# More Exercise: Objects and Classes

Problems for exercise and homework for the ["JS Fundamentals" Course @ SoftUni.](https://softuni.bg/trainings/4382/programming-fundamentals-with-javascript-january-2024)   
Submit your solutions in the SoftUni judge system at: <https://judge.softuni.org/Contests/1318>

## 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** – a function that **sets the isOn** variable to **true**
* **turnOff** – a function that **sets the isOn** variable to **false**
* **showInfo** – a 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 |
| let info = {producer: "Lenovo", age: 1, brand: "Legion"}  let laptop = new Laptop(info, 10)  laptop.turnOn()  console.log(laptop.showInfo())  laptop.turnOff()  laptop.turnOn()  laptop.turnOff()  console.log(laptop.isOn) | {"producer":"Lenovo","age":1,"brand":"Legion"}  false |

## 2. Flight Schedule

You will receive an **array** with **arrays.**

The first array (**at index 0**) will hold all flights on a **specific** **sector** in the airport. The second array (**at index 1**) will contain **newly changed statuses** of **some** of the **flights** at this airport. The third array (**at index 2**) will have a single **string,** which will **be the flight status** you need to check. When you put all flights into an **object** and change the statuses depends on the new information on the second array. You must print all flights with the given status from the last **array**.

* If the value of the string obtained from the third array is "**Ready to fly**":
* then you must **print** flights that have **not changed** their **status** in the second array
* and automatically **change** the status to "**Ready to fly**"
* Otherwise, print **only flights** that have **changed** their status.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| [['WN269 Delaware',  'FL2269 Oregon',  'WN498 Las Vegas',  'WN3145 Ohio',  'WN612 Alabama',  'WN4010 New York',  'WN1173 California',  'DL2120 Texas',  'KL5744 Illinois',  'WN678 Pennsylvania'],  ['DL2120 Cancelled',  'WN612 Cancelled',  'WN1173 Cancelled',  'SK430 Cancelled'],  ['Cancelled']  ] | { Destination: 'Alabama', Status: 'Cancelled' }  { Destination: 'California', Status: 'Cancelled' }  { Destination: 'Texas', Status: 'Cancelled' } |
| [['WN269 Delaware',  'FL2269 Oregon',  'WN498 Las Vegas',  'WN3145 Ohio',  'WN612 Alabama',  'WN4010 New York',  'WN1173 California',  'DL2120 Texas',  'KL5744 Illinois',  'WN678 Pennsylvania'],  ['DL2120 Cancelled',  'WN612 Cancelled',  'WN1173 Cancelled',  'SK330 Cancelled'],  ['Ready to fly']  ] | { Destination: 'Delaware', Status: 'Ready to fly' }  { Destination: 'Oregon', Status: 'Ready to fly' }  { Destination: 'Las Vegas', Status: 'Ready to fly' }  { Destination: 'Ohio', Status: 'Ready to fly' }  { Destination: 'New York', Status: 'Ready to fly' }  { Destination: 'Illinois', Status: 'Ready to fly' }  { Destination: 'Pennsylvania', Status: 'Ready to fly' } |

## 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. Keep in mind that if a student has a lower score than 3, he does not go into the next class. As a 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 the format:

**`{nextGrade} Grade**

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

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

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

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

### Examples

|  |  |
| --- | --- |
| **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 score from last year: 5.35  10 Grade  List of students: Ethan, Joey, Bill  Average annual score from last year: 5.52  11 Grade  List of students: Steven, Philip, Gavin  Average annual score from last year: 4.42  12 Grade  List of students: Bob, Peter  Average annual score from last year: 5.02 |
| [  'Student name: George, Grade: 5, Graduated with an average score: 2.75',  'Student name: Alex, Grade: 9, Graduated with an average score: 3.66',  'Student name: Peter, Grade: 8, Graduated with an average score: 2.83',  'Student name: Boby, Grade: 5, Graduated with an average score: 4.20',  'Student name: John, Grade: 9, Graduated with an average score: 2.90',  'Student name: Steven, Grade: 2, Graduated with an average score: 4.90',  'Student name: Darsy, Grade: 1, Graduated with an average score: 5.15'  ] | 2 Grade  List of students: Darsy  Average annual score from last year: 5.15  3 Grade  List of students: Steven  Average annual score from last year: 4.90  6 Grade  List of students: Boby  Average annual score from last year: 4.20  10 Grade  List of students: Alex  Average annual score from last year: 3.66 |

## Browser History

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

In the end, print the object in the 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** an 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 array should be printed in **descending order** in the format **"[a1, a2, a3,… an]"**. Check the examples below.

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

|  |  |
| --- | --- |
| **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] |