MAXMATCH - Maximum Self-Matching

no tags

You're given a string **s** consisting of letters 'a', 'b' and 'c'.

The matching function $m_s(i)$ is defined as the number of matching characters of **s** and its i-shift. In other words, $m_s(i)$ is the number of characters that are matched when you align the 0-th character of **s** with the i-th character of its copy.

You are asked to compute the maximum of $m_s(i)$ for all i (1 <= i <= |**s**|). To make it a bit harder, you should also output all the optimal i's in increasing order.

Input

The first and only line of input contains the string **s**. 2 <= |**s**| <= 10^5.

Output

The first line of output contains the maximal $m_s(i)$ over all i.

The second line of output contains all the i's for which $m_s(i)$ reaches maximum.

Example

```
Input:
caccacaa

Output:
4
3
```

Explanation:

```
caccacaa
   caccacaa
```

The underlined characters indicate the ones that match when shift = 3.

Submit solution! (/submit/MAXMATCH/)