

Lab: Tuples and Sets

Problems for in-class lab for the [Python Advanced Course @SoftUni](https://softuni.org/). Submit your solutions in the SoftUni judge system at <https://judge.softuni.bg/Contests/1832>

1. Count Same Values

Write a program that counts in a given list of float values and prints the number of occurrences of each value.

Examples

Input	Output
-2.5 4 3 -2.5 -5.5 4 3 3 -2.5 3	-2.5 - 3 times 4.0 - 2 times 3.0 - 4 times -5.5 - 1 times
2 4 4 5 5 2 3 3 4 4 3 3 4 3 5 3 2 5 4 3	2.0 - 3 times 4.0 - 6 times 5.0 - 4 times 3.0 - 7 times

2. Average Student Grades

Write a program, which reads a **name** of a student and his/her **grades** and **adds** them to the **student record**, then **prints** the student's **names** with their **grades** and their **average grade**.

The **order** in which we **print** the result does not matter.

Examples

Input	Output
7 Peter 5.20 Mark 5.50 Peter 3.20 Mark 2.50 Alex 2.00 Mark 3.46 Alex 3.00	Mark -> 5.50 2.50 3.46 (avg: 3.82) Peter -> 5.20 3.20 (avg: 4.20) Alex -> 2.00 3.00 (avg: 2.50)
4 Scott 4.50 Ted 3.00 Scott 5.00 Ted 3.66	Ted -> 3.00 3.66 (avg: 3.33) Scott -> 4.50 5.00 (avg: 4.75)
5 Lee 6.00 Lee 5.50 Lee 6.00 Peter 4.40 Kenny 3.30	Peter -> 4.40 (avg: 4.40) Lee -> 6.00 5.50 6.00 (avg: 5.83) Kenny -> 3.30 (avg: 3.30)

3. Record Unique Names

Write a program, which will take a list of **names** and print **only** the **unique** names in the list.

The **order** in which we **print** the result does not matter.

Examples

Input	Output	Input	Output	Input	Output
8 Lee Joey Lee Joe Alan Alan Peter Joey	Alan Joey Lee Joe Peter	7 Lyle Bruce Alice Easton Shawn Alice Shawn	Easton Lyle Alice Bruce Shawn	6 Adam Adam Adam Adam Adam Adam	Adam

4. Parking Lot

Write a program that:

- Records a **car number** for every car that enters the **parking lot**
- Removes a **car number** when the car leaves the **parking lot**

The input will be a string in the format: **[direction, carNumber]**. You will be receiving commands, until the **"END"** command is given.

Print the car numbers of the cars, which are still in the parking lot:

The **order** in which we **print** the result does not matter.

Examples

Input	Output
IN, CA2844AA IN, CA1234TA OUT, CA2844AA IN, CA9999TT IN, CA2866HI OUT, CA1234TA IN, CA2844AA OUT, CA2866HI IN, CA9876HH IN, CA2822UU END	CA2844AA CA9999TT CA2822UU CA9876HH
IN, CA2844AA IN, CA1234TA OUT, CA2844AA OUT, CA1234TA END	Parking Lot is Empty

Hints

- Car numbers are **unique**

- Before printing, **first check** if the set has any elements

5. SoftUni Party

There is a party in SoftUni. Many guests are invited and there are two types of them: **VIP** and **regular**. When a guest comes, check if he/she exists in any of the two reservation lists.

All reservation numbers will be with the length of **8 characters**.

All VIP numbers start with a **digit**.

First, you will be receiving the reservation numbers of the guests. You can also receive **2 possible commands**:

- **"PARTY"** – after this command you will begin receiving the reservation numbers of the people, who came to the party.
- **"END"** – the party is over, and you have to stop the program and print the appropriate output.

In the end, print the count of the guests who didn't come to the party and afterwards, print their reservation numbers. **The VIP guests must be first.**

Both the **VIP** and the **regular** guests must be **sorted** in **ascending** order.

Examples

Input	Output	Input	Output
7IK9Yo0h 9NoBUajQ Ce8vwPmE SVQXQCbc tSzE5t0p PARTY 9NoBUajQ Ce8vwPmE SVQXQCbc END	2 7IK9Yo0h tSzE5t0p	m8rfQBv1 fc1oZCE0 UgffRkOn 7ugX7bm0 9CQBGUeJ 2FQZT3uC dziNz78I mdSGyQCJ LjcVpmDL fPXNHpm1 HTTbwRmM B5yTkMQi 8N0FThqG xys2FYzn MDzcM9ZK PARTY 2FQZT3uC dziNz78I mdSGyQCJ LjcVpmDL fPXNHpm1 HTTbwRmM B5yTkMQi 8N0FThqG m8rfQBv1 fc1oZCE0 UgffRkOn 7ugX7bm0 9CQBGUeJ END	2 MDzcM9ZK xys2FYzn