Problem H
Alchembit Exam

As a modern alchemy student, you are taking an exam in Alchembit, a hybrid between alchemy and modern technology. In the exam, you are given N potions (numbered from 1 to N) where potion i has a potency of an integer A_i. You start the exam with a score of 0.

You can increase your score by doing the following procedure.

1. Suppose there are n potions remaining. Choose an interval $[l, r]$ where $1 \leq l < r \leq n$.
2. By choosing the interval $[l, r]$, your score will be increased by $A_l \,\&\, A_{l+1} \,\&\, \ldots \,\&\, A_r$, where the symbol $\&$ represents the bitwise AND operator.
3. Next, fuse potions $l, l+1, \ldots, r$ into one new potion with a potency of $A_l \,\&\, A_{l+1} \,\&\, \ldots \,\&\, A_r$.
4. The potions are then renumbered as follows: the newly fused potion becomes potion l, and potions $r+1, r+2, \ldots, n$ are renumbered as $l+1, l+2, \ldots, l+(n-r)$. Potions numbered $1, 2, \ldots, l-1$ remain unchanged.

For example, if you have 5 potions with potencies $A = [19, 12, 10, 20, 23]$, and you choose interval $[2, 3]$, then your score will be increased by $12 \,\&\, 10 = 8$. Then, potions 2 and 3 are fused into a new potion with a potency of $12 \,\&\, 10 = 8$. After the renumbering procedure (step 4), A becomes $[19, 8, 20, 23]$.

You can perform the above procedure until there is only one potion left. Determine the maximum score that you can achieve.

Input

The first line consists of an integer N ($2 \leq N \leq 100\,000$).

The second line consists of N integers A_i ($0 \leq A_i < 2^{30}$).

Output

Output a single integer representing the maximum score that you can get.

Sample Input #1

```
5
19 12 10 20 23
```

Sample Output #1

```
28
```

Explanation for the sample input/output #1

First, choose the interval $[2, 3]$ so that your score is increased by $12 \,\&\, 10 = 8$, and A becomes $[19, 8, 20, 23]$. Next, choose the interval $[3, 4]$ so that your score is increased by $20 \,\&\, 23 = 20$, and A becomes $[19, 8, 20]$. Finally, choose the interval $[1, 3]$ so that your score is increased by $19 \,\&\, 8 \,\&\, 20 = 0$, and A becomes $[0]$.

Sample Input #2

```
4
1000000000 1000000000 1000000000 1000000000
```

Sample Output #2

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3000000000
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