

Online & Class Room Training
Instructor-led Classes
Small Batches for 1-1 Care
Project from scratch
Job referrals
Course completion certificate
Lab in daily class
Real-Time 16 yrs Trainer

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ALGORITHM TRAINING INSTITUTE

The Programming Institute



Trainer is an IITian with 16 yrs exp who trained 40+ batches

Data Structures & Algorithms for interviews Course Content

Algorithm Analysis (1hr)

Big O notation
Theta notation
Omega notation

Stacks (2hrs)

Array implementation
Linked list implementation

implementation of 6 problems

Recursion (1 hr)

Recursion analysis using stack frames
Recursion analysis using recursion tree

implementation of 3 problems

Queues (2hrs)

Array implementation
Linked list implementation

implementation of 6 problems

Linked List (7hrs)

node structure
linked list implementation
Implement following routines
getNode(), insertFront(), insertAfter(),
insertEnd(), delFirst(), DelEnd()
DeleAfter()

implementation of 35+ problems

Circular linked list (2 hr)

node structure
circular linked list implementation
Implement following routines
insert(), remove(),
stack as CLL, queue as CLL

implementation of 4 problems

Doubly linked list (2 hr)

node structure
Doubly linked list implementation
Implement following routines
setLeft(), setRight(), remove(),
removeLeft(), RemoveRight()

implementation of 6 problems

Sorting (3 hrs)

Bubble sort
Insertion sort
Quick sort
Merge sort
Heap sort
Priority queue

Searching (1 hr)

Linear Search
Binary search

Hash Table (1hr)

open hashing
closed hashing
implementation of hash table

Arrays (1hr)

12 problems

Strings (1 hr)

6 problems

Data Structures & Algorithms for interviews Course Content

Trees (7 hrs)

Tree terminology
Binary Tree
Binary Search Tree
Implement following routines
PreTraversal(), postTraversal(), inorderTrav()
createtree(), setleft(), setRight(),
createTree(), disposeTree(), FindKey()
findMin(), findMax(), delete() operation

implementation of 35+ problems

AVL Tree (1hr)

Rotations
LR, RL, LL, RR

B Tree (1hr)

node structure
insert()
search()
delete()

Divide and Conquer (2hrs)

Merge Sort()
Quick Sort()
Binary Search()

Tries (4hrs)

node structure
Implement following routines
insert()
search()

implementation of 3 problems

Suffix Trees (1hr)

Ternary Search Tree (1hr)

node structure
Implement following routines
insert()
search()

Dynamic Programming (4hrs)

Introduction to dynamic programming
memorization (top down)
tabulation (Bottom up)
optimal sub structure

implementation of
1 Longest common sub sequence
2 Min cost path Matrix
3 Knapsack problem
4 Coin change problem
5 factorial of a numer
6 fibanacci series

GRAPHS (4hrs)

node structure
Implement following routines
Adjacency matrix
Adjacency list
BFS()
DFS()
Spanning tree
implementation of 6 problems

Greedy (2hrs)

Kruskals spanning tre
Primes spanning tree
Disjaskra shortest path
Knapsack problem
Min cost path Matrix
Coin change problem
Longest common sub sequence
Huffman Coding

Backtracking (1hr)

print permutations of a String
rat in amaze problem



Data Structures
and
Algorithms



OUR TRAINING

Free Demo

You can join a free demo and interact with the trainer before joining the course

Programming Courses

Data Structures and Algorithms for interviews

Python Scripting
Advanced Python
Python Full Stack
DJANGO

Java
C C++
Oracle SQL PL/SQL MySQL
.Dot Net
Android

Web Development Full Stack
Angular
React
Node JS
HTML CSS

Technology Courses

Data Science
Machine Learning
Deep Learning
Neural Networks

AWS

"We can make sure you to write programs in the class"

"Analyse and practice more programs to crack top MNC interviews"