

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