```c
static void quick_sort (long int *arr, long int start_index,
            long int end_index);
static long int partition (long int *arr, long int start_index,
               long int end_index);

void sort (long int *arr, long int nr_elements)
{
    quick_sort (arr, 0, nr_elements-1);
}

static void quick_sort (long int *arr, long int start_index,
            long int end_index)
{
    long int index;

    if (start_index < end_index)
    {
        index = partition (arr, start_index, end_index);
        quick_sort (arr, start_index, index-1);
        quick_sort (arr, index+1, end_index);
    }
}

static long int partition (long int *arr, long int start_index, long int
  end_index)
{
    long int x, i, j, tmp;

    x = arr[end_index];
    i = start_index-1;

    for (j=start_index; j < end_index; j++)
    {
        if (arr[j] <= x)
        {
            i = i + 1;
            tmp = arr[i];
            arr[i] = arr[j];
            arr[j] = tmp;
        }
    }

    tmp         = arr[i+1];
    arr[i+1]    = arr[end_index];
    arr[end_index]  = tmp;

    return (i+1);
}

```