Problem J
Repeated Substrings

Given an input string composed solely of lowercase English letters, find the longest substring that occurs more than once in the input string. The two occurrences are allowed to partially overlap.

Input

The input is a single line containing a string of lowercase letters. The string contains more than one character, but no more than 10^5. At least one letter will appear at least twice.

Output

Print a single line of output: the longest substring that occurs more than once in the input string. If there are multiple longest repeated substrings, print the one the would come first when the longest substrings are sorted in lexicographical (alphabetical) order.

Sample Input 1

```
abcefgabc
```

Sample Output 1

```
abc
```

Sample Input 2

```
abcbabcba
```

Sample Output 2

```
abcba
```

Sample Input 3

```
aaaa
```

Sample Output 3

```
aaa
```

Sample Input 4

```
bbcaadbbeaa
```

Sample Output 4

```
aa
```