Top 10 Algos in Interview Questions

If you are preparing for a coding interview, going through these problems is a must.

Here you can find the most asked algorithms

By-Anushka Gupta

ARRAYS-

Find pair with given sum in the array

Check if subarray with 0 sum is exists or not

Print all sub-arrays with 0 sum

Sort binary array in linear time

Find a duplicate element in a limited range array

Find largest sub-array formed by consecutive integers

Find maximum length sub-array having given sum

Find maximum length sub-array having equal number of 0's and 1's

Sort an array containing 0's, 1's and 2's (Dutch national flag problem)

Inplace merge two sorted arrays

Merge two arrays by satisfying given constraints

Find index of 0 to replaced to get maximum length sequence of continuous ones

Find maximum product of two integers in an array

Shuffle a given array of elements (Fisher–Yates shuffle)

Rearrange the array with alternate high and low elements

Find equilibrium index of an array

Find majority element in an array (Boyer–Moore majority vote algorithm)

Move all zeros present in the array to the end

Replace each element of array with product of every other element without using / operator

Find Longest Bitonic Subarray in an array

Find maximum difference between two elements in the array by satisfying given constraints

Maximum subarray problem (Kadane's algorithm)

Print continuous subarray with maximum sum

Maximum Sum Circular Subarray

Find all distinct combinations of given length

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Find all distinct combinations of given length with repetition allowed

Find maximum sequence of continuous 1’s formed by replacing at-most k zeroes by ones

Find minimum sum subarray of given size k

Find subarray having given sum in given array of integers

Find the length of smallest subarray whose sum of elements is greater than the given number

Find largest number possible from set of given numbers

Find the smallest window in array sorting which will make the entire array sorted

Find maximum sum path involving elements of given arrays

Maximum profit earned by buying and selling shares any number of times

Trapping Rain Water within given set of bars

Longest Increasing Subsequence

Longest Decreasing Subsequence Problem

Find maximum product subarray in a given array

Find maximum sum of subsequence with no adjacent elements

Find minimum platforms needed in the station so to avoid any delay in arrival of any train

Decode the array constructed from another array

Sort an array using one swap

Find Triplet with given sum in an array

Length of longest continuous sequence with same sum in given binary arrays

Rearrange array such that A[A[i]] is set to i for every element A[i]

Reverse every consecutive m elements of the given subarray

Maximum Product Subset Problem

Find pairs with given difference k in the array

Find pairs with given difference k in the array | Constant space solution

4 sum problem | Quadruplets with given sum

Print all quadruplets with given sum | 4-sum problem extended

Find odd occurring element in an array in single traversal

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Find two odd occurring element in an array without using any extra space

Quickselect Algorithm

Print all Triplets that forms Arithmetic Progression

Print all triplets that forms Geometric Progression

Print all combination of numbers from 1 to n having sum n

Replace each element of the array by its corresponding rank in the array

Print all Triplets in an array with sum less than or equal to given number

Group elements of an array based on their first occurrence

Find minimum difference between index of two given elements present in the array

Find maximum absolute difference between sum of two non-overlapping sub-arrays

Find all Symmetric Pairs in an Array of Pairs

Partition an array into two sub-arrays with the same sum

Find count of distinct elements in every sub-array of size k

Find two numbers with maximum sum formed by array digits

Print all sub-arrays of an array having distinct elements

Find a Triplet having Maximum Product in an Array

Find ways to calculate a target from elements of specified array

Find Minimum Index of Repeating Element in an Array

Generate Random Input from an Array according to given Probabilities

Find pair in an array having minimum absolute sum

Find Index of Maximum Occurring Element with Equal Probability

Check if an Array is Formed by Consecutive Integers

Find two non-overlapping pairs having same sum in an array

Find Minimum Product among all Combinations of Triplets in an Array

Replace every element of an array with the least greater element on its right

Find all odd occurring elements in an array having limited range of elements

Add elements of two arrays into a new array

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Count the distinct absolute values in the sorted array

Print all combinations of positive integers in increasing order that sum to a given number

Find all distinct combinations of given length - Part 2

Find subarrays with given sum in an array

Find the surpasser count for each element of an array

Find maximum length sequence of continuous ones (Using Sliding Window)

Find maximum length sequence of continuous ones

Merging Overlapping Intervals

Activity Selection Problem

Job Sequencing Problem with Deadlines

Introduction to Priority Queues using Binary Heaps

Min Heap and Max Heap Implementation in C++

Min Heap and Max Heap Implementation in Java

Heap Sort (Out-of-place and In-place implementation in C++ and C)

Check if given array represents min heap or not

Convert Max Heap to Min Heap in linear time

Find K'th largest element in an array

Sort a K-Sorted Array

Merge M sorted lists of variable length

Find K'th smallest element in an array

Find smallest range with at-least one element from each of the given lists

Merge M sorted lists each containing N elements

Insertion sort | Iterative & Recursive

Selection sort | Iterative & Recursive

Bubble sort | Iterative & Recursive

Merge Sort

Quicksort

Iterative Implementation of Quicksort

Hybrid QuickSort

Quicksort using Dutch National Flag Algorithm

Quick Sort using Hoare's Partitioning scheme

External merge sort

Custom Sort | Sort elements by their frequency and Index

Custom Sort | Sort elements of the array by order of elements defined by the second array

Inversion Count of an array

Segregate positive and negative integers in linear time

Binary Search

Ternary Search vs Binary search

Interpolation search

Exponential search

Find number of rotations in a circularly sorted array

Search an element in a circular sorted array

Find first or last occurrence of a given number in a sorted array

Count occurrences of a number in a sorted array with duplicates

Find smallest missing element from a sorted array

Find Floor and Ceil of a number in a sorted array

Search in a nearly sorted array in O(logn) time

Find number of 1's in a sorted binary array

Find the peak element in an array

Maximum Sum Subarray using Divide & Conquer

Find Minimum and Maximum element in an array using minimum comparisons

Matrix Chain Multiplication

0-1 Knapsack problem

Maximize value of the expression

Partition problem

Subset sum problem

Minimum Sum Partition problem

Rod Cutting

Coin change-making problem (unlimited supply of coins)

Coin Change Problem (Total number of ways to get the denomination of coins)

Longest alternating subsequence

Combinations of words formed by replacing given numbers with corresponding alphabets

Decode the given sequence to construct minimum number without repeated digits

All combinations of elements satisfying given constraints

Find Missing Term in a Sequence in log(n) time

Print all distinct Subsets of a given Set

Find Floor and Ceil of a number in a sorted array (Recursive solution)

Set both elements of a binary array to 0 in single line

K-Partition Problem | Printing all Partitions

3 Partition Problem

3-partition problem extended | Print all partitions

Iterative Merge Sort Algorithm (Bottom-up Merge Sort)

Find two duplicate elements in an limited range array (using XOR)

Find missing number and duplicate elements in an array

Find Minimum and Maximum element in an array by doing minimum comparisons

Find Frequency of each element in a sorted array containing duplicates

Difference between Subarray, Subsequence and Subset

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BACKTRACKING-

Print all possible solutions to N Queens problem

Print all Possible Knight's Tours in a chessboard

Find Shortest Path in Maze

Find Longest Possible Route in a Matrix

Find path from source to destination in a matrix that satisfies given constraints

Find total number of unique paths in a maze from source to destination

Print All Hamiltonian Path present in a graph

Print all k-colorable configurations of the graph (Vertex coloring of graph)

Find all Permutations of a given string

All combinations of elements satisfying given constraints

Find all binary strings that can be formed from given wildcard pattern

K-Partition Problem | Printing all Partitions

Magnet Puzzle

Find ways to calculate a target from elements of specified array

Find minimum number possible by doing at-most K swaps

Determine if a pattern matches with a string or not

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BST-

Insertion in BST

Search given key in BST

Deletion from BST

Construct balanced BST from given keys

Determine if given Binary Tree is a BST or not

Check if given keys represents same BSTs or not without building the BST

Find inorder predecessor for given key in a BST

Find Lowest Common Ancestor (LCA) of two nodes in a Binary Search Tree

Find K'th smallest and K'th largest element in BST

Floor and Ceil in a Binary Search Tree

Find optimal cost to construct binary search tree

Convert a Binary Tree to BST by maintaining its original structure

Remove nodes from BST that have keys outside the valid range

Find a pair with given sum in a BST

Find inorder successor for given key in a BST

Replace every element of an array with the least greater element on its right

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BINARY TREE-

Check if two given binary trees are identical or not | Iterative & Recursive

Calculate height of a binary tree | Iterative & Recursive

Delete given Binary Tree | Iterative & Recursive

Inorder Tree Traversal | Iterative & Recursive

Preorder Tree Traversal | Iterative & Recursive

Postorder Tree Traversal | Iterative & Recursive

Level Order Traversal of Binary Tree

Spiral Order Traversal of Binary Tree

Reverse Level Order Traversal of Binary Tree

Print all nodes of a given binary tree in specific order

Print left view of binary tree

Print Bottom View of Binary Tree

Print Top View of Binary Tree

Find next node in same level for given node in a binary tree

Check if given binary tree is complete binary tree or not

Determine if given two nodes are cousins of each other

Print cousins of given node in a binary tree

In-place convert given binary tree to its sum tree

Check if given binary tree is a sum tree or not

Combinations of words formed by replacing given numbers with corresponding alphabets

Determine if given binary tree is a subtree of another binary tree or not

Find diameter of a binary tree

Check if given binary Tree has symmetric structure or not

Convert binary tree to its mirror

Check if binary tree can be converted to another by doing any no. of swaps of left & right child

Find Lowest Common Ancestor (LCA) of two nodes in a binary tree

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Print all paths from root to leaf nodes in given binary tree

Find ancestors of given node in a Binary Tree

Find the distance between given pairs of nodes in a binary tree

Find Vertical Sum in a given Binary Tree

Print nodes in vertical order of a given Binary Tree (Vertical Traversal)

Find the diagonal sum of given binary tree

Print Diagonal Traversal of Binary Tree

Print corner nodes of every level in binary tree

In-place convert convert given Binary Tree to Doubly Linked List

Sink nodes containing zero to the bottom of the binary tree

Convert given binary tree to full tree by removing half nodes

Truncate given binary tree to remove nodes which lie on a path having sum less than K

Find maximum sum root-to-leaf path in a binary tree

Check if given binary tree is height balanced or not

Convert normal binary tree to Left-child right-sibling binary tree

Determine if given Binary Tree is a BST or not

Convert a Binary Tree to BST by maintaining its original structure

Invert given Binary Tree | Recursive and Iterative solution

Print Right View of a Binary Tree

Print leaf to root path for every leaf node in a binary tree

Find maximum width of given binary tree

Build Binary Tree from given Parent array

C++ Program to Print Binary Tree Structure

Find all nodes at given distance from leaf nodes in a binary tree

Count all subtrees having same value of nodes in a binary tree

Find Maximum Difference Between a Node and its Descendants in a Binary Tree

Construct a Binary Tree from Ancestor Matrix

Calculate height of a binary tree with leaf nodes forming a circular doubly linked list

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BINARY-

Bit Hacks – Part 1 (Basic)

Bit Hacks – Part 2 (Playing with k'th bit)

Bit Hacks – Part 3 (Playing with rightmost set bit of a number)

Bit Hacks – Part 4 (Playing with letters of English alphabet)

Bit Hacks – Part 5 (Find absolute value of an integer without branching)

Bit Hacks – Part 6 (Random Problems)

Brian Kernighan's Algorithm to count set bits in an integer

Compute parity of a number using lookup table

Count set bits using lookup table

Find the minimum or maximum of two integers without using branching

Multiply 16-bit integers using 8-bit multiplier

Round up to the next highest power of 2

Round up to the previous power of 2

Swap individual bits at given position in an integer

Check if given number is power of 4 or not

Reverse Bits of a given Integer

Find odd occurring element in an array in single traversal

Find two odd occurring element in an array without using any extra space

Swap two bits at given position in an integer

Add binary representation of two integers

Swap Adjacent Bits of a Number

Print all distinct Subsets of a given Set

Perform Division of two numbers without using division operator (/)

Check if adjacent bits are set in binary representation of a given number

Conditionally negate a value without branching

Find two duplicate elements in an limited range array (using XOR)

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Find missing number and duplicate elements in an array

Check if given number is power of 8 or not

Circular shift on binary representation of an integer by k positions

Solve given set of problems without using multiplication or division operators

Reverse Bits of an integer using lookup table

Generate binary numbers between 1 to N

Efficiently implement power function | Recursive and Iterative

Find square of a number without using multiplication and division operator | 3 methods

Generate power set of a given set

Huffman Coding

Find all odd occurring elements in an array having limited range of elements

DIVIDE & CONQUER-

Binary Search

Find number of rotations in a circularly sorted array

Search an element in a circular sorted array

Find first or last occurrence of a given number in a sorted array

Count occurrences of a number in a sorted array with duplicates

Find smallest missing element from a sorted array

Find Floor and Ceil of a number in a sorted array

Search in a nearly sorted array in O(logn) time

Find number of 1's in a sorted binary array

Find the peak element in an array

Maximum Sum Subarray using Divide & Conquer

Find Minimum and Maximum element in an array using minimum comparisons

Efficiently implement power function | Recursive and Iterative

Find Missing Term in a Sequence in log(n) time

Division of Two Numbers using Binary Search Algorithm

Find Floor and Ceil of a number in a sorted array (Recursive solution)

Find Minimum and Maximum element in an array by doing minimum comparisons

Find Frequency of each element in a sorted array containing duplicates

Ternary Search vs Binary search

Exponential search

Interpolation search

Merge Sort Algorithm

Iterative Merge Sort Algorithm (Bottom-up Merge Sort)

Merge Sort Algorithm for Singly Linked List

Inversion Count of an array

Quicksort Algorithm

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Iterative Implementation of Quicksort

Hybrid QuickSort

Quicksort using Dutch National Flag Algorithm

Quick Sort using Hoare’s Partitioning scheme

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DYNAMIC PROGRAMMING:-

Introduction to Dynamic Programming

Longest Common Subsequence | Introduction & LCS Length

Longest Common Subsequence | Space optimized version

Longest Common Subsequence of K-sequences

Longest Common Subsequence | Finding all LCS

Longest Common Substring problem

Longest Palindromic Subsequence using Dynamic Programming

Longest Repeated Subsequence problem

Implement Diff Utility

Shortest Common Supersequence | Introduction & SCS Length

Shortest Common Supersequence | Finding all SCS

Shortest Common Supersequence | Using LCS

Longest Increasing Subsequence using Dynamic Programming

Longest Bitonic Subsequence

Increasing Subsequence with Maximum Sum

The Levenshtein distance (Edit distance) problem

Find size of largest square sub-matrix of 1's present in given binary matrix

Matrix Chain Multiplication

Find the minimum cost to reach last cell of the matrix from its first cell

Find longest sequence formed by adjacent numbers in the matrix

Count number of paths in a matrix with given cost to reach destination cell

0-1 Knapsack problem

Maximize value of the expression

Partition problem

Subset sum problem

Minimum Sum Partition problem

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Find all N-digit binary strings without any consecutive 1's

Rod Cutting

Maximum Product Rod Cutting

Coin change-making problem (unlimited supply of coins)

Coin Change Problem – Find total number of ways to get the denomination of coins

Total possible solutions to linear equation of k variables

Longest alternating subsequence

Count number of times a pattern appears in given string as a subsequence

Collect maximum points in a matrix by satisfying given constraints

Count total possible combinations of N-digit numbers in a mobile keypad

Find optimal cost to construct binary search tree

Word Break Problem

Word Break Problem | Using Trie Data Structure

Determine Minimal Adjustment Cost of an Array

Check if a string is K-Palindrome or not

Wildcard Pattern Matching

Find probability that a person is alive after taking N steps on the island

Calculate sum of all elements in a sub-matrix in constant time

Find maximum sum K x K sub-matrix in a given M x N matrix

Find maximum sum submatrix present in a given matrix

Find maximum sum of subsequence with no adjacent elements

Maximum subarray problem (Kadane's algorithm)

Single-Source Shortest Paths – Bellman Ford Algorithm

All-Pairs Shortest Paths – Floyd Warshall Algorithm

Longest Decreasing Subsequence Problem

Pots of Gold Game using Dynamic Programming

Find minimum cuts needed for palindromic partition of a string

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Maximum Length Snake Sequence

3 Partition Problem

Calculate size of the largest plus of 1's in binary matrix

Check if given string is interleaving of two other given strings

Longest Increasing Subsequence using LCS

Determine negative-weight cycle in a graph

GRAPHS-

Terminology and Representations of Graphs

Graph Implementation using STL

Graph Implementation in C++ without using STL

Implement Graph Data Structure in C

Graph Implementation in Java using Collections

Breadth First Search (BFS) | Iterative & Recursive Implementation

Depth First Search (DFS) | Iterative & Recursive Implementation

Arrival and Departure Time of Vertices in DFS

Types of edges involved in DFS and relation between them

Bipartite Graph

Determine if a given graph is Bipartite Graph using DFS

Minimum number of throws required to win Snake and Ladder game

Topological Sorting in a DAG

Kahn's Topological Sort Algorithm

Transitive Closure of a Graph

Check if an undirected graph contains cycle or not

Total paths in given digraph from given source to destination having exactly m edges

Determine if an undirected graph is a Tree (Acyclic Connected Graph)

2-Edge Connectivity in the graph

2-Vertex Connectivity in the graph

Check if given digraph is a DAG (Directed Acyclic Graph) or not

Disjoint-Set Data Structure (Union-Find Algorithm)

Chess Knight Problem – Find Shortest path from source to destination

Check if given Graph is Strongly Connected or not

Check if given Graph is Strongly Connected or not using one DFS Traversal

Union-Find Algorithm for Cycle Detection in undirected graph

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Kruskal’s Algorithm for finding Minimum Spanning Tree

Single-Source Shortest Paths – Dijkstra’s Algorithm

Single-Source Shortest Paths – Bellman Ford Algorithm

All-Pairs Shortest Paths – Floyd Warshall Algorithm

Find Cost of Shortest Path in DAG using one pass of Bellman-Ford

Least Cost Path in Weighted Digraph using BFS

Find maximum cost path in graph from given source to destination

Determine negative-weight cycle in a graph

Print all k-colorable configurations of the graph (Vertex coloring of graph)

Print All Hamiltonian Path present in a graph

Greedy coloring of graph

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GREEDY-

Activity Selection Problem

Huffman Coding

Shortest Superstring Problem

Job Sequencing Problem with Deadlines

Greedy coloring of graph

Kruskal's Algorithm for finding Minimum Spanning Tree

Single-Source Shortest Paths – Dijkstra's Algorithm

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HEAP-

Introduction to Priority Queues using Binary Heaps

Min Heap and Max Heap Implementation in C++

Min Heap and Max Heap Implementation in Java

Heap Sort

Check if given array represents min heap or not

Convert Max Heap to Min Heap in linear time

Find K'th largest element in an array

Sort a K-Sorted Array

Merge M sorted lists of variable length

Find K'th smallest element in an array

Find smallest range with at-least one element from each of the given lists

Merge M sorted lists each containing N elements

External merge sort

Huffman Coding

Find first k maximum occurring words in given set of strings

Find first k non-repeating characters in a string in single traversal

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LINKED LIST-

Introduction to Linked Lists

Linked List Implementation | Part 1

Linked List Implementation | Part 2

Static Linked List in C

Clone given Linked List

Delete Linked List

Pop operation in linked list

Insert given node into the correct sorted position in the given sorted linked list

Given a linked list, change it to be in sorted order

Split the nodes of the given linked list into front and back halves

Remove duplicates from a sorted linked list

Move front node of the given list to the front of the another list

Move even nodes to the end of the list in reverse order

Split given linked list into two lists where each list containing alternating elements from it

Construct a linked list by merging alternate nodes of two given lists

Merge given sorted linked lists into one

Merge Sort Algorithm for Singly Linked List

Intersection of two given sorted linked lists

Reverse linked list | Part 1 (Iterative Solution)

Reverse linked list | Part 2 (Recursive Solution)

Reverse every group of k nodes in given linked list

Find K'th node from the end in a linked list

Merge alternate nodes of two linked lists into the first list

Merge two sorted linked lists from their end

Delete every N nodes in a linked list after skipping M nodes

Rearrange linked list in specific manner in linear time

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Check if linked list is palindrome or not

Move last node to front in a given Linked List

Rearrange the linked list in specific manner

Detect Cycle in a linked list (Floyd's Cycle Detection Algorithm)

Sort linked list containing 0's, 1's and 2's

Stack Implementation using Linked List

Queue Implementation using Linked List

Remove duplicates from a linked list

Rearrange the linked list so that it has alternating high, low values

Rearrange a Linked List by Separating Odd Nodes from the Even Ones

Calculate height of a binary tree with leaf nodes forming a circular doubly linked list

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MATRIX-

Print Matrix in Spiral Order

Create Spiral Matrix from given array

Shift all matrix elements by 1 in Spiral Order

Find Shortest path from source to destination in a matrix that satisfies given constraints

Change all elements of row i and column j in a matrix to 0 if cell (i, j) has value 0

Print diagonal elements of the matrix having positive slope

Find all paths from first cell to last cell of a matrix

Replace all occurrences of 0 that are not surrounded by 1 in a binary matrix

In-place rotate the matrix by 90 degrees in clock-wise direction

Count negative elements present in sorted matrix in linear time

Report all occurrences of an element in row wise and column wise sorted matrix in linear time

Calculate sum of all elements in a sub-matrix in constant time

Find maximum sum K x K sub-matrix in a given M x N matrix

Find maximum sum submatrix present in a given matrix

Find probability that a person is alive after taking N steps on the island

Count the number of islands

Flood fill Algorithm

Find shortest safe route in a field with sensors present

Find all occurrences of given string in a character matrix

Shortest path in a Maze | Lee algorithm

Check if given matrix is Toeplitz matrix or not

In-place rotate the matrix by 180 degrees

Fill Binary Matrix with Alternating Rectangles of 0 and 1

Find all common elements present in every row of given matrix

Construct a Binary Tree from Ancestor Matrix

Find common elements present in all rows of a matrix

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Travelling Salesman Problem using Branch and Bound

Collect maximum points in a matrix by satisfying given constraints

Count number of paths in a matrix with given cost to reach destination cell

Find longest sequence formed by adjacent numbers in the matrix

Find the minimum cost to reach last cell of the matrix from its first cell

Matrix Chain Multiplication

Find size of largest square sub-matrix of 1's present in given binary matrix

Chess Knight Problem – Find Shortest path from source to destination

Find Duplicate rows in a binary matrix

Print all possible solutions to N Queens problem

Print all Possible Knight's Tours in a chessboard

Find Shortest Path in Maze

Find Longest Possible Route in a Matrix

Calculate size of the largest plus of 1's in binary matrix

Find the maximum value of M[c][d] – M[a][b] over all choices of indexes

Find shortest distance of every cell from landmine in a Maze

Find shortest route in a device to construct the given string

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PUZZLES-

Clock angle problem – Find angle between hour and minute hand

Add two numbers without using addition operator | 4 methods

Generate power set of a given set

Implement power function without using multiplication and division operators

Print all numbers between 1 to N without using semicolon

Swap two numbers without using third variable | 5 methods

Determine the if condition to print specific output

Find maximum, minimum of three numbers without using conditional statement and ternary operator | 4 methods

Find numbers represented as sum of two cubes for two different pairs

Print “Hello World” with empty main() function | 3 methods

Tower of Hanoi Problem

Print all numbers between 1 to N without using any loop | 4 methods

Print a semicolon without using semicolon anywhere in the program

Multiply two numbers without using multiplication operator or loops

Find square of a number without using multiplication and division operator | 3 methods

Find if a number is even or odd without using any conditional statement

Set both elements of a binary array to 0 in single line

Find minimum number without using conditional statement or ternary operator

Perform Division of two numbers without using division operator (/)

Generate 0 and 1 with 75% and 25% Probability

Generate Desired Random Numbers With Equal Probability

Return 0, 1 and 2 with equal Probability using the specified function

Generate Fair Results from a Biased Coin

Generate numbers from 1 to 7 with equal probability using specified function

Implement Ternary Operator Without Using Conditional Expressions

Determine if two integers are equal without using comparison and arithmetic operators

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Return 0 and 1 with equal Probability using the specified function

Generate Random Input from an Array according to given Probabilities

Generate Fair Results from a Biased Coin

Magnet Puzzle

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QUEUE:

Queue Implementation

Queue Implementation using Linked List

Chess Knight Problem – Find Shortest path from source to destination

Shortest path in a Maze | Lee algorithm

Find shortest safe route in a field with sensors present

Flood fill Algorithm

Count the number of islands

Find Shortest path from source to destination in a matrix that satisfies given constraints

Generate binary numbers between 1 to N

Calculate height of a binary tree | Iterative & Recursive

Delete given Binary Tree | Iterative & Recursive

Level Order Traversal of Binary Tree

Spiral Order Traversal of Binary Tree

Reverse Level Order Traversal of Binary Tree

Print all nodes of a given binary tree in specific order

Print left view of binary tree

Find next node in same level for given node in a binary tree

Check if given binary tree is complete binary tree or not

Print Diagonal Traversal of Binary Tree

Print corner nodes of every level in binary tree

Breadth First Search (BFS) | Iterative & Recursive Implementation

Minimum number of throws required to win Snake and Ladder game

Check if an undirected graph contains cycle or not

Invert given Binary Tree | Recursive and Iterative solution

Find maximum cost path in graph from given source to destination

Find shortest distance of every cell from landmine in a Maze

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SORTING-

Insertion sort | Iterative & Recursive

Selection sort | Iterative & Recursive

Bubble sort | Iterative & Recursive

Merge Sort Algorithm

Iterative Merge Sort Algorithm (Bottom-up Merge Sort)

Quicksort Algorithm

Iterative Implementation of Quicksort

Hybrid QuickSort

Quicksort using Dutch National Flag Algorithm

Quick Sort using Hoare's Partitioning scheme

External merge sort

Counting Sort Algorithm

Custom Sort | Sort elements by their frequency and Index

Custom Sort | Sort elements of the array by order of elements defined by the second array

Inversion Count of an array

Segregate positive and negative integers in linear time

Efficiently Sort an Array with many Duplicated Values

Find the smallest window in array sorting which will make the entire array sorted

Find largest number possible from set of given numbers

Move all zeros present in the array to the end

Sort binary array in linear time

Sort linked list containing 0's, 1's and 2's

Merge Sort Algorithm for Singly Linked List

Group anagrams together from given list of words

Activity Selection Problem

Lexicographic sorting of given set of keys

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Heap Sort

Merge M sorted lists of variable length

Merge M sorted lists each containing N elements

Find all palindromic permutations of a string

Find all lexicographically next permutations of a string sorted in ascending order

Merge two sorted linked lists from their end

Sort an array containing 0's, 1's and 2's (Dutch national flag problem)

Find pair with given sum in the array

Inplace merge two sorted arrays

Merge two arrays by satisfying given constraints

Find maximum product of two integers in an array

Find all distinct combinations of given length

Find all distinct combinations of given length with repetition allowed

Merging Overlapping Intervals

Print all quadruplets with given sum | 4-sum problem extended

4 sum problem | Quadruplets with given sum

Find two numbers with maximum sum formed by array digits

Find a Triplet having Maximum Product in an Array

Find Minimum Product among all Combinations of Triplets in an Array

Find all distinct combinations of given length - Part 2

Find the surpasser count for each element of an array

STACK-

Stack Implementation

Stack Implementation using Linked List

Check if given expression is balanced expression or not

Find duplicate parenthesis in an expression

Evaluate given postfix expression

Decode the given sequence to construct minimum number without repeated digits

Inorder Tree Traversal | Iterative & Recursive

Preorder Tree Traversal | Iterative & Recursive

Postorder Tree Traversal | Iterative & Recursive

Find ancestors of given node in a Binary Tree

Check if two given binary trees are identical or not | Iterative & Recursive

Reverse given text without reversing the individual words

Find all binary strings that can be formed from given wildcard pattern

Iterative Implementation of Quicksort

Depth First Search (DFS) | Iterative & Recursive Implementation

Invert given Binary Tree | Recursive and Iterative solution

Print leaf to root path for every leaf node in a binary tree

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STRING-

Check if given string is a rotated palindrome or not

Longest Palindromic Substring (Non-DP Space Optimized Solution)

Check if repeated subsequence is present in the string or not

Check if strings can be derived from each other by circularly rotating them

Check if given set of moves is circular or not

Convert given number into corresponding excel column name

Determine if two strings are anagram or not

Find all binary strings that can be formed from given wildcard pattern

Find all interleavings of given strings

Isomorphic Strings

Find all possible palindromic substrings in a string

Find all possible combinations of words formed from mobile keypad

Find all possible combinations by replacing given digits with characters of the corresponding list

Find all words from given list that follows same order of characters as given pattern

Find first k non-repeating characters in a string in single traversal

Group anagrams together from given list of words

Introduction to Pattern Matching

Inplace remove all occurrences of ‘AB’ and ‘C’ from the string

Longest even length palidromic sum substring

Print string in zig-zag form in k rows

Reverse given text without reversing the individual words

Run Length Encoding (RLE) data compression algorithm

Validate an IP address

Find the longest substring of given string containing k distinct characters

Find all palindromic permutations of a string

Find all substrings of a string that are permutation of a given string

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Find the longest substring of given string containing all distinct characters

Find all Permutations of a given string

Iterative Approach to find Permutations of a String in C++ and Java

Generate all Permutations of a String in Java | Recursive & Iterative

Find all lexicographically next permutations of a string sorted in ascending order

Find Lexicographically minimal string rotation

Find all strings of given length containing balanced parentheses

Find all N-digit strictly increasing numbers (Bottom-Up and Top-Down Approach)

Find all N-digit binary numbers having more 1's than 0's for any prefix

Find all N-digit numbers with given sum of digits

Find all N-digit binary numbers with k-bits set where k ranges from 1 to N

Generate binary numbers between 1 to N

Find all combinations of non-overlapping substrings of a string

Check if given sentence is syntactically correct or not

Calculate rank of given string among all its lexicographically sorted permutations

Find all Lexicographic Permutations of a String

Find all N-digit binary numbers with equal sum of bits in its two halves

Check if given string is interleaving of two other given strings

Difference between Subarray, Subsequence and Subset

std::next_permutation | Overview & Implementation in C++

std::prev_permutation | Overview & Implementation in C++

Implementation of KMP Algorithm in C, C++ and Java

Reverse String without using Recursion

Reverse given string using Recursion

Reverse a String in Java in 10 different ways

Determine if a given string is palindrome or not

In-place remove all adjacent duplicates from the given string

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Find the minimum number of inversions needed to make the given expression balanced

Replace all non-overlapping occurrences of the pattern

Construct the longest palindrome by shuffling or deleting characters from a string

Determine if characters of a String follows a specified order or not

Print all combinations of phrases that can be formed by picking words from each of the given lists

Remove all extra spaces from a string

Break a string into all possible combinations of non-overlapping substrings

Remove adjacent duplicate characters from a string

Combinations of words formed by replacing given numbers with corresponding alphabets

Word Break Problem

Wildcard Pattern Matching

Count number of times a pattern appears in given string as a subsequence

The Levenshtein distance (Edit distance) problem

Longest Common Subsequence | Introduction & LCS Length

Longest Common Subsequence | Space optimized version

Longest Common Subsequence of K-sequences

Longest Common Subsequence | Finding all LCS

Longest Repeated Subsequence problem

Longest Palindromic Subsequence using Dynamic Programming

Longest Common Substring problem

Shortest Common Supersequence | Introduction & SCS Length

Shortest Common Supersequence | Finding all SCS

Shortest Common Supersequence | Using LCS

Implement Diff Utility

Word Break Problem | Using Trie Data Structure

Find minimum cuts needed for palindromic partition of a string

Check if a string is K-Palindrome or not

Find shortest route in a device to construct the given string

Find minimum number possible by doing at-most K swaps

Determine if a pattern matches with a string or not

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TRIE

:

Trie Implementation | Insert, Search and Delete

Memory efficient Trie Implementation using Map | Insert, Search and Delete

C++ Implementation of Trie Data Structure

Longest Common Prefix in given set of strings (using Trie)

Lexicographic sorting of given set of keys

Find maximum occurring word in given set of strings

Find first k maximum occurring words in given set of strings

Find Duplicate rows in a binary matrix

Word Break Problem | Using Trie Data Structure

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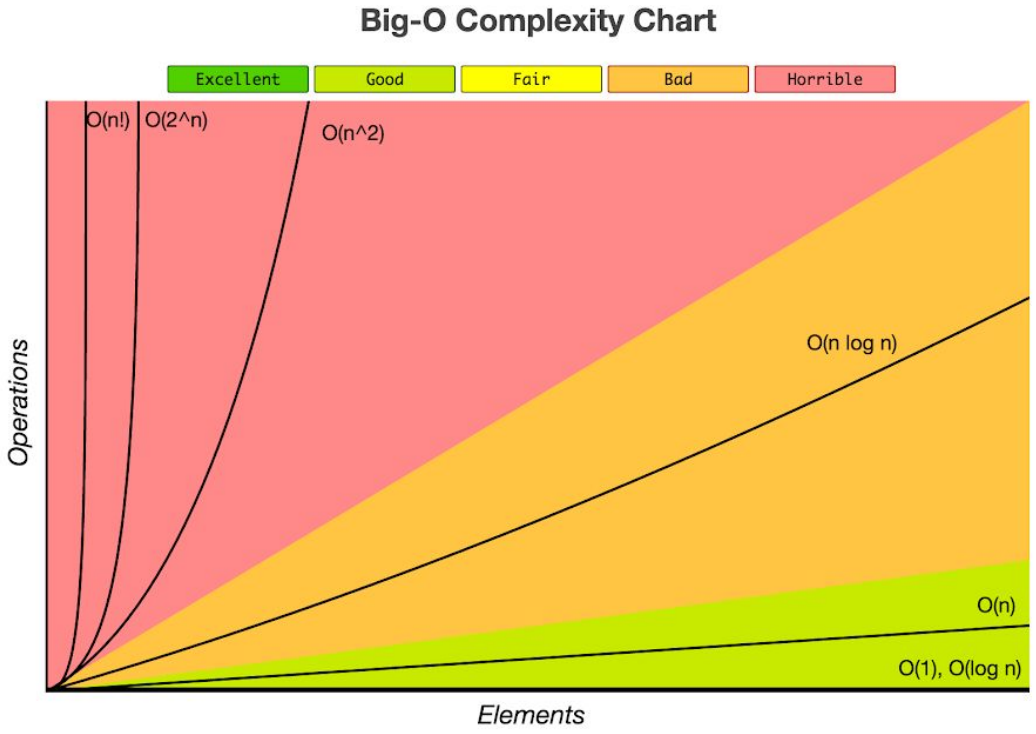
TIME COMPLEXITY-



Common Data Structure Operations

Data Structure	Time Complexity								Space Complexity
	Average				Worst				Worst
	Access	Search	Insertion	Deletion	Access	Search	Insertion	Deletion	
Array	O(1)	O(n)	O(n)	O(n)	O(1)	O(n)	O(n)	O(n)	O(n)
Stack	O(n)	O(n)	O(1)	O(1)	O(n)	O(n)	O(1)	O(1)	O(n)
Queue	O(n)	O(n)	O(1)	O(1)	O(n)	O(n)	O(1)	O(1)	O(n)
Singly-Linked List	O(n)	O(n)	O(1)	O(1)	O(n)	O(n)	O(1)	O(1)	O(n)
Doubly-Linked List	O(n)	O(n)	O(1)	O(1)	O(n)	O(n)	O(1)	O(1)	O(n)
Skip List	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)	O(n)	O(n)	O(n)	O(n log(n))
Hash Table	N/A	O(1)	O(1)	O(1)	N/A	O(n)	O(n)	O(n)	O(n)
Binary Search Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)	O(n)	O(n)	O(n)	O(n)
Cartesian Tree	N/A	O(log(n))	O(log(n))	O(log(n))	N/A	O(n)	O(n)	O(n)	O(n)
B-Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)
Red-Black Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)
Splay Tree	N/A	O(log(n))	O(log(n))	O(log(n))	N/A	O(log(n))	O(log(n))	O(log(n))	O(n)
AVL Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)
KD Tree	O(log(n))	O(log(n))	O(log(n))	O(log(n))	O(n)	O(n)	O(n)	O(n)	O(n)

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