

# JSON & XML



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# JSON & XML

## <xml>

- Xml is a markup language
  - Data interchange format
  - Humans/machines
- Can be used in many ways

## {json}

- Text based data interchange format
  - Key/value pairs, arrays, objects, ...
  - Humans and machines
- Developers want out of the syntax business!
- No standard way of converting to and from
  - Round trip conversions can be hard (XML<->JSON)

# Issues Converting Between JSON & XML

- No real equivalent of XML attributes in JSON
- Different representations
- XML allows mixed content
- Data types differences
- Incorrect mapping of JSON arrays

# Converting To/From XML & JSON

```
<?xml version='1.0'?>
<authors>
  <author>
    <name>Peter Shaw</name>
    <course>HTML 5 Layouts</course>
    <totalcourses>1</totalcourses>
    <currentlyauthoring>>false</currentlyauthoring>
  </author>
  <author>
    <name>Xavier Morera</name>
    <course>Solr</course>
    <course>dotTrace</course>
    <course>JIRA</course>
    <totalcourses>3</totalcourses>
    <currentlyauthoring>>true</currentlyauthoring>
  </author>
  <author>
    <name>Jason Alba</name>
    <courses>
      <course>Management 101</course>
      <course>Customer Service</course>
      <course>Phone Skills</course>
    </courses>
    <totalcourses>17</totalcourses>
    <currentlyauthoring>>true</currentlyauthoring>
  </author>
</authors>
```

```
{
  "?xml": {
    "@version": "1.0"
  },
  "authors": {
    "author": [
      {
        "name": "Peter Shaw",
        "course": "HTML 5 Layouts",
        "totalcourses": "1",
        "currentlyauthoring": "false"
      },
      {
        "name": "Xavier Morera",
        "course": [
          "Solr",
          "dotTrace",
          "JIRA"
        ],
        "totalcourses": "3",
        "currentlyauthoring": "true"
      },
      {
        "name": "Jason Alba",
        "courses": {
          "course": [
            "Management 101",
            "Customer Service",
            "Phone Skills"
          ]
        },
        "totalcourses": "17",
        "currentlyauthoring": "true"
      }
    ]
  }
}
```

# Converting To/From XML & JSON

## XmlNodeConverter

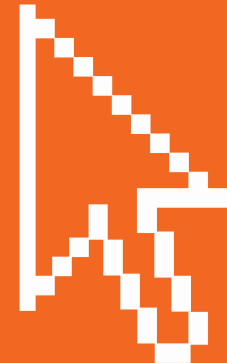
- XmlDocument
- SerializeXmlNode
- DeserializeXmlNode

## XNodeConverter

- XDocument
- SerializeXNode
- DeserializeXNode

# Demo 24: Mapping XML $\leftrightarrow$ JSON

SerializeXmlNode & SerializeXmlNode  
json:Array='true'



# Incompatible XML & JSON

## XML

- Single root element
- Different representations of data
- Namespaces
- Single element: array or not?
- Key name can start with a number

## JSON

- Array or object
- Properties, objects or arrays
- No namespaces
- Arrays are clear
- Key name CAN'T start with number

# Incompatible XML & JSON

## XML

- Comments available
- Different representations of data
- Order may be important
- Meaning may change (namespace)

- Possible but difficult to handle ANY conversion

## JSON

- No comments
- Properties, objects or arrays
- Order not relevant (except type)
- Straightforward



# Takeaway

XML <-> JSON

Data Interchange  
Formats

Conversion  
Possible  
(Tricky)

Json.NET Standard  
or  
Custom