NAOI TST - Day 1
Problem 2 : Sequence

We are given a sequence $a_1, \ldots, a_n$. We can manipulate this sequence using the operation reduce(i), which replaces elements a_i and a_{i+1} with a single element $\max(a_i, a_{i+1})$, resulting in a new shorter sequence. The cost of this operation is $\max(a_i, a_{i+1})$. After $n-1$ operations reduce, we obtain a sequence of length 1. Our task is to compute the cost of the optimal reducing scheme, i.e. the sequence of reduce operations with minimal cost leading to a sequence of length 1.

Input Specification

The first line contains n ($1 \leq n \leq 1,000,000$), the length of the sequence. The following n lines contain one integer a_i, the elements of the sequence ($0 \leq a_i \leq 1,000,000,000$).

Output Specification

In the first and only line of the output print the minimal cost of reducing the sequence to a single element.

Grading

In 30% of the test cases $n \leq 500$ holds.
In 50% of the test cases $n \leq 20,000$ holds.

Sample Input

```
3
1
2
3
```

Sample Output

```
5
```