GeeksforGeeks

DATA STRUCTURE IN C

DETAILED COURSE SYLLABUS

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SORTING

- Bubble Sort
- Selection Sort
- Insertion Sort
- Merging two sorted arrays
- Introduction of merge sort, algorithm and analysis
- Partitioning an array
- Lomuto Partitioning and Haore’s Partitioning
- Implementation of Quick Sort and analysis

MATRIX

- Introduction and Passing 2D arrays as arguments
- Matrix boundary traversal
- Matrix in snake pattern
- Transpose of a matrix
- Spiral traversal of matrix
- Searching in row-wise and column-wise sorted matrix

HASHING

- Concept of hashing
- Direct Address Table
- Collision Handling
- Chaining
- Open addressing
- Double Hashing

STRINGS

- Introduction
- Escape sequences
- Reverse a string
- String Comparisons
- Operations on String
- Pattern Searching
- Check for Anagram
- Check for Palindrome

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DEQUE

- Introduction
- Applications and array implementation.

TREES

- Introduction of Trees
- Applications
- Binary Tree
- Traversal of Tree
- Implementation of Preorder, Inoreder and Postorder traversal
- Iterative Inorder and Preorder

BINARY SEARCH TREES

- Introduction
- Insert, Ceil, Floor and Search in BST.

HEAP

- Introduction
- Implementation of Heap
- Binary Heap(Heapify and Extract)
- Binary Heap(Decrease Key, Build Heap and Delete)

GRAPH

- Introduction
- Representation – Adjacency List and Adjacency Matrix
- Implementation of Adjacency List
- Application of BFS and DFS