**Step 1: Understand Linked Lists: -**

Q1) Explain the different types of linked lists (Singly Linked List, Doubly Linked List).

Solution: -

Singly Linked List:

->Each node contains a data part and a reference to the next node in the sequence.

->Can be traversed only in one direction (from head to tail).

Doubly Linked List:

->Each node contains a data part, a reference to the next node, and a reference to the previous node.

->Can be traversed in both directions (from head to tail and tail to head).

**Step 4: Analysis: -**

Q1) Analyze the time complexity of each operation.

Solution: -

Time complexity of each operation:

->add: O(n)

->search: O(n)

->traverse: O(n)

->delete: O(n)

Q2) Discuss the advantages of linked lists over arrays for dynamic data.

Solution: -

The advantages of linked lists over arrays are: -

->Dynamic Size: They don't have a fixed size like arrays and can easily grow and shrink size by adding or removing nodes.

->Memory Utilization: Linked lists are more efficient for dynamic data, unlike arrays which have unused allocated space.

->Effective Insertions/Deletions: Linked list is more efficient because there is no need to shift elements while insertion or deletion.