**Understand Search Algorithms**

Search algorithms help in finding the required data from a collection. In a library management system, searching for books by title or author is a common requirement. Two basic search algorithms are:  
- **Linear Search:** It checks each element in the list one by one until the desired book is found or the list ends. It is simple and works on both sorted and unsorted data.  
- **Binary Search:** It is a more efficient method but requires the list to be sorted. It works by repeatedly dividing the search range in half and checking the middle element. If the middle element is not the target, the search continues in the appropriate half.

**Analysis**

**Time Complexity Comparison:**

- **Linear Search:**  
 - Best Case: O(1) (if the book is the first one)  
 - Average Case: O(n)  
 - Worst Case: O(n)  
- **Binary Search:**  
 - Best Case: O(1)  
 - Average Case: O(log n)  
 - Worst Case: O(log n)

**When to Use Each Algorithm:**

- Use Linear Search when the book list is small or unsorted.  
- Use Binary Search when the book list is large and sorted by title.