# Problem 4 – RainAir

Before naming it RyanAir … Tony Ryan named it RainAir, because the day he named it, it was really rainy, and he liked rain. Anyways, you have been hired by Tony, to create a software which manipulates data about flights and customers. The future of RyanAir is in your hands.

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

* {customerName} {customerFlight1} {customerFlight2} {customerFlight3} ...
* {customerName} = {customer2Name}

The customerName is a string. The customerFlights are integers.

If you receive a customerName and customerFlights, you should add the customer and the flights to the customer.

If the customer already exists, just add the new flights to him.

If you receive a customerName and customer2Name, you should make the 1st customer’s flights equal to the 2nd customer’s flights.

The input ends when you receive the command “I believe I can fly!”. When that happens, you must print all customers, ordered by count of flights in descending order, and then by alphabetical order.

The flights must be ordered in ascending order.

## Input

* The input consists of several input lines in the format specified above.
* The input ends when you receive the command “I believe I can fly!”.

## Output

* As output you must print all the customers ordered in the way specified above.
* The format is: #{customerName} ::: {flight1}, {flight2}, {flight3}...

## Constraints

* There will be no invalid input lines.
* The customerName is a string which may contain any ASCII characters except ‘ ’ (space) and ‘=’.
* The customerFlight is an integer in range [0, 10000].
* There will be no non-existent customerNames in the commands that require customerNames.
* If all data ordering fails, you should order the data by order of input.
* Allowed working time / memory: 100ms / 16MB.

## Examples

|  |  |
| --- | --- |
| Input | Output |
| Donald 1549 4592 3945 111  Prakash 111 45  Gibbs 492 502  Isacc 204 544  I believe I can fly! | #Donald ::: 111, 1549, 3945, 4592  #Gibbs ::: 492, 502  #Isacc ::: 204, 544  #Prakash ::: 45, 111 |
| Prakash 111 134 2451 232  Sony 222  Prakash 555  Stamat 111  Stamat = Sony  I believe I can fly! | #Prakash ::: 111, 134, 232, 555, 2451  #Sony ::: 222  #Stamat ::: 222 |