# 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**

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