

# Irritating accountants

## Problem ID: irritatingaccountants

You are shopping on behalf of a company for a big upcoming event and the pesky accountants ask you to sort the items you buy according to their own rigid standards. Why you ask? Nobody knows except for the accountants.

### Input

The first line of input contains two space-separated integers  $1 \leq n \leq 10^5$  and  $1 \leq k \leq 10^5$ , indicating how many items you have bought and how many categories the accountants operate with respectively. On the second line follows  $n$  space-separated strings  $t_1, t_2, \dots, t_n$ , the names of the items you have bought. Some items may have been bought multiple times. On the third line follows  $c$  space-separated distinct strings  $c_1, c_2, \dots, c_k$ , the names of the categories in the order that the accountants require your items to be sorted.

Next follows  $k$  lines, one describing each category. The  $i^{\text{th}}$  such line begins with a string  $s_i$ , the name of the category it describes. It is followed by a positive integer  $m_i$  and then  $m_i$  space-separated distinct strings  $t_1^i, t_2^i, \dots, t_{m_i}^i$ , the items that belong to category  $s_i$ .

All strings in the input consists of between 1 and 10 characters from the English alphabet ([A-Za-z]). It is guaranteed that each item you bought belongs to exactly one category, and that  $c_1, c_2, \dots, c_k$  is a permutation of  $m_1, m_2, \dots, m_k$ . It also holds that  $\sum_{i=1}^k m_i \leq 10^5$ .

### Output

On a single line, output  $n$  strings representing the items you bought in sorted order according to the accountants. If there are multiple ways of sorting the items according to the requirements, output any of them.

#### Sample Input 1

```
6 3
Bucket Milk Milk Cheese Rose Drill
Groceries Flowers Hardware
Hardware 3 Bucket Drill Nail
Groceries 2 Milk Cheese
Flowers 2 Rose Tulip
```

#### Sample Output 1

```
Milk Milk Cheese Rose Drill Bucket
```



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