Problem A. Qualifiers Ranking Rules

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	128 megabytes

The following is the current ranking rules for the ICPC Asia EC Online Qualifiers, and there will be two online contests.

1. In each contest, only the rank of the top-ranked team from each university will be taken as the score of that university;

2. In each contest, participating universities will be ranked according to their scores;

3. The two rankings of universities are combined using the merge sorting method. For any two universities that obtain the same ranking in different contests, the university that received this ranking in the first contest will be ranked first.

4. Delete duplicate universities and obtain the final ranking of all participating universities (only the highest rankings for each university are retained).

Now assuming that there are n teams in the first contest and m teams in the second contest.

For each contest, given the ranking of each team and the university to which it belongs, please output the final ranking of all participating universities according to the above rules.

You can better understand this process through the sample.

Input

The first line contains two integers n, m $(1 \leq n, m \leq 10^4)$, representing the number of teams participating in the first contest and the second contest.

Then following n lines, the i-th line contains a string s_i $(1 \leq |s_i| \leq 10)$ only consisting of uppercase letters, representing the abbreviation of the university to which the i-th ranked team in the first contest belongs.

Then following m lines, the i-th line contains a string t_i $(1 \leq |t_i| \leq 10)$ only consisting of uppercase letters, representing the abbreviation of the university to which the i-th ranked team in the second contest belongs.

It's guaranteed that each university has only one abbreviation.

Output

Output several lines, the i-th line contains a string, representing the abbreviation of the i-th ranked university in the final ranking.

You should ensure that the abbreviation of any participating universities appears exactly once.

Example

standard input	standard output
14 10 THU THU THU THU XDU THU ZJU THU ZJU THU NJU WHU THU HEU PKU THU PKU PKU ZJU NUPT THU NJU CSU ZJU	THU PKU XDU ZJU NJU NUPT WHU HEU CSU

Note

Sample is part of the results in 2022 ICPC Asia EC Online Contest.

In the first contest, the ranking of the universities is:

THU

XDU

ZJU

NJU

WHU

HEU

In the second contest, the ranking of the universities is:

PKU

THU

ZJU

NUPT

NJU

CSU

By combining these two rankings according to the rules, the rankings of the universities is:

THU
PKU
XDU
THU
ZJU
ZJU
NJU
NUPT
WHU
NJU
HEU
CSU

By deleting duplicate universities we will get the final ranking.