

## C. Watto and Mechanism

time limit per test: 3 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Watto, the owner of a spare parts store, has recently got an order for the mechanism that can process strings in a certain way. Initially the memory of the mechanism is filled with  $n$  strings. Then the mechanism should be able to process queries of the following type: "Given string  $s$ , determine if the memory of the mechanism contains string  $t$  that consists of the same number of characters as  $s$  and differs from  $s$  in exactly one position".

Watto has already compiled the mechanism, all that's left is to write a program for it and check it on the data consisting of  $n$  initial lines and  $m$  queries. He decided to entrust this job to you.

### Input

The first line contains two non-negative numbers  $n$  and  $m$  ( $0 \leq n \leq 3 \cdot 10^5$ ,  $0 \leq m \leq 3 \cdot 10^5$ ) — the number of the initial strings and the number of queries, respectively.

Next follow  $n$  non-empty strings that are uploaded to the memory of the mechanism.

Next follow  $m$  non-empty strings that are the queries to the mechanism.

The total length of lines in the input doesn't exceed  $6 \cdot 10^5$ . Each line consists **only** of letters 'a', 'b', 'c'.

### Output

For each query print on a single line "YES" (without the quotes), if the memory of the mechanism contains the required string, otherwise print "NO" (without the quotes).

### Examples

input
2 3 aaaaa acacaca aabaa ccacacc caaac
output
YES NO NO