Problem N
Wordle with Friends



Zoe and her friends enjoy playing Wordle[2] together and have decided to work cooperatively to solve the daily puzzle.

Wordle is a game where players get six attempts to guess a hidden 5-letter word. With each word guessed, the system will mark each letter with one of three feedback colors:

1. `Green` - this letter is in the word and occurs at this location.
2. `Yellow` - this letter is in the word, but not at this location.
3. `Gray` - this letter is not in the hidden word (with an exception for duplicate letters, see below).

Note that duplicate letters can be a little tricky. First, `Green` letters are marked. For a single letter, suppose there are X non-`Green` occurrences in the hidden word and Y non-`Green` occurrences in the guess. The *leftmost* $\min(X, Y)$ of the non-`Green` occurrences of this letter will be marked `Yellow` and the rest will be `Gray`.

For example, if the hidden word was `FREED` and a guessed word was `GEESE`, the feedback would show the second `E` (the third letter) in `Green`, and the first and third `E`s (second and fifth letters of `GEESE`) respectively in `Yellow` and `Gray`.

Knowing the list of all guessable words, help Zoe determine which words are still valid given their original guesses.

Input

The first line of input contains two integers N ($1 \leq N \leq 10$), which is the number of guesses Zoe and her friends have made, and W ($1 \leq W \leq 10^4$), which is the number of guessable words.

The next N lines describe the guesses. Each line contains two 5-letter strings g and f. The first string, g, is the guess which consists only of uppercase English letters and is in the list of guessable words. The second string, f, is the feedback. The feedback is composed of the characters `G`, `Y`, and `-`, respectively indicating `Green`, `Yellow`, and `Gray` for the guess.

The last W lines describe the list of distinct guessable words. Each line contains a 5-letter string of uppercase English letters.

[2] Wordle was created by Josh Wardle, and is now owned by the New York Times.

Output

Display all valid words, in the order they appear, from the guessable list of words. There will always be at least one valid word.

Sample Input 1

```
2 5
BERRY -G---
APPLE ---YY
MELON
BERRY
LEMON
LIMES
APPLE
```

Sample Output 1

```
MELON
LEMON
```

Sample Input 2

```
3 5
BERRY -G---
APPLE ---YY
LIMES G-GY-
APPLE
BERRY
LEMON
LIMES
MELON
```

Sample Output 2

```
LEMON
```

Sample Input 3

```
3 5
BLANK --Y--
SIGHS ----G
STORM YGG-Y
ATOMS
BLANK
MOATS
SIGHS
STORM
```

Sample Output 3

```
ATOMS
```

Sample Input 4	Sample Output 4
4 5 FRUIT -G--Y NUTTY --Y-- ROOTS Y--YG SEEDS -YG-G FRUIT NUTTY ROOTS SEEDS TREES	TREES

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