

Tasks and Bugs

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

Nikolai, a responsible head of the development department, wants to complete tasks as quickly as possible, but without any bugs. To achieve this, he keeps tasks and bugs in the Jira tracking system. The identifiers for tasks and bugs are represented in the format **CS-*X*** where *X* is a number containing from 1 to 5 decimal digits. To expedite task finalization, Nikolai needs to understand how many unresolved bugs are associated with each task.

Using a special filter in the tracking system, he compiles a list of unresolved bugs, and for each bug a non-empty list of tasks linked to this bug. Nikolai runs the filter and obtains a list of unresolved bugs and their associated tasks:

```
CS-20: CS-1
CS-100: CS-239
CS-300: CS-239, CS-11111
```

Bug **CS-20** is linked to task **CS-1**, bug **CS-100** is linked to task **CS-239**, and bug **CS-300** is linked to both tasks **CS-239** and **CS-11111**. The bugs, as well as the tasks associated with each bug, are listed in ascending **numerical** order of identifiers (identifiers are sorted as numbers). Bug identifiers are different from task identifiers.

Now, Nikolai regroups the tasks and bugs by sorting them in numerical order. After the reorganization, the result looks as follows:

```
CS-1: CS-20
CS-239: CS-100, CS-300
CS-11111: CS-300
```

Task **CS-1** is linked to bug **CS-20**, task **CS-239** is linked to bugs **CS-100** and **CS-300**, and task **CS-11111** is linked to bug **CS-300**. Tasks, as well as the bugs associated with each task, are listed in ascending **numerical** order of identifiers (identifiers are sorted as numbers).

However, Nikolai doesn't want to spend time doing this reorganization. Write a program that will do it for him.

Input

The input consists of one or more lines. Each line contains a name of a bug and a list of tasks associated with that bug. The bug is separated from tasks by a colon and a space. Every two tasks in the list are separated from each other by a comma and a space.

Bugs, as well as the tasks associated with each bug, are listed in ascending numerical identifier order.

The number of bugs ranges from 1 to 100, and the number of tasks for each bug ranges from 1 to 10.

Output

Print one or more lines: for each task, list the bugs associated with it. Follow the same format and use the same order as in the input.

Example

<i>standard input</i>	<i>standard output</i>
CS-20: CS-1	CS-1: CS-20
CS-100: CS-239	CS-239: CS-100, CS-300
CS-300: CS-239, CS-11111	CS-11111: CS-300