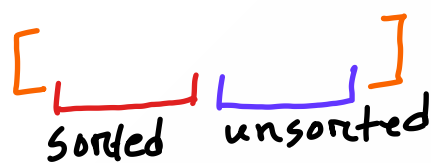


## Selection Sort:

✶ one kind of opposite of bubble sort

✶ Imagine an array into two parts



we have to pick

The smallest element in unsorted part and placed it into the sorted part

we have to push

(n-1) iterations → (n-1) smallest element

Example:

assume smallest when  $i=0$   
 [4, 1, 5, 2, 3]  
 assume as unsorted and find the smallest element and swap in zero index

$i=1$   
 1, 4, 5, 2, 3  
 sorted unsorted  
 Find the smallest element and swap in 1st index

$i=3$   
 1, 2, 5, 4, 3  
 sorted unsorted

$i=4$   
 1, 2, 3, 4, 5  
 sorted

```

for (int i = 0; i < n-1; i++) {
    int smallestIndex = i;
    for (int j = i+1; j < n; j++) {
        if (arr[j] < arr[smallestIndex]) {
            smallestIndex = j;
        }
    }
    swap(arr[i], arr[smallestIndex]);
}
  
```