Repeating Substring

Given a string, S, of lowercase English letters (i.e.: $a-z$), find the lexicographically smallest substring of maximal length occuring at least K times in the given string.

Note: Two substrings may have some common part. For example, "aa" occurs twice in string "aaa" as the substrings of indices $(0,1)$ and $(1,2)$, so the two substrings overlap at index 1.

Input Format

The first line contains string S.
The second line contains an integer, K (the minimum number of occurrences for the substring in S).

Constraints

- $1 \le |S| \le 10^5$
- $1 \le K \le |S|$

Output Format

Print the longest substring appearing K or more times in S; if more than one substring meets this criterion, print the lexicographically smallest one. If no such substring exists, print **-1**.

Sample Input

```
abcabcxyzxyz
2
```

Sample Output

```
abc
```

Explanation

$S = $"abcabcxyzxyz", $K = 2$

The two substrings of maximal length occurring K or more times in S are "abc" and "xyz". When ordered lexicographically (alphabetically), "abc" is the smallest (first) substring. Thus, we print **abc**.