Neighbours

Problem ID: neighbours

Problem Statement

There are N houses built along a straight road. The position of the i-th house is given by an integer x_i. The houses are listed in order from left to right ($x_1 < x_2 < \cdots < x_N$).

Your task is to find the **minimum distance** between any two neighbouring houses.

Input

- The first line contains an integer N ($2 \leq N \leq 1000$), the number of houses.

- The second line contains N integers $x_1, x_2, \ldots, x_N$ ($0 \leq x_i \leq 10^6$), the positions of the houses. It is guaranteed that $x_1 < x_2 < \cdots < x_N$.

Output

Print a single integer: the minimum distance between two neighbouring houses.

Subtasks

Subtask	Constraints	Points
1	We will only test the provided sample inputs.	10
2	$N \leq 100$, $x_i \leq 1000$	30
3	$N \leq 1000$, $x_i \leq 10^6$	60

Sample Input 1

```
5
1 4 7 12 14
```

Sample Output 1

```
2
```

Explanation for Sample 1

The gaps between neighbours are: $4 - 1 = 3$, $7 - 4 = 3$, $12 - 7 = 5$, $14 - 12 = 2$. The minimum is 2.

Sample Input 2

```
4
10 20 25 40
```

Sample Output 2

```
5
```

Explanation for Sample 2

The gaps are 10, 5, and 15. The minimum is 5.

End of Problem 1