

DATA STRUCTURES AND ALGORITHM (DSA) JAVA

01 - Maths for Coding

- (i) Number Properties and Operations
- (ii) Number Classification
- (iii) Number Sequences and Series
- (iv) Mathematical Functions
- (v) Combinatorics and Permutations
- (vi) Techniques

02 - Efficiency of Algorithm

- (i) Algorithm Analysis and Time Complexity
- (ii) Polynomial Time Complexity
- (iii) Time Complexity Analysis
- (iv) Concepts and Notations

03 – Arrays

- (i) Introduction to 1D Array
- (ii) Modifying an Array
- (iii) Find and Search
- (iv) Binary Operations
- (v) Sorting
- (vi) Some Programming Constructs
- (vii) Techniques -I

04 - Binary Search

05 - Number System and Bitwise operations

06 - Recursion and Backtracking

07 – Sorting

- (i) Introduction
- (ii) Basic Algorithms
- (iii) Divide-and-Conquer Sorting Algorithms
- (iv) Index Based Algorithms
- (v) Techniques
- (vi)

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08 – Matrix

- (i) Declaration and Operations
- (ii) Special Matrices
- (iii) Traversals
- (iv)

09 - Linked List

- 01 - Linked List & Operations
- 02 - Circular Linked List
- 03 - Doubly Linked List
- 04 - Techniques

10 – Stack

- 01 - Stack Representation and Implementation
- 02 - Techniques
- 03 - Notations

11 – Queue

- 01 - Representation and Implementation
- 02 – Techniques

12 – Trees

- 01 - Trees - Introduction and Representation
- 02 - Tree Operations
- 03 - Traversing a Tree
- 04 - Binary Search Tree (BST)
- 05 - Tries

13 - Heaps and Priority Queues

14 - Graphs**01 - Introduction & Representation****02 - Graph Traversals****03 - Algorithms****15 - Greedy Algorithms****01 - Optimization Problems****02 - Spanning Tree****03 - Knapsack Problems****04 - Shortest Path Algorithm****16 - Dynamic Programming****01 - Introduction****02 - DP Problems****03 - Shortest Path Algorithms****17 – Hashing****01 - Hashing Techniques****02 - Collision Handling Strategies****18 - String Matching****01 - Pattern Matching****techniques**

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