

Problem 2—Mountain Sort

Professor Plum likes to bicycle in the Rocky Mountains during his summer vacation. While writing an array question for his final examination in CS 101, he invents the notion of a *mountain sort* where the first half of the array is in ascending order and last half of the array is in descending order. More specifically, the smallest item is in the first index, the second smallest item is in the last index, the third smallest item is in the second index, the fourth smallest item is in the next to last index, etc.

For example, an array initially order as: 20, 45, 30, 5, 15, 50, 10, 30 would be mountain sorted to:
5, 15, 30, 45, 50, 30, 20, 10.

INPUT SPECIFICATION.

The first line of the input file contains an integer count of the number of items to mountain sort. The remaining lines will contain one integer per line.

OUTPUT SPECIFICATION.

The first line of the output file should contain an integer count of the number of items mountain sorted. The remaining lines will contain one integer per line in mountain-sorted order.

SAMPLE INPUT.

```
8<EOLN>
20<EOLN>
45<EOLN>
30<EOLN>
5<EOLN>
15<EOLN>
50<EOLN>
10<EOLN>
30<EOLN>
<EOF>
```

SAMPLE OUTPUT.

```
8<EOLN>
5<EOLN>
15<EOLN>
30<EOLN>
45<EOLN>
50<EOLN>
30<EOLN>
20<EOLN>
10<EOLN>
<EOF>
```