E. Ann and Half-Palindrome

time limit per test: 1.5 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Tomorrow Ann takes the hardest exam of programming where she should get an excellent mark.

On the last theoretical class the teacher introduced the notion of a *half-palindrome*.

String t is a *half-palindrome*, if for all the odd positions i () the following condition is held: $t_i = t_{|t| - i + 1}$, where $|t|$ is the length of string t if positions are indexed from 1. For example, strings "abaa", "a", "bb", "abbbaa" are half-palindromes and strings "ab", "bba" and "aaabaa" are not.

Ann knows that on the exam she will get string s, consisting only of letters a and b, and number k. To get an excellent mark she has to find the k-th in the lexicographical order string among all substrings of s that are half-palyndromes. Note that each substring in this order is considered as many times as many times it occurs in s.

The teachers guarantees that the given number k doesn't exceed the number of substrings of the given string that are half-palindromes.

Can you cope with this problem?

Input

The first line of the input contains string s ($1 \le |s| \le 5000$), consisting only of characters 'a' and 'b', where $|s|$ is the length of string s.

The second line contains a positive integer k — the lexicographical number of the requested string among all the half-palindrome substrings of the given string s. The strings are numbered starting from one.

It is guaranteed that number k doesn't exceed the number of substrings of the given string that are half-palindromes.

Output

Print a substring of the given string that is the k-th in the lexicographical order of all substrings of the given string that are half-palindromes.

Examples

input
abbabaab 7
output
abaa

input
aaaaa 10
output
aaa

input
bbaabb 13
output

```
bbaabb
```

Note

By definition, string $a = a_1 a_2 \ldots a_n$ is lexicographically less than string $b = b_1 b_2 \ldots b_m$, if either a is a prefix of b and doesn't coincide with b, or there exists such i, that $a_1 = b_1, a_2 = b_2, \ldots a_{i-1} = b_{i-1}, a_i < b_i$.

In the first sample half-palindrome substrings are the following strings — `a`, `a`, `a`, `a`, `aa`, `aba`, `abaa`, `abba`, `abbabaa`, `b`, `b`, `b`, `b`, `baab`, `bab`, `bb`, `bbab`, `bbabaab` (the list is given in the lexicographical order).