Problem 4 – Logs Aggregator

You are given a sequence of access logs in format **<IP> <user> <duration>**. For example:

- 192.168.0.11 peter 33
- 10.10.17.33 alex 12
- 10.10.17.35 peter 30
- 10.10.17.34 peter 120
- 10.10.17.34 peter 120
- 212.50.118.81 alex 46
- 212.50.118.81 alex 4

Write a program to aggregate the logs data and print **for each user** the **total duration** of his sessions and a **list of unique IP addresses** in format "**<user>: <duration> [<IP$_1$>, <IP$_2$>, …]**". Order the **users alphabetically**. Order the **IPs alphabetically**. In our example, the output should be the following:

- alex: 62 [10.10.17.33, 212.50.118.81]
- peter: 303 [10.10.17.34, 10.10.17.35, 192.168.0.11]

Input

The input comes from the console. At the first line a number **n** stays which says how many log lines will follow. Each of the next n lines holds a log information in format **<IP> <user> <duration>**. 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 user** (order users alphabetically). For each user print its sum of durations and all of his sessions' IPs, ordered alphabetically in format **<user>: <duration> [<IP$_1$>, <IP$_2$>, …]**. Remove any duplicated values in the IP addresses and order them alphabetically (like we order strings).

Constraints

- The **count** of the order lines **n** is in the range [1…1000].
- The **<IP>** is a standard IP address in format **a.b.c.d** where **a**, **b**, **c** and **d** are integers in the range [0…255].
- The **<user>** consists of only of **Latin characters**, with length of [1…20].
- The **<duration>** is an integer number in the range [1…1000].
- Time limit: 0.3 sec. Memory limit: 16 MB.

Examples

Input	Output
7 192.168.0.11 peter 33 10.10.17.33 alex 12 10.10.17.35 peter 30 10.10.17.34 peter 120 10.10.17.34 peter 120 212.50.118.81 alex 46 212.50.118.81 alex 4	alex: 62 [10.10.17.33, 212.50.118.81] peter: 303 [10.10.17.34, 10.10.17.35, 192.168.0.11]
2 84.238.140.178 nakov 25 84.238.140.178 nakov 35	nakov: 60 [84.238.140.178]