


# MAX 2006


## Beyond Boundaries



**XML 101**  
(WD101W)  
Bogdan Ripa  
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## About me




**Bogdan Ripa**

- Founder, CEO, CTO, etc of InterAKT Online
- Dreamweaver extensions
- Eclipse plug-ins (JSEclipse)
- Just joined Adobe
- Technical Director
- Romania




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## About you




- HTML / XHTML?
- XML / XSL?
- RSS / ATOM?
- Dreamweaver 8 XML/XSL Support?




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## Agenda




- Introduction to XML
- XML Samples
- XML Nodes and Attributes
- The XML Standard
- Enforcing a syntax
- XML Dreamweaver Integration
- Formatting your XML
- XSL Dreamweaver Integration
- Q&A



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## What is XML?




- eXtensible Markup Language.
- Formal recommendation from the World Wide Web Consortium (W3C)
- A flexible way to create common information formats
- Similar to the language of today's Web pages, the HyperText Markup Language
- XML is just a format, it does not do anything

```
<?xml version="1.0" encoding="iso-8859-1"?>
<bookstore>
  <book author="Jules Verne">
    <title>Twenty Thousand Leagues Under the Sea</title>
  </book>
  ...
```

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## Why use XML?



- Standard way to structure data
- W3 recommendation
- Easy to read and understand
- Easy to extend
- Lots of tools to edit
- Used by lots of applications / platforms
- Proprietary formats?

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## When should you use XML?

- Exchange data
- Share data
- Store data
- Create new languages
  - RSS, ATOM, XHTML, WML
- Abstraction layer

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## XML Samples - XHTML

```
<html>
  <head>
    <title>This is XHTML</title>
  </head>
  <body>
    <div class="header"><strong>I am the header</strong></div>
    <div class="content">
      <div class="left">Left column</div>
      <div class="right">Right <br /> column</div>
    </div>
  </body>
</html>
```

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## XML Samples - RSS

```
<rss version="0.92">
  <channel>
    <title>This is a RSS feed</title>
    ...
    <item>
      <title>This is a blog post</title>
      <description><![CDATA[Post descriptipon]]></description>
      <link>http://www</link>
      ...
    </item>
    ...
  </channel>
</rss>
```



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## XML Samples - Custom

```
<?xml version="1.0" encoding="iso-8859-1"?>
<bookstore>
  <book author="Jules Verne">
    <title>Twenty Thousand Leagues Under the Sea</title>
    <year>1870</year>
  </book>
  <book author="Jules Verne">
    <title>Around the world in 80 days</title>
    <year>1872</year>
  </book>
  ...
</bookstore>
```

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## XML nodes / tags

- Just like XHTML nodes
- <node> ... </node>
- <node />

```
<bookstore>
  <book author="Jules Verne">
    <title>Twenty Thousand Leagues Under the Sea</title>
    <year>1870</year>
  </book>
  ...
```

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## XML attributes

- Just like XHTML attributes
- attribute="value"
- <node attribute="value"> ... </node>
- <node attribute="value" />

```
<bookstore>
  <book author="Jules Verne">
    <title>Twenty Thousand Leagues Under the Sea</title>
    <year>1870</year>
  </book>
  ...
```

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## Attributes vs. nodes

- Attributes
  - Simple properties (name, phone, width, class, etc)
  - Cannot be duplicated
  - Not extendible
- Nodes
  - Complex properties (address – multi-line, contact information, table details – tbody, tr, td, etc)
  - Can be duplicated (companies – company)
  - Extendible
    - Add extra attributes
    - Add sub-nodes

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## XML comments

- Just like XHTML comments
- Usually ignored
- `<!-- this is a comment -->`

```
<bookstore>
  <!-- List all books -->
  <book author="Jules Verne">
    <title>Twenty Thousand Leagues Under the Sea</title>
    <year>1870</year>
  </book>
```

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## Well-formatted XML

- HTML – XHTML
- All nodes must be closed
- Single root node
- Properly nested (`<p><a>...</a></p>`)
- Tags and attributes are case sensitive
- Attributes have to be quoted
- Use only LF, no CR LF
- Respect the encoding
- Do not use special characters without encoding them (i.e. <, >, etc)
- XML validators

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## Escaping XML content

- Use special characters (like <, >, etc)
- `<![CDATA[ ... ]]>`
- `&lt;`; `&gt;`;
- `<formula value="a&lt;b?a:b" />`
- `<email><![CDATA[bripa@interaktonline.com <Bogdan Ripa>]]></email>`

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## XML namespaces

- Extend XML
- Define a namespace
- namespace:tag
- namespace:attribute

```
<html xmlns="http://ns.adobe.com/spry" xml:lang="en" lang="en">
  ...
  <spry:dataset name="bookmarks" />
  ...
  <div spry:region="bookmarks" id="bookmarks">
    ...
  </div>
</html>
```

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## Enforcing a syntax

- Export or consume an XML
- Make sure it's valid
- Required, optional, complex rules
- Structure constraints
- Content constraint (data types, etc)
- XML Schema or DTD (Document Type Definition)

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### XML Schema vs. DTD

- What should you use?
- Developer's choice
- XML Schemas / DTD validators

|  |  |
|--|--|
| <b>XML Schema</b> <ul style="list-style-type: none"> <li>XML-based</li> <li>Data-oriented</li> <li>Supports namespaces</li> <li>Newer</li> </ul> | <b>DTD</b> <ul style="list-style-type: none"> <li>Document-oriented</li> <li>Simpler to write</li> <li>Easier to read</li> <li>Older format</li> </ul> |
|--|--|

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### XML and Dreamweaver

- Improved XML support in Dreamweaver 8
- Auto-close matching tag
- DTD and Schema tag import
- Integrated validation tool
- Contextual code completion

```

1 <?xml version="1.0" encoding="iso-8859-1"?>
2 <!DOCTYPE bookstore SYSTEM "Bookstore.dtd">
3 <bookstore>
4   <book
5   </bookstore> author
  
```

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### DTD and Dreamweaver

- Link your XML document to a DTD
- Automatic code completion
- Can validate against the DTD

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### DTD and Dreamweaver

**DEMO**

Link an XML file to a DTD, then write some content

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### Formatting your XML with XSL

- eXtensible Stylesheet Language
- Extension to XHTML
- xsl: namespace
- Save HTML as XSL
- Bind XML datasource to XSL
- Integrated in Dreamweaver

```

<xsl:for-each select="bookstore/book">
  <tr>
    <td nowrap="nowrap"><xsl:value-of select="title"/></td>
    <td nowrap="nowrap"><xsl:value-of select="year"/></td>
    <td nowrap="nowrap"><xsl:value-of select="@author"/></td>
  </tr>
</xsl:for-each>
  
```

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### XSL Basics

- Attaching an XSL to an XML
- Commands → Attach an XSL Stylesheet
- List XML data in the XSL document (Dynamic Text)
 

```
<xsl:value-of select="bookstore/book/title" />
```
- Loop through XML data (Repeat Region)
 

```
<xsl:for-each select="bookstore/book">...</xsl:for-each>
```
- Conditional Region
 

```
<xsl:if test="@author = 'Jules Verne'">...</xsl:if>
```

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## XPath Basics

- Language that helps you locate specific elements in an XML document
- Folder-like syntax
  - /bookstore/book/title/
 

**Twenty Thousand Leagues Under the Sea**
  - /bookstore/book[2]/@author
 

**Jules Verne**
- @ → attributes
- [?] → conditions
- To be used with xsl:for-each and xsl:if

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## Formatting your XML with XSL

**DEMO**

Create an XSL that transforms our XML in XHTML

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## Where to do the transformation?

- Client side vs. server side
- Link the XML to a XSL
- Browser does 2 requests. One for the XML and one for the XSL

| Client-side  | Server-side  |
|--|--|
| <ul style="list-style-type: none"> <li>Let the client do the merge</li> <li>Requires newer browsers</li> <li>Does not require a server technology</li> </ul> | <ul style="list-style-type: none"> <li>Let the server do the merge</li> <li>Requires server technology</li> <li>Safer</li> </ul> |

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## Formatting your XML with XSL

**DEMO**

Server-side XSL transformation

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## Summary

- XML – common information format
- DTD, XML Schemas – validates XML documents
- XSL – transform XML raw data to HTML
- Integrates perfectly with Dreamweaver

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## Resources

- Dreamweaver manual
- <http://www.w3.org/TR/REC-xml/>
- <http://www.w3schools.com/>
- <http://www.adobe.com/devnet/dreamweaver/xml.html>

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