# Problem 4 – Student Protocol

You are given a sequence of exam results. Your task is to sort the exams by students and their results. Each exam holds an array of **students**. Each **student** has a **result**.

You should check whether the exam **result** value is **valid**. A **valid** **result** value is between **0** and **400** points. If a **student** has an invalid result value, you should **ignore** that line.

If a student has attended an exam **more** **than** **once**, it means the student went to a **makeup** exam and you should take into consideration the **higher** result. You should also **count** **how many makeup exams** the student went to.

In the output you should print all **exams** sorted **in order of appearance**. In each exam the **students** should be sorted by their **score** in **descending** order. If two students have the **same** **score** you should then sort them by **how** **many** **makeup** exams did **they** **take** in **ascending** order. If the **makeup exams are equal** then you should sort the **students** by **name alphabetically**.

### Input

The input data is passed to the first JavaScript function found in your code as an **array of strings**. Each input line holds an exam result description in format "**student – exam : result**". The input data will always be valid and in the format described. There is no need to check it explicitly.

### Output

### Print at the console a JSON string that holds the exams sorted in order of appearance, and for each student – his result and the number of makeup exams taken. The students should be sorted by several criteria:

### result in descending order: the students with the highest results should be first.

### makeup exams taken in ascending order *(if there are several players with the same result)* – if two players have the same results, you should sort them by makeup exams taken.

### Their names sorted alphabetically in ascending order in case several students have the same results and number of makeup exams taken. (Hint: Use *string*.localeCompare(*string*) function to compare the names.)

### Please follow exactly the JSON format from the example.

### Constraints

* The number of input lines will be between 1 and 1000.
* The student's name will consist of Latin letters and a single space. Its length is between 3 and 50 characters. Leading and trailing whitespaces should be removed.
* The exams and student's name will be unique names.
* The result of each student will be in the range [0 … 1000].
* Whitespace may be found or missing around the separators "-" and ":".
* Allowed working time for your program: 0.2 seconds. Allowed memory: 16 MB.

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| **Input** |
| Peter Jackson - Java : 350  Jane - JavaScript : 200  Jane - JavaScript : 400  Simon Cowell - PHP : 100  Simon Cowell-PHP: 500  Simon Cowell - PHP : 200 |
| **Output** |
| {"Java":[{"name":"Peter Jackson","result":350,"makeUpExams":0}],"JavaScript":[{"name":"Jane","result":400,"makeUpExams":1}],"PHP":[{"name":"Simon Cowell","result":200,"makeUpExams":1}]} |

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| **Input** |
| Simon Cowell - PHP : 100  Simon Cowell-PHP: 500  Peter Jackson - PHP: 350  Simon Cowell - PHP : 400 |
| **Output** |
| {"PHP":[{"name":"Simon Cowell","result":400,"makeUpExams":1},{"name":"Peter Jackson","result":350,"makeUpExams":0}]} |