# Lab: Tuples and Sets

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

## 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 |

## 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) |

## 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 |

## 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"** commandisgiven.

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

## 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 quests 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 | m8rfQBvl  fc1oZCE0  UgffRkOn  7ugX7bm0  9CQBGUeJ  2FQZT3uC  dziNz78I  mdSGyQCJ  LjcVpmDL  fPXNHpm1  HTTbwRmM  B5yTkMQi  8N0FThqG  xys2FYzn  MDzcM9ZK  PARTY  2FQZT3uC  dziNz78I  mdSGyQCJ  LjcVpmDL  fPXNHpm1  HTTbwRmM  B5yTkMQi  8N0FThqG  m8rfQBvl  fc1oZCE0  UgffRkOn  7ugX7bm0  9CQBGUeJ  END | 2  MDzcM9ZK  xys2FYzn |