# Problem A. AND Permutation

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|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 5 seconds |
| Memory limit: | 1024 mebibytes |

You are given a sequence of $n$ distinct nonnegative integers $a_1, a_2, \ldots, a_n$.

For the given sequence, it is guaranteed that for all nonnegative numbers $x$, if there is some $i$ such that $a_i \ \& \ x = x$, then there is a $j$ such that $a_j = x$. Here, & refers to the bitwise AND operator.

Find a permutation $b_1, b_2, \ldots, b_n$ of $a_1, a_2, \ldots, a_n$ such that $b_i \ \& \ a_i = 0$ for all $i$. If there are multiple solutions, find any such permutation. It is guaranteed that a solution always exists.

## Input

The first line of input contains an integer $n$ ($1 \le n < 2^{18}$), which is the number of integers in the permutation.

Each of the next $n$ lines contains an integer $a_i$ ($0 \le a_i < 2^{60}$), which is the input sequence, in order of $i$. All of the $a_i$'s are guaranteed to be distinct. For all nonnegative numbers $x$, if there is some $i$ such that $a_i \ \& \ x = x$, then there is a $j$ such that $a_j = x$.

## Output

Output $n$ lines, each containing a single integer, which are the $b_i$'s, in order of $i$.

## Example

| standard input | standard output |
|---|---|
| 6<br>0<br>1<br>4<br>5<br>2<br>6 | 4<br>6<br>0<br>2<br>5<br>1 |