

## Problem Set 0

### 1 Median (Demonstration Exercise)

**Task:** Let  $n$  be an integer. Let  $a_0, \dots, a_{n-1}$  be also integers. The *median* of  $(a_0, \dots, a_{n-1})$  is defined as

$$m((a_0, \dots, a_{n-1})) = \begin{cases} \tilde{a}_{(n-1)/2} & \text{if } n \text{ is odd} \\ \frac{1}{2} \cdot (\tilde{a}_{n/2-1} + \tilde{a}_{n/2}) & \text{otherwise.} \end{cases}$$

Here  $(\tilde{a}_0, \dots, \tilde{a}_{n-1})$  denotes the vector containing the  $a_i$  in sorted order.

**Input:** The first line contains the length of the vector  $n$ . In the following  $n$  lines the values  $a_i$  are specified.

**Output:** Output the median.

**Sample Input:**

3  
3  
1  
2

**Sample Output:**

2