**Understand Linked Lists**

Linked lists are a type of data structure used to store elements where each element (node) points to the next one. They are useful for dynamic data where the number of elements can change during program execution.  
  
**Types of Linked Lists:**  
**- Singly Linked List:** Each node contains data and a pointer to the next node. It allows traversal in one direction only (from head to tail).  
**- Doubly Linked List:** Each node contains data, a pointer to the next node, and a pointer to the previous node. It supports traversal in both directions and is more flexible but uses more memory.

**Analysis**

**Time Complexity of Operations:**

**- Add Task:** O(1) if added at the beginning; O(n) if added at the end (without tail reference)  
**- Search Task:** O(n) as each task might need to be checked  
**- Traverse Tasks:** O(n) since all nodes are visited  
**- Delete Task:** O(n) as we must find the task first, then adjust pointers

**Advantages of Linked Lists over Arrays for Dynamic Data:**

**-** Dynamic Size

- Efficient Insertions/Deletions

- Memory Utilization