



F. Bits And Pieces

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given an array a of n integers.

You need to find the maximum value of $a_i | (a_j \& a_k)$ over all triplets (i, j, k) such that $i < j < k$.

Here $\&$ denotes the [bitwise AND operation](#), and $|$ denotes the [bitwise OR operation](#).

Input

The first line of input contains the integer n ($3 \leq n \leq 10^6$), the size of the array a .

Next line contains n space separated integers a_1, a_2, \dots, a_n ($0 \leq a_i \leq 2 \cdot 10^6$), representing the elements of the array a .

Output

Output a single integer, the maximum value of the expression given in the statement.

Examples

input	Copy
3 2 4 6	
output	Copy
6	

input	Copy
4 2 8 4 7	
output	Copy
12	

Note

In the first example, the only possible triplet is $(1, 2, 3)$. Hence, the answer is $2 | (4 \& 6) = 6$.

In the second example, there are 4 possible triplets:

1. $(1, 2, 3)$, value of which is $2 | (8 \& 4) = 2$.
2. $(1, 2, 4)$, value of which is $2 | (8 \& 7) = 2$.
3. $(1, 3, 4)$, value of which is $2 | (4 \& 7) = 6$.
4. $(2, 3, 4)$, value of which is $8 | (4 \& 7) = 12$.

The maximum value hence is 12.

Manthan, Codefest 19 (open for everyone, rated, Div. 1 + Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0 ▼

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit



→ Problem tags

bitmasks dfs and similar dp greedy

*2600

No tag edit access

→ Contest materials

- [Announcement \(en\)](#) 
- [Tutorial \(en\)](#) 



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