The game of Nim (3)   P63146_en

This is another problem about the game of Nim, which is thoroughly explained in problem . But here, we may have a huge number of sets, each with a huge number of marbles. Furthermore, now we assume that the player to make the last move loses, instead of winning.

Input

Input consists of several cases. Every case begins with the number of sets n, followed by the number of marbles of each set, all between 0 and 10^9. Assume $0 \leq n \leq 10^5$. At least one set has one or more marbles.

Output

For every case, tell if it is a winning or a losing configuration.

Hint

You should use a mathematical trick to solve this problem.

Sample input

```
6  1 1 0 0 5 0
1  2
4  0 3 3 0
5  1000 43210 17 123456 42
5  1000 43210 17 43801 42
4  1 1 1 1
```

Sample output

```
winning
winning
losing
winning
losing
winning
```

Problem information

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