J: Rock, paper, scissors

Memory limit: **128 MB**

Johnny is playing *rock, paper, scissors* with his friend Bob. The game consists of separate rounds during which both players at the same time show with their hands a symbol of either rock, paper, or scissors. The player who shows a stronger symbol wins the round; if both players show the same symbol the round is considered a tie. The following rules show the relative strength of symbols:

- scissors cut paper (scissors are stronger than paper),
- paper covers rock (paper is stronger than rock),
- rock crushes scissors (rock is stronger than scissors).

The player who wins more rounds wins the entire game.

Mastering the game is Bob's one and only goal in life. After quite a few years of training, he prepared a long list of symbols that he considers to be the best possible strategy, and memorized it. Johnny has accidentally found a printout with the sequence and of course decided to prank Bob: he wants to win the game (that is to win strictly more rounds than his friend), and he wants to do so "epically". The win is epic when Johnny changes the symbol he's showing the least number of times possible. There's not much time until the match begins and Johnny still doesn't know what is the minimal number of changes he needs to make. Help him compute it.

Input

The first and only line of input contains a string of letters of length no greater than 10^6, where letter at position i specifies the symbol that Bob will show during round i. Each letter is either `K`, `P` or `N`, which denote respectively rock, paper, and scissors.

Output

In the first and only line you should output a single integer: the minimum possible number of changes of shown symbol that Johnny needs to make in order to win the game.

Example

Input	Output
KPNPKP	0

Johnny can win this game by one point without making any changes, he just needs to show scissors all the time. Then:

- he wins three rounds (second, fourth, and sixth), in which Bob shows paper,
- he ties in third round, in which Bob also shows scissors,
- he loses two rounds (first and fifth), in which Bob shows rock.

Input	Output
KKPPNN	1

Here if Johnny would make no changes he can only end the game with a tie. If he makes a single change there are many ways to win this game. One of possible ways is to show paper in the first two rounds and then change symbol to scissors for the rest of the game. Then:

- showing paper he wins first and second round, in which Bob shows rock,
- showing scissors he wins third and fourth round, in which Bob shows paper,
- continuing to show scissors he ties fifth and sixth round, in which Bob also shows scissors.