**Step 1: Understand Search Algorithms: -**

Q1) Explain linear search and binary search algorithms.

Solution: -

->Linear Search: Linear Search is a search algorithm that checks each element in a array sequentially until the target element is found or the end of the array is reached.

->Binary Search: Binary search is an efficient search algorithm that works on sorted arrays by repeatedly dividing the search interval in half, comparing the target value to the middle element, and narrowing down the search to the left or right half accordingly.

**Step 4: Analysis: -**

Q1) Compare the time complexity of linear and binary search.

Solution: -

Time complexity for Linear Search:

->Best Case: O (1)

->Average Case: O(n)

->Worst Case: O(n)

Time complexity for Binary Search:

->Best Case: O (1)

->Average Case: O (log n)

->Worst Case: O (log n)

Q2) Discuss when to use each algorithm based on the data set size and order.

Solution: -

We use Linear Search when we work with:

->Small and unsorted arrays.

->with data structures like linked list.

We use Binary Search when we work with:

->Larg and sorted arrays.

->with data structures that allow random access like array.