215. Kth Largest Element in an Array

Description | Hints | Submissions | Discuss | Solution

Pick One

Find the **k**th largest element in an unsorted array. Note that it is the kth largest element in the sorted order, not the kth distinct element.

Example 1:

```
Input: [3,2,1,5,6,4] and k = 2
Output: 5
```

Example 2:

```
Input: [3,2,3,1,2,4,5,5,6] and k = 4
Output: 4
```

Note:

You may assume k is always valid, 1 ≤ k ≤ array's length.

```java
public class L215 {

    public int findKthLargest(int[] nums, int k) {

        if(nums.length == 0 || nums == null)
            return 0;

        int left = 0;
        int right = nums.length - 1;
        while (left <= right) {
            int location = getLocation(nums, left, right);
            if(location == k - 1) {
                break;
            }else if (location > k - 1) {
               right = location - 1;
           }else {
               left = location + 1;
           }
       }
        //记住返回的是k-1
        return nums[k-1];

    }
    /*
     * 这儿是利用快排思想
     */
    public int getLocation(int [] nums, int left, int right){

        int tmp = nums[left];
        int tmp_left = left;
        int tmp_right = right;
        //重点记住这块，多看多撸
        while(tmp_left < tmp_right) {
            while (tmp_left < tmp_right && nums[tmp_right] <= tmp) {
               tmp_right --;
           }
            nums[tmp_left] = nums[tmp_right];
            while (tmp_left < tmp_right && nums[tmp_left] >= tmp) {
               tmp_left ++;
           }
            nums[tmp_right] = nums[tmp_left];
        }
        nums[tmp_left] = tmp;
        System.out.println(tmp_left);
        return tmp_left;
    }
       public static void main(String [] args) {
             int [] array = new int [] {9,7,4,5,2,1,3,8,6,0};
             System.out.println(new L215().findKthLargest(array, 5));
       }
}
```