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:

\[
\begin{align*}
&\text{NFNNFFFNFFNFFF} \\
&\text{NFFFNNFNNFFNFFF}
\end{align*}
\]

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.

<table>
<thead>
<tr>
<th>Sample input</th>
<th>Sample output</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFFFF 5</td>
<td>A</td>
</tr>
<tr>
<td>FFFFFFFFFF  6</td>
<td>B</td>
</tr>
<tr>
<td>NFNNFFFNFFNFFF 4</td>
<td>B</td>
</tr>
<tr>
<td>NNNNNNNNNN 1</td>
<td>A</td>
</tr>
</tbody>
</table>

**Problem information**

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