# B. Sponsor

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

OIJ, a giant company, plans to sponsor CPL this year. The amount of money they will invest is equal to the maximum points that can be scored in the following problem.

- Given the number of Instagram followers of $n$ teams in the CPL, you are allowed to choose any $i(1 \leq i \leq n-1)$ teams of your choice among them.
- Let the number of instagram followers of $i$ teams you chose be $a_1, a_2, a_3, \ldots, a_i$ and the followers of rest of the teams be $b_1, b_2, .., b_{n-i}$.
- Then points are calculated using the formula
  - $f(a_1, a_2, a_3, \ldots, a_i) + f(b_1, b_2, .., b_{n-i})$
- where $f(d_1, d_2, .., d_m) = d_1 \oplus d_2 \oplus .. d_{m-1} \oplus d_m$ and $\oplus$ represents the bitwise XOR operator

Your task is to find the amount of money that OIJ will sponsor. You will need to use **long long** as answer can be out of bound of int.

## Input

The first line contains a single integer $n(2 \leq n \leq 10^5)$— the number of teams in the CPL

The second line contains $n$ integers $c_1, c_2, \ldots, c_n$ $(1 \leq c_j \leq 10^{18})$ — number of instagram followers of each team.

## Output

Print the amount of money that will be sponsored by OIJ ,that is the maximum possible points one can score. You will need to use **long long** as the answer can be out of bound of int.

### Examples

| input | Copy |
|---|---|
| 4<br>2 5 7 4 | |
| **output** | **Copy** |
| 10 | |

| input | Copy |
|---|---|
| 3<br>4 4 4 | |
| **output** | **Copy** |
| 4 | |

| input | Copy |
|---|---|
| 3<br>90413825674767126 70258219014609588 49358208343180731 | |
| **output** | **Copy** |
| 209427676301511009 | |

## Note

In the first sample, the maximum possible points one can score is 10 and is obtained by choosing $2$ teams with followers $2$ and $5$, so now using the formula, points will be equal to $f(2,5) + f(7,4)$ = $(2 \oplus 5)$ + $(7 \oplus 4)$ = 7 + 3 = 10.

In the second sample, the maximum possible points one can score is 4, obtained by choosing any one of the teams.

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