Minimum Loss

Lauren has a chart of distinct projected prices for a house over the next n years, where the price of the house in the i^{th} year is p_i. She wants to purchase and resell the house at a minimal *loss* according to the following rules:

- The house cannot be sold at a price greater than or equal to the price it was purchased at (i.e., it must be resold at a loss).
- The house cannot be resold within the same year it was purchased.

Find and print the *minimum* amount of money Lauren must lose if she buys the house and resells it within the next n years.

Note: It's guaranteed that a valid answer exists.

Input Format

The first line contains an integer, n, denoting the number of years of house data.
The second line contains n space-separated long integers describing the respective values of $p_1, p_2, \ldots, p_n$.

Constraints

- $2 \leq n \leq 2 \times 10^5$
- $1 \leq p_i \leq 10^{16}$
- All the prices are distinct.
- It's guaranteed that a valid answer exists.

Subtasks

- $2 \leq n \leq 1000$ for 50% of the maximum score.

Output Format

Print a single integer denoting the minimum amount of money Lauren must lose if she buys and resells the house within the next n years.

Sample Input 0

```
3
5 10 3
```

Sample Output 0

```
2
```

Explanation 0

Lauren buys the house in year 1 at price $p_1 = 5$ and sells it in year 3 at $p_3 = 3$ for a minimal loss of $5 - 3 = 2$.

Sample Input 1

```
5
20 7 8 2 5
```

Sample Output 1

```
2
```

Explanation 1

Lauren buys the house in year 2 at price $p_2 = 7$ and sells it in year 5 at $p_5 = 5$ for a minimal loss of $7 - 5 = 2$.