# Problem 4 – Lora’s fan club

Lora is Orgolt’s Final Revenge bass player. She is the hottie of the band, she’s just so cute! So she has quite a lot of boys hitting on her and she needs your help to figure out who she should give a chance to.

You will receive input lines in one of the following formats:

* {name} {trait} {traitValue}
* {name} does Gyubek!

The **n**ame **and trait** are a one-word strings. The **trait value** is an integer in the range [0; 100].

If you receive a **trait** for the same **boy** twice, you should replace the existing **trait value** only if the new one is greater.

The following **traits** are considered **negative** by Lora so their **value should become a negative integer**:

* Greedy
* Rude
* Dumb

The following traits are considered **positive** so their value should be multiplied by a multiplier:

* Kind => multiplier \*2
* Handsome => multiplier \*3
* Smart => multiplier \*5

If you receive the command "{name} does Gyubek!", Lora becomes really upset with this boy. If this boy already exists in our database all positive traits added so far are erased! If the boy doesn’t exist in the database yet, he won`t be affected if added later.

The input ends when you receive the command "Make a decision already!". You must **print all boys**, **ordered** by **the total sum of their traits’ values** in **descending order**, and then alphabetically.

The **traits** must be ordered by their value in **descending order**.

## Input

* The input consists of several input lines in the format specified above.
* The input ends when you receive the command "Make a decision already!".

## Output

* As an output you must print all the boys ordered in the way specified above.
* The format is:

# {boy’s name}: {total sum of traits values}

**!!! {trait} -> {trait value}**

## Constraints

* The **boy’s name profession and trait** will be strings, consisting of one word each.
* The **trait value** is an integer in the range [0; 100].
* There will be **no invalid input lines**.
* Allowed working **time** / **memory**: **100ms** / **16MB**.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Tony Handsome 40  Johnny Cool 23  Johnny does Gyubek!  Asen Kind 33  Ivan Greedy 1  Ivan Smart 5  Asen Greedy 20  Make a decision already! | # Tony: 120  !!! Handsome -> 120  # Asen: 46  !!! Kind -> 66  !!! Greedy -> -20  # Ivan: 24  !!! Smart -> 25  !!! Greedy -> -1  # Johnny: 0 |
| Pesho Cool 20  Gosho Rude 20  Kiro Kind 10  Stamat does Gyubek!  Stamat Big 20  Make a decision already! | # Kiro: 20  !!! Kind -> 20  # Pesho: 20  !!! Cool -> 20  # Stamat: 20  !!! Big -> 20  # Gosho: -20  !!! Rude -> -20 |