

## Text Editor (editor)

Giorgio was asked to write the minutes of the last round of the *Olimpiadi di Informatica a Squadre*. After writing thousands of words in his beloved *MS Notepad*<sup>1</sup>, he now wants to format them properly and send the result via e-mail to the organizers. Nothing easier right? Except his e-mail client supports only formatting with **bold** and *italic*! At least you can mix them as much as you want, for example **this sentence is a mix of both** the formatters.

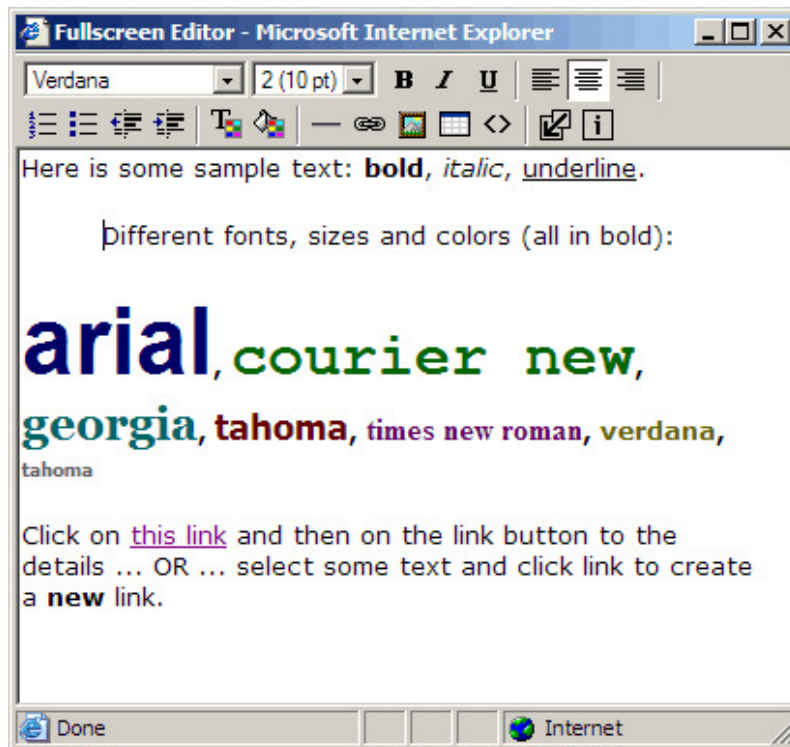



Figure 1: Is there something Internet Explorer can't do?

In Giorgio's editor, in order to toggle the bold-ness or italic-ness of some text you can simply select a continuous range of characters with your mouse and then press the button **toggle bold** or the button *toggle italic*. By doing so all the not-bold characters will become bold and vice-versa, and respectively for the italic ones.

Giorgio has already chosen which parts should be italic and which bold (and which both): your task is to tell him how many times he has to press the toggle buttons at minimum.

 Among the attachments of this task you may find a template file `editor.*` with a sample incomplete implementation.

<sup>1</sup>Mega Software <sup>TM</sup>

## Input

The first line contains the only integer  $N$ . The second line contains  $N$  characters  $V_i$  separated by spaces. Each character is among ‘n’, ‘i’, ‘N’, ‘I’. If the  $i$ -th character is letter  $i$  (‘i’ or ‘I’), then the corresponding character in the text should be *italic*. If the  $i$ -th character is uppercase (‘N’ or ‘I’), then the corresponding character in the text should be **bold**.

## Output







You need to write a single line with an integer: the minimum number of buttons to press.

## Constraints

- $1 \leq N \leq 1\,000\,000$ .
- $V_i$  is among ‘n’, ‘i’, ‘N’, ‘I’.

## Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

- Subtask 1 (0 points)      Examples.  

- Subtask 2 (10 points)       $N \leq 10$ .  

- Subtask 3 (15 points)      There is no bold character:  $V_i$  is among ‘n’ or ‘i’.  

- Subtask 4 (15 points)      There is no italic character:  $V_i$  is among ‘n’ or ‘N’.  

- Subtask 5 (30 points)       $N \leq 1000$ .  

- Subtask 6 (30 points)      No additional limitations.  


## Examples

input	output
6 n N I I N n	2
9 N I I i n n i i N	4

## Explanation

Counting from 0, in the **first sample case** you can select characters 1..4 and then use **toggle bold**, then select 2..3 and then use *toggle italic*.

In the **second sample case**, you can toggle **bold** characters 0..2, *italic* 1..7, *italic* 4..5 and **bold** 8.