## User Logs

Marian is a famous system administrator. The person to overcome the security of his servers has not yet been born. However, there is a new type of threat where users flood the server with messages and are hard to be detected since they change their IP address all the time. Well, Marian is a system administrator and is not so into programming. Therefore, he needs a skillful programmer to track the user logs of his servers. You are the chosen one to help him!

You are given an input in the format:

* **IP=(IP.Address) message=(A&sample&message) user=(username)**

Your task is to parse the IP and the username from the input and for **every user**, you have to display **every IP** from which the corresponding user has sent a message and the **count of the messages** sent with the corresponding IP. In the output, the usernames must be **sorted alphabetically** while their IP addresses should be displayed in the **order of their first appearance.** The output should be in the following format:

|  |
| --- |
| **username:**  **IP => count, IP => count.** |

For example, given the following input:

**IP=192.23.30.40 message='Hello&derps.' user=destroyer**

//IP=FE80:0000:0000:0000:0202:B3FF:FE1E:8329 message='Hey&son' user=mother

You will have to get theusername **destroyer** and the IP **192.23.30.40** and display it in the following format:

|  |
| --- |
| **destroyer:**  **192.23.30.40 => 1.** |

The username **destroyer** has sent a message from IP **192.23.30.40** once.

Check the examples below. They will further clarify the assignment.

### Input

The input comes from the console as **varying number** of lines. You have to parse every command until the command that follows is **end.** The input will be in the format displayed above, there is no need to check it explicitly.

### Output

For every user found, you have to display each log in the format:

**username:**

**IP => count, IP => count…**

The IP addresses must be split with a comma, and each line of IP addresses must end with a dot.

### Constraints

* The number of commands will be in the range **[1..50]**
* The IP addresses will be in the format of either **IPv4** or **IPv6.**

(**An IPv4** address has the following format: x . x . x . x where x is called an octet and must be a decimal value between 0 and 255.)

(A**n IPv6** (Normal) address has the following format: y : y : y : y : y : y : y : y where y is called a segment and can be any hexadecimal value between 0 and FFFF.)

* The messages will be in the format: This&is&a&message
* The username will be a string with length in the range **[3..50]**
* Time limit: 0.3 sec. Memory limit: 16 MB.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| IP=192.23.30.40 message='Hello&derps.' user=destroyer  IP=192.23.30.41 message='Hello&yall.' user=destroyer  IP=192.23.30.40 message='Hello&hi.' user=destroyer  IP=192.23.30.42 message='Hello&Dudes.' user=destroyer  end | destroyer:  192.23.30.40 => 2, 192.23.30.41 => 1, 192.23.30.42 => 1. |
| IP=FE80:0000:0000:0000:0202:B3FF:FE1E:8329 message='Hey&son' user=mother  IP=192.23.33.40 message='Hi&mom!' user=child0  IP=192.23.30.40 message='Hi&from&me&too' user=child1  IP=192.23.30.42 message='spam' user=destroyer  IP=192.23.30.42 message='spam' user=destroyer  IP=192.23.50.40 message='' user=yetAnotherUsername  IP=192.23.50.40 message='comment' user=yetAnotherUsername  IP=192.23.155.40 message='Hello.' user=unknown  end | child0:  192.23.33.40 => 1.  child1:  192.23.30.40 => 1.  destroyer:  192.23.30.42 => 2.  mother:  FE80:0000:0000:0000:0202:B3FF:FE1E:8329 => 1.  unknown:  192.23.155.40 => 1.  yetAnotherUsername:  192.23.50.40 => 2. |