



DSA with C++

Description:

For performance-critical applications that need speed and effective memory management, C++ is an important programming language. It's employed in a variety of fields such as software and game development, virtual reality, robotics, and scientific computing. In this course you will learn the fundamentals of C++ with various data structures and algorithms.

Start Date:

Doubt Clear Time:

Course Time:

Features:

- # Course material
- # Course resources
- # On demand recorded videos

Practical exercises

Quizzes

Assignments

Course completion certificate

What we learn:

C++ programming basics

C++ data types

C++ data structures

Input/Output in C++

Control Flow in C++

Loops

Functions

OOP in C++

Memory management

Macros

Requirements:

System with minimum i3 processor or better

At least 4 GB of RAM

Working internet connection

Dedication to learn

Instructor:

Name:

Hitesh Choudhary

Description:

I like to make videos related to code and tech in my free time. I also lead a few tech teams in startups, help in hiring talent for companies. I am also on a part time traveller, with 31 countries checked off so far!

>Introduction to DSA:

- >>Why we need Data structures and algorithms

- >>Time based approach

- >>Concept of Big O and graphs

- >>Data Structures and Algorithms HB

>Problem Solving:

- >>Start with a challenge - reverse string

- >>Reverse a string - solution

- >>Interview approach to solve a problem

- >>Classic interview steps for DSA problems

>Data Structure Introduction:

- >>Memory process - Stack and Heap

- >>Physical and logical data structures

- >>Abstract Data Types - ADT

>Recursion in depth:

- >>Introduction to recursion

- >>Tracing the recursion tree
- >>Trace tree assignment
- >>Trace tree solution
- >>Types of Recursion
- >>Complex recursion tree
- >>What is Factorial
- >>Factorial program in CPP
- >>Fibonacci series THEORY
- >>Fibonacci series and its version cpp Code
- >>What is Power Program
- >>Power Program cpp code
- >>What is a Combination Program
- >> Combination Program cpp code
- >>Classic Tower of Hanoi problem
- >> Classic Tower of Hanoi cpp code

>Linked List in depth:

- >> Introduction to Linked List
- >> Add value in linked list - cases
- >> Push Append and insert in LinkedList - cpp code
- >>Deletion of linked list THEORY.
- >> Deletion in linked list CPP code
- >> Delete complete linked list cpp code
- >>Count all nodes in linked list cpp code

>> Reversing a linked list THEORY

>> Reversing a linked list cpp code

>Circular Linked List in Depth:

>>Circular linked list THEORY

>>Circular Linked List push cpp code

>>Traverse a circular linked list cpp code

>> Deletion in circular linked list cpp code

>> count nodes in circular linked list cpp code

>> convert linked list to circular linked list cpp code

>Doubly Linked List in Depth:

>> Theory for doubly linked list

>> Doubly linked list push cpp code

>> Insert After in doubly linked list cpp code

>> add to last in doubly linked list cpp code

>> Traverse a doubly linked list cpp code

>>Deleting a node in doubly linked list cpp code

>Stack and Queue:

>> Stack - Push and Pop operation THEORY

>> Stack operations with cpp code

>>Queue concept THEORY

>>Queue implementation in cpp code

>> Circular queue THEORY

>> Circular queue cpp code

>Binary Search Tree:

>> What is Binary Search tree and creation THEORY update

>>Insertion and Deletion in BST THEORY

>> Inorder Traversal of BST THEORY

>> Pre Order traversal in BST THEORY

>> Post order traversal in BST THEORY

>> Creating a Binary Search tree cpp code

>> search a key in BST cpp code

>> Insertion in BST cpp code

>>deletion of key in BST cpp code

>> inorder preorder and postorder traversal in BST cpp code

>Hashing:

>> What is Hashing THEORY

>> Hash chaining with linked list

>> Linear Hash Shifting

>>Square hash shifting

>AVL Tree:

>> What is AVL tree and height

>>Finding balance factor

>>Left Left and Right Right Rotation in AVL Tree

>> LR and RL rotation with 1 trick

>>Creating a AVL tree - Important

>>Deletion in AVL Tree.

>HEAP:

>>Heap - Max and min Heap

>>Insertion and deletion in HEAP

>Sorting algorithms:

>>Categories of sorts

>>Selection sort - Theory

>>Selection sort - cpp Code

>>Bubble Sort - Theory

>>Bubble Sort - cpp Code

>> Insertion sort - Theory

>> Insertion sort - cpp Code

>> Quick Sort - Theory

>>Quick Sort - Theory part 2

>>Quick Sort-cpp code

>>Counting Sort - Theory

>>Merge Sort Theory

>>Merge sort cpp code

>>Counting Sort - cpp Code