# 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 |

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