DSA in C++, Competitive Programming & IOT in Hindi

You can easily learn the DSA principles in this course thanks to its instructional design. You will learn how to understand data structures and algorithms in this course, as well as how to nail product interviews. You can start your career as a software developer with this program.

Duration : 3 months   Language : hindi   Price : 4000

What you will learn?
- Arrays
- Linked List
- Stack & Queue
- Tree
- Graph
- Sorting Algorithm
- Divide and Conquer
- Greedy Algorithms
- Dynamic Programming
- IOT
- IOT Projects
- Competitive Programming Problems

Features
- Course material
- Course resources
- On-demand recorded videos
- Practical exercises
- Assignments
- Course completion certificate

Requirements
- Knowledge of C++
- System with Internet Connection
- Interest to learn
- Dedication

Course Curriculum

Introduction to Data Structures and Algorithm
- Introduction to Data Structures & Algorithms

- Why you should learn Data Structures & Algorithms?

- use case of Data Structures & Algorithms

- Why product-based companies focus on Data Structures & Algorithms

- Time complexity & its notation

Arrays
- Downside of using conventional arrays

- Array data structure

- Dynamic Arrays

Linked List
- Introduction to Linked List

- Insertion at the end of Linked List

- Insertion at the Start of Linked List

- Insertion at any place/middle of Linked List

- Search Traverse operation in a Linked List

- Delete operation on Linked List

- Searching in Binary Search Tree

- Introduction to Doubly Linked List

- Insertion at the Beginning and End in Doubly Link List

- Insertion at Specific Location in Doubly Link List

- Deletion at the Beginning and End of Doubly Link List

- Deletion at Specific Location in Doubly Linked List

- Search an item in Doubly Linked List

- Insert at the Beginning and End in the Circular Linked List

- Delete at the Beginning and End in the Circular Linked List

- Search an item in Circular Linked List

Stack & Queue
- Introduction to Stack

- Application of Stack (Balanced Parentheses Problem)

- Two-way Stack

- Introduction to Queue

- Double-Ended Queue

- Circular Queue
- Priority Queue

Tree
- Introduction to Tree & Properties of Binary Tree
- Types of Binary Tree
- Complete Binary Tree and Its Properties
- Array Representation of Binary Tree
- Linked List Representation of Binary Tree
- Traversal in Binary Tree
- Introduction to Inorder, Preorder, and Postorder Traversal
- How to create a Tree
- Recursive Preorder, Inorder, and Postorder Traversal
- Non-Recursive Preorder Traversal
- Non-Recursive Inorder Traversal
- Non-Recursive Postorder Traversal
- Level Order Traversal
- Height of the Binary Tree
- Introduction to Binary Search Tree
- Searching in Binary Search Tree
- Minimum and Maximum Element in BST (Inorder Successor and Inorder Predecessor)
- Creation or Insertion in BST
- Deletion in BST
- Introduction to AVL Tree
- Left Rotation (RR Rotation)
- Right Rotation (LL Rotation)
- Left Right Rotation
- Right Left Rotation
- Example on AVL Tree
- AVL Tree insertion Code
- Deletion in AVL Tree
- Heap Sort

Graph
- Introduction to Graph and its Terminology
- Maximum edges in a Graph

- Adjacency Matrix Representation of Graph

- Adjacency List Representation of Graph

- Depth First Search (DFS)

- Breath First Search (BFS)

- Dijkstra's Algorithm

- Minimum Spanning Tree (MST)

- Prim's Algorithms

Sorting Algorithm
- Sorting Algorithms

- Bubble Sort

- Selection Sort

- Insertion Sort

- Merge Sort

- Heap Sort

- Quick Sort

String Algorithms
- Introduction to string

- String Matching Algorithm

- Brute Force Method

Divide and Conquer
- Introduction to Divide and Conquer

- Its Strategy and How it works ?

- Application of Divide and Conquer

- Advantages and Disadvantages of it.

Greedy Algorithms
- Introduction to Greedy Strategy

- Elements of Greed Algorithm & How does it works ?

- Advantages & Disadvantages of Greedy Method

- Knapsack Problem using Greedy Approach

Dynamic Programming
- Introduction to DP

- Dynamic Strategy and Properties of DP

- Understanding DP
- Longest Common Subsequence.
- Knapsack Problem using DP Approach

Introduction to IOT
- Introduction to IOT
- Basics of Digital Electronics
- Gates
- Microcontrollers (uCs) Vs Microprocessors (uPs)
- Introduction to Arduino
- Arduino IDE
- Configuring Arduino IDE
- LED Blink Sketch

Projects
- Project: 1 - Make your own macro-pad using C++ and Arduino
- Project: 2 - Solve one of the biggest problems on the globe: Traffic Congestion
- Project: 3 - Automating Stuff using motors and Arduino
- Project: 4 - Emergency Temperature Control System
- Project: 5 - Solving drowsiness issues with Arduino
- Project: 6 - Creating Portable Medikit with Internet Connectivity
- Project: 7 - Turn your plants into pet
- Project: 8 - News Reader BOT

Competitive Programming Problems
- Palindrome Integer
- Product of Array Except Self
- Peak Index in a Mountain Array
- Median of Two Sorted Arrays
- Count of Range Sum
- Word Search
- Permutations
- Generate Parentheses
- Sudoku Solver
- N-Queens
- Target Sum

- Number Of Islands
- Invert Binary Tree
- Pacific Atlantic Water Flow
- Course Schedule
- Minimum Height Trees
- Binary Right Side View
- Palindrome Partitioning
- Find K Closest Elements
- House Robber 2
- Coin Change
- Maximum Product Subarray
- Longest Palindromic Substring
- Remove Nth node from the end of list
- Reorder List
- Jump Game
- Minimum Number of arrows to burst balloons
- K Closest Points to Origin
- Top K Frequent Elements
- Merge Intervals
- Non-overlapping Interval
- Permutation in String
- Longest Substring Without Repeating Characters
- Longest Word in Dictionary
- Maximum XOR of Two Numbers in an Array
- Find the Duplicate Number
- Subarray Product Less Than K
- Container with most water
- Rotate Image
- Spiral Matrix
- Subsets
- Letter Combinations of a Phone Number
- Average Levels in Binary Tree
- Minimum Depth Of Binary Tree
- Squares of Sorted Array
- Sort Colors

- Maximum Binary Tree

- Lowest Common Ancestor of a Binary Tree

- Concatenated Words

- Palindromic Pairs