Data structures and Algorithm using Java

Contents

Module-2

Non-Linear Data Structures
Tree ADT
Introduction
Tree Terminologies
Examples
General Tree
Binary Trees
Full Binary Tree
Complete Binary Tree
Applications of Tree
Binary Tree Representation
Linked List Representation
Sequential Representation
Tree Traversals
Preorder Traversal
Inorder traversal
Postorder Traversal
Binary Search Tree
Operations
Example
Implementation

Module -3

Searching and Sorting

Searching

Linear Search
Examples
Algorithm
Time complexity
Implementation
Binary Search
Examples
Algorithm
Time complexity
Implementation

Sorting

Definition
Example
Types of Sort
Internal & External Sorting

Classification
Insertion Sort
Algorithm
Time complexity
Implementation
Quick Sort
Algorithm
Time complexity
Implementation
Merge Sort
Algorithm
Time complexity
Implementation

Module-4

Graphs
Definition
Representation of Graph
Directed & Undirected Graph
Weighted & unweighted Graph
Cyclic & Acyclic Graph
Graph Terminologies
Degree of graph
Graph Traversal
Types of graph Traversal
Breadth First Search
Example
Algorithm
Implementation
Depth First Search
Example
Algorithm
Implementation
Shortest Path Algorithm
Examples
Dijkstra’s Algorithm
Example
Algorithm
Implementation