# Lab: Dictionaries

Problems for exercises and homework for the [“Programming Fundamentals” course @ SoftUni](https://softuni.bg/courses/programming-fundamentals).

Check your solutions here: <https://judge.softuni.bg/Contests/174/Dictionaries-Lambda-and-LINQ-Lab>.

## Odd Occurrences

Write a program that extracts from a given sequence of words all elements that present in it **odd number of times** (case-insensitive).

* Words are given in a single line, space separated.
* Print the result elements in lowercase, in their order of appearance.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Java C# PHP PHP JAVA C java | java, c#, c |
| 3 5 5 hi pi HO Hi 5 ho 3 hi pi | 5, hi |
| a a A SQL xx a xx a A a XX c | a, SQL, xx, c |

### Hints

* Use a **dictionary** (string 🡪 int) to count the occurrences of each word (just like in the previous problem).
* Pass through all **key-value pairs** in the dictionary and append to the results list all **keys** that have **odd value**.
* Print the results list.

## Count Real Numbers

Read a **list of real numbers** and **print them in ascending order** along with their **number of occurrences**.

### Examples

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Input** | **Output** |  | **Input** | **Output** |  | **Input** | **Output** |
| 8 2.5 2.5 8 2.5 | 2.5 -> 3 times  8 -> 2 times | 1.5 5 1.5 3 | 1.5 -> 2 times  3 -> 1 times  5 -> 1 times | -2 0.33 0.33 2 | -2 -> 1 times  0.33 -> 2 times  2 -> 1 times |

### Hints

* Use sorted dicrtionary (key=nums, value=count) named counts.
* Pass through each input number num and increase counts[num] (when num exists in the dictionary) or assign counts[num] = 1 (when num does not exist in the dictionary).
* Pass through all numbers num in the dictionary (counts.keys()) and print the number num and its count of occurrences counts[num].