Main Topics

Java Basics

Maths in DSA

Bits Manipulation

Arrays

Searching Algorithms

Matrix

Time & Space Complexity

Sorting Algorithms

String Manipulation

Stack

Queue

Object Oriented Programming

Collections Framework

Two Pointers

Recursion

Linked List

String Manipulation

Hashing

Sliding Window

Trees

Heap & Priority Queue

Tries

Graphs

Greedy Algorithms

Dynamic Programming (DP)

Multi Threading

Bonus

Java Plus DSA S

Subtopics

Programming Language and Memory Management

Flow of a program

How Java Program Compiles

Writing your first program

Java being Java

Inputs and Operators

Organize your code

Control Statements

Functions in Java

Mini Project -1

Mathematics in DSA - Part 1

Mathematics in DSA - Part 2

Bits and Binary Operations

Play with Bits / Bit Manipulation

Bit Manipulation

Arrays in Java

Searching Algorithms - 1

Searching Algorithms - 2

Questions on Binary Search Part 1

Questions on Binary Search Part 2

Questions on Binary Search Part 3

Questions on Binary Search Part 4

Questions on Binary Search Part 5

Q16. Koko Eating bananas
Q17. Smallest Divisor given a threshold
Q18. Minimize Maximum of products distributed to any
Q19. Aggressive cows
Q20. Median of two sorted arrays
Q21. Kth element of two sorted arrays

Questions on Binary Search Part 6

Other Searching Algorithms

Q. Median of a Sorted Matrix
Q. Kth Smallest element of a Matrix

Questions on Matrix - 1

Questions on Matrix - 2

Questions on Matrix - 3

Time and Space Complexity

Insertion Sort
Selection Sort [Uni and Bi - directional]
Bubble Sort and Brick Sort
Counting Sort
Radix Sort
Pigeonhole Sort
Cyclic Sort
Q. Find missing element in range of 0 to N
Q. Given an array [1 to N] return all elements in range [
Questions on Duplicate Numbers

Q. Find the missing and repeating element in an array [
Q. Return the smallest positive number missing

Strings in Java

More on Strings

Playing with String

Q. Print all substrings
Q. Reverse a string
Q. Check if a string is pallindrome
Q. Reverse words in a String
Q. Check if two strings are anagram
Q. Reverse Words in a String -iii

Stack Data Structure

Q. Check parenthesis
Q. Remove minimum brackets to balance string
Q. Add minimum brackets to balance string

Q. Swap minimum brackets to balance string
Q. Swap adjacent brackets to balance string
Q. Asteroid Collision
Q. Stock Span Problem
Q. Next Greater element
Q. Next Smaller element
Q. Next Greater / Smaller element in circular array
Q. Largest Rectangle in Histogram + Previous smaller el
Q. Max Rectangle
Q. Longest Valid Parentheses

Queue Data Structure

Implement queue using stack
Implement stack using queue
Q. LRU Cache
Q. LFU Cache
Q. Rotten Oranges
Q. Sliding Window Maximum

Q. Find Maximum and Minimum of Every Window Size

Classes and Objects
Pillars of Oops
Inheritance
Important Keywords
Constructor Calling and Access Specifier
Getters and Setters
Function Overriding
Abstract Classes
Java Interfaces
Nested Classes
Java Generics
Comparator and Comparable

Collections in One Shot

Q. Container with Most Water

Q. Trapping Rainwater

Q. Find Pair with a given sum in sorted Array

Q. Remove Duplicates from Sorted Array

Q. Maximum Consecutive ones

Q. Reverse Pairs

Q. The Celebrity Problem

Recursion - I

Recursion - II

Time and Space Complexity Analysis

Backtracking and All it's variants

Backtracking with Pruning

More Questions on Backtracking

Recursion - III

Divide and Conquer

Linked List Data Structure

Doubly Linked List

Q. Find Middle of Linked List (Hare Tortoise Algorithm)
Q. Delete Middle of Linked list
Q. Pairwise swap nodes of Linked List

Q. Add two numbers using Linked List
Q. Reverse the linked list (Iterative + Recursive)
Q. Palindrome linked list
Q. Detect Cycle in a linked list
Q. Segregate a linked list into odd and even list
Q. Reverse Nodes in K Group
Q. Remove Nth node from the end of linked list
Q. Sort a linked list of 0's, 1's and 2's
Q. Intersection of two Sorted linked list
Q. Intersection point of two linked list
Q. Insert in a sorted list
Q. Insertion Sort on Linked List
Q. Merge Sort on Linked List
Q. Split a circular linked list into two circular lists
Q. Clone a linked list with random and next pointer

Q. Longest Pallindrome
Q. Find all Anagrams
Q. K-Anagrams
Q. Roman to Integer
Q. First Repeated word in a string
Q. Isomorphic String checker

Rabin Karp Algorithm
KMP Algorithm
LPS Algorithm

Hashing

Hashmap Data Structure

Implement HashMap in Java

Q. Most frequent element in an array
Q. Check if an array is subset of another array
Q. Count Pairs with given sum

Hashset Data Structure

Q. Minimum number of subsets with distinct elements
Questions on K-SUM Subarray Pattern

Q. Longest subarray with sum divisible by K

Q. Longest increasing concecutive subsequence
Q. Count distinct elements in every window of size K
Q. Largest subarray with equal number of 0s and 1s
Q. Find pairs with given sum such that elements of pair
Bucket Sort Algorithm

Sliding Window Technique
Q. Maximum Sum Subarray of Size K
Q. First Negative Number in Each Subarray of Size K
Q. Chocolate Distribution Problem
Q. Smallest subarray with sum greater than x
Q. Longest Substring with K unique Elements
Q. Longest Substring without repeating elements
Q. Count Occurances of Anagrams
Q. Minimum Window Substring
Q. Sliding Window Maximum

Linear and Non Linear Data Structures

Intro to Tree Data Structure

Tree Traversal BFS
BFS on N-Ary Trees
Tree Traversal DFS - Recursive
Preorder Iterative
Inorder Iterative
Postorder Iterative
Q. Construct tree using inorder and postorder.

Q. Maximum Depth of Binary Tree
Q. Maximum Depth of N-Ary Tree
Q. Diameter of Binary Tree
Q. Diameter of N-ary Tree
Q. Count number of node in compete Binary Tree
Q. Left and Right View of Binary Tree
Q. Top and Bottom View of Binary Tree
Q. Vertical Order Traversal of Binary Tree
Q. Boundary Traversal of Binary Tree
Q. ZigZag Level Order Traversal of Binary Tree
Q. Balanced Binary Tree
Q. Lowest Common Ancestor of Binary Tree (LCA)
Introduction to Binary Search Tree
Delete a Node in BST
Q. Validate BST
Q. Two Sum in BST
Q. Kth Smallest Element in BST
Q. LCA in BST
Q. Burn a Tree
Q. BT to DLL
Q. Floor and Ceil in BST
Q. Search in BST

Q. Binary Search Tree Iterator
Q. Maximum Sum BST in Binary Tree

Flood fill algorithm in BT
Segment tree
Range query
Red Black Tree

AVL Tree

TreeMap Collections

Heap

Priority Queue in one shot

Q. Top K Frequent Elements
Q. Sort Characters by frequency
Q. IPO
Q. Design Twitter

Q. Task Scheduler

Q. Connect N ropes with Minimum cost

Q. Medium of Running Streams of Integers

Q. Maximum Sum Combination

Q. Merge K sorted Elements

Trie

Questions on TRIE

Graph Introduction

Graph Representation & Application

Q. Find the center of star graph
Q. Maximum Total Importance of Roads

Connected Components and Path

DFS Traversal in Graph
BFS Traversal in Graph
Q. Flood fill using BFS
Q. Number of Islands
Q. Word Ladder -1
Q. Word Ladder -2
Q. Evaluate Division
Q. Get Watched Videos by your friends
Q. Rotting Oranges | Multisource BFS
Q. Minimum Time to Collect All Apples in a Tree
Q. Most Stones Removed with Same Row or Column
Q. Accounts Merge
cycle detection in undirected graph using BFS
cycle detection in undirected graph using DFS
Cycle Detection In Directed Graphs using DFS
Kahn's Algorithm for Toposort
Toposort using DFS
Cycle Detection in directed graph using toposort
When to apply BFS | Shortest Path using BFS
Dijkstra Algorithm | Shortest Path
Floyd Warshall Algorithm | Shortest Path
Bellmanford Algorithm | Shortest Path

Q. Network Delay Time
Q. Cheapest Flights Within K Stops
Q. Minimum Cost to Convert String I
Disjoint Sets in one shot
Q. Redundant Connection
Q. Satisfiability of Equality Equations
Q. Number of Operations to Make Network Connected
Q. Is Graph Bipartite?
Strongly Connected Components | Kosaraju's Algorithm
Minimum spanning tree
Prim's Algorithm for minimum spanning tree
Kruskal's Algorithm for minimum spanning tree

Greedy Algorithm Introduction
Q. Activity Selection Problem
Q. Eqyption Fraction
Q. Job Sequencing Problem
Q. Policemen Catches Thieves
Q. Assign mice to Holes
Q. Minimum swaps for bracket balancing
Q. Minimum number of Platforms for Railway station
Q. Minimum number of Coins - greedy

Q. Fractional Knapsack - greedy
Q. Text Justification

Dynamic Programming Introduction

Q. Coin Change Problem
Q. 0-1 Knapsack Problem
Q. Longest Increasing Subsequence
Q. Pallindromic Partitioning

Kadanes Algorithm
Q. Maximum Sum Subarray
Q. Maximum Product Subarray
Q. Maximum Sum Rectangle
Q. Edit Distance
Q. Rod Cutting Problem
Q. Word Break Problem

Q. Longest Common Subsequence
Q. Variants of LCS

Java Multithreading and Concurrancy - I

Java Multithreading and Concurrancy - II

Catalan Number
Permutation and combinations
Trending leetcode contest questions.
All Important pattern printing
Observation and tricks

Sheet By Shashwat Tiwari

Details	*Video Links*
What is a programming Language *Machine Language* *Assembly Language* *High Level Language* *Procedural Language* *Functional Language* *Object Oriented Language* *Scripting Language* *Stack Memory* *Heap Memory* *Garbage Collection*	*https://youtu.be/DEC268j2hk0*
Flowchart *Psuedocode* *Algorithm*	*https://youtu.be/wL6sbJOzF5A*
Byte code *Machine code* *why java is platform independent*	*https://youtu.be/2Uer9X75EPI*

JDK, JRE, JVM, JIT

https://youtu.be/1Z2QzcbLicY

installation of Java
installation of IDE
"Hello Coder"
entrypoint of program
commandline arguments
generating byte code in style
How computer runs your program?
writing comments in java

https://youtu.be/FVs7Z9RfIJE

Variables and constants
Literals and keywords
data types
Program to swap two numbers
Type casting Implicit and explicit
Automatic type promotion
Wrapper class
ASCII Values
Unicode style

https://youtu.be/NZF0Rwrubs0

Operators in java

How to take input

https://youtu.be/Axw8usR3rEA

Java Packages
Access Specifiers

https://youtu.be/N6unLhAxy8s

if-else
switch case
while loop
do-while Loop
for each loop

https://youtu.be/IkOkAzNuefc

Functions
Types of functions
create your own functions
call by value and call by reference

https://youtu.be/FM1ujSiOSi0

Calculator Application
Temperature convertor

https://youtu.be/q0kKRFpGmiE

Number system
Conversion from one system to other

Digit extraction
Reverse a Number.
Find even odd
Find Power of a number.
Fast exponentiation

https://youtu.be/bvmoEgSp9O4

count digits
count digits using log
using log formulas
Armstrong Number
Pallindrome Number
Print all divisors
Check if Number is Prime
Sieve Algorithm
Newton Raphson Algorithm for square root
Greatest Common Divisor
Euclidian GCD Algorithm
lcm of two numbers
Modular Arithmetics
fast exponentiation with modular arithmetics
factorial of a number

find trailing zeros in a factorial
ceiling and floor of a number

https://youtu.be/cn_KKSd3T2g

Least Significant Bits
Most Significant Bits
Signed and unsigned Numbers
Calculate range of data type
How to add binary numbers
How to find 1's complement
How to find 2's complement
Left shift and Right shift
Trick to divide or multiply any number.
Bitwise NOT, Bitwise AND, Bitwise OR

https://youtu.be/wGrEXbLQX1k

Find the i-th Bit
Set the i-th Bit
Toggle the i-th Bit
Unset the i-th Bit
Print the number in binary without conversion
Find if a number is even / odd using bit manipulation
Find if a number is power of 2.

Count the number of set bits.
Unset the right most set bit.

https://youtu.be/UTVvLfkuSEs

Bitwise Operators
Bit Manipulation
Bit Masking
Advanced XoR problems of Bit Manipulation

https://youtu.be/TsoTexsJWlI

what are arrays
concept of indexing
Insert, update, delete, traverse
How arrays work in memory
what is a sorted array
How to create a 2d array
Operations on functions
Jagged Array
passing arrays to functions

https://youtu.be/slqFdKVMjeQ

Linear Search
Q. search an Element / first occurrence

Q. Find the minimum element in an array (1D/2D)
Q. Find the maximum element in an array (1D/2D)
Q. Find max sum 1D array in a 2D array
Q. Search all occurrences (1D/2D)
Q. Search last occurrence (1D/2D)

https://youtu.be/kOIECDEUzaI

Binary Search
Sorted in increasing
Sorted in decreasing
Order Agnostic Binary Search

https://youtu.be/P-vl_BrdxJA

Q1. Ceiling of a Number
Q2. Floor of a Number
Q3. First and Last Position of element in sorted array
Q4. Count all occurrence of element in an array
Q5. Next smallest letter in sorted array

https://youtu.be/DoVawmdh5NM

Binary Search in range
Q6. Find Minimum Difference in a Sorted array.
Q7. Find an element in an array of Infinite size
Q8. Find first 1 in an infinite and sorted array of 0s and 1s

https://youtu.be/IK5eSvNw9Qw

Bitonic Array

Q9. Find pivot in bitonic array

Q10. search in bitonic array

https://youtu.be/n12QcCu8oBI

Sorted and Rotated Array (Clockwise and Anticlockwise)

Q11. count number of rotations

Q12. search in rotated sorted array (with and without duplicates)

Q13 Find min / max (peak) element in rotated and sorted array

https://youtu.be/_4LmUWmmYbY

Q14. Allocated minimum number of pages

Q15. Capacity to Ship within D Days

https://youtu.be/BUFHoQIOnAs

https://youtu.be/pSGtbhpuhbk

store

https://youtu.be/4O6wrTtUQvY

https://youtu.be/86xSPxfc4iQ

https://youtu.be/2BOgAlmyTkc

https://youtu.be/SB6j8D95eHM

https://youtu.be/f09DayNeigg

Q22. Single Element in a Sorted Array

Q23. Finding square root

Q24. Count Squares

https://youtu.be/rFwBm-VT99A

Jump Search
Interpolation Search
Exponential Search
Ternary Search

https://youtu.be/aNIfGl1ZKQE
https://youtu.be/HuOcDlB1uXk

https://youtu.be/EXcmeMx3Dq0

Q. Search in a row wise and column wise sorted Matrix
Q. Search in a sorted matrix

https://youtu.be/hA_yvtCpjsg

Q. Transpose a Matrix
Q. Rotate a Matrix by 90 degree clockwise
Q. Rotate a Matrix by 90 degree anticlockwise

https://youtu.be/uAaoWcYX2_8

Q. Spiral Matrix - 1
Q. Spiral Matrix - 2

https://youtu.be/ZltvAvQXIEo

What is Algorithm Complexity	
Asymptotic Notations	
Time Complexity	
Space Complexity	
Big Oh cheat sheet.	
How to calculate time complexity	
Algorithm optimizations	
	https://youtu.be/EHBeiIm59Yk
	https://youtu.be/CfEZKDoVRcw
	https://youtu.be/vXwKKzn6D4E
	https://youtu.be/e644HVGFAJY
	https://youtu.be/HuwgdPVEwCc
	https://youtu.be/sWX1eMPYzSU
	https://youtu.be/vJn71L7CPH4
	https://youtu.be/bIHpx5NN2bg
1 to N] that are absent in the array	*https://youtu.be/xxFebE0VznM*
	https://youtu.be/Us63C10ozzw
Q. Find the duplicate Number in an array [1 to N] (inclusive)	
Q. Given an array [1 to N] with elements appearing once or twice, return all elements that c	
1 to N]	*TBD*
	TBD

https://youtu.be/aqjGYjtczvY

characters
string literals
string constant pool
subsequences
substrings
String comparison
String with new operator
Reference Comparision

https://youtu.be/rXSUJ-PwU4g

String Builder
String Buffer
Next vs NextLine
Taking string as a user input
compareTo function
trim function
split function
startsWith function
endsWith function
IndexOf function
lastIndexOf function

charAt function
toLowerCase function
toUpperCase function
toCharArray function

https://youtu.be/SrPyIYakYt8

Input Buffer and delimeters
String formatting
String Concatination

https://youtu.be/I1rgYRi1tXE
https://youtu.be/m9QAjIVnmp4
https://youtu.be/-HGtMO4MkWs
https://youtu.be/KhNAMB3jDOU
https://youtu.be/SFF3ND7TPc0
https://youtu.be/ajhV7EYLfOY

https://youtu.be/TpuQWpma7ug

Stack
Stack using Arrays

https://youtu.be/CNOoP25NpfQ
https://youtu.be/FB6wSdPjVGw
https://youtu.be/BNFBv1KtcDM

	https://youtu.be/RZTapGf3pzI
	https://youtu.be/U48xDsqb8OE
	https://youtu.be/OtddlksWtS4
	https://youtu.be/1_Bbq5qOraY
	https://youtu.be/8P3e34EgVyY
	https://youtu.be/MqQchOMmTGY
	https://youtu.be/ahlaBL4gG1s
ement	https://youtu.be/qUS-DZU4fj4
	https://youtu.be/DPkDmhCyyuc
	https://youtu.be/gqQsbdTcey0
	https://youtu.be/9m4SZPRQXQI?si
Queue	
Queue using Array	
Circular Queue	
Double ended Queue	
	https://youtu.be/Enygu8ivr0w?si=.
	https://youtu.be/z4FxPUgXn90?si=
	TBL
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TBL

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https://youtu.be/5_pMrxQ17rY?si=
https://youtu.be/txtsaKx3eME?si=
https://youtu.be/7VLroC57Exk?si=
https://youtu.be/W1P7tvRWZvs?si
https://youtu.be/_Xog65pQgDk?si
https://youtu.be/MrK_eL96fnY?si=
https://youtu.be/a2QGa30h3Is?si=
https://youtu.be/rjWDZt7hbD8?si=
https://youtu.be/vGG9d_FEl60?si=
https://youtu.be/quegYlReztM?si=

Introduction
Need of Data Structure and Algorithms
Data and Object in real world
Need for a framework
What is collection framework?
Modules Vs Framework Vs Library Vs Package
How to Import Collections Framework

https://youtu.be/CRG9tcCr8iU

Hierarchy of Collections Framework - Interfaces & Classes
Functions in Collection Interface
Java Generics and AutoBoxing
List Interface
ArrayList & its functions
How to Iterate your List using Iterator
Internal Working of ArrayList
Sorting using Comparator
Sorting based on Custom Comparator
How to Iterate your List using ListIterator
Time Complexity of ArrayList
LinkedList & its functions
ArrayList VS LinkedList
Time Complexity of LinkedList
Vectors and their use
Stack & its functions
Time Complexity of Stack
Queue & its functions
Queue using LinkedList
Queue using ArrayDeque
Deque Interface using ArrayDeque & LinkedList
PriorityQueue Implementation of Queue

Map Interface
Hashing Concept
How Map uses Hashing Concept
HashMap & its functions
How to traverse a Map using Entry Interface
Map using LinkedHashMap
Map using TreeMap
BST
Self Balanced BST or Red-Black Tree
TreeMap & its functions
Set Interface
HashSet
How HashSet works Internally
LinkedHashSet
TreeSet

TBD
TBD
TBD
TBD
TBD
TBD

TBD

playing with function calls
Types of recursion
Q. convert decimal to binary
Q. reverse a number / string
Q. reverse an array inplace
Q. reverse a stack

Leap of Faith
Q. Tower of Hanoi
Q. Count ways in a Matrix

Notations
Recurrence Relation
Trick

Q. Rat in a Maze

Q. All permutations
Q. Pallindrome Partitioning
Q. Letter Combination of a Phone Number
Q. Print Subdequences of a String
Q. Subsequences with sum equal K

Q. Combination Sum - I
Q. Combination Sum - II
Q. Combination Sum - III
Q. Combination Sum - IV

Q. Number of islands
Q. Knights tour problem
Q. N Queens problem
Q. Suduko Solver

Q. Josephus problem - Kill in circle
Binary Search using recursion

Q. calculating power (x^n)
Q. Merge Sort

Q. Quick Sort
Q. Count Inversion
Strassen's Matrix Multiplication

https://youtu.be/cf4RNGYI6hk?si=

Intro to linked list Data Structure
Types of linked list
All operations of Single linked list
Time Complexity
Applications of linked list
Implementation of linked list data structure

https://youtu.be/JxIC0XeTl4Y?si=5

Intro to Doubly linked list
All operations and their time complexity
Implementation of linked list

https://youtu.be/NUbqd8-lHl4?si=
https://youtu.be/uLlJJHpq7hw?si=
https://youtu.be/92f3L2p31Oc?si=

https://youtu.be/OgSnJa9pDk0?si=
https://youtu.be/6GkwvqS9Cq4?si
https://youtu.be/uXB8S875uyw?si
https://youtu.be/6VRgzaOT2G0?si
https://youtu.be/EqsLvheH5fA?si=-
https://youtu.be/zsuqutkRYcs?si=7
https://youtu.be/XLPiw_Dz5-A?si=_
https://youtu.be/c2C4lbstw1w?si=
https://youtu.be/19unN7dz54A?si=
https://youtu.be/qw0ZKmP-GTk?si
https://youtu.be/wa4fTaf3qSw?si=
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https://youtu.be/dBxiAxuT2I8?si=u

TBL

TBD

TBD

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TBD

https://youtu.be/vB3WKXNH-v4?s

Components of Hashing
How hashing works?
Types of Hash Functions
Collisions
Collision Resolution Techniques - Separate chaining
Collision Resolution Techniques - Open Addressing
Load Factor
Rehashing
Applications and Advantages

https://youtu.be/CMA0MQQ3jhA?

What is hashmap?
How to use custom key-value pair

https://youtu.be/B4VukYcQG_E?si

All Methods
Hashcode function
Rehashing

https://youtu.be/O5iUfFHxCZc?si=
https://youtu.be/V4hi-l-xNXU?si=L
https://youtu.be/NC9r8D2QnHk?si

https://youtu.be/3euKVlloIWY?si=

what is hashset data structure
Usage of map keys
Set Iterator

https://youtu.be/h6jzp9waCyk?si=
https://youtu.be/S6tARGbBGEo?si=

Q. Check if subarray with K sum Exists or Not
Q. Find the starting and ending index of K sum subarray
Q. Find the maximum length subarray with K sum
Q. Find the minimum length subarray with K sum *Homework*
Q. Count the total subarrays with sum K
Q. Find largest subarray with 0 sum *Homework*

https://youtu.be/L03d0qThnJQ?si=

are in different rows

https://youtu.be/4ohND5Hq-wQ?s

TBD

https://youtu.be/qOCuB-IC9KA?si=

TBD

https://youtu.be/5Pe3YSnqGh8?si=

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https://youtu.be/Rot0y4cmlNw?si=

https://youtu.be/oYNU1TD9W5Y?s

https://youtu.be/UXValb-h70s?si=

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https://youtu.be/Vgo7tvBm8OU?s

https://youtu.be/PVXVsSkItpY?si=

https://youtu.be/26E3K8Njm7M

https://youtu.be/jOoZuTrfpjc

https://youtu.be/jeQ_B7-nihM

Linear Data Structure

Non Linear Data Structure

https://youtu.be/qfHkWUl1zlc?si=

What is a tree Data Structure.

Types of trees.
Binary Trees.
N-ary Trees.
Ternary Trees.
Non Linear Data Strcuture.
Hierarical Data Structure.
Properties of a Tree Data Structure.
Neighbour in Tree.
Siblings in Tree.
Cousin in Tree.
Depth of a Tree.
1Height of a Tree.
Child of a node in tree.
Parent of a node in tree.

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https://youtu.be/4NZV0XBbKfA?si=
https://youtu.be/aQKJ9juD87k?si=
https://youtu.be/Tp2kzBIunWk?si=
https://youtu.be/-VzRxq3Jwp4?si=
https://youtu.be/xEPe6aWlRd0?si=
https://youtu.be/uDuOuMcSHwo?

Q. Size of Binary Tree	***https://youtu.be/zbZEcUV0t7k?si=*** ***https://youtu.be/Mehu7yep3ag?si*** ***https://youtu.be/Dt-U4vzYDTM?si=*** ***https://youtu.be/mPTJyH6Qs4c?si=*** ***https://youtu.be/1m3F7zEW9qc?si*** ***https://youtu.be/JgRsVsw_ZSw*** ***https://youtu.be/zbA4yWuEoYE*** ***https://youtu.be/X-XLc_jOmHE*** ***https://youtu.be/c2uD7WBjE5A*** ***https://youtu.be/9VLBM60-AVs*** ***https://youtu.be/PPD2X52uzMc*** ***https://youtu.be/m9NKcTvrhSc*** ***https://youtu.be/WikD4AEvRq0*** ***https://youtu.be/kdXBGjmiVCE*** ***https://youtu.be/GcY4pTdHzq0*** ***https://youtu.be/9luczLx9YYc*** ***https://youtu.be/RM8k2pr6V38*** ***https://youtu.be/TytL24jNZ6k*** ***TBD*** ***TBD*** ***TBD*** ***TBD***

https://youtu.be/V9J9gGIVt_E
https://youtu.be/zAz-WbqIaf8

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https://youtu.be/QEvpN09q3nw

1. AVL Trees
2. Balanced Trees
3. Insert in AVL Tree
4. Delete in AVL Tree
5. Balance factor of AVL Tree
6. AVL Tree rotations
7. LL
8. RR
9. LR
10. RL

https://youtu.be/W0JgjIgz3zQ

https://youtu.be/NFiYQGyL8rg

1. Heaps
2. Heapify
3. Heapsort
4. Min Heap
5. Max Heap
6. Increase Key
7. Decrease Key
8. Insert in Heap
9. Delete from Heap
10. build heap from array
11. Complete Tree

https://youtu.be/XGfa9jnDJNY

1. Priority Queue in Java collections
2. Priority Queue on custom classes.
3. Collections.ReverseOrder()
4. dsa playlist
5. Equate objects in pq

https://youtu.be/bXbiLwGSZHU
https://youtu.be/zPB7j1TMTDM
https://youtu.be/sdCvHi2i03E
https://youtu.be/tH051S6aM5M

https://youtu.be/it-tqUPacgM

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Introduction to Trie

Implement a Trie in java

Insert, Search and delete operations

Q. Longest String with All prefixes

Q. Number of Distinct substrings in string

Q. Power Set

Q. Maximum XoR of two Numbers in an Array

https://youtu.be/f-buby0Aac8

1. Introduction to graphs

2. Directed Graph

3. UnDirected Graph

4. Weighted Graph

5. UnWeighted Graph

6. Vertex and Edges

7. Degree of a node in graph
8. In-degree and Out-degree in graphs

https://youtu.be/2oXUetonhUg

1. How to represent graph in memory
2. InDegree of directed graph
3. outDegree of directed graph
4. Adjacency List
5. Adjacency Matrix
6. Degree of a graph
7. Represent Directed graph with weight
8. Represent UnDirected graph with weight

https://youtu.be/bEzD_V6Uhss
https://youtu.be/C7BENkkO3oU

https://youtu.be/bmULgrjRcss

1. How to traverse multiple components in a graph
2. TreeTraversal vs Graph Traversal
3. Path in a graph
4. Cycle in a graph
5. Directed Acyclic Graph (DAG)
7. Find if a path is valid or not

https://youtu.be/8ZP_Y3boL0M
https://youtu.be/88WZluVGlFI
https://youtu.be/W6nOvvWzZYg
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Overlapping Subproblems

Optimal Substructures

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