

```
1 static void quick_sort (long int *arr, long int start_index,
2                          long int end_index);
3 static long int partition (long int *arr, long int start_index,
4                            long int end_index);
5
6 void sort (long int *arr, long int nr_elements)
7 {
8     quick_sort (arr, 0, nr_elements-1);
9 }
10
11 static void quick_sort (long int *arr, long int start_index,
12                        long int end_index)
13 {
14     long int index;
15
16     if (start_index < end_index)
17     {
18         index = partition (arr, start_index, end_index);
19         quick_sort (arr, start_index, index-1);
20         quick_sort (arr, index+1, end_index);
21     }
22 }
23
24 static long int partition (long int *arr, long int start_index, long int
25                          end_index)
26 {
27     long int x, i, j, tmp;
28
29     x = arr[end_index];
30     i = start_index-1;
31
32     for (j=start_index; j < end_index; j++)
33     {
34         if (arr[j] <= x)
35         {
36             i = i + 1;
37             tmp = arr[i];
38             arr[i] = arr[j];
39             arr[j] = tmp;
40         }
41
42         tmp = arr[i+1];
43         arr[i+1] = arr[end_index];
44         arr[end_index] = tmp;
45
46         return (i+1);
47     }
48 }
```