# Lab: Associative Arrays, Lambda and Stream API

Problems for exercises and homework for the ["Programming Fundamentals" course @ SoftUni](https://softuni.bg/trainings/3951/programming-fundamentals-with-java-january-2023)

You can check your solutions in [Judge.](https://judge.softuni.org/Contests/1311)

# Associative Arrays

## 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 2 8 2 | 2 -> 3  8 -> 2 | 1 5 1 3 | 1 -> 2  3 -> 1  5 -> 1 | -2 0 0 2 | -2 -> 1  0 -> 2  2 -> 1 |

## Word Synonyms

Write a program that keeps a map with synonyms. The **key** to the map will be the **word**. The **value** will be a **list of all the synonyms of that word**. You will be given a number **n**. On the next **2 \* n** lines, you will be given the **word** and a **synonym** each on a separate line like this:

* **{word}**
* **{synonym}**

If you get the same word for the second time, just add the new synonym to the list.

Print the words in the following format:

**{word} - {synonym1, synonym2… synonymN}**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  cute  adorable  cute  charming  smart  clever | cute - adorable, charming  smart - clever |
| 2  task  problem  task  assignment | task – problem, assignment |

## Odd Occurrences

Write a program that extracts from a given sequence of words all elements that are present in it an **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 |

## Word Filter

Read an array of **strings**, and take only words whose length is **even**. Print each word on a new line.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| kiwi orange banana apple | kiwi  orange  banana |
| pizza cake pasta chips | cake |