# Lab: Objects and Classes

Problems with exercise and homework for the ["JS Front-End" Course @ SoftUni.](https://softuni.bg/trainings/4240/js-front-end-october-2023)

## Person Info

Write a function that receives **3 parameters**, sets them to an **object**, and **returns** that object.

The input comes as **3 separate strings** in the following order: **firstName**, **lastName**, **age**.

### Examples

|  |  |
| --- | --- |
| **Input** | **Object Properties** |
| "Peter",  "Pan", "20" | firstName: Peter  lastName: Pan  age: 20 |
| "George",  "Smith", "18" | firstName: George  lastName: Smith  age: 18 |

### Hints



## City

Write a function that receives a **single** **parameter** – an **object**, containing **five properties**:

**{ name, area, population, country, postcode }**

Loop through all the **keys** and **print** them with their **values** in format: "**{key} -> {value}**"

See the examples below.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| {  name: "Sofia",  area: 492,  population: 1238438,  country: "Bulgaria",  postCode: "1000"  } | name -> Sofia  area -> 492  population -> 1238438  country -> Bulgaria  postCode -> 1000 |
| {  name: "Plovdiv",  area: 389,  population: 1162358,  country: "Bulgaria",  postCode: "4000"  } | name -> Plovdiv  area -> 389  population -> 1162358  country -> Bulgaria  postCode -> 4000 |

## Convert to Object

Write a function that receives a **string** in **JSON format** and converts it to an **object**.

Loop through all the keys and print them with their values in format: "**{key}: {value}**"

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| '{"name": "George", "age": 40, "town": "Sofia"}' | name: George  age: 40  town: Sofia |
| '{"name": "Peter", "age": 35, "town": "Plovdiv"}' | name: Peter  age: 35  town: Plovdiv |

### Hints

* Use **JSON.parse()** method to parse JSON string to an object



## Convert to JSON

Write a function that receives a **first name**, **last name**, **hair color** and sets them to an **object**.

Convert the **object** to **JSON string** and print it.

Input is provided as **3 single strings** in the order stated above.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 'George', 'Jones', 'Brown' | {"name":"George","lastName":"Jones","hairColor":"Brown"} |
| 'Peter', 'Smith', 'Blond' | {"name":"Peter","lastName":"Smith","hairColor":"Blond"} |

### Hints

* Use **JSON.stringify()** to parse the object to JSON string



## Phone Book

Write a function that stores information about a **person’s name** and **phone number**. The input is an **array of strings** with space-separated name and number. **Replace duplicate names**. Print the result as shown.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| ['Tim 0834212554',  'Peter 0877547887',  'Bill 0896543112',  'Tim 0876566344'] | Tim -> 0876566344  Peter -> 0877547887  Bill -> 0896543112 |
| ['George 0552554',  'Peter 087587',  'George 0453112',  'Bill 0845344'] | George -> 0453112  Peter -> 087587  Bill -> 0845344 |

## Meetings

Write a function that manages meeting appointments. The input comes as an **array of strings**. Each string contains a **weekday** and person’s **name**. For each **successful** meeting, **print a message**. If you receive the **same weekday** twice, the meeting cannot be scheduled so print a **conflicting message**. In the end, print a list of all **successful** meetings.

### Example

|  |  |
| --- | --- |
| **Input** | **Output** |
| ['Monday Peter',  'Wednesday Bill',  'Monday Tim',  'Friday Tim'] | Scheduled for Monday  Scheduled for Wednesday  Conflict on Monday!  Scheduled for Friday  Monday -> Peter  Wednesday -> Bill  Friday -> Tim |
| ['Friday Bob',  'Saturday Ted',  'Monday Bill',  'Monday John',  'Wednesday George'] | Scheduled for Friday  Scheduled for Saturday  Scheduled for Monday  Conflict on Monday!  Scheduled for Wednesday  Friday -> Bob  Saturday -> Ted  Monday -> Bill  Wednesday -> George |

## Address Book

Write a function that stores information about a person’s **name** and his **address**. The input comes as an **array of strings**. Each string contains the **name** and the **address** separated by a **colon**. If you receive the same name **twice** just **replace** the address. In the end, print the full list, **sorted alphabetically** by the person’s name.

|  |  |
| --- | --- |
| **Input** | **Output** |
| ['Tim:Doe Crossing',  'Bill:Nelson Place',  'Peter:Carlyle Ave',  'Bill:Ornery Rd'] | Bill -> Ornery Rd  Peter -> Carlyle Ave  Tim -> Doe Crossing |
| ['Bob:Huxley Rd',  'John:Milwaukee Crossing',  'Peter:Fordem Ave',  'Bob:Redwing Ave',  'George:Mesta Crossing',  'Ted:Gateway Way',  'Bill:Gateway Way',  'John:Grover Rd',  'Peter:Huxley Rd',  'Jeff:Gateway Way',  'Jeff:Huxley Rd'] | Bill -> Gateway Way  Bob -> Redwing Ave  George -> Mesta Crossing  Jeff -> Huxley Rd  John -> Grover Rd  Peter -> Huxley Rd  Ted -> Gateway Way |

## Cats

Write a function that receives **array** of strings in the following format **'{cat name} {age}'**.

Create a **Cat** **class** that receives in the **constructor** the **name** and the **age** parsed from the input.

It should also have a method named **"meow"** that will print **"{cat name}, age {age} says Meow"** on the console.

For each of the strings provided, you must **create a cat object** and invoke the **.meow ()** method**.**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| ['Mellow 2', 'Tom 5'] | Mellow, age 2 says Meow  Tom, age 5 says Meow |
| ['Candy 1', 'Poppy 3', 'Nyx 2'] | Candy, age 1 says Meow  Poppy, age 3 says Meow  Nyx, age 2 says Meow |

### Hints

* Create a **Cat class** with properties and methods described above
* Parse the input data
* Create all objects using the class constructor and the parsed input data, store them in an array
* Loop through the array using **for…of** a cycle and **invoke .meow()** method



## Songs

Define a **class** **Song**, which holds the following information about songs: **typeList**, **name,** and **time**.

You will receive the input as an **array**.

The first element **n** will be the number of songs. Next **n** elements will be the songs data in the following format: **"{typeList}\_{name}\_{time}"**, and the last element will be **typeList** / **"all".**

Print only the **names of the songs**, which have the same **typeList (**obtained as the last parameter**)**. If the value ofthe last element is **"all",** print the names of all the songs.

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| [3,  'favourite\_DownTown\_3:14',  'favourite\_Kiss\_4:16',  'favourite\_Smooth Criminal\_4:01',  'favourite'] | DownTown  Kiss  Smooth Criminal |
| [4,  'favourite\_DownTown\_3:14',  'listenLater\_Andalouse\_3:24',  'favourite\_In To The Night\_3:58',  'favourite\_Live It Up\_3:48',  'listenLater'] | Andalouse |
| [2,  'like\_Replay\_3:15',  'ban\_Photoshop\_3:48',  'all'] | Replay  Photoshop |

### Solution:

Create a **Song class** with properties described above



Create a new array, where you will store songs



Iterate over the songs:



