

Knowledge Is The Best Investment

- C/C++
- JAVA FULL STACK
- PYTHON
- DSA
- HADOOP

- DATA SCIENCE
- DATA ANALYTICS
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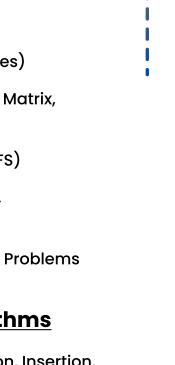
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DSA

COURSE CONTENTS

- Introduction to Data Structures and Algorithms
- Arrays and Linked Lists
- Stacks and Queues
- Trees and Binary Trees
- Graphs
- Dynamic Programming
- Hashing and Hash Tables
- RECURSION FOR DSA:
- Priority Queues & Heaps
- Algorithm



DSA syllabus

Introduction to Data Structures and Algorithms

- What Are Data Structures And Algorithms?
- Importance Of DSA In Computer Science And Programming
- Time And Space Complexity Analysis
- Asymptotic Notation (Big O, Omega, Theta)

Arrays and Linked Lists

- Introduction To Arrays And Linked Lists

- Array Operations: Searching, Sorting, And Insertion

- Singly Linked Lists, Doubly Linked Lists, And Circular Linked Lists

- Linked List Operations: Insertion, Deletion, Traversal

- Comparing Arrays And Linked Lists

Stacks and Queues

- Understanding Stacks And Queues

- Implementing Stacks And Queues Using Arrays And Linked Lists

- Common Applications Of Stacks And Queues

- Stack And Queue Operations

- Use Cases: Expression Evaluation, Backtracking Algorithms, Etc.

Trees and Binary Trees

- Introduction To Trees And Binary Trees

- Binary Tree Traversals (In-Order, Pre-Order, Post-Order)

- Binary Search Trees (BST)

- AVL Trees For Balanced Search

- Applications Of Trees In Real-World Problems

Graphs

- Basics Of Graphs (Vertices And Edges)
- Graph Representations (Adjacency Matrix, Adjacency List)
- Graph Traversal Algorithms (DFS, BFS)
- Shortest Path Algorithms (Dijkstra's, Bellman-Ford)
- Applications Of Trees In Real-World Problems

Sorting and Searching Algorithms

- Sorting Algorithms (Bubble, Selection, Insertion, Merge, Quick)

- Time And Space Complexity Of Sorting Algorithms

- Searching Algorithms (Linear Search, Binary Search)

- Hashing And Hash Functions

- Efficiency Of Searching Techniques

Dynamic Programming

- Principles Of Dynamic Programming

- Memoization And Tabulation Techniques

- Solving Problems With Dynamic Programming

- Examples: Fibonacci Sequence, Shortest Paths, Knapsack Problem

Hashing and Hash Tables

- Hashing Fundamentals

- Hash Table Data Structure

- Collision Resolution Techniques (Chaining, Open Addressing)

- Hash Functions And Their Properties

- Applications Of Hash Tables

RECURSION FOR DSA:

- Recursion Building Block Of Coding

- Recursion & PMI

- Power Using Recursion

- Fibonacci Series

- First Occurrence In An Array

- Last Occurrences In An Array

Algorithm

- Sorting Algorithm

- 1. Bubble Sort

- 2. Insertion Sort

- 3. Selection Sort

- 4. Bucket Sort

- 5. Quick Sort

- 6. Heap Sort

- Searching Algorithm

- 1. Linear Search

- 2. Binary Search

- Greedy Algorithm

- Divide And Conquer

Priority Queues & Heaps

- Introduction To Priority Queues

- Methods To Implement Priority Queues

- Introduction To Heaps

- Introduction To Complete Binary Trees And Its Implementation

- Insert And Delete Operations In Heaps

- Implementing Priority Queues

- Heap Sort

Career Support

Comprehensive Curriculum

Mock Interview Sessions

Real-World Projects

Lifetime Access

Flexible Scheduling

Hands-On-Learning

Experienced Faculty

Priority Queues & Heaps

Graphs

Sorting and Searching Algorithms

Dynamic Programming

Hashing and Hash Tables

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