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.

Linear Search Algorithm

```
LinearSearch(array, key)
    for each item in the array
        if item == value
            return its index
```

code example:-

```
# Linear Search
def linearSearch(array, n, x):
```

```
# Going through array sequencially
    for i in range(0, n):
        if (array[i] == x):
            return i
    return -1

array = [2, 4, 0, 1, 9]
x = 1
n = len(array)
result = linearSearch(array, n, x)
if(result == -1):
    print("Element not found")
else:
    print("Element found at index: ", result)
```

Linear Search Complexities

Time Complexity:

O(n)

Space Complexity: O(1)

Linear Search Applications

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