Note:

This is a case where the videos are easier to understand than the pdfs alone.

The videos comment the slides step by step, this helps build your understanding.

Don't read and rush. Watch the video instead!

EMLYON
business school

CODAPPS

JSON, what an awful beast (but we need it)

Let's say that Julie, a user of your app, wants to send a message to another user.
You think it would be like:
"hey, how are you today?"

But no. That would be too simple.
When we exchange messages, they are organized in a different way.
We write instead:

The JSON way of exchanging info on the Internet

⟶

```
{
 "author": "Julie",
 "message": "hey, how are you today?"
}
```

EMLYON
business school

CODAPPS

The JSON way of exchanging info on the Internet

→

```
{
 "author": "Julie",
 "message": "hey, how are you today?"
}
```

Why??

It is convenient:

- We can send different stuff at once (the name of the author, the message…), they all stay nicely organized
- If everybody uses this JSON thing, we can use standard objects to write or read stuff in Json and exchange data easily with everybody!

Converting some text in JSON before sending it to the Internet:

```
Hashtable tableOfMessages = new Hashtable();
tableOfMessages.put("author", "Julie");
tableOfMessages.put("message", "hey, how are you today?");

String textFormattedInJson = BlackMagic.convert(tableOfMessages);
```

… and then send this box textFormattedInJson to the Internet!

The JSON way of exchanging info on the Internet ⟶

```
{
 "author": "Julie",
 "message": "hey, how are you today?"
}
```

And when our app receives some JSON stuff from the Internet, it can be used like that:

Using some JSON we received from the Internet:

JSONObject stuffInJson = new JSONObject(whatIReceivedFromInternet);

String nameOfAuthor = stuffInJson.get("author"); ⟵ The box « nameOfAuthor » contains now « Julie »

String message = stuffInJson.get("message");

The box « message » contains now « hey, how are you today? »

So, JSON is actually a convenient way to exchange text over the Internet.

EMLYON
business school

CODAPPS

The dark side of JSON

The nice easy way of JSON: →

```
{
 "author": "Julie",
 "message": "hey, how are you today?"
}
```

The dark side of JSON:

```
{
 "author": "Julie",
 "message": "my friends says \"hi\"! ",
 "recipients": ["Mike", "Liu", "Mohamed"],
 "timestamp": {
    "date": "23/09/2015",
    "time": "16:23:02"
  }
}
```

We need to use the special character \ in front when we use " " in our text.

We can have lists of stuff (called ARRRAYS) between square brackets, that's confusing

Here, inside our JSON object (which is in green) we have another JSON object (in orange)!!

So how can we retrieve the time when the message has been sent by Julie?

```
JSONObject stuffInJson = new JSONObject(whatIReceivedFromInternet);

JSONObject timestamp = stuffInJson.get("timestamp");
String timeWhenMessageWasSent = timestamp.get("time");
```

EMLYON
business school

CODAPPS