

# Matarinnkaup

## Problem ID: matarinnkaup

A lot of food and drinks were sold at Nauthóll over the last few days. Now it is time to take inventory and figure out necessary purchases. This job falls to you. Given the recipes used at Nauthóll and all receipts from the past few days, how much was used of each ingredient?



### Input

The first line of the input contains two integers  $1 \leq u, k \leq 10\,000$  where  $u$  is the number of recipes and  $k$  is the number of receipts. Next there will be  $u$  descriptions of recipes. The first line of each description contains a string giving the name of the dish. Dish names are unique. The next line contains a single integer  $1 \leq h \leq 10\,000$ , the number of ingredients that the recipe calls for.

Finally there are  $h$  lines, each containing the name of an ingredient and then an integer  $1 \leq x \leq 500$ . This means there are  $x$  instances of the ingredient in the dish. Then there will be  $k$  descriptions of receipts. Each starts with an integer  $1 \leq n \leq 10\,000$ , the number of dishes on the receipt. Then follow  $n$  lines, each of them containing the name of a dish and an integer  $1 \leq y \leq 500$ . This means that  $y$  instances of the dish were purchased. The names of the dishes will always have appeared in the input above. Each name in the input is at most 20 characters and contains only lower case English letters and underscores. The total number of names in the input will be at most 100 000.

### Output

Print how much is needed of every ingredient, one ingredient per line. On each line the name of the ingredient, a space and an integer denoting how much is needed should be printed. The ingredients should be printed in alphabetical order. Underscores are considered to go before all the letters in this order. If an ingredient isn't needed, it shouldn't be printed.

### Scoring

Group	Points	Constraints
1	50	There are at most 500 names in the input.
2	50	No further constraints.

#### Sample Input 1

```
2 2
hamborgaramaltid
4
buff 1
braud 2
franskar 100
salat 1
hamborgari
2
buff 1
braud 2
1
hamborgaramaltid 4
1
hamborgari 2
```

#### Sample Output 1

```
braud 12
buff 6
franskar 400
salat 4
```