

DATA STRUCTURES

1. Remembering: Recall the basic concepts and terminology related to data structures such as linear arrays, linked lists, stacks, queues, binary trees, and graphs.
2. Understanding: Explain the principles behind algorithms complexity, time-space trade-off, and the different types of data structures.
3. Applying: Apply the knowledge of linear arrays to traverse and manipulate data efficiently, and implement insertion and deletion operations in various data structures like linked lists.
4. Analyzing: Analyze the concepts of memory management in singly linked lists, garbage collection, doubly linked lists, header linked lists, and circular linked lists.
5. Evaluating: Evaluate the representation and operations of stacks, recursion, Towers of Hanoi, queues (including circular, double-ended, and priority queues), traversal of binary trees, and graph traversal algorithms.
6. Creating: Design and implement algorithms for sequential search, binary search, insertion sort, selection sort, divide and conquer strategies, and merge sort for efficient data handling and manipulation.