

### E. Text Editor

time limit per test: 1 second  
memory limit per test: 512 megabytes

One of the most useful tools nowadays are text editors, their use is so important that the Unique Natural Advanced Language (UNAL) organization has studied many of the benefits working with them.

They are interested specifically in the feature "find", that option looks when a pattern occurs in a text, furthermore, it counts the number of times the pattern occurs in a text. The tool is so well designed that while writing each character of the pattern it updates the number of times that the corresponding prefix of the total pattern appears on the text.

Now the UNAL is working with the editor, finding patterns in some texts, however, they realize that many of the patterns appear just very few times in the corresponding texts, as they really want to see more number of appearances of the patterns in the texts, they put a lower bound on the minimum number of times the pattern should be found in the text and use only prefixes of the original pattern. On the other hand, the UNAL is very picky about language, so they will just use the largest non-empty prefix of the original pattern that fit into the bound.

#### Input

The first line contains the text  $A$  ( $1 \leq |A| \leq 10^5$ ) The second line contains the original pattern  $B$  ( $1 \leq |B| \leq |A|$ ) The third line contains an integer  $n$  ( $1 \leq n \leq |A|$ ) - the minimum number of times a pattern should be found on the text.

#### Output

A single line, with the prefix of the original pattern used by the UNAL, if there is no such prefix then print "IMPOSSIBLE" (without the quotes)

#### Examples

<b>input</b>	Copy
aaaaa aaa 4	
<b>output</b>	Copy
aa	

<b>input</b>	Copy
programming unal 1	
<b>output</b>	Copy
IMPOSSIBLE	

<b>input</b>	Copy
abracadabra abra 1	
<b>output</b>	Copy
abra	

<b>input</b>	Copy
Hello World! H W 5	
<b>output</b>	Copy
IMPOSSIBLE	

### 2017 ACM-ICPC, Universidad Nacional de Colombia Programming Contest

Finished

Practice



#### About Contest



Eliminatory contest of the teams from the Universidad Nacional de Colombia for ACM-ICPC official contests

#### Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

#### Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

#### Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

#### Last submissions

Submission	Time	Verdict
<a href="#">281034498</a>	Sep/13/2024 22:27	Accepted
<a href="#">280379644</a>	Sep/09/2024 01:53	Accepted
<a href="#">280379374</a>	Sep/09/2024 01:45	Wrong answer on test 5