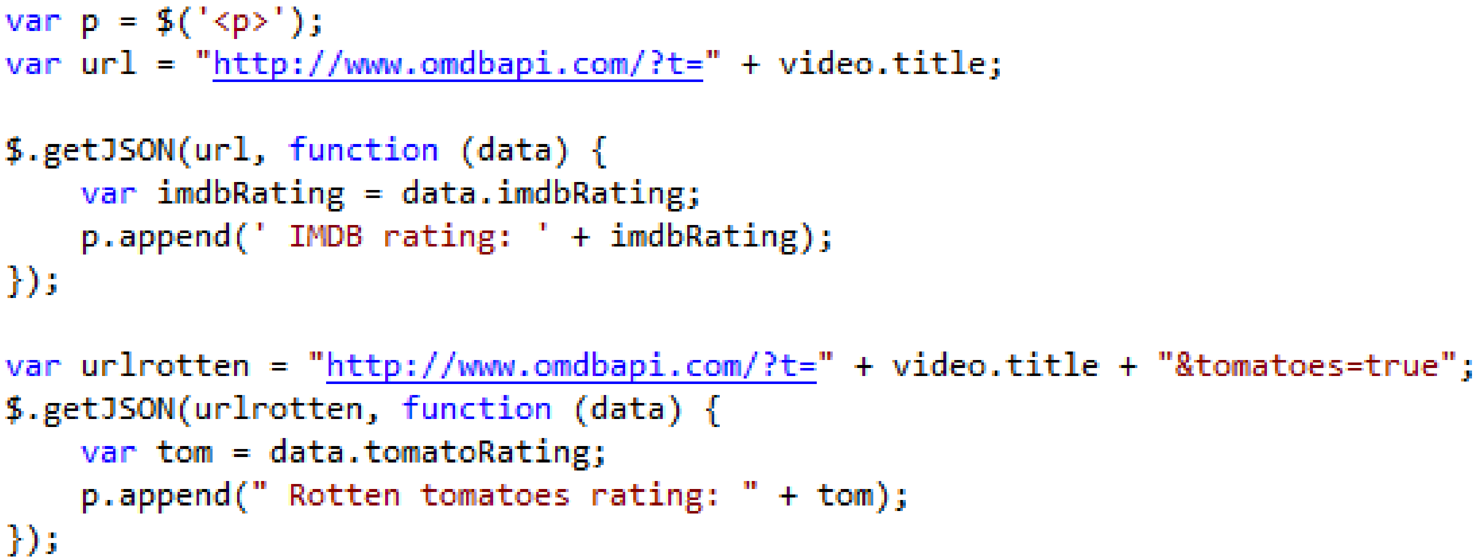
BUSINESS ACADEMY
AARHUS

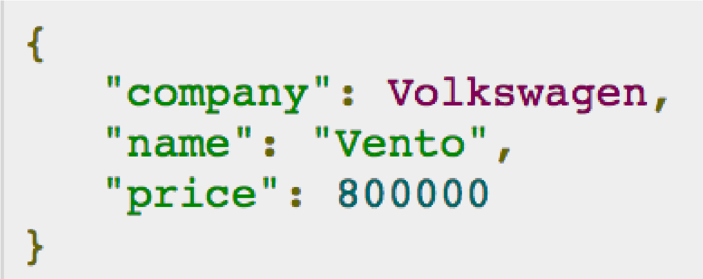
Databases & XML (9)   18.04.2016



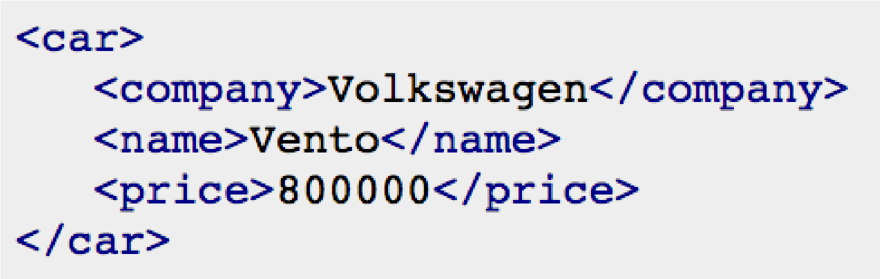
```
var p = $('<p>');
var url = "http://www.omdbapi.com/?t=" + video.title;

$.getJSON(url, function (data) {
    var imdbRating = data.imdbRating;
    p.append(' IMDB rating: ' + imdbRating);
});

var urlrotten = "http://www.omdbapi.com/?t=" + video.title + "&tomatoes=true";
$.getJSON(urlrotten, function (data) {
    var tom = data.tomatoRating;
    p.append(" Rotten tomatoes rating: " + tom);
});
```

JSON code example

- E**X**tensible **M**arkup **L**anguage
- Widely used syntax for storing data



```
{
    "company": Volkswagen,
    "name": "Vento",
    "price": 800000
}
```



```
<car>
   <company>Volkswagen</company>
   <name>Vento</name>
   <price>800000</price>
</car>
```

XML

XML is frequently compared with HTML. Compared with HTML, however, XML has some other important features:

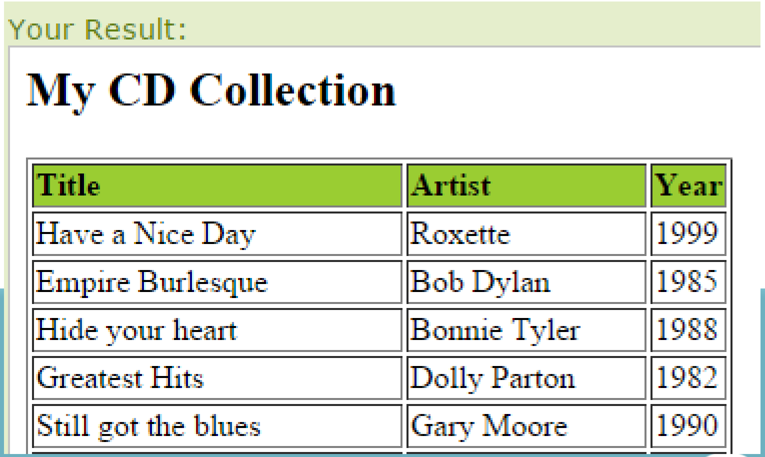
- XML is extensible: it does not consist of a fixed set of tags;
- XML documents must be well-formed according to a defined syntax;
- an XML document can be formally validated against a schema of some kind;
- XML is more interested in the meaning of data than in its presentation.

When descriptive markup is used, the same document can readily be processed in many different ways, using only those parts of it which are considered relevant. For example:

- a content analysis program might disregard entirely the footnotes embedded in an annotated text
- a formatting program might extract and collect them all together for printing at the end of each chapter.
- one program might extract names of persons and places from a document to create an index or database,
- while another, operating on the same text, but using a different stylesheet, might print names of persons and places in a distinctive typeface.

http://www.w3schools.com/xsl/tryxslt.asp?xmlfile=cdcatalog&xsltfile=cdcatalog

- **Add a cd to the collection**
- **Add a column to the result set showing the year**
- Take a screenshot where you can see both the XML, the XSLT and the result and save it



Your Result:

My CD Collection

Title	Artist	Year
Have a Nice Day	Roxette	1999
Empire Burlesque	Bob Dylan	1985
Hide your heart	Bonnie Tyler	1988
Greatest Hits	Dolly Parton	1982
Still got the blues	Gary Moore	1990

XML + XSLT exercise (3.1)

- Documents are regarded as having types, just as other objects processed by computers do.
- The type of a document is formally defined by its constituent parts and their structure.
- The definition of a ‘report’, for example, might be that it consisted of a ‘title’ and possibly an ‘author’, followed by an ‘abstract’ and a sequence of one or more ‘paragraphs’.
- Anything lacking a title, according to this formal definition, would not formally be a report, and neither would a sequence of paragraphs followed by an abstract, whatever other report-like characteristics these might have for the human reader.

Document types

- If documents are of known types, a special-purpose program (called a parser), once provided with an unambiguous definition of a document type, can check that any document claiming to be of that type does in fact conform to the specification.
- A parser can check that all elements specified for a particular document type are present and no others, that they are combined in appropriate ways, correctly ordered, and so forth.
- Programs can be written that take advantage of the knowledge encapsulated in the document type information, and which can thus behave in a more ‘intelligent’ fashion.

Document types

- XSL = E**X**stensible **S**tylesheet **L**anguage
- A stylesheet language for XML documents
- XSLT = **XSL T**ransformations
- Used to transform XML documents into other formats, like XHTML

XSLT

Well-formed XML

- there is a single element enclosing the whole document: this is known as the root element
- each element is completely contained by the root element, or by an element that is so contained; elements do not partially overlap one another;
- a tag explicitly marks the start and end of each element.

Example

Is this well-formed XML?

```
<?xml version="1.0"?>
<to>Tove</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
```

```xml
<?xml version="1.0"?>
<note>
<to>Tove</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
</note>
```

Example

- 1.2 Making the video watcher homepage – in lesson 7
- 2.2 Using the OMDB API – in lesson 8

- 3.2 Using the OMDB API XML format – in lesson 9

Youtube exercises

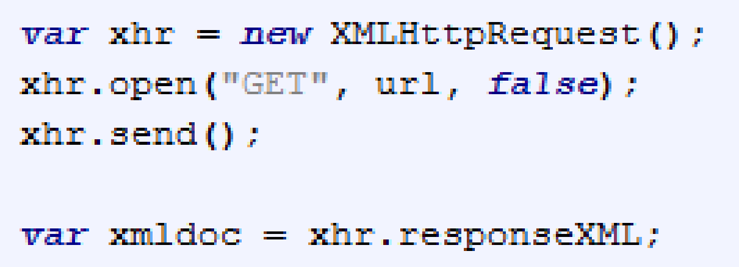
- Make a new copy of your working video watcher file

- In stead of collecting the data in JSON format, you now need to collect it in XML format (r=xml)

- In stead of showing the IMDB and Rotten tomatoes ratings, you should now only output the plot of the movies underneath the movie trailer

- After this exercise you should have one video watcher that collects in JSON format and outputs ratings, and one that collects in XML format and outputs the plot

3.2 XML format



```
var xhr = new XMLHttpRequest();
xhr.open("GET", url, false);
xhr.send();

var xmldoc = xhr.responseXML;
```

The Imitation Game - MOVIECLIPS Trailers

The Imitation Game Official Trailer #1 (2014) - Benedict Cumberbatch Movie HD

During World War II, mathematician Alan Turing tries to crack the enigma code with help from fellow mathematicians.

3.2 XML format

Translate from JSON to XML

```
{"employees":[
    {"firstName":"John", "lastName":"Doe"},
    {"firstName":"Anna", "lastName":"Smith"},
    {"firstName":"Peter", "lastName":"Jones"}
]}
```

http://www.w3schools.com/xml/simple.xml

Translate from XML to JSON

SOCRATIVE.COM

ROOM: TORILL

The official w3shools tutorial:

http://www.w3schools.com/xml/

Extra: for those who has finished all exercises