# Problem 4 – Tech Shop

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

* Pesho: laptop - 1000

Write a program that prints **all products** in the **order of their first appearance**. For each product print the customers and their aggregated prices. Order the customers by name alphabetically. Print the result in the following format: **<product>: <customer> <price>, <customer> <price>, …**

### 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> <price> <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> <price>, <customer> <price>, …**

### Constraints

* The **count** of the order lines **n** will be in the range [1…100000].
* The **<customer>** and **<product>** will consist of only of **Latin characters**, with length of [1…200].
* The **<price>** will be integer number in the range [1…1000000000].
* Time limit: 0.3 sec. Memory limit: 16 MB.

### Examples

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| **Input** | **Output** |
| 3  Pesho 1000 laptop  Mariq 800 laptop  Pesho 1300 laptop | laptop: Mariq 800, Pesho 2300 |

|  |  |
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| **Input** | **Output** |
| 8  Pesho 1000 laptop  Mariq 800 camera  Pesho 1300 laptop  Grigor 3800 camera  Mariq 6000 laptop  Mariq 2800 camera  Pesho 2000 camera  Pesho 4000 camera | laptop: Mariq 6000, Pesho 2300  camera: Grigor 3800, Mariq 3600, Pesho 6000 |

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| **Input** | **Output** |
| 5  Pesho 1000 laptop  Mariq 800 camera  Pesho 1300 telephone  Grigor 3800 software  Mariq 6000 monitor | laptop: Pesho 1000  camera: Mariq 800  telephone: Pesho 1300  software: Grigor 3800  monitor: Mariq 6000 |