Exercise 5: Task Management System

**Time Complexity of Operations:**

* **Add:** O(n) - Inserting a new task requires traversing to the end of the list.
* **Search:** O(n) - Searching for a task requires traversing the list until the task is found or the end is reached.
* **Traverse:** O(n) - Traversing all tasks requires visiting each node.
* **Delete:** O(n) - Deleting a task involves finding it and potentially updating links, requiring traversal of the list.

**Advantages of Linked Lists Over Arrays:**

* **Dynamic Size:** Linked lists can easily grow and shrink in size, whereas arrays have a fixed size.
* **Efficient Insertions/Deletions:** Insertion and deletion operations can be more efficient in a linked list, as they do not require shifting elements like in arrays.
* **Memory Utilization:** Linked lists do not waste memory if the number of elements is less than the allocated capacity, unlike arrays which may allocate extra space.