Maximize Minimum Pair Difference

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	256 megabytes

You are given an array A of **even length** n.

Your task is to produce another array of $n/2$ pairs, such that:

- Each element a_i in A belongs to exactly one pair.

- The minimum pair difference over all the $n/2$ pairs is maximized.

A pair difference of a pair (x, y) is the absolute value of $x - y$ ($|x - y|$).

Print the value of the maximized `minimum pair difference` after optimally pairing up the elements.

Input

The first line of the input contains a single integer n ($1 \leq n \leq 10^5$), the size of the array.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 10^9$).

Output

Output one single number, the maximized `minimum pair difference` after pairing up the elements.

Example

standard input	standard output
6 2 4 5 4 1 6	2

Note

The elements can be paired up into pairs $(2, 4)$, $(5, 1)$, and $(6, 4)$.

The minimum pair difference is $min(|2 - 4|, |5 - 1|, |6 - 4|) = 2$.

There are other possibilities too, yet the minimum pair difference does not exceed 2, so 2 will be the answer.