CODING NINJAS

Data Structures
& Algorithms

"Learning to write programs stretches your mind, and helps you think better, creates a way of thinking about things that I think is helpful in all domains."

~Bill Gates

About Coding Ninjas

At Coding Ninjas, our mission is to continuously innovate the best ways to train the next generation of developers and transform how tech education is delivered. Training is designed and provided by professional developers turned educators who have experience working at bigwigs like Facebook, Amazon, Google etc. and are Stanford, IIT, IIIT alumni.

Coding Ninjas teaches 17+ Programming courses in Foundation, Advanced, Data & Development courses such as Machine Learning, Data Science, Web Development, Android and more.

Doubt Support

We have developed a very scalable solution using which we are able to solve 4000+ doubts every single day with the help of 500+ doubts on the platform itself with an average rating of 4.8 out of 5.

Placement Cell

50,000+
Students taught so far

78%+
Percentage placement

2500+
Students placed in top MNCs

300+ Placement Partners | **7.6L** Average Salary
Number of placement partners and average salary of students

100+
Students received International job offers

Ankush Singla

Co-Founder & Instructor

Ankush holds a Bachelor's degree in Computer Science from India's most premier institute- IIT Delhi and a Master's degree in Computer Science from Stanford University.

He is a coding enthusiast and has worked with bigwigs like Amazon and Facebook in the past.

Live Mentor Support & Student Experience Team

Dedicated TAs and Student experience team to make sure that your doubts get resolved quickly and you don't miss your deadlines.

Want A Break? Pause Your Course

Take a short break when you need it. Pause your course for upto 60 days. Resume when you are ready

Get An Industry Recognised Certificate

Get awarded with an industry recognised certificate after you complete your programming course

Be A Part Of The Learning Community

Slack groups to meet your batchmates. Learn from your peers about resources, doubts and more!

Programme Overview

Course Overview

You will learn the most commonly used data structures and algorithms that are necessary to solve problems by programming which target multiple job opportunities like software developer, software engineer, product/data roles, etc..

Features

30K+
Students Enrolled

350+
Problems

60+
hours of video content

DURATION: 2 TO 8 MONTHS

WHY
Data Structures & Algorithms?

- It is essential to learn the basics of the most popular programming languages (C++/Java / Python) to become an expert
- Data structures and algorithms is all about organizing the information and finding the most efficient approach to solve a problem.
- Learning these concepts will in turn help you to improve your problem-solving skills and solve any real-world problems using technology

Companies Hiring

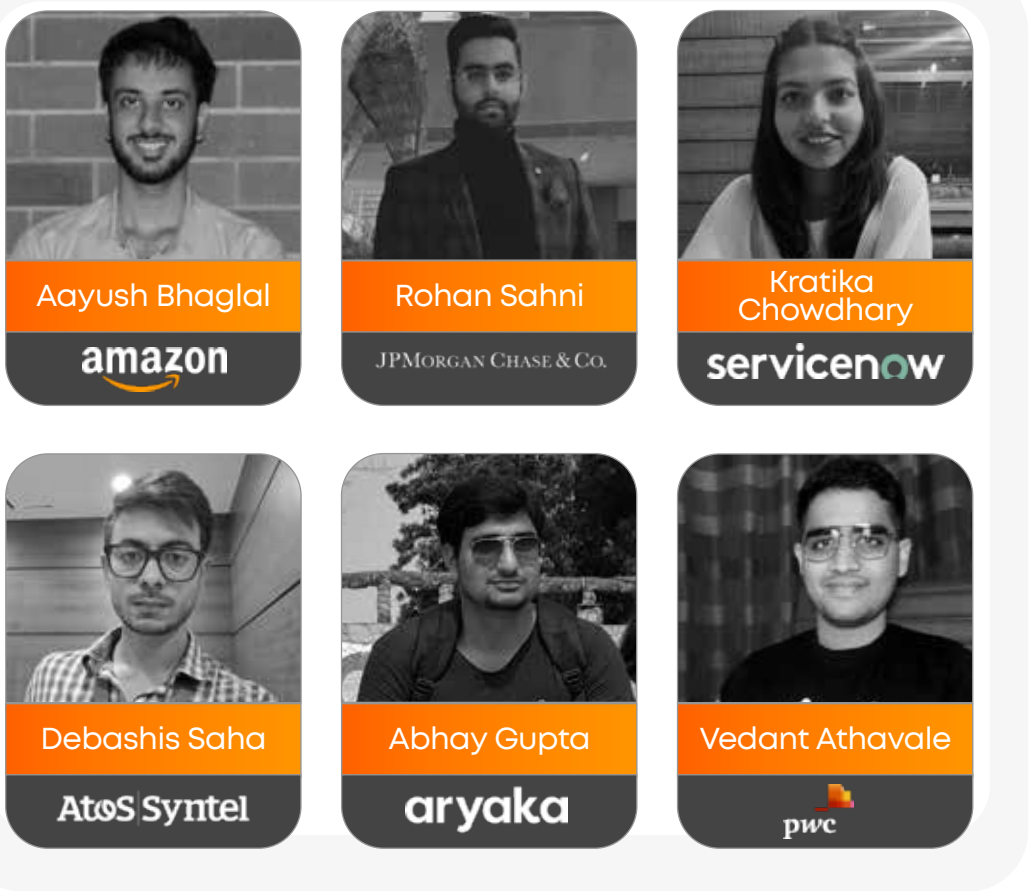
amazon | Adobe | Google

Flipkart | PayPal | Microsoft

Course Outcome

- This course will enhance your basics of Programming and Data Structures & Algorithm concepts of C++ / Java / Python.

Placement after the course



Course Offerings

Basic	Standard	Combo	Premium
Introduction to Programming	x	Introduction to Programming	Introduction to Programming
x	Data structures and algorithms	Data structures and algorithms	Data structures and algorithms
Dedicated Placement Cell with curated job openings	Dedicated Placement Cell with curated job openings	Dedicated Placement Cell with curated job openings	Dedicated Placement Cell with curated job openings
x	x	x	Premium Hirist Account
x	x	x	Mock interview/Industry mentor guidance sessions
x	x	x	Workshops for building your resume and Linkedin/Github profiles
x	x	x	Curated interview problems
x	x	x	DSA based product companies Mock Test Series
x	x	x	2 months Free Course Extension
2 Months, 15+ Hours, 10+ Assignments, 100+ Problems	4 Months, 45+ Hours, 30+ Assignments, 200+ Problems	6 Months, 60+ Hours, 40+ Assignments, 300+ Problems	8 Months, 60+ Hours, 40+ Assignments, 400+ Problems

Detailed Curriculum

Introduction to Programming

Topics	Sub-topics	Details
Basics of Programming	Flowcharts	Introduction to flowcharts, Decision making using flowcharts, Loops, Example problems
	Variables and Data types	First program, Variables and data types, Taking input, How data is stored in memory, Arithmetic Operators
	Conditional statements	Introduction to If else, Relational and logical operators, Nested conditionals
Loops and Functions	While loops	While loops, Flow of execution of statements in while loop, Example problems using while loop
	Patterns	Introduction to patterns, Basic Patterns, Square Patterns, Triangular Patterns, Character Patterns, Reverse Triangle, Inverted patterns, Isosceles triangles
	For loops	For loops, Break and Continue, increment - decrement operators
	Functions	Introduction to functions, Working of function calling, Variables and its scope, Pass by value
Arrays	Introduction to arrays	Introduction to arrays, How arrays are stored in memory, Passing arrays to functions
	Searching and Sorting	Understanding Binary Search, Selection sort, Bubble sort, Insertion sort, Merging two sorted arrays
Strings and 2D Arrays	Strings	Introduction to strings, storage of strings and their inbuilt functions
	2D Arrays	2D arrays, Storage of 2D arrays, Example problems using 2D Arrays

Data Structures

Topics	Sub-topics	Details
Problem Solving Techniques	Recursion	Introduction to recursion, Principle of mathematical induction, Fibonacci numbers, Recursion using arrays, Recursion using strings, Recursion using 2D arrays
	Time and space complexity	Order complexity analysis, Theoretical complexity analysis, Time complexity analysis of searching and recursive algorithms, Theoretical space complexity, Space complexity analysis of merge sort
Object-oriented programming	Basics of OOP	Introduction to oops, Creating objects, Getters, and setters, Constructors and related concepts, Inbuilt constructor and destructor, Example classes
	Advance concepts of OOP	Static members, Function overloading and related concepts, Abstraction, Encapsulation, Inheritance, Polymorphism, Virtual functions, Abstract classes, Exception handling
Linear Data Structures	Linked lists	Introduction to linked list, 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 and Queues	Introduction to stacks, Stack using arrays, Dynamic Stack class,Stack using linked list, Inbuilt stack, Queue using arrays, Dynamic queue class, Queue using linked list, Inbuilt queue
Trees	Generic Trees	Introduction to Trees, Making a tree node class, Taking a tree as input and printing, Tree traversals, Destructor for tree node class
	Binary Trees	Introduction to Binary Trees, Taking a binary tree as input and printing, Binary Tree traversals, Diameter of binary tree
	Binary Search Trees	Introduction to Binary Search Trees, Searching a node in BST, BST class, Inserting and Deleting nodes in BST, Types of balanced BSTs
Advanced Data Structures	Priority Queues	Introduction to Priority Queues, Ways 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, Inbuilt Priority Queue

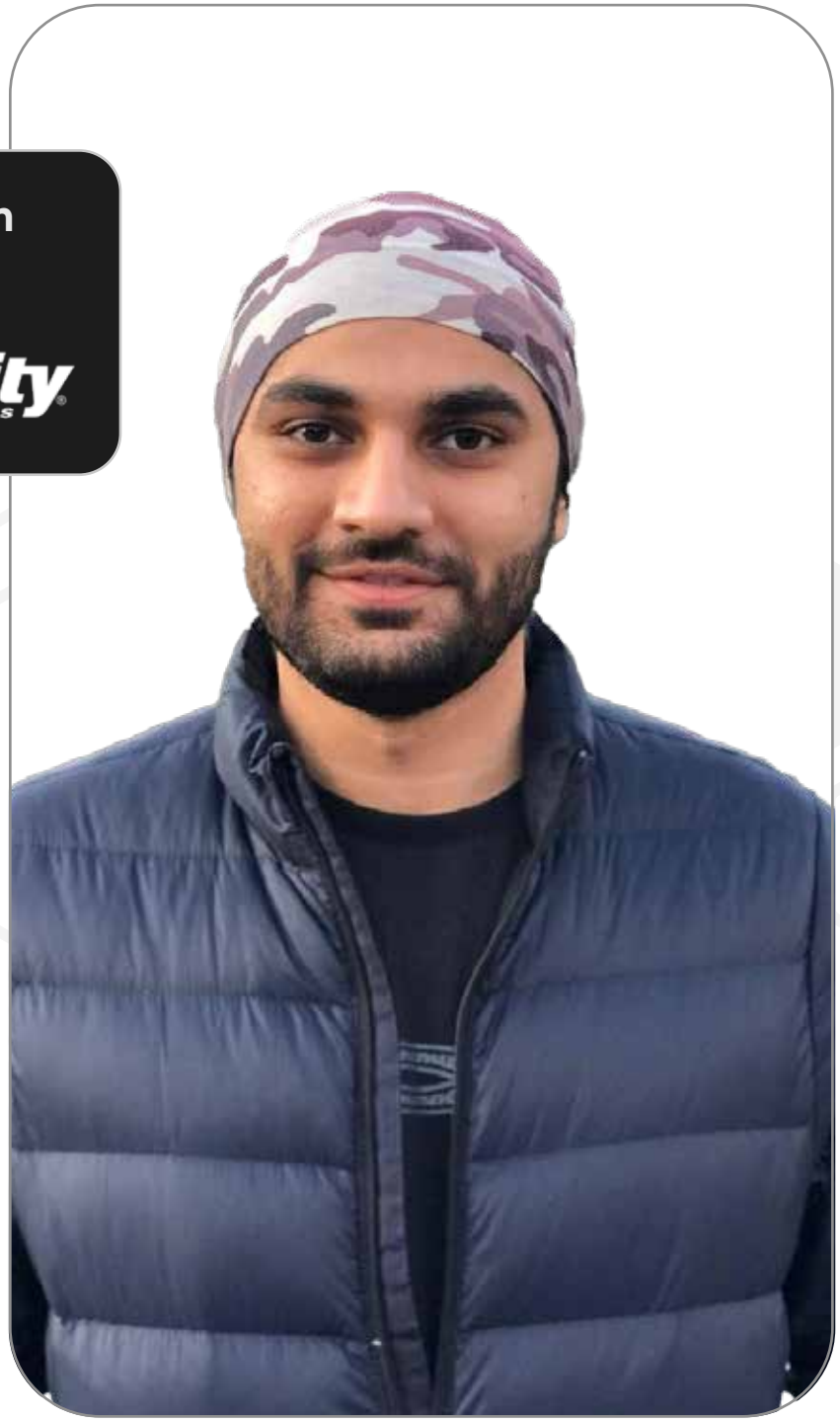
Topics	Sub-topics	Details
	Hashmaps	Introduction to Hashmaps, Inbuilt Hashmap, Hash functions, Collision handling, Insert and Delete operation implementation in hashmap, Load factor, Rehashing
	Tries	Introduction to Tries, Making a Trie Node class, Insert, Search and Remove operation implementation in Tries, Types of Tries, Huffman Coding
	Graphs	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
Dynamic Programming	Introduction to Dynamic Programming	Introduction to Memoization, Introduction to Dynamic Programming, Fibonacci numbers using recursion, memoization and dynamic programming
	Applications of Dynamic	Longest Common Subsequence (LCS) using recursion, memoization and dynamic programming, Edit distance using recursion, memoization and dynamic programming, Knapsack problem using recursion, memoization and dynamic programming

CODING NINJAS

Tanveer Singh

Placed at

Fidelity INVESTMENTS



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