

Problem D

Double Up

Time limit: 7 seconds

A Double Up game consists of a sequence of n numbers a_1, \dots, a_n , where each a_i is a power of two. In one move one can either remove one of the numbers, or merge two identical adjacent numbers into a single number of twice the value. For example, for sequence 4, 2, 2, 1, 8, we can merge the 2s and obtain 4, 4, 1, 8, then merge the 4s and obtain 8, 1, 8, then remove the 1, and, finally, merge the 8s, obtaining a single final number, 16. We play the game until a single number remains. What is the largest number we can obtain?

Input

The input consists of two lines. The first line contains n ($1 \leq n \leq 1000$). The second line contains numbers a_1, \dots, a_n , where $1 \leq a_i \leq 2^{100}$ for each i .

Output

The output consists of a single line containing the largest number that can be obtained from the input sequence a_1, \dots, a_n .

Sample Input 1

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5  
4 2 2 1 8
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Sample Output 1

```
16
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