

IOI '00 P1 - Palindrome

A palindrome is a symmetrical string, that is, a string read identically from left to right as well as from right to left. You are to write a program which, given a string, determines the minimal number of characters to be inserted into the string in order to obtain a palindrome.

As an example, by inserting 2 characters, the string `Ab3bd` can be transformed into a palindrome (`dAb3bAd` or `Adb3bdA`). However, inserting fewer than 2 characters does not produce a palindrome.

Input Specification

The first line contains one integer: the length of the input string N , $3 \leq N \leq 5\,000$. The second line contains one string with length N . The string is formed from uppercase letters from `A` to `Z`, lowercase letters from `a` to `z` and digits from `0` to `9`. Uppercase and lowercase letters are to be considered distinct.

Output Specification

The first line contains one integer, which is the desired minimal number.

Sample Input

```
5
Ab3bd
```

Sample Output

```
2
```