# Problem 4 – Orders

You are given a sequence of **n** orders in format **<customer> <amount> <product>**. Example:

* steve 8 apples
* maria 3 bananas
* kiro 3 bananas
* kiro 9 apples
* maria 2 apples
* steve 4 apples
* kiro 1 bananas
* kiro 1 apples

Write a program that prints **all products** in the **order of their first appearance**. For each product print the customers and their aggregated ordered amounts. Order the customers by name alphabetically. Print the result in the following format: **<product>: <customer> <amount>, <customer> <amount>, …** For the orders above the output should be:

* apples: kiro 10, maria 2, steve 12
* bananas: kiro 4, maria 3

### Input

The input comes from the console. At the first line the number **n** stays alone. At the next **n** lines, we have **n** orders in format **<customer> <amount> <product>**.

The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

Print **one line for each product**. Product lines should be ordered in the same way in which the products first appear in the input. For each product print the **customers** ordered this product in **alphabetical order**, along with the total ordered amount for each customer in format **<product>: <customer> <amount>, <customer> <amount>, …**

### Constraints

* The **count** of the order lines **n** will be in the range [1…100].
* The **<customer>** and **<product>** will consist of only of **Latin characters**, with length of [1…20].
* The **<amount>** will be integer number in the range [1…100].
* Time limit: 0.3 sec. Memory limit: 16 MB.

### Examples

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |
| 8  steve 8 apples  maria 3 bananas  kiro 3 bananas  kiro 9 apples  maria 2 apples  steve 4 apples  kiro 1 bananas  kiro 1 apples | apples: kiro 10, maria 2, steve 12  bananas: kiro 4, maria 3 | 7  bob 3 whiskeys kiro 1 beers  mimi 2 beers  alex 4 beers  alex 1 beers  kiro 1 vodkas  bob 10 beers | whiskeys: bob 3  beers: alex 5, bob 10, kiro 1, mimi 2  vodkas: kiro 1 |