

## Quick-Sort

**Description** In this lab assignment, your job is to implement the randomized version of Quick-sort. That is, you must choose a random pivot from the elements in  $A[p...r]$  when partitioning the subarray. For more details, see page 179 of the textbook. The following webpage describes a simple way to obtain a random integer: <http://www.cplusplus.com/reference/cstdlib/rand/>

**Input structure** The input starts with an integer number which indicates the number of elements (integers) to be sorted,  $n$ . Then, the elements follow, one per line.

**Output structure** Output the elements in non-decreasing order. Each element must be followed by ;.

### Examples of input and output:

*Input*

6  
5  
3  
2  
1  
6  
4

*Output*

1;2;3;4;5;6;

Note that the output is only one line and has no white characters.

See the lab guidelines for submission/grading, etc., which can be found in Files/Labs.