Problem 4. Pokemon Evolution

You have been tasked to keep track of pokemons and their evolutions. A pokemon can evolve in several phases and types. When it evolves, the pokemon has an evolution index, which indicates how much it has evolved.

You will receive input lines in the following format:
`{pokemonName} -> {evolutionType} -> {evolutionIndex}`

The **`pokemonName`** and **`evolutionType`** will be **strings**. The **`evolutionIndex`** will be an **integer**. Your task is to store every **pokemon** and his **evolutions**.
If you receive an existent **`pokemonName`**, you should **add** the **new evolution** to it.

A single **pokemon** may have **many evolutions** with the **same type** and the **same index**.

In some rare cases you may receive the following input:
`{pokemonName}`

When you receive only a **`pokemonName`**, you must **check if there is** such a **pokemon**, and if there is, you must print all of its **evolutions** by **order of input**.

The **input sequence ends** when you **receive** the command "**`wubbalubbadubdub`**".
Then you must print all pokemons and their evolutions. The pokemons must be printed by **order of input**. Each **pokemon's evolutions** must be **ordered** by **evolution index** in **descending order**.

Input

- The input will come in the form of lines in the format specified above.
- In some rare cases you may have only one element of the input – the **`pokemonName`**.
- The input sequence ends when you receive the command "**`wubbalubbadubdub`**".

Output

- **Pokemons** and their **evolutions** must be printed in the following format:

```
"# {pokemoName}
 {evolution1Type} <-> {evolution1Index}
 {evolution2Type} <-> {evolution2Index}
 …"
```

- If you have received a **`pokemonName`** and you are **printing its evolutions**, the order is – by **order of input**.
- If you have received the **ending command**, and you are printing the **pokemons' evolutions**, the order is – by **`evolutionIndex`** in **descending order**.

Constrains

- The **`pokemonName`** and **`evolutionType`** are strings which may contain any ASCII character (except '**`-`**', ' ', '**`>`**').
- The **`evolutionIndex`** will be an **integer** in **range [0, 1.000.000.000]**.
- There will be **NO invalid** input data.
- Allowed time / memory: **100ms / 16 MB**.

Examples

Input	Output

Ekans -> Hybrid -> 100
Nidoran -> Physical -> 150
Ekans -> Psychological -> 50
Jigglypuff -> Hybrid -> 1000
Jigglypuff -> Physical -> 2000
wubbalubbadubdub
	# Ekans
	Hybrid <-> 100
	Psychological <-> 50
	# Nidoran
	Physical <-> 150
	# Jigglypuff
	Physical <-> 2000
	Hybrid <-> 1000

Pikachu -> Hybrid -> 100
Meowth -> Physical -> 100
Pikachu -> Psychological -> 50
Meowth -> Physical -> 50
Pikachu -> Hybrid -> 150
Meowth
Pikachu
wubbalubbadubdub
	# Meowth
	Physical <-> 100
	Physical <-> 50
	# Pikachu
	Hybrid <-> 100
	Psychological <-> 50
	Hybrid <-> 150
	# Pikachu
	Hybrid <-> 150
	Hybrid <-> 100
	Psychological <-> 50
	# Meowth
	Physical <-> 100
	Physical <-> 50