Bookmarks

Bookmarks Bar

DSA Sheet

Core Subjects

DSA Sheet Puzzles Aptitude OS Playlist DBMS Playlist CN Playlist SQL Leetcode OS Articles DBMS Articles CN Articles SQL Articles

Getting Started

Java Programming Basics Basic Problems Practice

C++ Programming Basics

C++ Basics Basic Pointers in C++ Pointers in C++

STL C++

STL Basics Templates in C++ Generic Programming in C++ Iterators in C++ Inbuilt Algorithms in C++ Comparator in C++ Pair in C++ Tuples in C++ Containers in C++ Strings in C++ String Tokenizer in C++ Hashing in C++ Custom Hash Function Functors in C++ Priority Queue in C++ Custom Priority Queue Sets in C++ Bitset in C++

Basic Java Problems

Java Practice Problems Hello World - I Hello World - II Java Comments Java Datatypes Java Inputs Next vs Nextline Concatenate Strings Java If Else Check Vowel Change Case of String Check Even Odd Java Switch Case Java Loops Swap Two Integers

Loops Basics

Print Increasing Print Decreasing Sum of Series Sum of AP Series Sum of GP Series Factorial Problem Power Function Check Power of 2 Nth Fibonacci Nth Tribonacci Print A to Z Fizz Buzz

Digit Traversals

Count Digits of Number Reverse Integer Double Reversal Sum & Product of Digits Self Dividing Numbers Amstrong Number Rotate Digits of Number Rotate Digits of Number Inverse of Number

Basic Math Problems

Stones Remove Game Divisor Game Digital Root Bulb Switcher Tournament Matches Count Odd In Range Max Water Bottles Pythagorean Triplets Factorial Trailing 0s Check Ugly Number Nth Term of GP Days Between Dates Day of the Year Day of the Week Next Closest Time

Pattern Printing

Pattern Printing Stars Pattern Lower RIght Triangle Upper Left Triangle Lower Right Triangle Upper Right Triangle Diamond Pattern Hollow Diamond Diamond Border Backward Slash Forward Slash Cross of Stars Cross of Numbers Table of Number Pattern of Numbers - I Pattern of Numbers - II Pattern of Numbers - III Fibonacci Pattern Mirror Image Triangle Arrow Pattern Empty Hour Glass Swastik Pattern W Pattern

Time & Space Complexity

Time & Space Complexity - I Time & Space Complexity - II Algorithm Analysis Time Complexity Master's Theorem Space Complexity Complexity Practice

Arrays & Strings

Arrays and Strings Practice

Array & String Theory

Array Data Structure Java Arrays Java 1D Arrays Array Utility Class String Data Structure Java Strings String Pool in Java String Immutability Java vs C++ Strings Java StringBuffer Java StringBuilder String Buffer vs Builder Multidimensional Array Jagged Arrays Java Collections Iterable Interface Java ArrayList Java Vector String Tokenizer Java

Reverse Array or String

Reverse Array Left Rotate Array Right Rotate Array Reverse String Reverse String Range Reverse Words - I Reverse Words - II Reverse Vowels Palindromic String Palindromic Integer Palindrome After Deletion

String to Integer

Integer to String String to Integer String to Integer Valid Number Excel Column No to Title Excel Column Title to No

Linear Traversal

Linear Search Linear Search Maximum & Minimum Maximum & Minimum Smallest Range Second Largest Valid Mountain Array Is Array Sorted Rotated Distribute Candies Count Equal Pairs Range Addition Visiting All Points Subarray or Substrings Sum of Odd Subarrays Celebrity Problem - I Celebrity Problem - II Non Decreasing Array Target Modulo Sum Pair

Prefix Sum Array

Running Sum Highest Altitude Point Positive Step Sum Leaders in Array Equillibrium Point Balanced Array Product Array Puzzle Max Closest Person Sum of Even Nos Queries Prefix Aligned Binary String Shifting Letters Polynomial Evaluation Polynomial Evaluation Prefix Sum Array Range Sum Query 1D Range Sum Query 2D Range Sum Query Difference Array Range Update Queries - I Range Update Queries - II

Matrix or 2D Array

Basic Matrix Traversal

2D Array or Matrix Theory Print Matrix Row Wise Print Matix Column Wise Wave or Snake Traversal Reverse Wave Traversal Searching in Matrix Exit Point in Matrix Convert 1D Array to 2D Shift 2D Grid Reshape Matrix

Two Matrices

Identical Matrices Add Matrices Multiply Matrices

Rotate Matrix

Transpose Matrix Rotate 90D Clockwise Rotate 90D Anticlockwise Rotate 180D Clockwise Rotate 180D Anticlockwize Equal Matrix Rotations

Diagonal Traversal

Diagonal Traversal - BL to TR Diagonal Traversal - Zig Zag Diagonal Traversal - TL to BR Matrix Diagonal Sum Toeplitz Matrix Check X Matrix Upper Lower Triangle

Rows & Columns

Saddle Point in Matrix Set Matrix Zeros Valid Tic Tac Toe State Winner of Tic Tac Toe Equal Row Column Sum Rows Columns Valid Matrix Game of Life

Spiral Matrix Traversal

Boundary Traversal Spiral Matrix Traversal Fill Matrix in Spiral Order Reverse Spiral Matrix Spiral Matrix - Starting Pt Shell Rotate Matrix Shell Rotate Matrix

Big Integers as Arrays

Plus One to Array Plus K to Array Add Two Strings Subtract Two Arrays Subtract Two Arrays

Compare Two Strings Multiply Two Strings Large Factorial Multiply Polynomials Sparse Matrix Sparse Matrix Big Integers Java Big Integers Java

Majority Element

Majority Element - I Majority Element - II Majority Element - III

Missing & Duplicate

Missing Number - I Missing Number - II First Missing Positive Repeating Element - I Repeating Element - II Repeating Element - III Max Repeating Element Missing & Repeating

String Matching Problems

Is Subsequence Largest Word in Dictionary Valid Anagram K Anagrams Anagram Substrings Anagram Mappings Group Anagrams Group Shifted Strings Group Shifted Strings Find & Replace Pattern Odd - Even Anagrams Word Subsets Isomorphic Strings - I Isomorphic Strings - II Word Pattern - I Word Pattern - II Camelcase Matching First Unique Character Remove Duplicate Chars First Repeated Character

More String Problems

Run Length Encoding String Compression Compare Version Nos Zig Zag Conversion Validate IP Address Maximum Number Swap Largest Odd Substring Beauty of All Substrings Pretty JSON

Recursion & Backtracking

Recursion Basics

Recursion Theory Backtracking Theory Print Decreasing Print Increasing Print Increasing Decreasing Factorial Print ZigZag Tower of Hanoi Exponentiation Binary Exponentiation Print Array Left to Right Print Array Right to Left Check Is Array Sorted Largest Element in Array First & Last Occurence Find All Occurences

Subsets Problems

Subsets Subarray vs Subset Iterative Method Get Subsets Print Subsets Unique Subsets Subsets of Given Size Letter Tile Possibilites Square Matchsticks Beautiful Arrangement

Maze Path Problems

Print Stair Paths Get Stair Paths All Maze Paths Rat in Maze Rat in Maze Count Rat in Maze Paths Rat in Maze with Jumps Get Maze Path with Jumps Print Maze Path with Jumps Gold Mine Problem

P & C Problems

Combinations

Combinations Combinations - 1 Combinations - 2 Factor Combinations

Permutations

Permutations Permutations - 1 Permutations - 2 Permutations - 3 Distinct Permutations Distinct Permutations - 1 Distinct Permutations - 2 Palindromic Permutations

K Words Combination

K Words - Combination - I K Words - Combination - II K Words - Combination - III K Words - Combination - IV

K Words Permutation

K Words - Permutation - I K Words - Permutation - II K Words - Permutation - III K Words - Permutation - IV

2D Perm & Comb

Permutations - 2d as 2d - Box Choose Combinations - 2d as 2d - Box Choose Permutations - 2d as 2d - Queen Choose Combination - 2d as 2d - Box Choose Combination - 2d as 1d - Queen Choose

Keypad Problems

Keypad Combinations Get Keypad Combinations Print Keypad Combinations Print Decode Ways Print Decode Ways Generalized Abbreviations Abbreviations - Using R&B Abbreviations - Using Bits Keypad Sequence Letter Case Permutations

N Queen Problem

N Queen - Combinations N Queen - Permutations N Queens - I N Queens - II N Queen - Backtracking N Queen - Branch & Bound N Queen - Bit Manipulation N Knights N Knights Knight's Tour Problem

Coin Change Problem

Coin Change - Combination - 1 Coin Change - Combination - 2 Coin Change - Combination - 3 Coin Change - Permutation - 1 Coin Change - Permutation - 2

Puzzles Problems

Josephus Problem Word Search Crossword Puzzle - I Crossword Puzzle - II Valid Sudoku Sudoku Solver Sudoku Solver Verbal Arithmetic Puzzle Magnet Puzzle Smallest No in DI Pattern Max Score Words

More Recursion Problems

Largest No in K Swaps Print Friend Pairings Stepping Numbers Generate Balanced Parenthesis Lexicographical Numbers Restore IP Addresses Count & Say Convert Integer to Roman Convert Roman to Integer Integer in English Words Expression Add Operators Additive Numbers Split into Fibonacci Sequence Paranthesis Addition Ways Kth Symbol in Grammar

Lucky Number

Number Theory

Euclid's Algorithm

GCD of 2 Numbers Euclid's Algorithm Euclid's Algorithm Euclid's Algorithm GCD of Array GCD of Big Integer GCD of Big Integer Required Rooms Deck of Cards Simplified Fractions Min Deletions Array Divisible Cutting Squares Largest Coprime Divisor Largest Coprime Divisor

Extended Euclid

Extended Euclid Algorithm Extended Euclid Algorithm Extended Euclid Algorithm Linear Diophantine Eqn Linear Diophantine Eqn Linear Diophantine Eqn

Prime Numbers

Prime Numbers Playlist Checking No is Prime Kth Factor of Number Three Divisors Four Divisors Count Factors Sum of Factors Product of Factors Number & Sum of Factors Number & Sum of Factors Count Common Divisors Count Common Divisors Perfect Number Count Prime Numbers Sieve of Eratosthenes Find Kth Prime Prime Arrangements Smallest Prime Factor Largest Prime Factor Primes in Range I Bitset Sieve Product of Primes Primes in Range II Segmented Sieve Prime Factorization Prime Factorization Queries Count Prime Factors Divisor Queries Sieve Variations

Modular Arithmetic

Modular Arithmetic Modular Arithmeitc Modular Factorial Modular Exponentiation Modular Exponentiation - I Modular Exponentiation - II Fermat's Little Theorem Fermat's Little Theorem Modular Division Modular Muliplicative Inverse Modular Muliplicative Inverse Modular Muliplicative Inverse Modular Binomial Coeff Modular Permutation Coeff Modular Permutation Coeff Sum of All Subarrays Sum of All Subsets Sum of Subset Width

Inclusion Exclusion Principle

Inclusion Exclusion Principle Inclusion Exclusion Principle Nth Magical Number Nth Ugly Number

Sorting Algorithms

Sorting Algo Theory - I Sorting Algo Theory - II Sort Array Inbuilt Sorting

Basic Sorting Algorithms

Bubble Sort Bubble Sort Bubble Sort - Recursive Bubble Sort - Count Swaps Insertion Sort Insertion Sort Insertion Sort - Recursive Selection Sort Selection Sort Selection Sort - Recursive Shell Sort Shell Sort Pancake Sorting

Merge Sorted Arrays

Merge Two Sorted Arrays - I Merging Using Two Pointers Merge Two Sorted Arrays - II Merging using Insertion Sort Merging using Shell Sort Union of 2 Sorted Arrays Intersection of 2 Arrays - I Intersection of 2 Arrays - II Instersection of 3 Arrays Symmetric Difference Squares of Sorted Array

Partitioning Algorithm

Partition Around Pivot Sort Binary Array Sort Colors 012 Dual Pivot Partitioning Three Way Partitioning Move Zeroes To End Segregate w/o Relative Order Segregate with Relative Order Segregate with Relative Order Alternate w/o Relative Order Alternate with Relative Order

Rearrange Array

Wiggle Sort - 1 Wiggle Sort - 1 Wiggle Sort - 2 Wave Sort - Lexical Order Wave Sort - Min Max Form Inverse Permutation - I Inverse Permutation - II Reorder Array with Indexes Reorder Array with Indexes

Divide & Conquer Based

Merge Sort Merge Sort Quick Sort Quick Sort Dual Pivot Quicksort 3 Way Quick Sort Improving Quicksort

Counting Sort

Counting Sort Radix Sort Bucket Sort Sort Array of Dates Minimum Time Distance H Index Unsorted Height Checker Relative Sort Array Max Consecutive Gap Frequency Sort Frequency Sort String Top K Frequent Elements Top K Frequent Words Top K Frequent in Stream

Inversion Count

Inversion Count Inversions - Merge Sort Inversions - Policy Based DS Policy Based DS Min Adjacent Swaps to Sort Global & Local Inversions Reverse Pairs Count of Smaller After Self Count of Range Sum Count Binary Substrings

Binary Search

Binary Search Basics

Binary Search Theory Binary Search Transition Point First Bad Version Guess No Higher or Lower Arranging Coins Fixed Point in Sorted Array

Lower & Upper Bound

Lower & Upper Bound Search Insert Position Ceil in Sorted Array Floor in Sorted Array First & Last Occurence Count Occurences Closest Element K Closest Elements Heaters Remove 2*Min >= Max

Root & Square

Square Root - Integral Square Root - Decimal Square Root Valid Perfect Square Nth Root of Number

Rotated Sorted Array

Pivot in Rotated Sorted - I Pivot in Rotated Sorted - II Rotation Count in Rotated Sorted Search in Rotated Sorted - I Search in Rotated Sorted - II Search in Nearly Sorted Search in Nearly Sorted

Mountain Array

Peak in Bitonic Array Search in Bitonic Array Find Peak Element

Search in 2D Matrix

Search 2D Matrix - I Search 2D Matrix - II Count 0 in Binary Matrix Max 1s Row in Binary Matrix Peak Element in Matrix

Median in 2 Arrays

Median 2 Sorted Arrays - Same Size Median 2 Sorted Arrays - Dff Size Kth Element in 2 Sorted Arrays Median in Row Wise Sorted Matrix

Binary Search on Answer

Book Allocation Painter's Partition Split Array Largest Sum Capacity to Ship Packages Min Days to Make Bouquets Koko Eating Banana Smallest Divisor Threshold Min Time to Complete Trips Min Speed to Arrive on Time Aggressive Cows Magnetic Force Balls Max Candies to Children Woodcutting Eko - SPOJ Minimize Max Products Store Minimize Farthest Gas Stations Roti Prata - SPOJ

More Binary Search Problems

Single Element in Sorted Kth Missing Element H Index - Sorted Longest Subset Limited Sum Kth Smallest Pair Distance Random Pick with Weight Missing Element of AP Min Factorial Trailing 0s Count Factorials with k 0s Left Out Candies Min Coin Piles Longest Subarray Sum > 0 Double Helix - SPOJ

Linked List

Design Linked List

Design Linked List Singly Linked List Theory Doubly Linked List Theory Circular Linked List Theory Searching - SLL Traversal - SLL

Remove List Nodes

Remove All Occurences Remove Duplicates in Sorted List - I Remove Duplicates in Sorted List - II Delete Node Without Head Remove 0 Sum Nodes

Two Pointers in List

Get Middle Node of List Delete Middle Node of List Get Kth Node from End Delete Kth Node from End Swap Kth List Nodes Intersection Node of 2 Lists Common Nodes in 2 Lists Common Nodes in 2 Sorted Lists Merge 2 Unsorted Lists

Floyd's Cycle Detection

Check Circular List Linked List Cycle Detection Starting List Node in Cycle Length of Linked List Cycle Remove Cycle from List

Reverse Linked List

Reverse Singly Linked List Reverse SLL in Range Reverse SLL in K Groups Swap List Nodes in Pairs Reverse Even List Nodes Reverse Doubly Linked List Palindrome Linked List

Merge Sort List

Merge 2 Sorted Lists Merge K Sorted Lists Flatten Sorted Lists Sort Singly Linked List Merge Sort - SLL Merge Sort - DLL

Quick Sort List

Partition Linked List Sort Binary Linked List Segregate Odd & Even Nodes Sort Colors in Linked List QuickSort - SLL Quick Sort - DLL Quicksort vs Mergesort Quicksort vs Mergesort

Reorder Linked List

Fold of Linked List Unfold of Linked List Rotate Linked List Insertion Sort List Split List in K Parts Flatten Multilevel DLL Clone List with Random Pointers Absolute List Sorting

Big Integers as Lists

Add 1 to Linked List Add Two Lists - I Add Two Lists - II Subtract Two Lists Multiply Two Lists Polynomial Addition Multiply Polynomials

Design Cache

Design LRU Cache LRU Page Faults Design LFU Cache Design GetRandom - I Design GetRandom - II

Stack & Queue

Stack & Queue Basics

Stacks Theory Design Stack Using Array Design Stack Using List Design 2 Stacks in Array Design K Stacks in Array Design Stack Using Heap Queue Theory Design Queue Using Array Design Queue Using List Design Circular Queue Circular Queue Using Array Circular Queue Using List

Doubly Ended Queue

Deque Theory Design Circular Deque Deque Using Circular Array Deque Using DLL Stack & Queue using Deque

Design Stack or Queue

Design Stack using Queue Design Queue using Stack Design Minimum Stack Design Maximum Stack Design Max Frequency Stack Design Middle Queue Delete Middle in Stack Design Stack with Increments Validate Stack Sequences

Rearrange Stack or Queue

Reverse Stack Reverse Queue Sort Stack Sort Queue Interleave Queue

Parenthesis Matching

Redundant Braces Balanced Parenthesis - I Balanced Parenthesis - II Remove Outermost Paranthesis Longest Valid Parentheses Min Additions for Balanced Braces - I Min Additions for Balanced Braces - II Min Removals for Balanced Braces - I Min Removals for Balanced Braces - II Min Reversals for Balanced Braces Min Swaps for Balanced Braces Score of Parenthesis Reverse Substrings B/W Braces Decode String Number of Atoms Maximum Nesting Depth

Expressions Evaluation

Infix Expressions

Infix Evaluation Infix Evaluation Infix Conversions Infix To Prefix Conversion Infix To Postfix Conversion Basic Calculator - I Basic Calculator - II Basic Calculator - III

Postfix Expressions

Postfix Expression Postfix Evaluation Postix to Infix Conversion Postfix to Prefix Conversion

Prefix Expressions

Prefix Expression Prefix Evaluation Prefix to Infix Conversion Prefix to Postfix Conversion

Expression Tree

Exp Tree - Construction Exp Tree - Evaluation Expression Tree

Monotonic Stack

Next Greater Element NGE - Circular Array NGE - Two Arrays NGE - Linked List Prices with Special Discount Daily Temperatures Online Stock Span Largest Area Histogram 132 Pattern Sum of Subarray Ranges Sum of Subarray Minimums Sum of Total Wizard Strength Max Subarray Min Product Max of Sliding Window Min No of Valid Subarrays VIsible People in Queue Coubt Submatrix with All 1s Maximal Rectangle Remove Duplicate Letters Remove K Digits Lexico Smallest Subset

More Stack Queue Problems

Asteroid Collision Exclusive Time of Functions Number of Recent Calls Valid Word After Subsitution 1st Unique Char - Stream Decode String at Index Generate Binary Numbers Remove Adjacent Duplicates - I Remove Adjacent Duplicates - II Remove Adjacent Duplicates - III Card Rotation - I Card Rotation - II

Hashmap & Heaps

Hashing Technique

Hashing Theory Separate Chaining Open Addressing Double Hashing Rehashing Hashing Technique Design HashMap Design HashSet

Intersection & Union

Common Elements Uncommon Elements Union of Unsorted Arrays Common Elements in 2 of 3 Contains Duplicate - I Contains Duplicate - II Contains Duplicate - III First Repeating Element First Unique Element

Subarray Sum

Target Subarray Sum

0 Sum Subarray Largest 0 Sum Subarray Count 0 Sum Subarrays K Sum Subarray K Sum Subarray - Only Positives K Sum Subarray - With Negatives Count K Sum Subarrays Largest K Sum Subarray Min Moves Reduce X to 0 Count K XOR Subarrays

Divisible Subarrays

Largest Divisible Subarray Count Divisible Subarrays K Multiple Subarray Sum Count Bad Pairs - I Count Bad Pairs - II Count K Absolute Diff Pairs Count Equal Divisible Pairs Count Equal Distance Points

Binary Subarray Sum

Largest Subarray Equal 01 Count Subarrays Equal 01 Longest Subarray Equal 012 Count Subarrays Equal 012 Largest Subarray More 1s Binary Subarray Target Sum

Target Sum Submatrices

Count 0 Sum Submatrix Largest 0 Sum Submatrix Count K Sum Submatrix Largest Submatrix Equal 01 Max Sum Square Submatrix

More Hashing Questions

Count 0 XOR Pairs Degree of Array Longest Consecutive Sequence Tricky Sorting Cost Array Pairs Divisible by K Fraction to Recurring Decimal Rabbits in Forest Array of Doubled Pairs Powerful Integers Hand of Straights Rank Transform of Array Stream Disjoint Intervals Brick Wall Max Equal Frequency

Binary Heap

Heap Theory Priority Queue Theory Design Priority Queue Design Priority Queue Build Min Heap Build Min Heap Comparable & Comparator Comparable & Comparator Heap Sort Heap Sort MCQ Does Array Represent Heap Is Binary Tree Heap Convert Min to Max Heap Convert BST to Min Heap Merge Two Max Heaps Priority Queue Using List Priority Queue Using Heap

Heap Order Statistics

K Largest - Sorted Order K Largest - Original Order K Closest Points Kth Smallest Element Kth Largest Element Quick Select Algorithm Kth Largest in Stream Kth Smallest in Sorted Matrix K Min Sum Combinations Kth Smallest Fraction Sort K Sorted Array Merge K Sorted Arrays Smallest Range in K Lists

Basic Geometry Problems

Basic Geometry Geometric Algorithms Rectangle Overlap Largest Triangle Perimeter Matrix Cells in Order Largest Triangle Area Construct Rectangle Two Collinear Points Non Collinear Points Valid Square Points Max Distance Points Total Rectangle Area Max Collinear Points Best Meeting Point Line Reflection Intersecting Lines Check Pt Inside Triangle

Two Pointer Technique

Two Pointer Theory Sliding Window Theory

Target Sum Pair

Two Sum - Unsorted Two Sum - Unsorted Two Sum - Sorted K Sum Pairs - Remove Pairs K Sum Pairs - Two Arrays K Sum Pairs - Unique Pairs K Sum Pairs - All Pairs K Sum Pairs - Sorted Matrix Two Sum - Closest Two Sum - Design Two Sum - Smaller Two Sum - Greater Boats to Save People Target Difference Pair K Difference Pairs Longest Difference Pair

Target Sum Triplet

3 Sum 3 Sum - Closest 3 Sum - Smaller Target Sum Triplets Count Valid Triplets Valid Triangles Good Triplets Closest in 3 Arrays

Quadruplet Sum

4 Sum - I 4 Sum - Using 2 Pointer 4 Sum - Using Hashmap 4 Sum - II Tuples - Equal Sum Tuples - Equal Product Special Quadruplets Target Sum K Set

Two Pointer Problems

Trapping Rain Water Container with Most Water Max Consecutive Ones Remove All Occurences Remove Duplicates Sorted - I Remove Duplicates Sorted - II Long Pressed Name Longest Consecutive Chars Count Equal Consecutive 0s 1s Happy Number Fizz Buzz Smallest String Deleting Ends Shorted Unsorted Subarray

Static Sliding Window

Max Sum Subarray Size K Max Subarray Average Size K K Radius Subarray Averages Min Sum Subarray Size K Sliding Window Maximum Anagram Permutation Distinct Nos Sliding Window Min Swaps Group Together - I Min Swaps Group Together - II Min Swaps Group Together - III First Negative Sliding Window Substring Concatenations Max Sum Atmost 2 Unique Sliding Window Median

Dynamic Array Window

Smallest Subarray Sum >= X - I Smallest Subarray Sum >= X - II Maximum Subarray Sum < X Count Subarrays Score < K Count Subarrays Product < X Subarrays with Max Value > K Subarrays Bounded Maximum Max Sum Subarray All Unique Max Sum Rectangle < K Sum Max Consecutive 1s K Flips

Dynamic String Window

Minimum Window Substring - I Minimum Window Substring - II Minimum Window Subsequence Longest Substring All Unique Count Substrings All Unique Longest Substring Atmost K Unique Count Substrings Atmost K Unique Longest Substring Exact K Unique Count Substrings Exact K Unique Count Subarrays K Odd Longest Substring Atleast K Repeating Count Substrings All Chars Longest Repeating Replacement

Greedy Algorithms

Greedy Algorithms

Meeting Rooms

Job Sequencing Merge Intervals Insert Interval Interval Intersections Max Overlap Intervals Video Stitching Max Meetings - I Max Meetings - II Max Meetings - III Activity Selection Max Train Stoppage Disjoint Intervals Min Balloon Bursts Max Chain Length Min Meeting Rooms Min Train Platforms Car Pooling Teemo Attacking Employee Free Time My Calendar - I My Calendar - II My Calendar - III

Huffman Coding

Weight Balanced Tree Huffman Encoding Huffman Decoding Huffman Coding Min Cost of Ropes Encode & Decode String

Max or Min in Array

Max Product of 3 Nos Min Subset Greater Sum Smallest Range Score Least Unique Elements Min Difference 3 Moves Min Fibonacci Sum K Min Moves Equal - I Min Moves Equal - II Partition Disjoint Intervals Not Target Sum Subset Max Sum 2nd Smallest Indian Coin Change Chocolate Distribution Min & Max Candies Highest Pyramid Max Sum Rotation Minimum Jumps in Seats Max Profit Ticket Selling

Array Permutation

Max Sum Value X Index Coordinate Compression Assign Cookies Lemonade Change Next Permutation - I Next Permutation - II Smallest Permutation Largest Permutation Largest No From Array Min Sum of 2 Numbers Arithmetic Sequence DI String Match Max Absolute Difference - I Max Absolute Difference - II Reorganize String - I Reorganize String - II Distinct Barcodes Task Scheduler Max Profit Assigning Work Shortest Job First Scheduling

Array Partitions

Partition Labels Max Chunks to Sort - I Max Chunks to Sort - II Min Moves Unique Array Array Partition Pairs Largest Derangement Circular Tour - I Circular Tour - II Candy Distribution Kill Most Monsters Advantage Shuffle Minimize the Heights - I Minimize the Heights - II

Custom Sorting

Median from Data Stream Minimize Cash Flow Two City Scheduling Maximum Profit IPO Height Queue Reconstruct Defense Kingdom Custom Sort String Marks of PCM Car Fleet Wine Buying

& Selling Arrange Amplifiers Biased Standings

Trees

Tree Theory

Depth First Search

Basics of DFS

Constructor - Binary Tree Tree Properties Size - Binary Tree Max & Min - Binary Tree Preorder Traversal - Binary Tree Inorder Traversal - Binary Tree Postorder Traversal - Binary Tree Recursive DFS Traversals Iterative DFS Traverals Iterative DFS Traverals Searching in Binary Tree BFS vs DFS Traversals - I BFS vs DFS Traversals - II Preorder Predecessor Preorder Successor

Depth and Width

Max Depth of Binary Tree Min Depth of Binary Tree Is Binary Tree Balanced Diameter of Binary Tree Max Width of Binary Tree - I Max Width of Binary Tree - II Vertical Width or Shadow

Node Paths Problems

Ancestors in Binary Tree Max Node Ancestor Difference Count Turns in N2N Path All Root to Leaf Tree Paths Sum of Root to Leaf Paths Linearize Binary Tree Linked List in Binary Tree Count Good Nodes

Subtree Sum Problems

Maximum Sum Subtree Tilt of Binary Tree Target Sum Subtrees Transform to Sum Tree Check Sum Tree

Path Sum Problems

Has Root to Leaf Path Sum All Root to Leaf Path Sum Longest Root to Leaf Path Sum Node to Descendant Path Sum Max Leaf to Leaf Path Sum Max Node to Node Path Sum Longest Univalue Path

K Distance Nodes

Nodes K Level Down Nodes At K Distance Burning Tree

Modify Binary Tree

Delete Single Child Parents Merge Two Binary Trees Delete Target Leaf Nodes Delete Insufficient Nodes Delete Nodes & Return Forest Add One Row to Tree Follow Children Sum Property

Compare Trees

Identical or Same Trees Foldable Binary Tree Isomorphic Binary Tree Symmetric or Mirror Tree Invert Binary Tree Find Cloned Tree Node Image Multiplication Duplicate Subtree - I Duplicate Subtree - II

Complete Binary Tree

Count Complete Tree Nodes Is Binary Tree Complete Design Complete Tree

More DFS Problems

Splitted Tree Max Edge Score Splitted Tree Max Node Score Holiday Accomodation Print Single Child Nodes Tree Coloring Game 2nd Min in Special Tree Path in ZigZag Labelled Tree

Breadth First Search

Level Order of Binary Tree Level Order Linewise Reverse Levelorder Zigzag Levelorder Alternate Levelorder Cousins in Binary Tree Maximum Level Sum Average Levelorder Are Leaves at Same Level Populate Right Pointer - I Populate Right Pointer - II Even Odd Tree

Other Tree Traversals

Diagnol Order

Diagonal Order - I Diagonal Order - II Diagonal Sum

Vertical Order

Vertical Order - I Vertical Order - II Vertical Order Sum

View of Tree

Left View of Binary Tree Right View of Binary Tree Top View of Binary Tree Bottom View of Binary Tree Boundary Traversal of Tree

Morris Traversal

Threaded Binary Tree Convert Tree to Threaded - I Convert Tree to Threaded - II Morris Inorder Traversal Morris Preorder Traversal Morris Postorder Traversal

Construct Binary Tree

Serialize & Deserialize Binary Tree Verify Preorder Serialization Tree from Preorder & Inorder Tree from Postorder & Inorder Tree from Preorder & Postorder Tree from Levelorder & Inorder Clone Binary Tree Binary Tree from Parent Array Bracket String from Binary Tree Binary Tree from Bracket String Ternary Expression to Binary Tree Heap Ordered Binary Tree

Lowest Common Ancestor

LCA Variations

LCA - Binary Tree LCA - Deepest Leaves LCA - Parent Pointers LCA - 3 Nodes LCA - K Nodes Shortest Distance of 2 Nodes

Sparse Table

Sparse Table Sparse Table LCA - Using Sparse Table LCA - Using Sparse Table

Binary Lifting

Binary Lifting - Kth Ancestor Binary Lifting - Kth Ancestor LCA - Using Binary Lifting LCA - Using Binary Lifting - I LCA - Using Binary Lifting - II Distance Queries Distance Queries LCA - Sparse Matrix

Rerooting Technique

DP on Trees Subordinates Tree Matching Tree Distances - I Tree Distances - II House Robber - Tree Largest Independent Set Vertex Cover Tree Longest ZigZag Path Binary Tree Cameras Distribute Coins Min Time to Collect Apples Min Cost Tree From Leaf

N Ary or Generic Tree

N Ary Tree Theory N Ary Tree Problems Preorder DFS - Nary Postorder DFS - Nary Height of Nary Tree Diameter of Nary Tree Mirror of Nary Tree Levelorder BFS - Nary Nary to Binary Tree Serialize Deserialize NAry Lockable Tree Lockable Tree

Binary Search Tree

BST Basics

Binary Search Tree Theory Insertion in BST Deletion in BST Searching in BST Minimum Node in BST Maximum Node in BST Handle Duplicates in BST DFS Generic Solver in BST LCA in BST

Inorder Traversal

Inorder Pred/Successor in BST Inorder Successor in BST Kth Smallest Element in BST Kth Largest Element in BST Greater Sum Tree from BST Min Difference in BST Mode in BST Recover BST Union of BSTs

Range Problems

Print Nodes in Range Count Nodes in Range Range Sum of BST Trim BST Ceil Element in BST Floor Element in BST Closest Element in BST K Closest Elements in BST Split BST

Construct BST

Construct BST From Inorder Construct BST From Preorder Construct BST From Postorder Construct BST From Levelorder Convert Sorted SLL to BST Convert BST to Sorted SLL Convert BST To Sorted DLL Convert BST To Sorted CDLL Convert Sorted DLL to BST Convert Sorted DLL to BST Serialize & Deserialize BST Balance a BST Depth of BST from Array

Check for BST

Validate BST Validate BST Largest BST Subtree Max Sum BST Subtree Check Dead End in BST Verify Preorder of BST Identical BST Identical BST - O(n^2) Identical BST - O(n)

BST Iterator

BST Iterator - I BST Iterator - II Iterator & Iterable Forward Iterator in BST Backward Iterator in BST Target Sum Pair in BST - I Target Sum Pair in BST - II Median of BST Merge Two BSTs

Dynamic Programming

DP Theory

Fibonacci Sequence

Fibonacci Number Tribonacci Number Valid Binary Strings Arrange Buildings Decode Ways A+B+C+ Subsets Tiling - 2 X 1 Tiles Tiling - M X 1 Tiles Dominos & Trominos Count Friend Pairing Distinct Subsequences Ugly Numbers Super Ugly Numbers Count Derangements Assembly Line Scheduling Assembly Line Scheduling Weighted Job Scheduling - I Weighted Job Scheduling - II Max Taxi Earnings Min Flips Sort Binary Min Swaps Increasing Sets

Climbing Stairs

Climb Stairs - I Climb Stairs - II Climb Stairs - III Climb Stairs - III Climb Stairs - IV Jump Game - I Jump Game - II Jump Game - III Jump Game - All Paths Jump Game - All Paths Frog Jump - I Frog Jump - II Min Steps to 1 Min Taps to Water 2 Keys Keyboard 4 Keys Keyboard

House Robber

House Robber - I House Robber - II House Robber - III Paint House - I Paint House - II Paint Fence - I Paint Fence - II

Knapsack Problem

Fractional Knapsack 0-1 Knapsack 0-1 Knapsack - Print Ways 0-1 Knapsack - Print Ways Unbounded Knapsack Rod Cutting Max Sum Min Cost for Tickets Min Cost to Fill Bag Flip Array Signs 1s & 0s Binary String

Coin Change Problem

Minimum Coin Change Coin Change - Combinations Coin Change - Permutations Coin Change Analysis

Buy & Sell Stock

1. One Transaction 2. Infinite Transactions 3. Transaction Fees 4. Cooldown 5. Two Transactions 6. K Transactions

Target Sum Subset

Check Target Sum Subset Count Target Sum Subset Print All Target Sum Subsets - I Print All Target Sum Subsets - II Equal Sum Partition Target Diff Partition Equal Average Partition K Equal Sum Partition K Partitions - I K Partitions - II Bell Numbers Tug of War - Equal Size Tug of War - Diff Size

DP on Grid

Min Path Sum in Maze Min Path Sum - All Paths Min Path Sum in Triangle Minimum Falling Path Sum Goldmine All Paths Unique Paths - I Unique Paths - II Knight's Probability Chess Keypad Problem - DP Dungeon Game Cherry Pickup - I Cherry Pickup - II Maximal Square Square Submatrix All 1s Out of Boundary Paths Largest Bordered Square Knight Dialer Largest Plus Sign Divide Cholocate Bar

Pascal Triangle

Pascal Triangle - I Pascal Triangle - II Binomial Coeff (nCr) Permutation Coeff (nPr) Water Overflow

LIS Problems

Longest Increasing Subset Longest Increasing Subset Print All LIS Count All LIS Longest Increasing Subarray Max Sum Increasing Subset Longest Bitonic Subset Max Sum Bitonic Subset Longest Bitonic Subarray Building Bridges Building Bridges Russian Doll Envelopes Perfect Squares Count AP Subarray Count AP Subsets Longest AP Subarray Longest AP Subset Longest Wiggle Subset Highway Billboards Box Stacking - I Box Stacking - II Largest Divisible Subset LCIS (LCS + LIS) Longest String Chain

LCS Problems

Longest Common Subset

Longest Common Subset Uncrossed Lines Print Any LCS Print All LCS Longest Common Substring Increase LCS by 1 LCS of 3 Strings

Longest Duplicate Subset

Longest Duplicate Subset Longest Duplicate Substring - I Longest Duplicate Substring - II

Palindromic Subsets

Longest Palindromic Subset Count Palindromic Subset - I Count Palindromic Subset - II Min Deletions for Palindrome Min Insertions for Palindrome K Palindromic String

Palindromic Substrings

Count Palindromic Substrings Using Dynamic Programming Using Expand Around Center Print All Palindromic Substrings Distinct Palindromic Substrings Using Dynamic Programming Using Manacher's Algorithm Longest Palindromic Substring Using Dynamic Programming Using Expand Around Center Manacher's Algorithm

Expression Matching

Wildcard Matching Regular Expression Matching Edit Distance Min Cost for Identical Strings Min Delete Operations Min ASCII Delete Sum Interleaving String Distinct Transformations Min Insertions and Deletions

Shortest Common Superset

Shortest Common Superset - I Shortest Common Superset - II Shortest Uncommon Subset

Catalan Numbers

Nth Catalan Number Nth Catalan - 3 Solns Catalan No Applications Catalan No Applications Unique BSTs - I Unique BSTs - II Count Balanced Paranthesis Count of Mountain Ranges Dyck Paths Dyck Words Non Intersecting Chords Count Handshakes Count Triangulations Min Score Triangluation

Kadane's Algorithm

Maximum Subarray Sum Max Absolute Sum Subarray Max Sum Circular Subarray K Concatenation Max Sum Maximum Product Subarray Maximum Sum Submatrix Max Sum

Subarray >= K Size Best Sightseeing Pair Max Difference of 0s 1s Max Sum 2 Non-Overlap Subarrays Max Sum 3 Non-Overlap Subarrays Max Sum 3 Non-Overlap Subarrays Max Sum K Non-Overlap Subarrays

Optimal Game Strategy

Predict the Winner Stone Game Optimal Game Strategy Wine Selling Problem Egg Drop - 2 Eggs Egg Drop - K Eggs Super Egg Drop Stone Game - II Stone Game - III Stone Game - IV Stone Game - V Stone Game - VII Stone Game - VIII

MCM Problems

Palindromic Partitioning

Palindrome Partitioning - I Palindrome Partitioning - II Palindrome Partitioning - III Palindrome Partitioning - IV

Matrix Chain Multiplication

Matrix Chain Multiplication Printing Brackets Parsing Boolean Expression Boolean Parenthesization Optimal Binary Search Tree Partition array for Max Sum Burst Balloons Scramble String Rectangle Cutting Min Cost to Merge Stones Min Cost to Cut Stick Min & Max Values with * +

Word Break

Check Word Break Concatenated Words Word Break - Backtracking Word Break - DP Minimum Word Break Text Justification - Greedy Text Justification - DP

Bit Manipulation

Number System

Number System Basics Decimal to Any Base Decimal to Any Base Decimal to Base 7 Decimal to Hexadecimal Decimal to -2 Base Any Base to Decimal Convert Binary to Decimal Any Base to Any Base Any Base to Any Base Any Base Addition Any Base Addition Add Binary Numbers Add -2 Base Numbers Any Base Subtraction Any Base Subtraction Any Base Multiplication Any Base Multiplication

Bitmasking Basics

Bit Manipulation Theory Bit Manipulation Basics Bitmasking Tricks Bitmasking Tricks Binary Representation 1s Complement 2s Complement Check Bits Check Odd or Even Set Bits Unset or Clear Bits Toggle Bits Swap 2 Nos Using Bits Power Set Using Bits Power Set Using Bits

Hamming Weight

Find Rightmost Set Bit Rightmost Setbit Mask Set Rightmost Unset Bit Hamming Weight - I Kernighan's Algorithm Hamming Weight - II Hamming Weight - II Hamming Distance Total Hamming Distance Total Hamming Distance Prime Set Bits Steps Reduce to 0

Bitset Problems

Min Bit Flips to Convert No Min Bit Flips to Convert No Same No of Set Bits Same No of Set Bits Copy Set Bits in Range Copy Set Bits in Range Reverse Bits Reverse Bits Swap Odd Even Bits Swap Odd Even Bits Swap Nibbles in Byte Check Power of 2 Check Power of 2 Highest Power of 2 Check Power of 3 Check Power of 4

Gray Codes

Generate Gray Codes - I Generate Gray Codes - II Generate Gray Codes Gray - Binary Conversion Binary to Gray Conversion Gray to Binary Conversion

Single Number

Single Number - I Single Number - I Single Number - II Single Number - II Single Number - III Single Number - III

XOR Problems

Triplets with = XOR Triplets with = XOR XOR of Sum of Pairs XOR of Sum of Pairs Min Xor Pair Min Xor Pair Xor Subarray Queries Max XOR in Range XOR of All Subarrays Count Pairs = XOR Bitwise AND of Range

More Bits Problems

Josephus Special Case Josephus Special Case Divide Integers w/o Operators Divide Integers w/o Operators Add Integers w/o Operators Valid Words for Puzzle Valid Words for Puzzle Integer Replacement Integer Replacement Is No Multiple of 3 Is No Multiple of 3 UTF - 8 Encoding UTF - 8 Encoding Palindromic Binary No Palindromic Binary No Binary Substrings 1 to N Count Steps to Reduce to 1

Graphs

Graph Theory

Basic BFS/DFS

DFS DFS - Multisolver DFS - Iterative DFS - Applications BFS BFS - Applications Has Path (IB) Print All Paths Time to Inform Employees Min Swaps to Sort Array Clone Graph Hamiltonian Path Hamiltonian Cycle Hamitonian Cycle Pacific Atlantic Water Flow Surrounded Regions Reorder Routes Water Jug Problem Smallest Multiple with 0 & 1

Euler Path & Circuit

Euler Path & Circuit Seven Bridges of Königsberg Euler Path - Undirected Euler Path - Directed Reconstruct Itinerary

Connected Components

Number of Provinces Make Graph Connected Unreachable Pair Nodes Minimize Malware Spread Number of Islands Number of Enclaves Number of Distinct Islands Island Perimeter Island Area Flood Fill SCC - Kosaraju Algo Kosaraju - DFS Kosaraju - BFS SCC - Tarjan Algo Tarjan Algorithm

Cycle Detection

Cycle in Undirected Graph Undirected - DFS Undirected - BFS Cycle in Directed Graph Directed - DFS - 2 Arrays Directed - DFS - Coloring Directed - BFS Graph - Valid Tree Eventual Safe States Longest Cycle Length Print All Cycles

Topological Sort

Topological Sort Topological Sort - DFS Topological Sort - BFS Course Schedule - I Course Schedule - II Parallel Courses Alien Dictionary - I Alien Dictionary - II Mother Vertex Assign Directions - DAG Minimum Height Trees

Graph Coloring

Bipartite Graph Bipartite Graph - BFS Bipartite Graph - DFS Possible Bipartition Two Clique Problem M Coloring Problem Graph Coloring

Shortest Path

Unweighted Graph

Unweighted Graph Unweighted Graph Spread of Infection Rotten Oranges Snake and Ladder Word Ladder - I Word Ladder - II Nearest 0 in Binary Matrix Shortest Path in Binary Matrix Min Steps by Knight Shortest Bridge Shortest Path Visiting All Nodes Farthest Land Possible Sliding Puzzle K Similar Strings 0-1 BFS Minimum Edges Reversals Min Cost for Valid Path Trapping Rain Water 3D Jump Game - III Jump Game - IV

Dijkstra's Algorithm

Network Delay Time Dijkstra Algorithm Min Cost Path in Grid Path with Max Probability Path with Min Effort Count Shortest Paths Bus Routes

Bellman Ford Algo

Bellman Ford Algorithm Bellman Ford Algorithm Negative Weight Cycle Cheapest Flights K Stops

Floyd Warshall Algo

Floyd Warshall Algorithm Floyd Warshall Algorithm City with Min Neighbours Shortest Paths Queries

Directed Acyclic Graph

Shortest Path in DAG Longest Path in DAG Longest Path - Tree Longest Increasing Path Matrix Jump Game - V Shortest Path in Multistage Graph

Disjoint Set Union (DSU)

Disjoint Set Union Disjoint Set Union (DSU) No of Island Queries Smallest Equivalent String Has Path Queries Similar String Groups Smallest String with Swaps Satisfiability of Eqn Redundant Connection - I Redundant Connection - II GCD Threshold Connectivity Evaluate Division Colorful Array Remove Max Edges Accounts Merge Rank Transform of Matrix Most Stones Removed Making Large Island Swim in Rising Water

Minimum Spanning Tree

Minimum Spanning Tree Prim's Algorithm Kruskal's Algorithm Min Cost to Connect Points Optimize Water Distribution

Articulation Pt & Bridges

Euler Tour of Tree Edge Classification Articulation Points Articulation Points Critical Connections Bridges - Offline Algo Bridges - Online Algo

Trie or Prefix Tree

Trie Theory Trie Applications Implement Trie/Prefix Tree - I Implement Trie/Prefix Tree - II

Prefix Tree Problems

Design Add Search Word Weighted Prefix Search Longest Common Prefix Longest Word in Dictionary Implement Magic Dictionary String Searching Queries Design Search Suggestions Word Search - II Word Boggle Replace Words with Prefix Prefix & Suffix Search Palindrome Pairs Shortest Unique Prefix Count Distinct Substrings

Binary Trie Problems

Maximum XOR Pair - I Maximum XOR Pair - II XOR Pairs in Range Unique Rows in 01 Matrix Subarrays with XOR < K

Competitive Programming

CP Handbook CSES Problem Set CP Algorithms

Template

Setting IDE Java Setting IDE C++ Fast I/O Java Fast I/O C++ Java Tricks C++ Tricks

String Pattern Matching

Pattern Matching Search Occurence First Occurence Java Regular Expressions Longest Prefix Suffix Longest Palindrome Prefix KMP Algorithm KMP Algorithm Repeated String Pattern - I Repeated String Pattern - II KMP & Z Algorithm Shortest Palindrome String Hashing Rolling Hash Function Rabin Karp Algorithm Rabin Karp Algorithm Rabin Karp Algorithm Distinct Echo Substrings Repeated DNA Sequences Z Algorithm Z Algorithm Compressed Trie Suffix Trees Suffix Trees

Advanced Mathematics

O.E.I.S Series Basic Combinatorics

Advanced Number Theory

Euler's Totient Function Euler's Totient Function Euler's Totient Function Chinese Remainder Theorem Chinese Remainder Theorem Pigeonhole Principle Pigeonhole Principle

Large Exponentiation

Big Power - Large A Big Power - Large A Big Power - Large A Big Power - Large B Big Power - Large B Super Power Super Power Power of Power Power - Big Integers Modular Factorial Wilson's Theorem Wilson's Theorem Factorials Again Product of Factorials

Fibonacci Numbers

Fibonacci Numbers Linear Recurrence Relation Facts About Fibonacci Matrix Exponentiation Matrix Exponentiation Generalized Fibonacci Modified Fibonacci Cassini Identity Check Fibonacci GCD & Fibonacci Nth Fibonaci Last Digit Nth Digit of Fibonacci Nth Non Fibonacci Nth Even Fibonacci Fibonacci Sum Throwing Dice Dice Roll Expectation Recursive Sequence - I Recursive Sequence - II

Probability Problems

Birthday Paradox Probability Theory Mathematical Expectation Mathematical Expectation Coupon Collector Problem Dice Probability Candy Lottery Inversion Probability Moving Robots

Game Theory

Game Theory Notes Game Theory Notes Game Theory Notes Sprage Grundy Theorem Finders Keeper Game of Nim QCJ3 Game Stone Game - VI Maximum Coins Sum Game Remove Same Colors CSES - Stick Game CSES - Nim Game I CSES - Nim Game II CSES - Stair Game CSES - Grundy's Game CSES - Another Game

Advanced Searching

Jump Search Step Array Search Exponential Search Exponential Search Unbounded Binary Search Searching in Infinite Sorted Interpolation Search Interpolation Search Ternary Search

Ternary Search Ternary Search

Advanced Linked Lists

XOR List

XOR List XOR LL XOR LL - Code XOR List - I XOR List - II

Skip List

Design Skip List Introduction Insertion Search & Deletion Skip List

Self Organizing List

Introduction 1. Move to Front Method 2. Count Method 3. Tranpose Method Self Organizing List

Unrolled Linked List

Introduction Introduction Insertion Insertion

Advanced Trees

AVL Tree

AVL Tree Theory AVL Tree Theory AVL Tree Insertion AVL Tree Insertion AVL Tree Deletion AVL Tree Deletion

B & B+ Tree

B & B+ Tree B Tree Theory B Tree Insertion B Tree Deletion B+ Tree Theory B+ Tree Insertion B+ Tree Deletion

M Way Tree

2-3 Trees 2-3 Trees 2-3-4 Trees 2-3-4 Trees M Way Tree M Way Tree - I M Way Tree - II

Red Black Trees

Red Black Tree RB Tree Theory RB Tree Insertion RB Tree Deletion Augmented DS Augmented DS Interval Trees Interval Trees

Splay Trees

Splay Tree Theory Splay Tree Theory Splay Tree - Searching Splay Tree - Insertion Splay Tree - Insertion Splay Tree - Deletion Splay Tree - Deletion I Splay Tree - Deletion II

Range Query

Range Query Theory

Segment Tree Theory Segment Tree Theory Segment Tree Theory Lazy Propogation Persistent Segment Tree Fenwick Tree Theory Fenwick Tree Theory Square Root Decomposition Square Root Decomposition Segment Tree Playlist Range Query Playlist

Range Sum Query

Range Sum Query - 1D Range Sum Query - 2D RSQ - Point Update 1D RSQ - Point Update 2D RSQ - Range pdates Count Even in Range Squares Sum Range Query

Range Minimum Query

Range Minimum Query Range Minimum Query RMQ - Point Updates RMQ - Range Updates

Subarray Sum Queries

Max Subarray Sum Queries Max Subarray Sum Range - I Max Subarray Sum Range - II Max Pair Sum Range Queries Max Prefix Sum Queries - I Max Prefix Sum Queries - II

Range Query Problems

Inversion Count Range XOR Queris Distinct Value Queries Value in Range Queries Value > K Queries - I Value > K Queries - II Chocolate & Sweetnes AND Rounds Design Tetris Frequency Range Queries Smallest Subarray GCD Palindrome Substring Queries Increasing Triplet Subsets Binary Flip Queries Card Trick Niceday of Competitors

Advanced Geometry

Computational Geometry Line Sweep Technique Convex Polygon Convex Hull Erect the Fence Jarvis Algorithm Graham Scan Algorithm Graham Scan Algorithm

Digit Dynamic Programming

Digit Dynamic Programming Digit Dynamic Programming Digit DP - Tight Constraint Digit DP - Leading Constraint Nos in Range with Sum Digits Count Numbers from Given Set Digit Sum in Numbers Digit Sum in Numbers Count 1s in Nos <= N Digit Count in Range Nos with No Equal Digits Nos with No Equal Digits Nos without Consecutive 1s Nos with Repeated Digits N Digit Stepping Nos

DP With Bitmasking

Subsets Using Bitmasking DP with Bitmasking DP with Bitmasking DP with Bitmasking Travelling Salesman Problem TSP - Backtracking TSP - Backtracking TSP - Dynamic Programming - I TSP - Dynamic Programming - II TSP - Dynamic Programming Smallest Sufficient Team Smallest Sufficient Team Ways to wear Diff Hats Max Students in Exam Shortest Superstring Sum Over Subset (SOS)

Meet in the Middle

Meet in the Middle Meet in the Middle Meet in the Middle Target Sum Subset Sum of Four Values Subset Sum in Range

Network Flow Algorithm

Network Flow Max Flow Problem Max Flow Problem Ford Fulkerson Algo Dinic's Algorithm Minimum Cut Minimum Cut Max Bipartite Matching Max Bipartite Matching

System Design

Low Level Design OOPS interview

Java Advanced

UML - TutorialsPoint UML - Java T Point LLD Codes Real World Problems Design Patterns - Pep

Multithreading

Print in Order Print FooBar Alternately Print Zero Even Odd Building H2O Fizz Buzz Multithreaded The Dining Philosophers

Design Principles

Design Principles - Definitions SOLID Principles - OODesign SOLID Principles - Baeldung SOLID Principles - FreeCodeCamp

Design Patterns

Design Patterns - Scaler Topics Design Patterns - OODesign Design Patterns - Tutorials Point Design Patterns - JavaTPoint Design Patterns - DigitalOcean

Design Problems

Leetcode Problems

Design Parking Lot Design Parking Lot Design Ordered Stream Design ATM Machine Design Tiny URL Design Twitter Design Tweet Counter Design Online Election Design Timeseries Database Design Food Rating System Design BitSet Design Bank System Design Browser History Design No Container System Stock Price Fluctuation Seat Reservation Manager Authentication Manager Railway Underground System Design Book My Show Design Movie Rental App Design Text Editor Design Interval Tree Design O1 Data Structure

Design Parser

Design Peeking Iterator Flatten Nested List Iterator Parse Nested List RLE Iterator Crawler Log Folder Simplify Path Remove Comments

Leetcode Locked

Design Tic Tac Toe Design Hit Counter Ternary Expression Parser Design Candy Crush Design Snake Game Design Leaderboard Design File System Design In Memory File System Design Excel Sum Formula Design Log Storage System Design Logger Rate Limiter Most Recently Used Queue Design Deck of Cards Design Call Center

Machine Coding Round

Design Parking Lot Design Splitwise App Design Chess Validator Design Snake and Ladder Design 2048 Game Design Tic Tac Toe Design Library Management Design Trello Design In Memory Cache Design Distributed Queue

High Level Design

HLD - Donne Martin Primer HLD - GeeksForGeeks HLD - Guided Path HLD - Gaurav Sen HLD - Blogs System Design Series

Databases

SQL vs NoSQL Database Chosing Right Database - I Chosing Right Database - II Database

Scaling Patterns Scaling Databases In Memory Database Graph Database Database Indexing
Master Slave Database Master-Slave vs Master-Master ACID vs BASE Properties

InterviewBit HLD

Design Cache Sharding Database Highly Available Database Highly Consistent Database
Design URL Shortener Design Web Search Design Whatsapp Design Twitter