THE NAME OF THE COMPETITION
Details about the competition
Locality, day – day Month, year
Group C

Task C1. HIDDEN WORDS

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Elly has a rectangular table of characters with N rows and M columns. Kris told her, that she has "hidden" there some of K given words. A string S is considered hidden in the table if there is a sequence of |S| *neighboring* characters cells, the symbols in which form the string. Here |S| denotes the length of the string. Two cells are considered neighboring if they share a side, i.e. they are next to each other either horizontally or vertically. A cell can be used more than once when hiding a string. See the example for clarification.

To help Elly you decide to write a program **`hidden`** that finds which words are hidden in the table and which are not.

Input

On the first line of the standard input will be given the two integers N and M – the dimensions of the table. N lines follow, each containing M characters of the English alphabet ('a'-'z'). The next line gives the integer K – how many words has Kris given to Elly. K lines follow, containing the strings W_1, W_2, …, W_K.

Output

For each of the K strings given by Kriss print a line with a single word: "Yes", if it is hidden in the table or "No" otherwise.

Constraints

- $1 \leq \mathbf{N}, \mathbf{M}, \mathbf{K}, |\mathbf{W_i}| \leq 50$
- In 50% of the test cases the table will be randomly generated.

Example

Input	Output
5 6 glmnta csoikf dgotzf hcnats oemcpw 7 nato god meh cat catod gg stanchoemnogogotin	Yes No No Yes No No Yes

Explanation of the example

Note that "gg" is *not* considered hidden in the table, because it cannot be formed by neighboring cells.