Linear Search in R

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Linear Search is a searching algorithm that is used to find an element in a sorted array. The basic idea of linear search is to search for an element in a sorted array by comparing it with each element of the array.
The average case time complexity of linear search is $O(n)$
The worst case time complexity of linear search is $O(n)$
The best case time complexity of linear search is $O(1)$
The space complexity of linear search is $O(1)$ (in-place)
' ### Algorithm: 1. Compare the element to be searched with each element of the array 2. If the element is found, return the index of the element defintion of linear search @param vec Vector to be searched @param element Element to be searched @return Index of the element

```r
linear.search <- function(vec, element){
    for(i in 1:length(vec)){
        if(vec[i] == element){
            return(i)
        }
    }
    return("Not Found")
}
```

Example

```r
sorted_vec <- c(0,1,2,3,4,5,6,7,8,9)
linear.search(sorted_vec, 5)
```

```
## [1] 6
```