### **Linear Search**

Linear search is a simple search algorithm that sequentially checks each element in a list until the desired element is found or the end of the list is reached. It's straightforward but inefficient for large datasets.

### **Binary Search**

Binary search is a much more efficient algorithm for searching sorted lists. It works by repeatedly dividing the search interval in half. If the value is greater than the middle element, the search continues in the upper half. Otherwise, the search continues in the lower half.

## **Analysis**

* **Linear Search:**
  + **Time complexity: O(n)**
  + **Suitable for small datasets or unsorted lists.**
* **Binary Search:**
  + **Time complexity: O(log n)**
  + **Significantly faster for large sorted datasets.**

**When to use which:**

* **Use linear search for small datasets or when you don't know if the data is sorted.**
* **Use binary search for large sorted datasets to improve search efficiency.**