

Find the Median



Problem Statement

In the Quicksort challenges, you sorted an entire array. Sometimes, you just need specific information about a list of numbers, and doing a full sort would be unnecessary. Can you figure out a way to use your partition code to find the median in an array?

Challenge

Given a list of numbers, can you find the median?

Input Format

There will be two lines of input:

- n - the size of the array
- ar - n numbers that makes up the array

Output Format

Output one integer, the median.

Constraints

$1 \leq n \leq 1000001$
 $-10000 \leq x \leq 10000$, $x \in ar$
There will be an odd number of elements.

Sample Input

```
7
0 1 2 4 6 5 3
```

Sample Output

```
3
```