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Problem G
Palindromic Length
Time Limit: 0.5 Seconds

A string is called a *palindrome* if it is read the same forward and backward. Palindromes are useful factors for measuring the complexity of strings like the asymmetry of the strings. The asymmetry of a string S of length n can be measured by its *palindromic length*, PL(S), which is the minimum number of palindrome substrings into which S can be partitioned. More precisely, PL(S) is the minimum number t ($1 \le t \le n$) such that there exist palindrome substrings $S_1, S_2, \dots, S_t$ whose concatenation $S_1 S_2 \cdots S_t$ becomes S. To make it easier to distinguish, we denote a partition of S into $S_1, S_2, \dots, S_t$ as $S_1 \mid S_2 \mid \cdots \mid S_t$.

For example, a string $S = abaaca$ can be partitioned into two palindrome substrings as $aba \mid aca$, that is the minimum, so PL($abaaca$) $= 2$. A string $acaba$ cannot be partitioned into two palindrome substrings, but it can be partitioned into three palindrome substrings, $S = aca \mid b \mid a$ or $S = a \mid c \mid aba$, so PL($acaba$) $= 3$. For $S = radar$, PL(S) $= 1$ because S is a palindrome. PL(S) $= 5$ for $S = abcde$.

Given a non-empty string S of English lowercase letters, write a program to output PL(S).

Input
Your program is to read from standard input. The input starts with a line containing a positive integer n ($1 \le n \le 100{,}000$), where n is the number of letters of a string. The next line contains a string of n English lowercase letters. Note that the string contains no space between the letters.

Output
Your program is to write to standard output. Print exactly one line. The line should contain a positive integer which is the palindromic length PL(S) of the input string S.

The following shows sample input and output for four test cases.

Sample Input 1

```
6
abaaca
```

Output for the Sample Input 1

```
2
```

Sample Input 2

```
5
acaba
```

Output for the Sample Input 2

```
3
```

Sample Input 3

```
5
abcde
```

Output for the Sample Input 3

```
5
```

Sample Input 4

```
5
radar
```

Output for the Sample Input 4

```
1
```