Selection Sort in R

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This function implements the selection sort algorithm. The basic idea of selection sort is to pick the smallest element from the unsorted list and place it at the beginning. It's average case time complexity is O(n^2)

Algorithm: 1. Pick the smallest element from the unsorted list and place it at the beginning 2. Repeat the above step until the entire list is sorted It is an improvement over bubble sort. It is a stable sorting algorithm. Let us create a function that implements the selection sort algorithm.

```
selection.sort <- function(vec){
    # Iterate over the vector
    for(i in 1:length(vec)){
        # Initialize the index of the smallest element
        min_index <- i
        # Iterate over the unsorted list
        for(j in i:length(vec)){
            # If the element at j is smaller than the element at min_index
            if(vec[j] < vec[min_index]){
                # Update the index of the smallest element
                min_index <- j
            }
        }
        # Swap the smallest element with the element at i
        temp <- vec[i]
        vec[i] <- vec[min_index]
        vec[min_index] <- temp
    }
    vec
}
```

Example

```
vector <- c(7,6,5,1,0,9,5,5)
selection.sort(vector)
```

```
## [1] 0 1 5 5 5 6 7 9
```