

# Data Structures and Programmatic Thinking. Session 12

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## Session 12

# Plan for today

- Learn what's JSON
- See how it relates to Python data structures

# JSON

*Javascript Object Notation*

# What is JSON

JSON is one of the most used data interchange format nowadays. It provides a syntax **easy to understand for humans** and **easy to parse for computers**.

# JSON

```
{  
  "numbers": 1234,  
  "strings": "this is a string",  
  "booleans": true,  
  "lists": [1, "string"],  
  "nulls": null,  
  "dictionaries": {  
    "key": "value"  
  }  
}
```

# Numbers

1234

Numbers in JSON, like in Python, are declared by just writing their numeric representations

# Strings

```
"hello world!"
```

Strings should be declared within double quotes. It's not valid to use single quotes.



# Booleans

`false`

For declaring booleans, we use the lowercased words **true** and **false**

# Null

```
null
```

Null declares an empty value, as Python **None**

# Lists

```
[1, true, "potato"]
```

Lists are declared within **square brackets** and with elements separated by commas. (they're called **arrays** in JSON)

# Dictionaries

```
{  
  "first key": 3,  
  "second key": false  
}
```

Dictionaries (called **objects** in JSON) are declared like in Python. The difference is that **keys must be strings** in JSON objects

# Exercises

For these exercises we will use `lobste.rs` data from the above URL.

1. Download the data to a file called `lobsters.json` and read it from Python
2. Create a function `for *printing*` all the titles.
3. Create a function that returns the number of articles per user.

<https://lobste.rs/hottest.json>