1. **Understand Search Algorithms:**

**Explain linear search and binary search algorithms.**

**Linear Search**

Linear search, also known as sequential search, is a simple search algorithm that checks each element of a list sequentially until the desired element is found or the end of the list is reached.

**Binary Search**

Binary search is a more efficient search algorithm that works on sorted arrays. It repeatedly divides the search interval in half until the target value is found or the interval is empty.

1. **Analysis:**

**Compare the time complexity of linear and binary search.**

Linear Search -> O(n) and Binary search -> O(log n)

**Discuss when to use each algorithm based on the data set size and order.**

Binary search is generally preferred over linear search for large sorted datasets due to its superior time complexity