**Alpha Placement Course** Java



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' Let not the fruit of action be your motive to action. Your concern is with action alone, not with the fruit of action. '

# - The Bhagavad Gita

Batch 2

**What's new?**

**300+**

Coding Questions

**400+**

videos. Classes on alternate

days for next 3.5 months

**Live**

7

Live Mentorship Sessions

devikumavath1999@gmail.com

Our experience tells us that students on average are 3 times more serious in a paid batch. The completion of course and watch time of students increases exponentially.

**Batch Overview**

 Complete Java

 Complete Data Structures & Algorithms

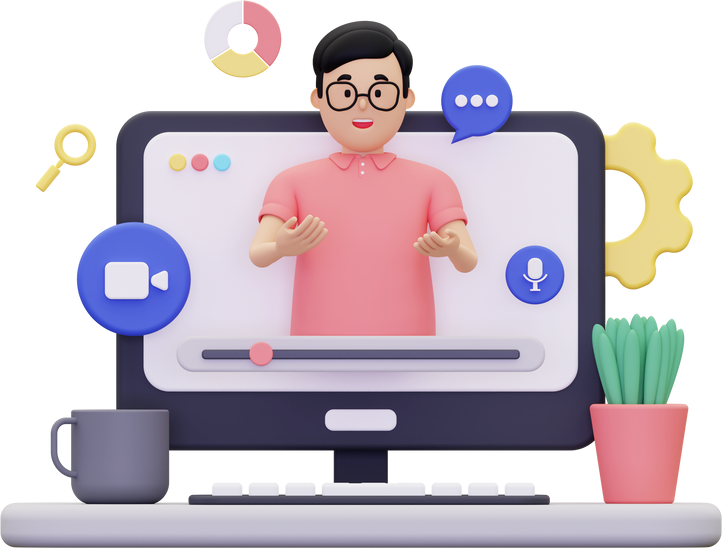
 Live Resume Preparation

devikumavath1999@gmail.com

 Live Interview Preparation & Mentorship sessions

 Coding Questions on all Important Topics (asked by Top

Companies)



# 400+ 300+

video solved questions lectures practice

**Duration** : 3.5 Months

Course access is for One Year

**Topics**

**CATEGORY**

**Java**

**CHAPTERS**

**OVERVIEW**

Basics of

Programming

Flowcharts & Pseudocodes

Variables & Data Types

Conditional Statements

Operators

Loops & Functions

Arrays

D Arrays & Strings

2

For loop, While loop, Do-while loop

Patterns

Functions

Introduction to Arrays

Searching & Sorting

D Arrays

2

Strings

what are flowcharts, pseudocodes, decision making using flowcharts, examples

Our first Java program, Variables and data types, Taking input/output, How java code runs?

Introduction to if else, else if, Nested conditionals, switch

arithmetic, relational, logical & assignment operators

For loops, While loops, Do-while loops, Flow of execution of statements, break & continue,

examples

Introduction to nested loops, basic to advanced patterns solved

)

butterfly, floyd's triangle, rhombus etc.

(

Introduction to functions, function calling, Pass by value, scope

Introduction to arrays, arrays in memory, Passing arrays to

functions, interview problems

Linear search, Binary search, Selection sort, Bubble sort, Insertion sort, count sort

2

D arrays, 2D arrays in memory, Examples using 2D Arrays

Introduction to strings & StringBuilder, storage of strings and their

inbuilt functions

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**Data Structures & Algorithms (DSA) COLLEGEAPNA**

**CATEGORY**

**CHAPTERS**

**OVERVIEW**

Problem Solving

Techniques

Recursion, Backtracking,

Divide & Conquer

Bit Manipulation

Time & Space Complexity

Object-oriented

programming

Greedy Algorithms

Linked lists

Stacks and Queues

Introduction to recursion, Principle of mathematical induction, factorial, Fibonacci

numbers, Recursion using arrays, Recursion using strings, Recursion using 2D arrays,

backtrack, merge sort, quick sort

Binary number system, bitwise operators, operations on bits, fast exponentiation

Order complexity analysis, Theoretical complexity analysis, Time complexity analysis of

searching and recursive algorithms, Space complexity analysis of merge sort

Introduction to greedy approach to problem solving, solving classical problems

Introduction to java collection framework, arrays, solved questions

Linked list Introduction, Inserting node in linked list, Deleting node from linked list, Midpoint of

linked list, Merge two sorted linked lists, merge sort of a linked list, Reversing a linked list

Stacks Introduction, Stack using arrays, Dynamic Stack class, Stack using linked list, Inbuilt

stack, Queue using arrays, Dynamic queue class, circular queue

ArrayLists

Linear Data

Structures

Basic to Advanced OOP

Objects & Classes, Creating objects, Getters, and setters, Constructors and related concepts,

Inbuilt constructor and destructor, Example classes, Static members, Function overloading

and related concepts, Abstraction, Encapsulation, Inheritance, Polymorphism, Abstract

classes, Interfaces

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**Data Structures & Algorithms (DSA) COLLEGEAPNA**

**CATEGORY**

**CHAPTERS**

**OVERVIEW**

Advanced Data

Structures

Heaps/Priority Queues

Hashing (Maps & Sets)

Tries

Dynamic

Programming

DP & its Questions

Introduction to Heaps, Min/Max heaps, Heap Sort, Priority Queues, how to implement

priority queues, Introduction to CBT(Complete Binary Trees) and its implementation, Insert

and Delete operations in heaps, Implementing priority queues, In-built Priority Queue

Introduction to Hashing, Hashmaps, Inbuilt Hashmap, Hashsets, In-built Hashsets, Hash

functions, Insert and Delete operation implementation in hashmap/hashset, examples

What are Tries, Creating a Trie node class, Insert, Search and Remove operation in Tries,

Types of Tries, Questions on Tries

Fundamentals of Dynamic Programming, Introduction to Memoization,

Knapsack using DP, Factorial using DP, Fibonacci numbers using recursion,

memoization and tabulation, Longest Common Subsequence (LCS) using

recursion, Catalan's number, Edit distance using recursion, memoization

and dynamic programming, Matrix Chain Multiplication and much more

Introduction to Graphs, Graph Terminology, Graph implementation, Graph

Traversals (DFS and BFS), Weighted and Directed Graphs, Minimum

Spanning Trees, Cycle Detection in Graphs, Kruskal's algorithm, Prim's

Algorithm, Dijkstra's algorithm, Bellman Ford Algorithm & a lot of questions

Segment Trees

Graphs

What are segment trees, Creation of segment trees, solving range queries,

immutable & mutable

Binary Trees & BST

Introduction to Binary Trees, Constructing the tree, Binary Tree traversals, Diameter of

binary tree, height & LCA of the tree, Introduction to Binary Search Trees, Searching a

node in BST, BST class, Inserting and Deleting nodes in BST, Types of balanced BSTs

Trees

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**APNA**

**COLLEGE**

Lectures will be uploaded on **Alternate** Days (9:00 PM)

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starting from 1st November

Till then, keep learning & keep exploring ❤