Problem A. Palindromes

Input file:	`palindrome.in`
Output file:	`palindrome.out`
Time limit:	1 second
Memory limit:	128 megabytes

You are given a string of lower-case Latin letters. Let us define substring's "occurrence value" as the number of the substring occurrences in the string multiplied by the length of the substring. For a given string find the largest occurrence value of palindromic substrings.

Input

The only line of input contains a non-empty string of lower-case Latin letters (a-z).

Output

Output one integer – the largest occurrence value of palindromic substrings.

Examples

palindrome.in	palindrome.out
abacaba	7
www	4

Note

$|s|$ is length of string s.

A substring of string $s_1 s_2 \ldots s_{|s|}$ is any non-empty string $s_i s_{i+1} \ldots s_j$, where $1 \le i \le j \le |s|$. Any string is also its own substring.

A string is called palindromic, if it is read the same in either direction, from left to right and from right to left.

In the first sample there are seven palindromic substrings $a, b, c, aba, aca, bacab, abacaba$.

- a has 4 occurrences in the given string, its occurrence value is $4 \times 1 = 4$
- b has 2 occurrences in the given string, its occurrence value is $2 \times 1 = 2$
- c has 1 occurrence in the given string, its occurrence value is $1 \times 1 = 1$
- aba has 2 occurrences in the given string, its occurrence value is $2 \times 3 = 6$
- aca has 1 occurrence in the given string, its occurrence value is $1 \times 3 = 3$
- $bacab$ has 1 occurrence in the given string, its occurrence value is $1 \times 5 = 5$
- $abacaba$ has 1 occurrence in the given string, its occurrence value is $1 \times 7 = 7$

So, the largest occurrence value of palindromic substrings is 7.

Scoring

Your program will be tested on 5 sets of input instances as follows:

Subtask 1 (points: 8)

$1 \le |s| \le 100$.

Subtask 2 (points: 15)

$1 \leq |s| \leq 1000$.

Subtask 3 (points: 24)

$1 \leq |s| \leq 10000$.

Subtask 4 (points: 26)

$1 \leq |s| \leq 100000$.

Subtask 5 (points: 27)

$1 \leq |s| \leq 300000$.