Welcome to ineuron.ai

DSA with Python

Description:

This Python course on Data Structures and Algorithms covers data structures such as linked lists, stacks and queues, binary search trees, heaps, searching, and hashing. This course covers a variety of sorting algorithms, as well as their implementation and analysis. The following topics are covered with Python implementation in this Data Structures in Python course. Analysis of Algorithms, Big O notation, Time Complexity, Singly Linked List, Doubly linked list, Trees, Heaps, Hashing and Sorting 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:

Big O notation

Time and space complexity

DSA problem solving

Stacks and heaps

Physical and logical strcutures

Abstract data types

Recursion

Linked Lists

Stacks

Queues

Trees

Hashing

AVL trees

Heaps

Sorting

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 Python

>>Fibonacci series THEORY

>>Fibonacci series and its version Python Code

>>What is Power Program

>>Power Program Python code

>>What is a Combination Program

>> Combination Program Python code

>>Classic Tower of Hanoi problem

>> Classic Tower of Hanoi Python code

>Linked List in depth:

>> Introduction to Linked List

>> Add value in linked list - cases

>> Push Append and insert in LinkedList - Python code

>>Deletion of linked list THEORY.

>> Deletion in linked list Python code

>> Delete complete linked list Python code

>>Count all nodes in linked list python code

>> Reversing a linked list THEORY

>> Reversing a linked list Python code

>Circular Linked List in Depth:

>>Circular linked list THEORY

>>Circular Linked List push Python code

>>Traverse a circular linked list Python code

>> Deletion in circular linked list Python code

>> count nodes in circular linked list Python code

>> convert linked list to circular linked list Python code

>Doubly Linked List in Depth:

>> Theory for doubly linked list

>> Doubly linked list push Python code

>> Insert After in doubly linked list Python code

>> add to last in doubly linked list Python code

>> Traverse a doubly linked list Python code

>>Deleting a node in doubly linked list Python code

>Stack and Queue:

>> Stack - Push and Pop operation THEORY

>> Stack operations with Python code

>>Queue concept THEORY

>>Queue implementation in Python code

>> Circular queue THEORY

>> Circular queue Python 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 Python code

>> search a key in BST Python code

>> Insertion in BST Python code

>>deletion of key in BST Python code

>> inorder preorder and postorder traversal in BSTPython code

>Hashing:

>> What is Hashing THEORY

>> Hash chaining with linked list

>> Linear Hash Shifing

>>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 - Python Code

>> Bubble Sort - Theory

>>Bubble Sort - Python Code

>> Insertion sort - Theory

>> Insertion sort - Python Code

>> Quick Sort - Theory

>>Quick Sort - Theory part 2

>>Quick Sort - Python Code

>>Counting Sort - Theory

>>Merge Sort Theory

>>Merge sort Python code

>>Counting Sort - Python Code