Task: TRZ
Three towers 2

Olimpiada Informatyczna

XXV OI, Stage III, Day zero (trial). Source file `trz.*` Available memory: 128 MB. *10.04.2018*

Bythony loves to play. In his room, he has arranged a row of n colored blocks. Each block is either white, gray, or black. Bythony would like to pick a contiguous segment in the row of blocks, and construct towers out of its blocks.

Bythony is going to construct three monochromatic towers: one out of white, one out of gray, and one out of black blocks. Note that a tower may consist of zero blocks, e.g., if there are none of its color. Bythony would like to satisfy the following two conditions: First, the heights of the towers, i.e., the numbers of blocks they consist of, should be unique. Second, Bythony wants to utilize all the blocks in his segment of choice. Help him out by writing a program that determines the longest contiguous segment of the row of blocks that satisfies these requirements.

Input

The first line of the standard input contains a single integer n that specifies the number of blocks. The next line contains a string of n characters $a_1a_2\ldots a_n$, where each a_i is one of the three characters `B`, `S`, or `C`, and specifies the color of the i-th block in the row: `B` denotes white, `S` gray, and `C` black (these stand for Polish names of the colors: *biały*, *szary*, and *czarny*).

Output

The first and only line of the standard output should contain either the word `NIE` (Polish for *no*) if no segment allows constructing towers observing the rules, or a single integer, equal to the number of blocks in the longest segment that does allow such construction.

Example

For the input data:

```
9
CBBSSBCSC
```

the correct result is:

```
6
```

Explanation for the example: Bythony can choose a segment of 6 blocks: `BSSBCS`, out of which he can construct a three blocks high gray tower, two blocks high white tower, and a one block high black tower.

For the following input data:

```
5
BBBBC
```

the correct answer is:

```
5
```

Explanation for the example: Bythony can utilize all blocks, constructing a white tower of four blocks, a black tower of one block, and a gray tower of zero blocks.

Sample grading tests:

- `1ocen`: $n = 2500$, the row is as follows: $\texttt{B}^{1248}\texttt{C}\underline{\texttt{SB}^{1250}}$ (the string $\texttt{B}^k$ denotes a k-repetition of the character `B`); the longest segment Bythony can choose is underlined;
- `2ocen`: $n = 1\,000\,000$, the row is periodic: `BSCBSCBSC`$\ldots$`BSCBSCB`; the answer is `NIE`.

Grading

The set of tests consists of the following subsets. Within each subset, there may be several unit tests.

Subset	Property	Score
1	$n \leq 2500$	30
2	$n \leq 1\,000\,000$	70