Minimum Absolute Difference in an Array

The absolute difference is the positive difference between two values a and b, is written $|a - b|$ or $|b - a|$ and they are equal. If $a = 3$ and $b = 2$, $|3 - 2| = |2 - 3| = 1$. Given an array of integers, find the minimum absolute difference between any two elements in the array.

Example. $arr = [-2, 2, 4]$

There are 3 pairs of numbers: $[-2, 2]$, $[-2, 4]$ and $[2, 4]$. The absolute differences for these pairs are $|(-2) - 2| = 4$, $|(-2) - 4| = 6$ and $|2 - 4| = 2$. The minimum absolute difference is 2.

Function Description

Complete the *minimumAbsoluteDifference* function in the editor below. It should return an integer that represents the minimum absolute difference between any pair of elements.

minimumAbsoluteDifference has the following parameter(s):

- *int arr[n]:* an array of integers

Returns

- *int:* the minimum absolute difference found

Input Format

The first line contains a single integer n, the size of arr.
The second line contains n space-separated integers, $arr[i]$.

Constraints

- $2 \leq n \leq 10^5$
- $-10^9 \leq arr[i] \leq 10^9$