Problem 2—Mario Brothers

Mario Brothers was introduced by Nintendo as an arcade game in 1983. Although it is not the same as Super Mario Brothers, both games involve giant pipes and deadly turtles. In Mario Brothers, turtles come out of a gigantic pipe and walk around the screen. Unique to Mario Brothers was the "POW" button, punching it would toggle the state of all turtles on the screen: any upright turtle would flip on its back, and any already-overturned turtle would flip rightside-up again (the "POW" button would not affect any turtles who haven't come out of the pipe yet). The "POW" button would only last 3 punches, but for the purpose of this problem, we will assume a "POW" button that never runs out.

A sequence of turtles are coming out of the pipe. Mario has decided ahead of time which turtles he wants flipped on their backs and which ones he wants upright. Help him find a sequence of actions (i.e. whether or not to hit the "POW" button after each turtle comes out of the pipe) so that he realizes his goal after all of those turtles are out of the pipe.

INPUT SPECIFICATION.

You will be given a set of input cases, each followed by **<EOLN>**. Each case consists of a string indicating whether the corresponding turtle should be upright (asterisk *****) or flipped over (underscore **_**) in the end. The leftmost symbol corresponds to the first turtle out of the pipe. An extra **<EOLN>** will follow the last case.

OUTPUT SPECIFICATION.

For each case, you are to output a sequence of characters that brings Mario's goal to fruition: either P for "POW" button or N for no "POW" button. The first action is performed just after the first turtle comes out of the pipe, and the last action is performed just after the last turtle comes out. This string should be followed by **<EOLN>**.

SAMPLE INPUT

```
_<EOLN>
*_<EOLN>
____<EOLN>
<EOF>
```

SAMPLE OUTPUT

```
P<EOLN>
PP<EOLN>
NNP<EOLN>
<EOF>
```