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Note: If you find the sheet useful, you can also contribute an article or solution for any problem to be published on takeuforward.org! Click here for more details.

Day 1: Arrays ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
Set Matrix Zeroes	Link 1	YT	Link 2
Pascal's Triangle	Link 1	YT	Link 2
Next Permutation	Link 1	YT	Link 2
Kadane's Algorithm	Link 1	YT	Link 2
Sort an array of 0's 1's 2's	Link 1	YT	Link 2
Stock buy and Sell	Link 1	YT	Link 2

Accolite Digital Amazon Arcesium Bank of America Barclays BFS Binary Search Binary Search Tree Commvault CPP DE Shaw DFS DSA Self Paced google HackerEarth infosys inorder Java Juspay Kreeti Technologies Morgan Stanley Newfold Digital Oracle post order pre-order queue recursion Samsung SDE Core Sheet SDE Sheet Searching set-bits sorting sub-array subarray Swiggy takeforward TCQ NINJA TCS TCS CODEVITA TCS DIGITA; TCS Ninja TCS NQT VMware XOR

Day 2: Arrays Part-II ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Rotate Matrix	Link 1	YT	Link 2
✓ Merge Overlapping Subintervals	Link 1	YT	Link 2
★ ✓ Merge two sorted Arrays without extra space	Link 1	YT	Link 2
★ ✓ Find the duplicate in an array of N+1 integers.	Link 1	YT	Link 2
✓ Repeat and Missing Number	Link 1	YT	Link 2
★ ✓ Inversion of Array (Pre-req: Merge Sort)	Link 1	YT	Link 2

Day 3: Arrays Part-III ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Search in a 2d Matrix	Link 1	YT	Link 2
✓ Pow(X,n)	Link 1	YT	Link 2
★ ✓ Majority Element (>N/2 times)	Link 1	YT	Link 2

✓ Majority Element (>N/3 times)	Link 1	YT	Link 2
✓ Grid Unique Paths	Link 1	YT	Link 2
★ ✓ Reverse Pairs (Leetcode)	Link 1	YT	Link 2

Modification of total inv. count.

Day 4: Arrays Part-IV ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ 2-Sum-Problem	Link 1	YT	Link 2
★ ✓ 4-sum-Problem	Link 1	YT	Link 2
★ ✓ Longest Consecutive Sequence	Link 1	YT	Link 2
★ ✓ Largest Subarray with 0 sum	Link 1	YT	Link 2
★ ✓ Count number of subarrays with given Xor K	Link 1	YT	Link 2
✓ Longest Substring without repeat	Link 1	YT	Link 2

(Prefix sum modification)

[Prefix xor]

Day 5: Linked List ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2

✓ Reverse a LinkedList	Link 1	YT	Link 2
✓ Find the middle of LinkedList	Link 1	YT	Link 2
✓ Merge two sorted Linked List (use method used in mergeSort)	Link 1	YT	Link 2
✓ Remove N-th node from back of LinkedList	Link 1	YT	Link 2
✓ Add two numbers as LinkedList	Link 1	YT	Link 2
✓ Delete a given Node when a node is given.(0(1) solution)	Link 1	YT	Link 2

Day 6: Linked List Part-II ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Find intersection point of Y LinkedList	Link 1	YT	Link 2
✓ Detect a cycle in Linked List	Link 1	YT	Link 2
✓ Reverse a LinkedList in groups of size k.	Link 1	YT	Link 2

Check if a LinkedList is palindrome or not.	Link 1	YT	Link 2
Find the starting point of the Loop of LinkedList	Link 1	YT	Link 2
Flattening of a LinkedList	Link 1	YT	Link 2

Day 7: Linked List and Arrays ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
Rotate a LinkedList	Link 1	YT	Link 2
Clone a Linked List with random and next pointer	Link 1	YT	Link 2
3 sum	Link 1	YT	Link 2
Trapping rainwater	Link 1	YT	Link 2
Remove Duplicate from Sorted array	Link 1	YT	Link 2
Max consecutive ones	Link 1	YT	Link 2

Day 8: Greedy Algorithm ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2

✓	N meetings in one room	Link 1	YT	Link 2
✓	Minimum number of platforms required for a railway	Link 1	YT	Link 2
★ ✓	Job sequencing Problem	Link 1	YT	Link 2
✓	Fractional Knapsack Problem	Link 1	YT	Link 2
✓	Greedy algorithm to find minimum number of coins	Link 1	YT	Link 2
✓	Activity Selection (it is the same as N meeting in one room)	Link 1	YT	Link 2

Day 9: Recursion ✕

Find both C++/Java codes of all problem in the articles in the first column.
I will recommend you to do this playlist at first, so that you learn A-Z of recursion.

	Problem	Practice Link 1	Video Solution	Practice Link 2
✓	Subset Sums	Link 1	YT	Link 2
✓	Subset-II	Link 1	YT	Link 2
✓	Combination sum-1	Link 1	YT	Link 2
✓	Combination sum-2	Link 1	YT	Link 2

✓ Palindrome Partitioning	Link 1	YT	Link 2
✓ K-th permutation Sequence	Link 1	YT	Link 2

Day 10: Recursion and Backtracking ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of recursion.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Print all permutations of a string/array	Link 1	YT	Link 2
✓ N queens Problem	Link 1	YT	Link 2
✓ Sudoku Solver	Link 1	YT	Link 2
✓ M coloring Problem	Link 1	YT	Link 2
✓ Rat in a Maze	Link 1	YT	Link 2
☆ ✓ Word Break (print all ways)	Link 1	YT	Link 2

Day 11: Binary Search ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ The N-th root of an integer	Link 1	YT	Link 2

Matrix Median	Link 1	YT	Link 2
Find the element that appears once in a sorted array, and the rest element appears twice (Binary search)	Link 1	YT	Link 2
Search element in a sorted and rotated array/ find pivot where it is rotated	Link 1	YT	Link 2
Median of 2 sorted arrays	Link 1	YT	Link 2
K-th element of two sorted arrays	Link 1	YT	Link 2
Allocate Minimum Number of Pages	Link 1	YT	Link 2
Aggressive Cows	Link 1	YT	Link 2

Day 12: Trie ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Tries.

Problem	Practice Link 1	Video Solution	Practice Link 2
Implement Trie (Prefix Tree)	Link 1	YT	Link 2
Implement Trie – 2			

✓ (Prefix Tree)	Link 1	YT	Link 2
✓ Longest String with All Prefixes	Link 1	YT	Link 2
✓ Number of Distinct Substrings in a String	Link 1	YT	Link 2
✓ Power Set (this is very important)	Link 1	YT	Link 2
✓ Maximum XOR of two numbers in an array	Link 1	YT	Link 2
★ ✓ Maximum XOR With an Element From Array	Link 1	YT	Link 2

Day 13: Stack and Queue ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Implement Stack Using Arrays	Link 1	YT	Link 2
✓ Implement Queue Using Arrays	Link 1	YT	Link 2
✓ Implement Stack using Queue (using single queue)	Link 1	YT	Link 2
✓ Implement Queue using Stack (0(1) amortized method)	Link 1	YT	Link 2

Check for balanced parentheses	Link 1	YT	Link 2
Next Greater Element	Link 1	YT	Link 2
Sort a Stack	Link 1	YT	Link 2

Day 14: Stack and Queue Part-II

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
Next Smaller Element	Link 1	YT	Link 2
LRU cache (IMPORTANT)	Link 1	YT	Link 2
LFU Cache	Link 1	YT	Link 2
Largest rectangle in a histogram	Link 1	YT1/YT2	Link 2
Sliding Window maximum	Link 1	YT	Link 2
Implement Min Stack	Link 1	YT	Link 2
Rotten Orange (Using BFS)	Link 1	YT	Link 2
Stock Span Problem	Link 1	YT	Link 2
Find the maximum of minimums of every window size	Link 1	YT	Link 2
The Celebrity			

✓ Problem	Link 1	YT	Link 2

Day 15: String ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Reverse Words in a String	Link 1	YT	Link 2
✓ ☆ Longest Palindrome in a string	Link 1	YT	Link 2
✓ Roman Number to Integer and vice versa	Link 1	YT	Link 2
✓ Implement ATOI/STRSTR	Link 1	YT	Link 2
✓ Longest Common Prefix	Link 1	YT	Link 2
✓ Rabin Karp	Link 1	YT	Link 2

Day 16: String Part-II ✕

Find both C++/Java codes of all problem in the articles in the first column.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Z-Function	Link 1	YT	Link 2
✓ KMP algo / LPS(pi) array	Link 1	YT	Link 2

Minimum characters needed to be inserted in the beginning to make it palindromic	Link 1	YT	Link 2
Check for Anagrams	Link 1	YT	Link 2
Count and Say	Link 1	YT	Link 2
Compare version numbers	Link 1	YT	Link 2

Day 17: Binary Tree ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
Inorder Traversal	Link 1	YT1 / YT2	Link 2
Preorder Traversal	Link 1	YT1 / YT2	Link 2
Postorder Traversal	Link 1	YT1 / YT2	Link 2
Morris Inorder Traversal	Link 1	YT	Link 2
Morris Preorder Traversal	Link 1	YT	Link 2
LeftView Of Binary Tree	Link 1	YT	Link 2

✓ Bottom View of Binary Tree	Link 1	YT	Link 2
✓ Top View of Binary Tree	Link 1	YT	Link 2
★ ✓ Preorder inorder postorder in a single traversal	Link 1	YT	Link 2
✓ Vertical order traversal	Link 1	YT	Link 2
✓ Root to node path in a Binary Tree	Link 1	YT	Link 2
✓ Max width of a Binary Tree	Link 1	YT	Link 2

Day 18: Binary Tree part-II

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Level order Traversal / Level order traversal in spiral form	Link 1	YT	Link 2
✓ Height of a Binary Tree	Link 1	YT	Link 2
✓ Diameter of Binary Tree	Link 1	YT	Link 2
✓ Check if the Binary			

✓ tree is height-balanced or not	Link 1	YT	Link 2
✓ LCA in Binary Tree	Link 1	YT	Link 2
✓ Check if two trees are identical or not	Link 1	YT	Link 2
✓ zig zag traversal of binary tree			
✓ ☆ Boundary Traversal of Binary Tree	Link 1	YT	Link 2

Day 19: Binary Tree part-III ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Maximum path sum	Link 1	YT	Link 2
✓ Construct Binary Tree from inorder and preorder	Link 1	YT	Link 2
✓ Construct Binary Tree from Inorder and Postorder	Link 1	YT	Link 2
✓ Symmetric Binary Tree	Link 1	YT	Link 2
✓ ☆ Flatten Binary Tree to LinkedList	Link 1	YT	Link 2
✓ Check if Binary Tree			

→ O(1) space sdn

✓ is the mirror of itself or not	Link 1	YT	Link 2
✓ Check for Children Sum Property	Link 1	YT	Link 2

Day 20: Binary Search Tree

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Populate Next Right pointers of Tree	Link 1	YT	Link 2
✓ Search given Key in BST	Link 1	YT	Link 2
✓ Construct BST from given keys	Link 1	YT	Link 2
✓ Construct BST from preorder traversal	Link 1	YT	Link 2
✓ Check is a BT is BST or not	Link 1	YT	Link 2
✓ Find LCA of two nodes in BST	Link 1	YT	Link 2
✓ Find the inorder predecessor/successor of a given Key in BST.	Link 1	YT	Link 2

Day 21: Binary Search Tree Part-II

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Floor in a BST	Link 1	YT	Link 2
✓ Ceil in a BST	Link 1	YT	Link 2
✓ Find K-th smallest element in BST	Link 1	YT	Link 2
✓ Find K-th largest element in BST	Link 1	YT	Link 2
✓ Find a pair with a given sum in BST	Link 1	YT	Link 2
✓ BST iterator	Link 1	YT	Link 2
✓ Size of the largest BST in a Binary Tree	Link 1	YT	Link 2
✓ Serialize and deserialize Binary Tree	Link 1	YT	Link 2

Day 22: Binary Trees[Miscellaneous] ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Binary Trees.

Problem	Practice Link 1	Video Solution	Practice Link 2
☆ ✓ Binary Tree to			

Double Linked List	Link 1	YT	Link 2
★ ✓ Find median in a stream of running integers.	Link 1	YT	Link 2
✓ K-th largest element in a stream.	Link 1	YT	Link 2
✓ Distinct numbers in Window.	Link 1	YT	Link 2
★ ✓ K-th largest element in an unsorted array.	Link 1	YT	Link 2
✓ Flood-fill Algorithm	Link 1	YT	Link 2

Day 23: Graph

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Graphs.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Clone a graph (Not that easy as it looks)	Link 1	YT	Link 2
✓ DFS	Link 1	YT	Link 2
✓ BFS	Link 1	YT	Link 2
✓ Detect A cycle in Undirected Graph using BFS	Link 1	YT	Link 2

✓ Detect A cycle in Undirected Graph using DFS	Link 1	YT	Link 2
✓ Detect A cycle in a Directed Graph using DFS	Link 1	YT	Link 2
✓ Detect A cycle in a Directed Graph using BFS	Link 1	YT	Link 2
✓ Topological Sort BFS	Link 1	YT	Link 2
✓ Topological Sort DFS	Link 1	YT	Link 2
✓ Number of islands(Do in Grid and Graph Both)	Link 1	YT	Link 2
✓ Bipartite Check using BFS	Link 1	YT	Link 2
✓ Bipartite Check using DFS	Link 1	YT	Link 2

Day 24: Graph Part-II ✕

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of Graphs.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Strongly Connected Component(using KosaRaju's algo)	Link 1	YT	Link 2

✓ Dijkstra's Algorithm	Link 1	YT	Link 2
✓ Bellman-Ford Algo	Link 1	YT	Link 2
✓ Floyd Warshall Algorithm	Link 1	YT	Link 2
✓ MST using Prim's Algo	Link 1	YT	Link 2
✓ MST using Kruskal's Algo	Link 1	YT	Link 2

Day 25: Dynamic Programming

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of DP.

Problem	Practice Link 1	Video Solution	Practice Link 2
✓ Max Product Subarray	Link 1	YT	Link 2
✓ Longest Increasing Subsequence	Link 1	YT	Link 2
✓ Longest Common Subsequence	Link 1	YT	Link 2
✓ 0-1 Knapsack	Link 1	YT	Link 2
✓ Edit Distance	Link 1	YT	Link 2
✓ Maximum sum increasing subsequence	Link 1	YT	Link 2
☆ ✓ Matrix Chain Multiplication	Link 1	YT	Link 2

Day 26: Dynamic Programming Part-II

Find both C++/Java codes of all problem in the articles in the first column.

I will recommend you to do this playlist at first, so that you learn A-Z of DP.

Problem	Practice Link 1	Video Solution	Practice Link 2
Maximum sum path in the matrix, (count paths and similar type do, also backtrack to find the maximum path)	Link 1	YT	Link 2
Coin change	Link 1	YT	Link 2
Subset Sum	Link 1	YT	Link 2
Rod Cutting	Link 1	YT	Link 2
Egg Dropping	Link 1	YT	Link 2
Word Break	Link 1	YT	Link 2
Palindrome Partitioning (MCM Variation)	Link 1	YT	Link 2
Maximum profit in Job scheduling	Link 1	YT	Link 2

Day 27: Operating System Revision (Refer Sheet for OS Questions)

1. Revise OS notes that you would have made during

your sem
2. If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day 28: DBMS Revision (Refer Sheet for DBMS Questions)

1. Revise DBMS notes that you would have made during your sem
2. If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day 29: Computer Networks Revision (Refer Sheet for CN Questions)

1. Revise CN notes that you would have made during your sem
2. If not made notes, spend 2 or 3 days and make notes from Knowledge Gate.

Day 30: Project Overview

Make a note of how will your represent your projects, and prepare all questions related to tech which you have used in your projects. Prepare a note which you can say for 3-10 minutes when he asks you that say something about the project.

> Hurrah!! You are ready for your placement after a month of hard work without a cheat day.
>
> — ~Striver

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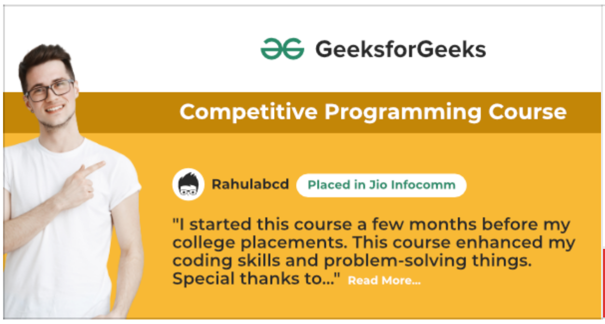

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Dynamic Programming: Frog Jump with k Distances (DP 4)

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