

## Problem M. String Problem

Input file:            `standard input`  
Output file:         `standard output`  
Time limit:          2 seconds  
Memory limit:       512 megabytes

JB hates solving string problems. Therefore, when his friend Potato gives him a string problem to solve, he immediately gives it to you and continues playing Genshin Impact, the greatest game in the world.

You are given a string and then for each nonempty prefix, you need to find the largest substring in lexicographical order and point out the leftmost occurrence of the largest substring.

### Input

The only line contains a string  $S$  ( $1 \leq |S| \leq 10^6$ ), which consists of lowercase Latin letters, **a** to **z**.

### Output

Output  $|S|$  lines, the  $i$ -th of which contains two integers  $l_i$  and  $r_i$ , indicating the leftmost occurrence of the largest substring in the prefix of length  $i$ .

### Examples

standard input	standard output
potato	1 1 1 2 3 3 3 4 3 5 5 6
pbpbppb	1 1 1 2 1 3 1 4 1 5 5 6 5 7