Problem 4 – Сръбско Unleashed

Admit it – the СРЪБСКО is your favorite sort of music. You never miss a concert and you have become quite the geek concerning everything involved with СРЪБСКО. You can't decide between all the singers you know who your favorite one is. One way to find out is to keep a statistics of how much money their concerts make. Write a program that does all the boring calculations for you.

On each input line you'll be given data in format: **"singer @venue ticketsPrice ticketsCount"**. There will be **no redundant whitespaces anywhere** in the input. Aggregate the data **by venue and by singer**. For each venue, print the singer and the total amount of money his/her concerts have made on a separate line. **Venues** should be kept in the **same order** they were entered, the **singers** should be **sorted by how much money** they have made in **descending order**. If two singers have made the same amount of money, keep them **in the order** in which **they were entered.**

Keep in mind that if a line is in incorrect format, it should be skipped and its data should not be added to the output. Each of the four tokens must be separated by **a space**, everything else is invalid. The venue should be denoted with **@** in front of it, such as @Sunny Beach

SKIP THOSE: Ceca@Belgrade125 12378, Ceca @Belgrade12312 123

The singer and town name may consist of one to three words.

Input

- The input data should be read from the console.
- It consists of a variable number of lines and ends when the command "**End**" is received.
- The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

- The output should be printed on the console.
- Print the aggregated data for each venue and singer in the format shown below.
- Format for singer lines is **#{2*space}{singer}{space}->{space}{total money}**

Constraints

- The **number of input lines** will be in the range [2 … 50].
- The **ticket price** will be an integer in the range [0 … 200].
- The **ticket count** will be an integer in the range [0 … 100 000]
- **Singers** and **venues** are case sensitive
- Allowed working time for your program: 0.1 seconds. Allowed memory: 16 MB.

Examples

Input	Output
Lepa Brena @Sunny Beach 25 3500 Dragana @Sunny Beach 23 3500 Ceca @Sunny Beach 28 3500 Mile Kitic @Sunny Beach 21 3500 Ceca @Sunny Beach 35 3500 Ceca @Sunny Beach 70 15000 Saban Saolic @Sunny Beach 120 35000 End	Sunny Beach # Saban Saolic -> 4200000 # Ceca -> 1270500 # Lepa Brena -> 87500 # Dragana -> 80500 # Mile Kitic -> 73500

Input	Output
Lepa Brena @Sunny Beach 25 3500 Dragana@Belgrade23 3500 Ceca @Sunny Beach 28 3500 Mile Kitic @Sunny Beach 21 3500	Sunny Beach # Saban Saolic -> 4200000 # Ceca -> 1148000 # Lepa Brena -> 87500

Ceca @Belgrade 35 3500 Ceca @Sunny Beach 70 15000 Saban Saolic @Sunny Beach 120 35000 End	# Mile Kitic -> 73500 Belgrade # Ceca -> 122500