

The Translation Machine

Difficulty: Miderm Expect Time: 20min Homework

Here is a translation machine. You are given the possible translations of letters table and a list of word pairs of original and deciphered words. Your task is to verify whether the words in each pair match. Two words match if they have the same length and if each letter of the first word can be translated into the corresponding letter of the second word by using the translation table.

translations of letters	
c	t
i	r
k	p
o	c
r	o
t	e
t	f
u	h
w	p

word pair to check	
we	we
can	the
work	people
it	of
out	the

Next, take these two tables as examples to show what should be output.

- (we ,we)
Because the word "we" is equal to "we", output "**yes**".
- (can, the)
'c' can become 't' after one translation.
'a' and 'n' cannot be translated, so "can" cannot become "the" after multiple translations, output "**no**".
- (work, people)
The length of the two words is different, output "**no**".
- (it, of)
'i' can be translated into 'r', 'r' can be translated into 'o'.
't' can be translated into 'e' or 'f'.
Therefore, "it" can be translated into "of", output "**yes**".
- (out, the)
Similar to the previous case:
'o' → 'c' → 't'
'u' → 'h'
't' → 'e' or 'f'
Therefore, "out" can be translated into "the", output "**yes**".

Please note that each letter can be translated multiple times, and one letter may correspond to multiple letters.

Input

1. The input contains several test cases, read from STDIN.
2. The Online Judge will replace the following files:
 - a) [main.cpp](#)
3. The following files are part of the test case of Online Judge. You can input the contents of this file via **STDIN** as a test case
 - a) [in001.txt](#)
 - b) [in002.txt](#)
4. Input range
 - A. The first line of input contains two integers **m**, **n**
 - a) m ($1 \leq m \leq 500$) is the number of translations of letters.
 - b) n ($1 \leq n \leq 50$) is the number of word pairs.
 - B. Each of the next **m** lines contains two distinct space-separated letters **α** and **β** , indicating that letter **α** can be translated into letter **β** .
Each ordered pair of letters (**α** , **β**) appears at most once.
 - C. Following next **n** lines, each line containing a **word pair**. Each word consists of at least 1 and at most 50 letters.
 - D. After inputting **m** lines of translation and **n** lines of word pairs, the test cases follow.
5. When either **m** or **n** is out of the input definition range, exit the program.

Output

1. For each pair of words, if the two words match after translation, output “**yes**”, otherwise output “**no**”.
2. Each output is shown in one line.
3. The sample output and input files are shown as follow:
 - a) [out001.txt](#) corresponds to [in001.txt](#)
 - b) [out002.txt](#) corresponds to [in002.txt](#)