

Topic:

[illegible]

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[illegible]

LinkedList

Binary Trees

Binary Search Trees

[illegible]

[illegible]

BackTracking

Stacks & Queues

[illegible]

Dynamic Programming

Dynamic Programming

Bit Manipulation

Bit Manipulation

Questions by Love Babbar:

Youtube Channel: <https://www.youtube.com/channel/UCQHLxxBFrbfdrk1jF0moTpw>

Problem:

Reverse the array

Find the maximum and minimum element in an array

Find the "Kth" max and min element of an array

Given an array which consists of only 0, 1 and 2. Sort the array without using any sorting algo

Move all the negative elements to one side of the array

Find the Union and Intersection of the two sorted arrays.

Write a program to cyclically rotate an array by one.

find Largest sum contiguous Subarray [V. IMP]

Minimise the maximum difference between heights [V.IMP]

Minimum no. of Jumps to reach end of an array

find duplicate in an array of N+1 Integers

Merge 2 sorted arrays without using Extra space.

Kadane's Algo [V.V.V.V.V IMP]

Merge Intervals

Next Permutation

Count Inversion

Best time to buy and Sell stock

find all pairs on integer array whose sum is equal to given number

find common elements In 3 sorted arrays

Rearrange the array in alternating positive and negative items with O(1) extra space

Find if there is any subarray with sum equal to 0

Find factorial of a large number

find maximum product subarray

Find longest coinsecutive subsequence

Given an array of size n and a number k, find all elements that appear more than " n/k " times.

Maximum profit by buying and selling a share atmost twice

Find whether an array is a subset of another array

Find the triplet that sum to a given value
Trapping Rain water problem
Chocolate Distribution problem
Smallest Subarray with sum greater than a given value
Three way partitioning of an array around a given value
Minimum swaps required bring elements less equal K together
Minimum no. of operations required to make an array palindrome
Median of 2 sorted arrays of equal size
Median of 2 sorted arrays of different size

Spiral traversal on a Matrix
Search an element in a matrix
Find median in a row wise sorted matrix
Find row with maximum no. of 1's
Print elements in sorted order using row-column wise sorted matrix
Maximum size rectangle
Find a specific pair in matrix
Rotate matrix by 90 degrees
Kth smallest element in a row-column wise sorted matrix
Common elements in all rows of a given matrix

Reverse a String
Check whether a String is Palindrome or not
Find Duplicate characters in a string
Why strings are immutable in Java?
Write a Code to check whether one string is a rotation of another
Write a Program to check whether a string is a valid shuffle of two strings or not
Count and Say problem
Write a program to find the longest Palindrome in a string.] Longest palindromic Substring]
Find Longest Recurring Subsequence in String

Print all Subsequences of a string.

Print all the permutations of the given string

Split the Binary string into two substring with equal 0's and 1's

Word Wrap Problem [VERY IMP].

EDIT Distance [Very Imp]

Find next greater number with same set of digits. [Very Very IMP]

Balanced Parenthesis problem.[Imp]

Word break Problem[Very Imp]

Rabin Karp Algo

KMP Algo

Convert a Sentence into its equivalent mobile numeric keypad sequence.

Minimum number of bracket reversals needed to make an expression balanced.

Count All Palindromic Subsequence in a given String.

Count of number of given string in 2D character array

Search a Word in a 2D Grid of characters.

Boyer Moore Algorithm for Pattern Searching.

Converting Roman Numerals to Decimal

Longest Common Prefix

Number of flips to make binary string alternate

Find the first repeated word in string.

Minimum number of swaps for bracket balancing.

Find the longest common subsequence between two strings.

Program to generate all possible valid IP addresses from given string.

Write a program to find the smallest window that contains all characters of string itself.

Rearrange characters in a string such that no two adjacent are same

Minimum characters to be added at front to make string palindrome

Given a sequence of words, print all anagrams together

Find the smallest window in a string containing all characters of another string

Recursively remove all adjacent duplicates

String matching where one string contains wildcard characters

Function to find Number of customers who could not get a computer

Transform One String to Another using Minimum Number of Given Operation

Check if two given strings are isomorphic to each other
Recursively print all sentences that can be formed from list of word lists

Find first and last positions of an element in a sorted array
Find a Fixed Point (Value equal to index) in a given array
Search in a rotated sorted array
square root of an integer
Maximum and minimum of an array using minimum number of comparisons
Optimum location of point to minimize total distance
Find the repeating and the missing
find majority element
Searching in an array where adjacent differ by at most k
find a pair with a given difference
find four elements that sum to a given value
maximum sum such that no 2 elements are adjacent
Count triplet with sum smaller than a given value
merge 2 sorted arrays
print all subarrays with 0 sum
Product array Puzzle
Sort array according to count of set bits
minimum no. of swaps required to sort the array
Bishu and Soldiers
Rasta and Kheshtak
Kth smallest number again
Find pivot element in a sorted array
K-th Element of Two Sorted Arrays
Aggressive cows
Book Allocation Problem
EKOSPOJ:
Job Scheduling Algo
Missing Number in AP

Smallest number with atleastn trailing zeroes infactorial
Painters Partition Problem:
ROTI-Prata SPOJ
DoubleHelix SPOJ
Subset Sums
Findthe inversion count
Implement Merge-sort in-place
Partitioning and Sorting Arrays with Many Repeated Entries

Write a Program to reverse the Linked List. (Both Iterative and recursive)
Reverse a Linked List in group of Given Size. [Very Imp]
Write a program to Detect loop in a linked list.
Write a program to Delete loop in a linked list.
Find the starting point of the loop.
Remove Duplicates in a sorted Linked List.
Remove Duplicates in a Un-sorted Linked List.
Write a Program to Move the last element to Front in a Linked List.
Add "1" to a number represented as a Linked List.
Add two numbers represented by linked lists.
Intersection of two Sorted Linked List.
Intersection Point of two Linked Lists.
Merge Sort For Linked lists.[Very Important]
Quicksort for Linked Lists.[Very Important]
Find the middle Element of a linked list.
Check if a linked list is a circular linked list.
Split a Circular linked list into two halves.
Write a Program to check whether the Singly Linked list is a palindrome or not.
Deletion from a Circular Linked List.
Reverse a Doubly Linked list.
Find pairs with a given sum in a DLL.
Count triplets in a sorted DLL whose sum is equal to given value "X".

[Sort a “k”sorted Doubly Linked list.\[Very IMP\]](#)

[Rotate DoublyLinked list by N nodes.](#)

[Rotate a Doubly Linked list in group of Given Size.\[Very IMP\]](#)

Can we reverse a linked list in less than $O(n)$?

Why Quicksort is preferred for. Arrays and Merge Sort for LinkedLists ?

[Flatten a Linked List](#)

[Sort a LL of 0's, 1's and 2's](#)

[Clone a linked list with next and random pointer](#)

[Merge K sorted Linked list](#)

[Multiply 2 no. represented by LL](#)

[Delete nodes which have a greater value on right side](#)

[Segregate even and odd nodes in a Linked List](#)

[Program for n'th node from the end of a Linked List](#)

[Find the first non-repeating character from a stream of characters](#)

[level order traversal](#)

[Reverse Level Order traversal](#)

[Height of a tree](#)

[Diameter of a tree](#)

[Mirror of a tree](#)

[Inorder Traversal of a tree both using recursion and Iteration](#)

[Preorder Traversal of a tree both using recursion and Iteration](#)

[Postorder Traversal of a tree both using recursion and Iteration](#)

[Left View of a tree](#)

[Right View of Tree](#)

[Top View of a tree](#)

[Bottom View of a tree](#)

[Zig-Zag traversal of a binary tree](#)

[Check if a tree is balanced or not](#)

[Diagnol Traversal of a Binary tree](#)

[Boundary traversal of a Binary tree](#)

Construct Binary Tree from String with Bracket Representation
Convert Binary tree into Doubly Linked List
Convert Binary tree into Sum tree
Construct Binary tree from Inorder and preorder traversal
Find minimum swaps required to convert a Binary tree into BST
Check if Binary tree is Sum tree or not
Check if all leaf nodes are at same level or not
Check if a Binary Tree contains duplicate subtrees of size 2 or more | IMP |
Check if 2 trees are mirror or not
Sum of Nodes on the Longest path from root to leaf node
Check if given graph is tree or not. | IMP |
Find Largest subtree sum in a tree
Maximum Sum of nodes in Binary tree such that no two are adjacent
Print all "K" Sum paths in a Binary tree
Find LCA in a Binary tree
Find distance between 2 nodes in a Binary tree
Kth Ancestor of node in a Binary tree
Find all Duplicate subtrees in a Binary tree | IMP |
Tree Isomorphism Problem

Find a value in a BST
Deletion of a node in a BST
Find min and max value in a BST
Find inorder successor and inorder predecessor in a BST
Check if a tree is a BST or not
Populate Inorder successor of all nodes
Find LCA of 2 nodes in a BST
Construct BST from preorder traversal
Convert Binary tree into BST
Convert a normal BST into a Balanced BST
Merge two BST | V.V.V>IMP |

[Find Kth largest element in a BST](#)
[Find Kth smallest element in a BST](#)
[Count pairs from 2 BST whose sum is equal to given value "X"](#)
[Find the median of BST in O\(n\) time and O\(1\) space](#)
[Count BST nodes that lie in a given range](#)
[Replace every element with the least greater element on its right](#)
[Given "n" appointments, find the conflicting appointments](#)
[Check preorder is valid or not](#)
[Check whether BST contains Dead end](#)
[Largest BST in a Binary Tree | V.V.V.V.V IMP |](#)
[Flatten BST to sorted list](#)

[Activity Selection Problem](#)
[Job Sequencing Problem](#)
[Huffman Coding](#)
[Water Connection Problem](#)
[Fractional Knapsack Problem](#)
[Greedy Algorithm to find Minimum number of Coins](#)
[Maximum trains for which stoppage can be provided](#)
[Minimum Platforms Problem](#)
[Buy Maximum Stocks if i stocks can be bought on i-th day](#)
[Find the minimum and maximum amount to buy all N candies](#)
[Minimize Cash Flow among a given set of friends who have borrowed money from each other](#)
[Minimum Cost to cut a board into squares](#)
[Check if it is possible to survive on Island](#)
[Find maximum meetings in one room](#)
[Maximum product subset of an array](#)
[Maximize array sum after K negations](#)
[Maximize the sum of arr\[i\]*i](#)
[Maximum sum of absolute difference of an array](#)
[Maximize sum of consecutive differences in a circular array](#)

Minimum sum of absolute difference of pairs of two arrays
Program for Shortest Job First (or SJF) CPU Scheduling
Program for Least Recently Used (LRU) Page Replacement algorithm
Smallest subset with sum greater than all other elements
Chocolate Distribution Problem
DEFKIN -Defense of a Kingdom
DIEHARD -DIE HARD
GERGOVIA -Wine trading in Gergovia
Picking Up Chicks
CHOCOLA –Chocolate
ARRANGE -Arranging Amplifiers
K Centers Problem
Minimum Cost of ropes
Find smallest number with given number of digits and sum of digits
Rearrange characters in a string such that no two adjacent are same
Find maximum sum possible equal sum of three stacks

Rat in a maze Problem
Printing all solutions in N-Queen Problem
Word Break Problem using Backtracking
Remove Invalid Parentheses
Sudoku Solver
m Coloring Problem
Print all palindromic partitions of a string
Subset Sum Problem
The Knight's tour problem
Tug of War
Find shortest safe route in a path with landmines
Combinational Sum
Find Maximum number possible by doing at-most K swaps
Print all permutations of a string

Find if there is a path of more than k length from a source
Longest Possible Route in a Matrix with Hurdles
Print all possible paths from top left to bottom right of a mXn matrix
Partition of a set into K subsets with equal sum
Find the K-th Permutation Sequence of first N natural numbers

Implement Stack from Scratch
Implement Queue from Scratch
Implement 2 stack in an array
find the middle element of a stack
Implement "N" stacks in an Array
Check the expression has valid or Balanced parenthesis or not.
Reverse a String using Stack
Design a Stack that supports getMin() in O(1) time and O(1) extra space.
Find the next Greater element
The celebrity Problem
Arithmetic Expression evaluation
Evaluation of Postfix expression
Implement a method to insert an element at its bottom without using any other data structure.
Reverse a stack using recursion
Sort a Stack using recursion
Merge Overlapping Intervals
Largest rectangular Area in Histogram
Length of the Longest Valid Substring
Expression contains redundant bracket or not
Implement Stack using Queue
Implement Stack using Deque
Stack Permutations (Check if an array is stack permutation of other)
Implement Queue using Stack
Implement "n" queue in an array
Implement a Circular queue

LRU Cache Implementation

Reverse a Queue using recursion

Reverse the first "K" elements of a queue

Interleave the first half of the queue with second half

Find the first circular tour that visits all Petrol Pumps

Minimum time required to rot all oranges

Distance of nearest cell having 1 in a binary matrix

First negative integer in every window of size "k"

Check if all levels of two trees are anagrams or not.

Sum of minimum and maximum elements of all subarrays of size "k".

Minimum sum of squares of character counts in a given string after removing "k" characters.

Queue based approach or first non-repeating character in a stream.

Next Smaller Element

Implement a Maxheap/MinHeap using arrays and recursion.

Sort an Array using heap. (HeapSort)

Maximum of all subarrays of size k.

"k" largest element in an array

Kth smallest and largest element in an unsorted array

Merge "K" sorted arrays. | IMP |

Merge 2 Binary Max Heaps

Kth largest sum continuous subarrays

Leetcode- reorganize strings

Merge "K" Sorted Linked Lists |V.IMP|

Smallest range in "K" Lists

Median in a stream of Integers

Check if a Binary Tree is Heap

Connect "n" ropes with minimum cost

Convert BST to Min Heap

Convert min heap to max heap

Rearrange characters in a string such that no two adjacent are same.

Minimum sum of two numbers formed from digits of an array

Create a Graph, print it

Implement BFS algorithm

Implement DFS Algo

Detect Cycle in Directed Graph using BFS/DFS Algo

Detect Cycle in UnDirected Graph using BFS/DFS Algo

Search in a Maze

Minimum Step by Knight

flood fill algo

Clone a graph

Making wired Connections

word Ladder

Dijkstra algo

Implement Topological Sort

Minimum time taken by each job to be completed given by a Directed Acyclic Graph

Find whether it is possible to finish all tasks or not from given dependencies

Find the no. of Islands

Given a sorted Dictionary of an Alien Language, find order of characters

Implement Kruksal's Algorithm

Implement Prim's Algorithm

Total no. of Spanning tree in a graph

Implement Bellman Ford Algorithm

Implement Floyd warshall Algorithm

Travelling Salesman Problem

Graph Colouring Problem

Snake and Ladders Problem

Find bridge in a graph

Count Strongly connected Components(Kosaraju Algo)

Check whether a graph is Bipartite or Not

Detect Negative cycle in a graph

[Longest path in a Directed Acyclic Graph](#)
[Journey to the Moon](#)
[Cheapest Flights Within K Stops](#)
[Oliver and the Game](#)
[Water Jug problem using BFS](#)
[Water Jug problem using BFS](#)
[Find if there is a path of more than length from a source](#)
[M-Colouring Problem](#)
[Minimum edges to reverse to make path from source to destination](#)
[Paths to travel each node using each edge \(Seven Bridges\)](#)
[Vertex Cover Problem](#)
[Chinese Postman or Route Inspection](#)
[Number of Triangles in a Directed and Undirected Graph](#)
[Minimise the cashflow among a given set of friends who have borrowed money from each other](#)
[Two Clique Problem](#)

[Construct a trie from scratch](#)
[Find shortest unique prefix for every word in a given list](#)
[Word Break Problem | \(Trie solution\)](#)
[Given a sequence of words, print all anagrams together](#)
[Implement a Phone Directory](#)
[Print unique rows in a given boolean matrix](#)

[Coin Change Problem](#)
[Knapsack Problem](#)
[Binomial Coefficient Problem](#)
[Permutation Coefficient Problem](#)
[Program for nth Catalan Number](#)
[Matrix Chain Multiplication](#)
[Edit Distance](#)

Subset Sum Problem
Friends Pairing Problem
Gold Mine Problem
Assembly Line Scheduling Problem
Painting the Fence problem
Maximize The Cut Segments
Longest Common Subsequence
Longest Repeated Subsequence
Longest Increasing Subsequence
Space Optimized Solution of LCS
LCS (Longest Common Subsequence) of three strings
Maximum Sum Increasing Subsequence
Count all subsequences having product less than K
Longest subsequence such that difference between adjacent is one
Maximum subsequence sum such that no three are consecutive
Egg Dropping Problem
Maximum Length Chain of Pairs
Maximum size square sub-matrix with all 1s
Maximum sum of pairs with specific difference
Min Cost Path Problem
Maximum difference of zeros and ones in binary string
Minimum number of jumps to reach end
Minimum cost to fill given weight in a bag
Minimum removals from array to make max –min \leq K
Longest Common Substring
Count number of ways to reach a given score in a game
Count Balanced Binary Trees of Height h
Largest Sum Contiguous Subarray | $V > V > V > V$ IMP |
Smallest sum contiguous subarray
Unbounded Knapsack (Repetition of items allowed)
Word Break Problem
Largest Independent Set Problem

Partition problem

Longest Palindromic Subsequence

Count All Palindromic Subsequence in a given String

Longest Palindromic Substring

Longest alternating subsequence

Weighted Job Scheduling

Coin game winner where every player has three choices

Count Derangements (Permutation such that no element appears in its original position) | IMPORTANT |

Maximum profit by buying and selling a share at most twice | IMP |

Optimal Strategy for a Game

Optimal Binary Search Tree

Palindrome Partitioning Problem

Word Wrap Problem

Mobile Numeric Keypad Problem | IMP |

Boolean Parenthesization Problem

Largest rectangular sub-matrix whose sum is 0

Largest area rectangular sub-matrix with equal number of 1's and 0's | IMP |

Maximum sum rectangle in a 2D matrix

Maximum profit by buying and selling a share at most k times

Find if a string is interleaved of two other strings

Maximum Length of Pair Chain

Count set bits in an integer

Find the two non-repeating elements in an array of repeating elements

Count number of bits to be flipped to convert A to B

Count total set bits in all numbers from 1 to n

Program to find whether a no is power of two

Find position of the only set bit

Copy set bits in a range

Divide two integers without using multiplication, division and mod operator

Calculate square of a number without using *, / and pow()

Power Set

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