

Quick sort

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#include <stdio.h>

void switchValues(int *x, int *y) {
    int holder = *x;
    *x = *y;
    *y = holder;
}

int divide(int array[], int start, int end) {
    int pivot = array[end];
    int index = start - 1;

    for (int current = start; current < end; current++) {
        if (array[current] <= pivot) {
            index++;
            switchValues(&array[index], &array[current]);
        }
    }
    switchValues(&array[index + 1], &array[end]);
    return index + 1;
}

void sortQuickly(int array[], int start, int end) {
    if (start < end) {
        int partIndex = divide(array, start, end);
        sortQuickly(array, start, partIndex - 1);
        sortQuickly(array, partIndex + 1, end);
    }
}

void show(int array[], int len) {
    for (int k = 0; k < len; k++) {
        printf("%d ", array[k]);
    }
    printf("\n");
}

int main() {
    int total;
    printf("Enter the number of elements: ");
    scanf("%d", &total);
```

```

int numbers[total];
printf("Enter %d elements:\n", total);
for (int i = 0; i < total; i++) {
    scanf("%d", &numbers[i]);
}

printf("Original array:\n");
show(numbers, total);

sortQuickly(numbers, 0, total - 1);

printf("Sorted array:\n");
show(numbers, total);

return 0;
}

```

Output

Enter the number of elements: 6

Enter 6 elements:

34 7 23 32 5 62

Original array:

34 7 23 32 5 62

Sorted array:

5 7 23 32 34 62