Hats on and off P72822_en

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.

Fo 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:

```
NFNNFFFNFFNFFF
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 1

```
NFFFF 5
FFFFFFFFFF 6
NFNNFFFNFFNFFF 4
NNNNNNNNN 1
```

Sample output 1

```
A
B
B
A
```

Problem information

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