

Data Structure

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DATA STRUCTURE SYLLABUS

Unit – 1:

Data Structures Basics: Structure and Problem Solving, Data structures, Data structure Operations, Algorithm: complexity, Time- complexity;

Unit – 2:

Linked List: Introduction, Linked lists, Representation of linked lists in Memory, Traversing a linked list, Searching a linked list, Memory allocation and Garbage collection, insertion into linked list, Deletion from a linked list, Types of linked list,

Unit – 3:

Stack and Queue: Introduction, Array Representation of Stack, Linked List Representation of stack, Application of stack, Queue, Array Representation of Queue, Linked List Representation of Queue.

Unit – 4:

Trees: Definitions and Concepts, Operations on Binary Trees, Representation of binary tree, Conversion of General Trees to Binary Trees, Sequential and Other Representations of Trees, Tree Traversal.

Unit –5:

Graphs: Matrix Representation of Graphs, List Structures, Other Representations of Graphs, Breadth First Search, Depth First Search, Spanning Trees.



Unit - 6:

Directed Graphs Types of Directed Graphs; Binary Relation as a Digraph; Euler's Digraphs; Matrix Representation of Digraphs.

Unit -7:

Dijkstra's Algorithm, Minimum spanning tree- Prim's Algorithm;

Unit – 8:

Searching Techniques: Sequential Searching,

Unit -9:

Binary Searching, Search Trees, Hash- Table Methods.

Unit 10:

Mathematical Functions and Notations Functions and Notations; Efficiency of an Algorithm; Well Known Asymptotic Functions and Notations; Analysis of Algorithms – Simple Examples; Well Known Sorting Algorithms – Insertion sort, Bubble sort, Selection sort, Shell sort, Heap sort.

Unit 11:

Divide and Conquer Divide and Conquer Strategy; Binary Search; Max. And Min.; Merge sort; Quick sort.

Unit 12:

Greedy Method Greedy Method Strategy;

Unit 13:

Dynamic Programming Dynamic Programming Strategy; All

THANK you



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