**Algorithms**

**Linear Search**

It is a straightforward algorithm that checks every element in the list or array until it finds the target value. If the element is found, the algorithm returns its index. If the list doesn’t contain the element, it indicates that as well. This method doesn’t require the list to be sorted and is very intuitive. However, its simplicity comes at the cost of efficiency, especially with large datasets, as it has time complexity of O(n).

**Binary Search**

It is a divide-and-conquer search algorithm that finds the position of a target value within a sorted array. Binary search compares the target value to the middle element of the array, if they are not equal, the half in which the target is eliminated, and the search continues on the remaining half until the target is found or the search space is empty.

This method requires the array to be sorted beforehand and has a time complexity of O(log n).