

Problem 4. CODE: Phoenix Oscar Romeo November

The fire creatures are assembling in squads to fight The Evil Phoenix God. You have been tasked to determine which squad is the strongest, so it will be sent as The Vanguard.

You will begin receiving input lines containing information about fire creatures in the following format:

{creature} -> {squadMate}

The **creature** and the **squadMate** are **strings**. You should store every **creature**, and his **squad mates**. If the **creature** already **exists**, you should **add** the **new squad mate** to it.

- If there is **already** a **squad mate** with the **given name** in the **given creature's squad**, **IGNORE** that line of **input**.
- If the **given squad mate name** is the **same** as the **given creature**, **IGNORE** that line of **input**.

The **input sequence ends** when you receive the command **"Blaze it!"**.

When that happens you must **print** the **creatures ordered** in **descending** order by **count** of **squad mates**. Sounds simple right? But there is one little **DETAIL**.

If a particular **creature** has a **squadMate**, and that **squadMate** has that **creature** in his **squadMates**, you should **NOT** consider them as **part** of the **count** of **squad mates**.

Example:

Creature 1: **Mozilla** -> {Tony, Dony, Mony}

Creature 2: **Tony** -> {Mozilla, Franzilla, Godzilla}

Mozilla has **2 squad mates** in total, because **Tony** also has **Mozilla** in his **squad mates**.

Tony has **2 squad mates** in total, because **Mozilla** also has **Tony** in his **squad mates**.

Input

- As input you will receive several input lines containing information about the fire creatures.
- The input sequence ends when you receive the command **"Blaze it!"**.

Output

- As output you must print each of the creatures the following information:
 - **{creature} : {countOfSquadMates}**
- As it was stated above, mind the **count** of **squad mates**. If **2 creatures** have themselves in their **squad mates**, they should **NOT** be **counted**.

Constraints

- The **creature** and the **squadMate** will be **strings** which may contain **any ASCII character**.
- There will be **NO invalid** input lines.
- Allowed time / memory: **100ms / 16MB**.

Examples

Input	Output
Mozilla -> Tony Tony -> Godzilla Mozilla -> Dony Tony -> Franzilla Mozilla -> Mony Tony -> Mozilla Blaze it!	Mozilla : 2 Tony : 2
FireBird -> FireMane Phoenix -> FireVoid FireVoid -> FireMane FireSnow -> FireMane Phoenix -> FireBird FireMane -> FireBird FireMane -> FireVoid Phoenix -> FireSnow FireMane -> FireSnow FireMane -> FireMane Phoenix -> FireMane Phoenix -> FireVoid Blaze it!	Phoenix : 4 FireBird : 0 FireVoid : 0 FireSnow : 0 FireMane : 0