

Merge the Tools! ★

40/115 challenges solved

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Consider the following:

- A string, s , of length n where $s = c_0c_1 \dots c_{n-1}$.
- An integer, k , where k is a factor of n .

We can split s into $\frac{n}{k}$ substrings where each subtring, t_i , consists of a contiguous block of k characters in s . Then, use each t_i to create string u_i such that:

- The characters in u_i are a subsequence of the characters in t_i .
- Any repeat occurrence of a character is removed from the string such that each character in u_i occurs exactly once. In other words, if the character at some index j in t_i occurs at a previous index $< j$ in t_i , then do not include the character in string u_i .

Given s and k , print $\frac{n}{k}$ lines where each line i denotes string u_i .

Example

$s = \text{'AAABCADDE'}$

$k = 3$

There are three substrings of length 3 to consider: 'AAA', 'BCA' and 'DDE'. The first substring is all 'A' characters, so $u_1 = \text{'A'}$. The second substring has all distinct characters, so $u_2 = \text{'BCA'}$. The third substring has 2 different characters, so $u_3 = \text{'DE'}$. Note that a subsequence maintains the original order of characters encountered. The order of characters in each subsequence shown is important.

Function Description

Complete the merge_the_tools function in the editor below.

merge_the_tools has the following parameters:

- string s: the string to analyze
- int k: the size of substrings to analyze

Prints

Print each subsequence on a new line. There will be $\frac{n}{k}$ of them. No return value is expected.

Input Format

The first line contains a single string, s .
The second line contains an integer, k , the length of each substring.

Constraints

- $1 \leq n \leq 10^4$, where n is the length of s
- $1 \leq k \leq n$
- It is guaranteed that n is a multiple of k .

Sample Input

STDIN	Function
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AABCAAADA	s = 'AABCAAADA'
3	k = 3

Sample Output

AB
CA
AD

Explanation

Split s into $\frac{n}{k} = \frac{9}{3} = 3$ equal parts of length $k = 3$. Convert each t_i to u_i by removing any subsequent occurrences of non-distinct characters in t_i :

- $t_0 = \text{"AAB"} \rightarrow u_0 = \text{"AB"}$
- $t_1 = \text{"CAA"} \rightarrow u_1 = \text{"CA"}$
- $t_2 = \text{"ADA"} \rightarrow u_2 = \text{"AD"}$

Print each u_i on a new line.