# **Exercise 5: Task Management System**

## **Understand Linked Lists:**

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

Different types of linked lists:

1. Singly Linked List

* Structure: Consists of nodes where each node contains data and a pointer to the next node.
* Traversal: Can only be traversed in one direction (from head to tail).
* Operations: Easier to implement and requires less memory (one pointer per node).
* Use Case: Suitable for applications where memory efficiency is crucial and backward traversal is not needed.

2. Doubly Linked List

* Structure: Each node contains data, a pointer to the next node, and a pointer to the previous node.
* Traversal: Can be traversed in both directions (forward and backward).
* Operations: More complex than singly linked lists but allows for easier deletion of nodes and more flexible traversal.
* Use Case: Useful in applications requiring bidirectional traversal or frequent insertions and deletions.