

Our Solution(s)

Run Code

Your Solutions

Run Code

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 using System;
4
5 public class Program {
6     // Best: O(n) time | O(1) space
7     // Average: O(n) time | O(1) space
8     // Worst: O(n^2) time | O(1) space
9     public static int Quickselect(int[] array, int k) {
10         int position = k - 1;
11         return Quickselect(array, 0, array.Length - 1, position);
12     }
13
14     public static int Quickselect(int[] array, int startIdx, int endIdx,
15         while (true) {
16             if (startIdx > endIdx) {
17                 throw new Exception("Your Algorithm should never arrive here!")
18             }
19             int pivotIdx = startIdx;
20             int leftIdx = startIdx + 1;
21             int rightIdx = endIdx;
22             while (leftIdx <= rightIdx) {
23                 if (array[leftIdx] > array[pivotIdx] &&
24                     array[rightIdx] < array[pivotIdx]) {
25                     swap(leftIdx, rightIdx, array);
26                 }
27                 if (array[leftIdx] <= array[pivotIdx]) {
28                     leftIdx++;
29                 }
30                 if (array[rightIdx] >= array[pivotIdx]) {
31                     rightIdx--;
32                 }
33             }
34         }
35     }
36
37     private static void swap(int i, int j, int[] array) {
38         int temp = array[i];
39         array[i] = array[j];
40         array[j] = temp;
41     }
42 }
```

Solution 1   Solution 2   Solution 3

```
1 public class Program {
2     public static int Quickselect(int[] array, int k) {
3         // Write your code here.
4         return -1;
5     }
6 }
7
```

Our Tests

Custom Output

Submit Code

```
1 public class Program {
2     // Best: O(n) time | O(1) space
3     // Average: O(n) time | O(1) space
4     // Worst: O(n^2) time | O(1) space
5     public static int Quickselect(int[] array, int k) {
6         int position = k - 1;
7         return Quickselect(array, 0, array.Length - 1, position);
8     }
9
10    public static int Quickselect(int[] array, int startIdx, int endIdx,
11        while (true) {
12            if (startIdx > endIdx) {
13                throw new Exception("Your Algorithm should never arrive here!")
14            }
15            int pivotIdx = startIdx;
16            int leftIdx = startIdx + 1;
17            int rightIdx = endIdx;
18            while (leftIdx <= rightIdx) {
19                if (array[leftIdx] > array[pivotIdx] &&
20                    array[rightIdx] < array[pivotIdx]) {
21                    swap(leftIdx, rightIdx, array);
22                }
23                if (array[leftIdx] <= array[pivotIdx]) {
24                    leftIdx++;
25                }
26                if (array[rightIdx] >= array[pivotIdx]) {
27                    rightIdx--;
28                }
29            }
30        }
31    }
32
33    private static void swap(int i, int j, int[] array) {
34        int temp = array[i];
35        array[i] = array[j];
36        array[j] = temp;
37    }
38 }
```

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