

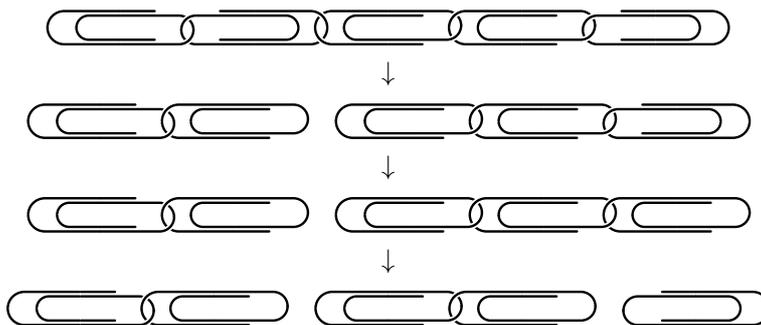
# Task: SPI

## Paper Clips

UFAM Workshop, contest #2. Source file spi.\* Available memory: 128 MB.

Bytie discovered recently a great game – building chains out of paper clips. One day he constructed a long-long chain made of his father’s paper clips and he went to school. Unfortunately for Bytie, his father needs all of his paper clips. As one may expect, he needs all of them. . . separated. However, before he starts to disassemble son’s construction, he wants to know how long would it take.

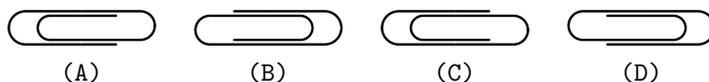
Dad is going to untangle the chain by performing moves of rotating one paper clip by 180° around its axis perpendicular to the surface of the table. Each move takes one second The image below demonstrates performing of some single moves against small paper clip chain.



Write a program, which calculates minimal number of moves required to untangle the chain.

### Input

Chain is described by the alignment of consecutive its links and the connection type between each consecutive pair. When looking from above at the paper clip laying on the table we can see it in one of four possible positions, just as the image below shows.



Two paper clips are connected in one of two possible ways – top part of the left paper clip goes above top part of the right paper clip or vice versa.

Both situations are presented on the image below (on the base of the pair BA).



In the first line of the standard input there is one integer  $n$  ( $2 \leq n \leq 5\,000\,000$ ) representing the number of paper clips. In the second line there is a description of the chain consisting of letters A, B, C, D, P and Q. Letters represent arrangement of the paper clips and the way of connection of the consecutive pairs.

### Output

In the first and only line of the standard output there should be one integer – minimal number of moves required to separate chain into single paper clips.

### Example

For the input data:

5  
CPBQAPAPB

the correct result is:

4

**Explanation to the example:** In the example initial chain looks like the one from the first figure. It can be disassembled in four moves, if one behaves differently from the process depicted on that image.