

Linear Search

19 October 2023 16:38

Arr[9]

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
33	55	88	77	44	11	66	22	99

- 1) Accept the key from the user.
- 2) Start Traversing from the 1st element (0th index)
- 3) Compare the key with each element
 - a. If matched, then return the index.
 - b. Else continue the search till the last index.

Key 77

Found at index 3

comparisons = 4

Average case:
 $\theta(n/2) \rightarrow \theta(n)$
 $o(n) \rightarrow order(n)$

Key 33

Found the key at index 0

comparisons = 1

Best case time complexity
 $\Omega(1) \rightarrow o(1)$
 $order(1)$

Key 99

Found the key at index 8

comparisons = 9

worst case time complexity
 $O(n) \rightarrow o(n)$
 $Big Oh(n) \rightarrow order(n)$

Key 101

Key not found

worst case time complexity
comparisons = 9
 $O(n) \rightarrow o(n)$
 $Big Oh(n) \rightarrow order(n)$