Problem A. Besho and palindromes

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Besho loves palindromes.

An array is palindrome if it reads the same backwards and forwards, for example arrays $\{1\}$, $\{1,1,1\}$, $\{1,2,1\}$, $\{1,3,2,3,1\}$ are palindrome, but arrays $\{11,3,5,11\}$, $\{1,12\}$ are not.

Besho has an array of n integers A. He wants his array to be palindrome. He can choose an integer m, then change the value of all A_i $(1 \leq i \leq n)$ to $(A_i \mod m)$.

what is the maximum value of m he can choose, such that the array becomes palindrome?

Input

The first line of input contains a single integer n $(1 \leq n \leq 10^5)$

The second line contains integers A_1,A_2,...,A_n $(1 \leq A_i \leq 10^9)$

Output

Print the maximum value of m Abu Tahun can choose, if m is arbitrarily large print -1.

Examples

standard input	standard output
4 1 1 1 1	-1
4 1 2 3 4	1
3 8 12 16	8