**Linear Search**

Linear search is a sequential searching algorithm where we start from one end and check every element of the list until the desired element is found. It is the simplest searching algorithm.

## How Linear Search Works?

The following steps are followed to search for an element k = 1 in the list below.

|  |
| --- |
| Initial array |
| Array to be searched for |

1. Start from the first element, compare k with each element x.

|  |
| --- |
| Element not found |
| Compare with each element |

1. If x == k, return the index.

|  |
| --- |
| Element found |
| Element found |

1. Else, return not found.

## Linear Search Algorithm

LinearSearch(array, key)

for each item in the array

if item == value

return its index

## Linear Search Complexities

**Time Complexity:** O(n)

**Space Complexity:** O(1)

## Linear Search Applications

1. For searching operations in smaller arrays (<100 items).