Problem G. Lexicographically Minimal Subsequence

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

Your are given a string s and an integer k. Find the lexicographically minimal subsequence of s which length is k.

Input

The first line contains a string s ($1 \le |s| \le 10^6$). It consists of lowercase Latin letters.

The second line contains an integer k ($1 \le k \le |s|$) — the length of the resulting subsequence.

Output

Output the lexicographically minimal subsequence of s which length is k.

Example

standard input	standard output
bcaabac 4	aaac

Note

String $s_{p_1}s_{p_2}\ldots s_{p_k}(1 \le p_1 < p_2 < \cdots < p_k \le |s|)$ is called a *subsequence* of string s.

String $x = x_1x_2\ldots x_k$ is *lexicographically less* than string $y = y_1y_2\ldots y_k$, if there exists such number i ($1 \le i \le k$), that $x_1 = y_1, x_2 = y_2, \ldots, x_{i-1} = y_{i-1}$ and $x_i < y_i$. Characters in strings are compared as their ASCII codes.