Name: Junth Basnet

Roll.No : 05

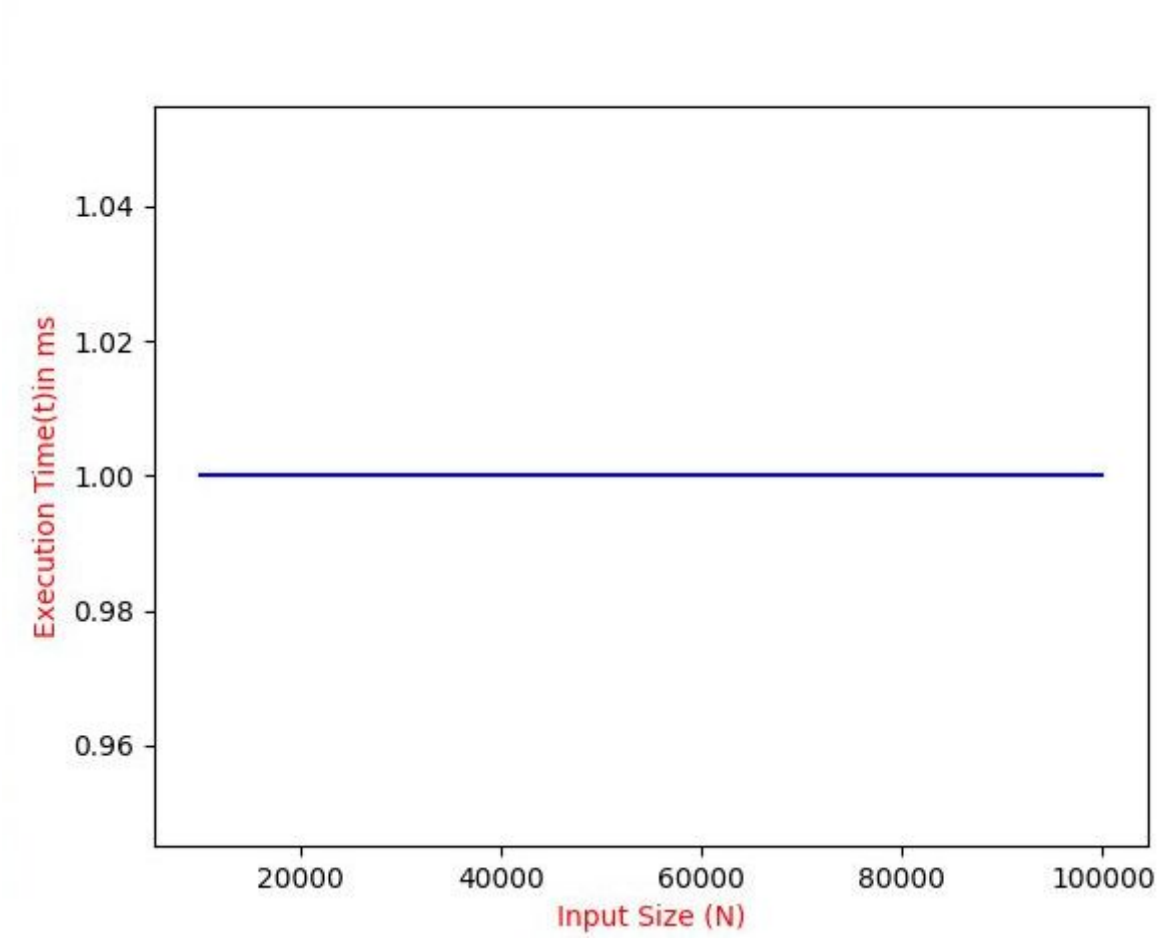
Group: CE(III / I)

Subject: COMP 314(Lab1)

Linear Search

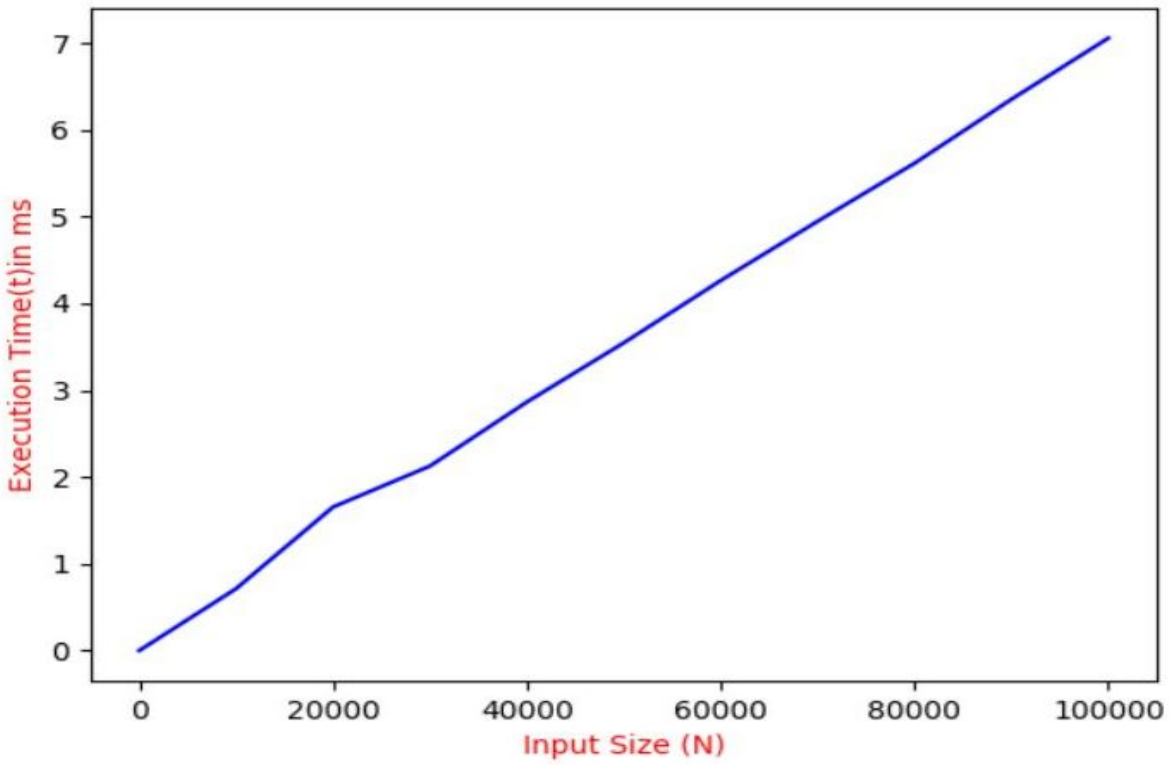
In computer science, a **linear search** or **sequential search** is a method for finding an element within a list. It sequentially checks each element of the list until a match is found or the whole list has been searched.

- **Best Case: O(1)**



When the target element to be found lies at the beginning of the array(list), it can be found immediately.This situation is the **best case of a linear search**.

❖ **Worst Case: O(N)**

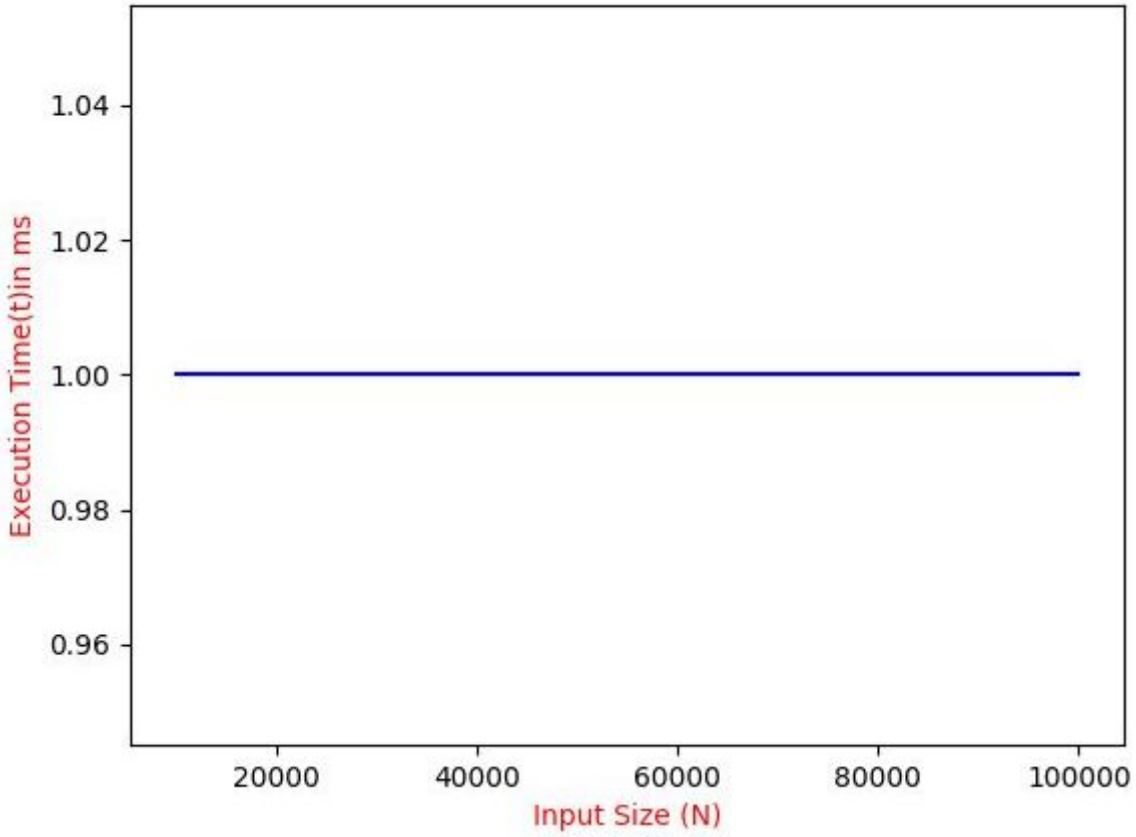


When the target element to be found lies at the end of the array(list), it is found at the final iteration. This situation is the **worst case of a linear search**.

Binary Search

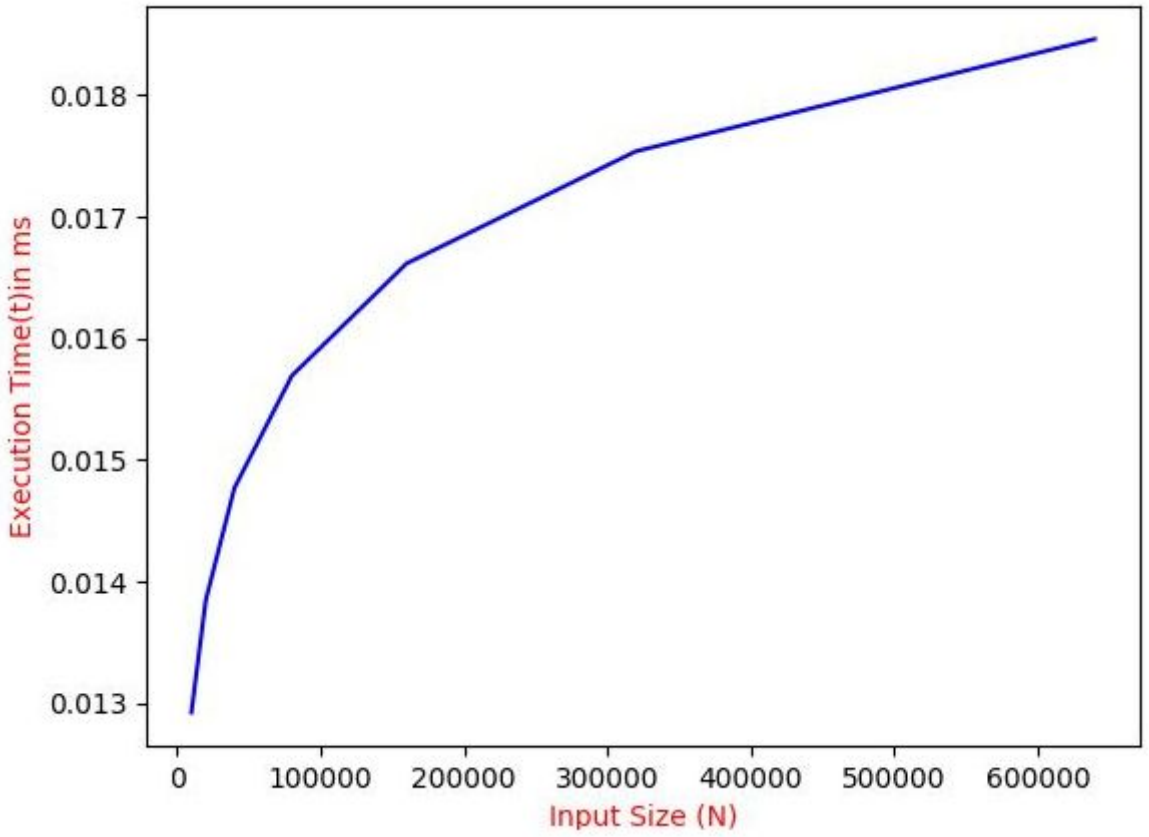
In computer science, binary search, also known as logarithmic search, is a search algorithm that finds the position of a target value within a sorted array. Binary search compares the target value to the middle element of the array. If they are not equal, the half in which the target cannot lie is eliminated and the search continues on the remaining half, again taking the middle element to compare to the target value, and repeating this until the target value is found.

- **Best Case: O(1)**



When the target element to be found lies in the middle of the array(list), it can be found immediately. This situation is the **best case for a binary search.**

- **Worst Case: O(log n)**



When the target element lies at the beginning or the end of the array, this situation is the **worst case for binary search.**