## \*ForceBook

*The force users are struggling to remember which side are the different forceUsers from, because they switch them too often. So you are tasked to create a web application to manage their profiles.*

You should store information for every **unique forceUser**, registered in the application.

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

{forceSide} | {forceUser}

{forceUser} -> {forceSide}

The forceUser and forceSide are strings, containing **any** character.

If you receive **forceSide | forceUser** you should **check if such forceUser already exists**, and **if not** - **add** him/her to the corresponding side.

If you receive a forceUser -> forceSide you should check if there is such **forceUser** already and if so, **change his/her side**. If there is no such **forceUser**, add him/her to the corresponding **forceSide**, treating the command **as new registered forceUser.**  
Then you should print on the console: "{forceUser} joins the {forceSide} side!"

You should end your program when you receive the command "Lumpawaroo". At that point you should print each force side, **ordered descending by forceUsers count, than ordered by name**. For each side print the **forceUsers**, **ordered by name**.

In case there are **no forceUsers in a side**, you **shouldn't print** the side information.

### Input / Constraints

* The input comes in the form of commands in one of the formats specified above
* The input ends when you receive the command "Lumpawaroo"

### Output

* As output for each forceSide, **ordered descending by forceUsers count**, **then by name**, you must print all the forceUsers, **ordered by name alphabetically**
* The output format is:

Side: {forceSide}, Members: {forceUsers.Count}

! {forceUser}

! {forceUser}

! {forceUser}

* In case there are **NO** forceUsers, don't print this side

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| Light | Gosho  Dark | Pesho  Lumpawaroo | Side: Dark, Members: 1  ! Pesho  Side: Light, Members: 1  ! Gosho | We register Gosho in the Light side and Pesho in the Dark side. After receiving "Lumpawaroo", we print both sides, ordered by membersCount and then by name. |
| Lighter | Royal  Darker | DCay  Ivan Ivanov -> Lighter  DCay -> Lighter  Lumpawaroo | Ivan Ivanov joins the Lighter side!  DCay joins the Lighter side!  Side: Lighter, Members: 3  ! DCay  ! Ivan Ivanov  ! Royal | Although Ivan Ivanov doesn't have profile, we **register** him and add him to the Lighter side.  We **remove DCay** from Darker side and add him to Lighter side.  We print only Lighter side, because Darker side **has no members.** |