
Hats on and off

P72822_en

Setzè Concurs de Programació de la UPC - Semifinal (2018-06-20)

There is a line of people on a row. Every one has a hat, which he can be wearing (on) or not (off). Let us use those people to play a game for two players, A and B. First, decide an integer number n . By turns (A begins), each player must choose some person x that is currently wearing his hat, and change the state (from on to off, or the other way around) of the n people to the right of x , starting at x . Note that the $n - 1$ rightmost persons can never be chosen.

For instance, assume that 'N' means on, and that 'F' means off. If $n = 4$ and we pick the third person of the row below (note that his state is on), we get the next state of the game that is shown underneath:

```
NFNFFFNFFNFFF
NFFFNNFNFFNFFF
```

The player that cannot play loses the game. Assuming perfect play from both players, can you tell who will win?

Input

Input consists of several cases, each one with a string s made up of only 'N' and 'F', followed by n . Assume $1 \leq n \leq |s| \leq 10^5$.

Output

For every case, print the name of the winner.

Sample input

```
NFFFF 5
FFFFFFFFF 6
NFNFFFNFFNFFF 4
NNNNNNNNN 1
```

Sample output

```
A
B
B
A
```

Problem information

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