

Objective:

- We are live in an information age. Everything around us is all about information.
- IT means Information Technology, what does mean information? after processing the data we get information. we have to store the data somewhere and that's important how can we store the data.
- We have to store the data in such a way that is easier to fetch, process and retrieve.
- In data structure we know a particular way of storing and organizing data in a computer's memory so that it can be used efficiently.

Class No Topics

Lecture 1	Terminology; Elementary Data Organization;
Lecture 2	Data Structures; Data Structure Operations; Control Structures;
Lecture 3	Algorithms; Complexity, Time-Space Tradeoff, Mathematical Notation and function,
Lecture 4	String Processing: String Operations, word processing, and Pattern Matching Algorithms.
Lecture 5	Linear Arrays; Representation of linear array in memory;
Lecture 6	Quiz 1
Lecture 7	traversing linear arrays, Inserting and Deleting
Lecture 8	sorting; (Bubble sort), Searching (linear, binary),
Lecture 9	Multidimensional Arrays; Pointer Arrays; Record Structures; Matrices.
Lecture 10	Representation of Linked lists in memory, Traversing a linked lists
Lecture 11	Searching a linked list, insertion, deletion; Header and two way lists.
Lecture 12	Quiz 2 Mid Term Examination
Lecture 13	Array Representation of Stacks, Polish Notation; Quick sort,
Lecture 14	Recursive definition; Towers of Hanoi, Implementation of Recursive procedures, Queue Dequeue, Priority Queues.
Lecture 15	Binary Trees; Representing Binary Trees in memory, Traversing Binary Tree
Lecture 16	Header Nodes; Threads, binary search trees, Heap tree, heap sort, Huffman's Algorithm.

Lecture 17	Sequential Representation of Graph:
Lecture 18	Quiz 3
Lecture 19	Adjacency Matrix;
Lecture 20	Path Matrix;
Lecture 21	Warshall's Algorithm;
Lecture 22	Linked Representation of Graphs.
Lecture 23	Revised Class
Lecture 24	Quiz 4
Lecture 25	Revised Class
Lecture 26	Presentation
Lecture 27	Revised Class
Lecture 28	Solve Class
Lecture 29	Solve Class
Lecture 30	Solve Class
	Internal Final Examination

Outcomes

- Knowledge of data structures is an extremely important part of any programmer's arsenal. For almost any programming job, most companies will undoubtedly ask questions regarding data structures.
- Data structure tells us to make our programs efficient and fast to execute.
- Data structure helps the students to understand the logic of computer and its related branch
- Data structure are important in every branch in computer science (programming, data mining, big data, artificial intelligence etc)

Google Classroom Code: kd3tdff

Referred Book :

DATA_ STRUCTURES BY SEYMOUR_ LIPSCHUTZ_ SCHAUM's_ OUTLINE_ SERIES