# More Exercise: Objects and JSON

Problems for in-class lab for the [“Technology Fundamentals” course @ SoftUni](https://softuni.bg/trainings/2056/technology-fundamental-september-2018#lesson-9616).   
Submit your solutions in the SoftUni judge system at: [Objects and JSON – More Exercises](https://judge.softuni.bg/Contests/1318/Objects-and-JSON-More-Exercises)

## Class Laptop

Create a **class Laptop** that has the following properties:

**info** – object that contains:

**producer** – string

**age** – number

**brand** – string

**isOn** – boolean (false by default)

**turnOn** – function that **sets the isOn** variable to **true**

**turnOff** – function that **sets the isOn** variable to **false**

**showInfo** – function that returns the **producer, age and brand as json**

**quality** – number (every time the laptop **is turned on/off the quality decreases by 1**)

**getter price** – number (**800 – {age \* 2} + (quality \* 0.5)**)

The **constructor** should receive the **info as an object and the quality**

### Examples

Test your class

|  |  |
| --- | --- |
| **Input** | **Output** |
| let info = {producer: "Dell", age: 2, brand: "XPS"}  let laptop = new Laptop(info, 10)  laptop.turnOn()  console.log(laptop.showInfo())  laptop.turnOff()  console.log(laptop.quality)  laptop.turnOn()  console.log(laptop.isOn)  console.log(laptop.price) | {"producer":"Dell","age":2,"brand":"XPS"}  8  true  799.5 |

## Make a dictionary

You will receive an **array** with **strings in the form of objects.** You have to parse these strings and combine them into one object. Every string from the array will hold **terms** and a **description.**

Print every term and definition in that dictionary on new line in format:

**Term: ${term} => Definition: ${definition}**

Don't forget to sort the dictionary **alphabetically** by the terms as in real dictionaries.

### Examples

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| **Input** | **Output** |
| ["{"Coffee":"A hot drink made from the roasted and ground seeds (coffee beans) of a tropical shrub."}",  "{"Bus":"A large motor vehicle carrying passengers by road, typically one serving the public on a fixed route and for a fare."}",  "{"Boiler":"A fuel-burning apparatus or container for heating water."}",  "{"Tape":"A narrow strip of material, typically used to hold or fasten something."}",  "{"Microphone":"An instrument for converting sound waves into electrical energy variations which may then be amplified, transmitted, or recorded."}"] | Term: Boiler => Definition: A fuel-burning apparatus or container for heating water.  Term: Bus => Definition: A large motor vehicle carrying passengers by road, typically one serving the public on a fixed route and for a fare.  Term: Coffee => Definition: A hot drink made from the roasted and ground seeds (coffee beans) of a tropical shrub.  Term: Microphone => Definition: An instrument for converting sound waves into electrical energy variations which may then be amplified, transmitted, or recorded.  Term: Tape => Definition: A narrow strip of material, typically used to hold or fasten something. |

## School register

In this problem you have to arrange all students by **grade**. You as the secretary of the school principal will process students and store them into a school register before the new school year hits. As a draft, you have a list of all the students from **last year** but mixed. Кeep in mind that if a student has a lower grade than 3, he does not go into the next class. As result of your work, you have to print the entire school register **sorted** in **ascending order by grade** already filled with all the students from last year in format:

**{nextGrade} Grade**

**List of students: {All students in that grade}**

**Average annual grade from last year: {average annual grade on the entire class from last year}**

And empty row **{console.log}**

The input will be **array** with strings, each containing a student's name, last year's grade, and an annual grade. The **average annual grade from last year** should be **formatted to the second decimal point**.

### Examples

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| **Input** | **Output** |
| ["Student name: Mark, Grade: 8, Graduated with an average score: 4.75",  "Student name: Ethan, Grade: 9, Graduated with an average score: 5.66",  "Student name: George, Grade: 8, Graduated with an average score: 2.83",  "Student name: Steven, Grade: 10, Graduated with an average score: 4.20",  "Student name: Joey, Grade: 9, Graduated with an average score: 4.90",  "Student name: Angus, Grade: 11, Graduated with an average score: 2.90",  "Student name: Bob, Grade: 11, Graduated with an average score: 5.15",  "Student name: Daryl, Grade: 8, Graduated with an average score: 5.95",  "Student name: Bill, Grade: 9, Graduated with an average score: 6.00",  "Student name: Philip, Grade: 10, Graduated with an average score: 5.05",  "Student name: Peter, Grade: 11, Graduated with an average score: 4.88",  "Student name: Gavin, Grade: 10, Graduated with an average score: 4.00"] | 9 Grade  List of students: Mark, Daryl  Average annual grade from last year: 5.35  10 Grade  List of students: Ethan, Joey, Bill  Average annual grade from last year: 5.52  11 Grade  List of students: Steven, Philip, Gavin  Average annual grade from last year: 4.42  12 Grade  List of students: Bob, Peter  Average annual grade from last year: 5.02 |

## Browser history

As an input you will receive **two parameters**: **an** **OBJECT and a STRING ARRAY.**

The object will be in format: **{Browser Name}:{Name of the browser}, Open tabs:[…], Recently Closed: […], Browser Logs: […]**. Your task is to fill in the object based on the actions we will get in the array of strings.

You can **open** any site in the world as many times as you like; if you do that add it to the open tabs.

You can **close** only these tabs you have **opened already**! If current action contains valid opened site, you should remove it from "**Open Tabs**" and put it into "**Recently closed**", otherwise **don't do anything!**

**Browser Logs** will hold every single **Valid** action which you did (Open and Close).

There"s a **special case** in which you can get an action that says: **"Clear History and Cache".** That means you should **empty the whole object**.

At the end print the object in format:

**{Browser name}**

**Open Tabs: {[…]}** // Joined by comma and space

**Recently Closed: {[…]}** // Joined by comma and space

**Browser Logs: {[…]}** // Joined by comma and space

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| {"Browser Name":"Google Chrome","Open Tabs":["Facebook","YouTube","Google Translate"],  "Recently Closed":["Yahoo","Gmail"],  "Browser Logs":["Open YouTube","Open Yahoo","Open Google Translate","Close Yahoo","Open Gmail","Close Gmail","Open Facebook"]},  ["Close Facebook", "Open StackOverFlow", "Open Google"] | Google Chrome  Open Tabs: YouTube, Google Translate, StackOverFlow, Google  Recently Closed: Yahoo, Gmail, Facebook  Browser Logs: Open YouTube, Open Yahoo, Open Google Translate, Close Yahoo, Open Gmail, Close Gmail, Open Facebook, Close Facebook, Open StackOverFlow, Open Google |
| {"Browser Name":"Mozilla Firefox",  "Open Tabs":["YouTube"],  "Recently Closed":["Gmail", "Dropbox"],  "Browser Logs":["Open Gmail", "Close Gmail", "Open Dropbox", "Open YouTube", "Close Dropbox"]},  ["Open Wikipedia", "Clear History and Cache", "Open Twitter"] | Mozilla Firefox  Open Tabs: Twitter  Recently Closed:  Browser Logs: Open Twitter |

## Sequences

You are tasked with storing sequences of numbers. You will receive an **array of strings; each of them will contain** unknown amount of **arrays containing numbers,** from which you must store only the **unique** arrays (duplicate arrays should be discarded). An array is considered the **same** (**NOT unique**) if it contains the **same numbers** as another array**, regardless of their order**.

After storing all arrays, your program should print them back in **ascending** order based on their **length**, if two arrays have the same length they should be printed in **order of being received from the input**. Each individual array should be printed in **descending order** in the format **"[a1, a2, a3,… an]"**. Check the examples bellow.

The **input** comes as an **array of strings** where **each entry is a JSON representing an array of numbers**.

The **output** should be printed on the console - each array printed on a new line in the format **"[a1, a2, a3,… an]"** , following the above mentioned ordering.

### Examples

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| --- | --- |
| **Input** | **Output** |
| ["[-3, -2, -1, 0, 1, 2, 3, 4]",  "[10, 1, -17, 0, 2, 13]",  "[4, -3, 3, -2, 2, -1, 1, 0]"] | [13, 10, 2, 1, 0, -17]  [4, 3, 2, 1, 0, -1, -2, -3] |
| ["[7.14, 7.180, 7.339, 80.099]",  "[7.339, 80.0990, 7.140000, 7.18]",  "[7.339, 7.180, 7.14, 80.099]"] | [80.099, 7.339, 7.18, 7.14] |