I. Lena and the Blocks, Again

time limit per test: 1 second

memory limit per test: 256 megabytes

Remember Lena? The girl you helped earlier . . . Well, she's now safe thanks to you. But unfortunately Lena won't stop this dangerous game, instead, she decided to play it with more towers. Here's the game in case you forgot:

Lena arranges some blocks as towers and jumps from one to another until the end.

Since this time the towers are much more, the game is $really$ dangerous, so you need to be extremely careful while solving this problem.

Your task is to tell Lena's father the minimum distance between one of the tallest towers and one of the shortest towers and remember if you can't solve this problem, Lena will be in danger . . . good luck!

Input

The first line contains a single integer N $(1 \leq N \leq 100000)$ – the number of towers.

The next line contains N space separated integers $(1 \leq a_i \leq 10^9)$ – the number of blocks in the i_{th} tower.

Output

Print a single integer, the minimum distance between one of the tallest towers and one of the shortest towers.

Example

input	Copy
4 1 1 2 2	
output	**Copy**
1	

Note

A tower is in the shape of a single column of blocks, and each block's height is exactly 1 metre.

The distance between the i_{th} and the j_{th} towers equals $|i - j|$

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

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→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #4 (Binary search , Two pointers)

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
312329409	Mar/25/2025 16:54	Accepted