Play with words

by shaka_shadows

Shaka and his brother have created a boring game which is played like this:

They take a word composed of lowercase English letters and try to get the maximum possible score by building exactly 2 **palindromic subsequences**. The score obtained is the product of the length of these 2 subsequences.

Let's say A and B are two subsequences from the initial string. If A_i & A_j are the smallest and the largest positions (from the initial word) respectively in A ; and B_i & B_j are the smallest and the largest positions (from the initial word) respectively in B, then the following statements hold true:
$A_i \leq A_j$,
$B_i \leq B_j$, &
$A_j < B_i$.
i.e., the positions of the subsequences should not cross over each other.

Hence the score obtained is the product of lengths of subsequences A & B. Such subsequences can be numerous for a larger initial word, and hence it becomes harder to find out the maximum possible score. Can you help Shaka and his brother find this out?

Input Format

Input contains a word S composed of lowercase English letters in a single line.

Constraints

$1 < |S| \leq 3000$
each character will be a lower case english alphabet.

Output Format

Output the maximum score the boys can get from S.

Sample Input

```
eeegeeksforskeeggeeks
```

Sample Output

```
50
```

Explanation

A possible optimal solution is **eee**-g-**ee**-ksfor-**skeeggeeks** being **eeeee** the one subsequence and **skeeggeeks** the other one. We can also select **eegee** in place of **eeeee**, as both have the same length.

Difficulty: Medium

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Current Buffer (saved locally, editable)

Java 7

```
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code