

JAVA + DSA

From **Beginner** to **Interview-Ready**
In Just **16 Weeks**



PHASE

1

JAVA FOUNDATION

WEEK 1 — Java Basics

JDK & IDE Setup, Java Syntax, Variables, Data Types, I/O, Operators, Type Casting

Practice: 25–30 basic Java programs

WEEK 2 — Control Flow

if/else, Nested if, switch, for, while, do-while, break & continue

Practice: 30–40 logic programs

WEEK 3 — Functions & Arrays

String, StringBuilder, Arrays, Array Methods, 2D Arrays

Practice: 35–40 array & string problems

WEEK 4 — Methods & Essentials

Methods, Method Overloading, Recursion Basics, Exception Handling, File Handling, Packages

Practice: 30–35 problems + Mini Project

PHASE

2

JAVA FOR DSA

WEEK 5 — Object-Oriented Programming

Classes & Objects, Constructors, this & super, Encapsulation, Inheritance, Polymorphism, Abstraction, Interfaces

Outcome: Structured object-oriented Java applications

WEEK 6 — Java Collections & DSA Foundations

Time & Space Complexity, Big-O, ArrayList, LinkedList, HashSet, HashMap, Queue, Stack, PriorityQueue, Iterators

Outcome: Ready for solving DSA problems efficiently in Java

PHASE

3

CORE DSA

WEEK 7 — Arrays

Concepts: Traversal, Insertion, Deletion, Prefix Sum, Sliding Window, Two Pointers

WEEK 8 — Searching & Sorting

Concepts: Linear Search, Binary Search, Bubble, Selection, Insertion, Merge & Quick Sort

WEEK 9 — Strings & Hashing

Concepts: Character Frequency, HashMap, HashSet, Anagrams, Palindrome, Pattern Matching, StringBuilder

WEEK 10 — Linked Lists

Concepts: Singly, Doubly & Circular Linked List, Reverse, Detect Cycle, Fast & Slow Pointer

WEEK 11 — Stack & Queue

Concepts: Stack, Queue, Deque, Parentheses, Monotonic Stack, Next Greater Element

WEEK 12 — Recursion & Backtracking

Concepts: Recursion, Backtracking, Subsets, Permutations, Combinations, Sudoku Solver, N-Queens

PHASE

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ADVANCED DSA

WEEK 13 — Trees & BST

Concepts: Binary Tree, BST, Traversals, Height & Depth, Search, Insert, Delete, Lowest Common Ancestor

WEEK 14 — Heap & Priority Queue

Concepts: Min Heap, Max Heap, Priority Queue, Heap Sort, Top-K, Kth Largest, Merge K Sorted Arrays

WEEK 15 — Graphs

Concepts: Graph Representation, Adjacency Matrix/List, BFS, DFS, Connected Components, Cycle Detection, Topological Sort, Shortest Path

WEEK 16 — Dynamic Programming & Revision

Concepts: Memoization, Tabulation, 1D/2D DP, Knapsack, Longest Common Subsequence, Longest Increasing Subsequence, Interview Revision, Mock Coding Tests