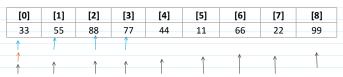
Linear search

01 April 2024 20:08

Arr[9]



- 1) Get the element(key) to search from the user.
- 2) Start the traversal from the 1st element (0th index)
- 3) Compare the key with each element in the array
 - a. If key is found, return the index $% \left(x\right) =\left(x\right) +\left(x\right$
 - b. Else, continue the search till the last index

Key = 77 Key found at index 3

Key = 33

Comparisons = 4 Average case time complexity n/2 --> order of(n) Big theta O(n) 1/2 is constant and in asymptotic analysis constant is discarded

Order of(1)--> o(1) \rightarrow O(n) O(n) O(n)

Key is found at index 0

Comparison = 1 Best case time complexity

Draer of(1) -> o(1) -> big on ego

Key = 99 Key is found at index 8 Comparisons = 9 Worst case time complexity Order of (n) --> o(n) --> n is the number of elements Big oh > O(n)

Key = 110 Key not found Comparisons = 9 Worst case time complexity

Order of(n) o(n)

o(n) Big $\circ h \rightarrow \circ \circ (n)$ N is the number of elements