

Problem 4 – School system

Write a program that reads a **list of student grade entries** and prints the **average grade** of every **subject** for each student. For example, we are given the following entries:

```
Ivan Ivanov history 5
Ivan Ivanov math 3
Ivan Ivanov math 4
Peter Petrov physics 2
```

There are two students – **Ivan Ivanov** and **Peter Petrov**. Ivan has an average grade in history of **5.00** and in math of **3.50**. Peter has an average grade in physics of **2.00**. We print the students, sorted alphabetically by **fullname**. The **subjects** of each student should also be sorted alphabetically. The result is:

```
Ivan Ivanov: [history - 5.00, math - 3.50]
Peter Petrov: [physics - 2.00]
```

Input

The input comes from the console. At the first line a number **n** stays which says how many lines will follow. Each of the next **n** lines holds information in format:

<First name> <Last name> <subject> <score>

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

Output

Print on the console in a row for each student in the following format:

<First name> <Last name>: [<subject> - <average score>, <subject> - <average score>, ...]

The subjects of each student should be printed in alphabetical order. Students should be printed in alphabetical order of their **full name**. The average grade should be **rounded to the second decimal**.

Constraints

- The **count** of the entry lines **n** is in the range [1...1000].
- Time limit: 0.3 sec. Memory limit: 16 MB.

Examples

Input	Output
4 Ivan Ivanov history 5 Ivan Ivanov math 3 Ivan Ivanov math 4 Peter Petrov physics 2	Ivan Ivanov: [history - 5.00, math - 3.50] Peter Petrov: [physics - 2.00]