

# Problem A. two-characters

OS Linux

Given a string, remove characters until the string is made up of any two alternating characters. When you choose a character to remove, all instances of that character must be removed. Determine the longest string possible that contains just two alternating letters.

### Example

$s = \text{'abaacdabd'}$

Delete **a**, to leave **bcdbd**. Now, remove the character **c** to leave the valid string **bdbd** with a length of 4. Removing either **b** or **d** at any point would not result in a valid string. Return 4.

Given a string  $s$ , convert it to the longest possible string  $t$  made up only of alternating characters. Return the length of string  $t$ . If no string  $t$  can be formed, return 0.

### Function Description

Complete the *alternate* function in the editor below.

*alternate* has the following parameter(s):

- *string s*: a string

### Returns.

- *int*: the length of the longest valid string, or 0 if there are none

### Input Format

The first line contains a single integer that denotes the length of  $s$ .

The second line contains string  $s$ .

### Constraints

- $1 \leq \text{length of } s \leq 1000$
- $s[i] \in \text{ascii[a-z]}$

Input		Output
STDIN	Function	5
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10	length of s = 10	
beabeefeab	s = 'beabeefeab'	

## Explanation

The characters present in  $s$  are  $a$ ,  $b$ ,  $e$ , and  $f$ . This means that  $t$  must consist of *two* of those characters and we must delete *two* others. Our choices for characters to leave are  $[a,b]$ ,  $[a,e]$ ,  $[a,f]$ ,  $[b,e]$ ,  $[b,f]$  and  $[e,f]$ .

If we delete  $e$  and  $f$ , the resulting string is  $babab$ . This is a valid  $t$  as there are only two distinct characters ( $a$  and  $b$ ), and they are alternating within the string.

If we delete  $a$  and  $f$ , the resulting string is  $bebeeeb$ . This is not a valid string  $t$  because there are consecutive  $e$ 's present. Removing them would leave consecutive  $b$ 's, so this fails to produce a valid string  $t$ .

Other cases are solved similarly.

$babab$  is the longest string we can create.