.

Given two numbers a and b and we have to find out Nth number divisible by either a or b. Input will be given in the form of a, b, n.

Input

: 2 3 10

Output

: 15

Given n, which is the number of strings taken as input. For each input use have to print “YES” or “NO” whether the current string is already present or not.