

Using the Power of XML with Dreamweaver

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Ideas in motion.

**MAX**  
The 2005 Macromedia Conference

## Biography

Alexandru COSTIN

President of Products Division, InterAKT Online

- InterAKT - Macromedia partners
- Extend Dreamweaver for developers
  - PHP support for Dreamweaver
  - ColdFusion 7 support for Dreamweaver
- Software usability

## Assumptions

- You are familiar with Dreamweaver
- You have little or no ColdFusion knowledge
- You have no experience with XML and XSL

## Topics

- An overview of XML and XSL
- The Dreamweaver XML/XSL support
  - Managing XML and XSL files
  - XML bindings
  - Visually constructing XSL templates
  - Using the XSL commands
- Client side transformation
- Server side transformation
- RSS feeds
- Advanced XML/XSL techniques
  - Dynamic XML generation
  - XSL fragments

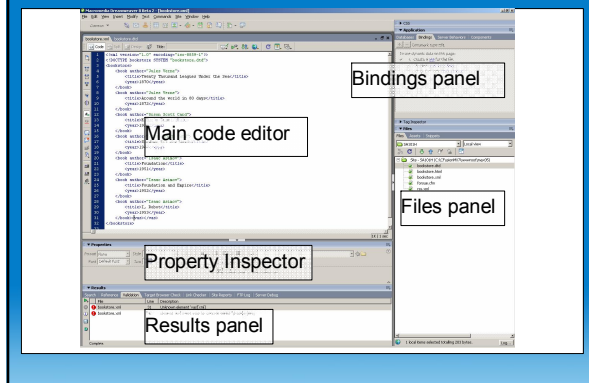
## What is XML?

- XML – eXtensible Markup Language
- Structure and store information
  - HTML – define the layout and formatting of a page
  - XML – define the structure of data, open
- Communication
  - Heterogeneous networks
  - Web services
- Separate data from presentation

## XML sample

```
<?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>
  ...
  ▪ Elements - <book>...</book>
  ▪ Attributes – author="Jules Verne"
```

## Dreamweaver environment



## Syntax Highlighting

- Nodes and Attributes are **blue**
- Attribute values are **green**
- Node values are **black**

```
1 <?xml version="1.0" encoding="iso-8859-1"?>
2 <!DOCTYPE bookstore SYSTEM "bookstore.dtd">
3 <bookstore>
4   <book>
5     <title>
6       Theory Thousand Leagues Under the Sea
7     </title>
8     <year>
9       1970,1
10    </year>
11  </book>
12  <book author="Jules Verne">
13    <title>
14      Around the world in 80 days
15    </title>
16    <year>
17      1972
18    </year>
19  </book>
20  <book author="Oceanic Scott Card">
```

## The Dreamweaver XML support

### XML Editor

- Code completion, Syntax highlighting

```
24 <book author="Isaac Asimov">
25   <title>Foundation and Empire</title>
26   <year>1952</year>
27 </book>
28 <book author="Isaac Asimov">
29   <title>I, Robot</title>
30   <year>1953</year>
31 </book>
32 </bookstore>
```

The screenshot shows the XML Editor in Dreamweaver. The code is syntax-highlighted. A dropdown menu is open over the code, showing options: 'book', 'bookstore', 'title', and 'year'. The 'book' option is selected.

- Auto-close tags

## Exercise 1

- Open Dreamweaver
- Select the SA101H site in the Files panel  
*The site should already be defined for you.*
- Double-click the bookstore.xml file in the Files panel, to open it in Dreamweaver.



## XML validity

### Well-formed XML documents:

- Tags are correctly nested (no cross-nesting)
  - Good: <book><title></title></book>
  - Bad: <book><title></book></title>
- Attribute values are enclosed between quotes
  - Good: <book author="Jules Verne">
  - Bad: <book author=Jules Verne>

### Valid XML documents (DTD or XML Schema)

- Allowed elements in an XML document
- **<book> must have a <title> child node**

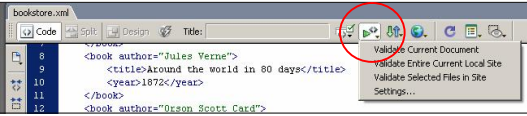
## What is DTD?

- Document Type Definition
- Describes the structure of an XML file
  - Allowed elements (nodes)
  - Allowed attributes

```
<!ELEMENT book (title, year)>
<!ATTLIST book
  author CDATA #REQUIRED
>
<!ELEMENT bookstore (book+)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT year (#PCDATA)>
```

## XML Validation in Dreamweaver

- Dreamweaver toolbar



- DTD validation (check XML doc compliance)

File	Line	Description
bookstore.xml	32	Unknown element 'bigbook' [xml]
bookstore.xml	34	Element 'bigbook' is not valid for content model: '(book)*' [xml]

## Exercise 2



- Checking the validity of an XML document
  - With the **bookstore.xml** file open, select “Validate Current Document” from the Document toolbar
  - Intentionally generate several errors, by editing the XML file. Try to apply the command again.

File	Line	Description
bookstore.xml	21	Expected whitespace [xml]
bookstore.xml	21	Expected equal sign [xml]
bookstore.xml	21	Expected an attribute value [xml]
bookstore.xml	21	Expected equal sign [xml]
bookstore.xml	29	Expected whitespace [xml]
bookstore.xml	29	Expected equal sign [xml]
bookstore.xml	29	Expected an attribute value [xml]
bookstore.xml	29	Expected equal sign [xml]

## What is XPath?

- Language for finding information in an XML document
- Folder-like syntax
  - /bookstore/book/title/  
**Twenty Thousand Leagues Under the Sea**
  - /bookstore/book[1]/@author  
**Jules Verne**

## XSL – transforming XML trees

- XSL - Extensible Stylesheet Language
- Powerful language

```
<xsl:template match="/">
  <xsl:value-of select="/bookstore/book[1]/@author"/>
</xsl:template>
```

### Result:

Jules Verne

## The XSL transformation



XML “tree”



XSL “transformation”



Output (xHTML page)

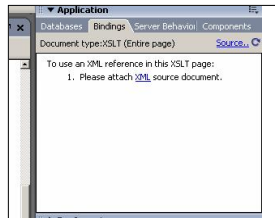
## Exercise 3



- Converting an HTML page to an XSLT document:
  - Open the **bookstore.html** file in Dreamweaver
  - Select **File -> Convert -> XSLT 1.0** to convert the HTML page into an XSLT document.
  - Switch to Code View (from the Document toolbar)
  - Have a look at the generated code.

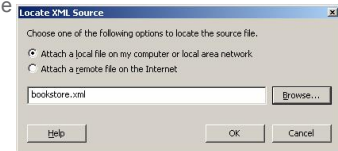
## XML bindings

- Go to the Bindings panel (or select Window → Bindings to make it visible).
- You can define an XML data source for the current XSLT document.



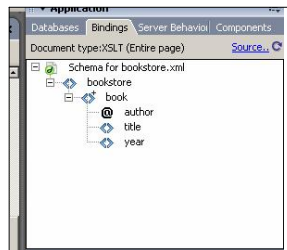
## Linking the XSLT document to bookstore.xml

- Bindings panel:
  - Click XML link, or:
  - Click the Source link in the Bindings header
  - Choose to attach a local file
  - Use the Browse button to locate and select the bookstore.xml file



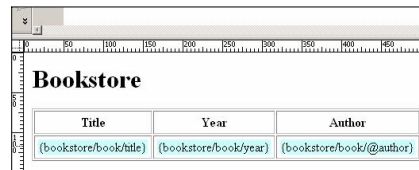
## The canonized XML tree

- XML tree
  - <> - node
  - <>+ - node
  - @ - attribute



## Displaying XML Data

- Drag and drop from the XML tree in the Bindings panel



## Exercise 4

- Linking the XSLT file to the XML tree
  - Link the XSLT file created at Exercise 3 to **bookstore.xml** file.
  - Use drag and drop in Design View, to replace the "Book title", "Year" and "Author" text with the corresponding XML nodes



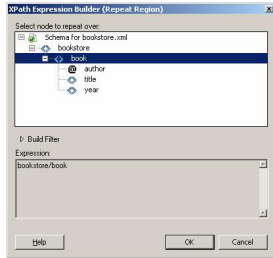
## Exercise 5

- Formatting the XML data
  - Apply Math - Floor formatting function on the year field, by double-clicking it in your page.



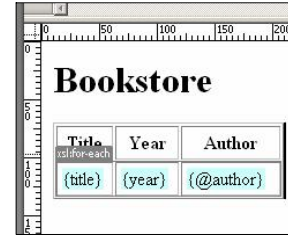
## Inserting a repeat region

- Displaying multiple table rows (one for each book)



## Repeat Region Representation

- Child nodes are updated (XPath expressions are relative)



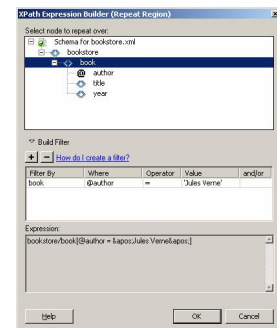
## Previewing the Completed Output Page

- All XML nodes are displayed as rows:

Title	Year	Author
Twenty Thousand Leagues Under the Sea	1870.1	Jules Verne
Around the world in 80 days	1872	Jules Verne
Roder's Game	1986	Orson Scott Card
Speaker for the Dead	1987	Orson Scott Card
Foundation	1951	Isaac Asimov
Foundation and Empire	1952	Isaac Asimov
I, Robot	1953	Isaac Asimov
my trip to MARS	2005	Myself

## Add Filter Condition on the Repeat Region

- book@author
- =
- 'Jules Verne'



## The Filtered Output

- Only books by Jules Verne are displayed:

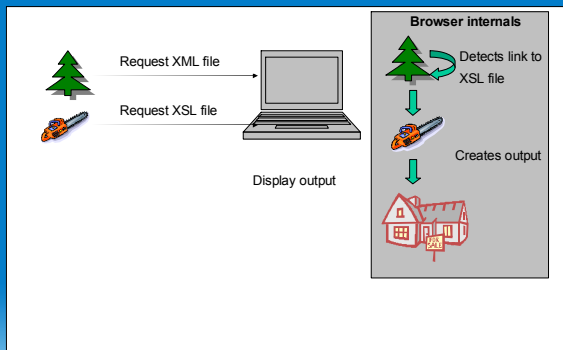
Title	Year	Author
Twenty Thousand Leagues Under the Sea	1870.1	Jules Verne
Around the world in 80 days	1872	Jules Verne

## Exercise 6

- Inserting a repeat region
  - Select table row that contains book info
  - Go to Insert bar → XSLT tab → Repeat Region
  - Click Build Filter.
  - Select the <book> node, then click plus to add a condition
  - Enter 'Jules Verne' in the Value text field.



## The actual XSL transformation – client side



## Linking the XSLT File to an XML File

- Commands → Attach an XSL Stylesheet



## Preview XML file in the browser

- Automatic XSL transformation

A screenshot of a web browser showing a page titled "Bookstore". The page contains a table with the following data:

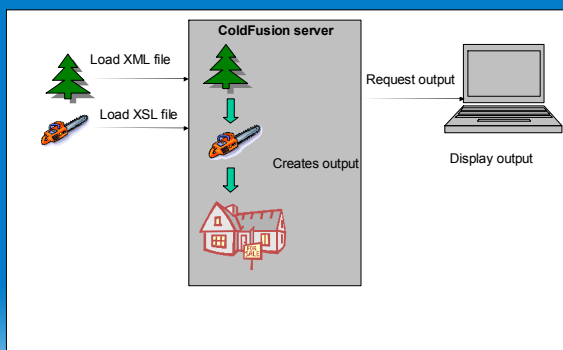
Title	Year	Author
Twenty Thousand Leagues Under the Sea	1870	Jules Verne
Around the world in 80 days	1872	Jules Verne
Ender's Game	1986	Orson Scott Card
Speaker for the Dead	1987	Orson Scott Card
Foundation	1951	Isaac Asimov
Foundation and Empire	1952	Isaac Asimov
I, Robot	1953	Isaac Asimov
my trip to MAXX	2005	Myself

## Exercise 7

- Client-side XSL Transformation
  - Attach the bookstore.xsl document to the XML tree (bookstore.xml).

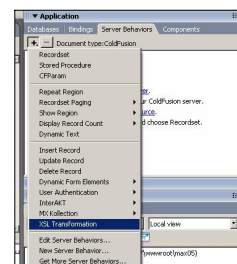


## The actual XSL transformation – server side



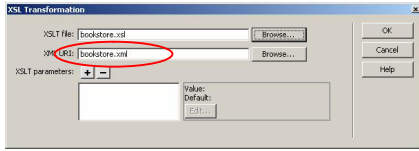
## Using the XSL Transformation Server Behavior

- Application panel → Server Behaviors → XSL Transformation



## Configuring the XSL Transformation

- Pre-load XML file, if specified



## Generated code

- Call to ColdFusion Component, that handles the server-side transformation

```

<!-- XSL Transformation -->
<cfinclude name="xsl" value="bookstore.xsl">
</cfinclude>

```

## Preview in browser

- XML tree is transformed on the server and displayed in any browser.

Title	Year	Author
Twenty Thousand Leagues Under the Sea	1870	Jules Verne
Around the world in 80 days	1873	Jules Verne
Baker's Game	1986	Chris Scott Card
Speaker for the Dead	1987	Chris Scott Card
Foundation	1951	Isaac Asimov
Foundation and Empire	1952	Isaac Asimov
I, Robot	1953	Isaac Asimov
my trip to MAXX	2005	Myself

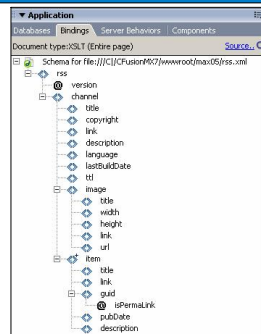
## Exercise 8

- Server side XSL Transformation



## Importing an RSS feed

- Remote RSS files are cached



## Exercise 9

- Importing an RSS feed



### Advanced XSL Techniques

- Dynamic XML from database
- XSL fragments
- XSL templates
- Performance considerations

### What Dreamweaver Is Not

- Dreamweaver does not have **XML Schema support**
- Dreamweaver is not an XML spy

### Summary

- Dreamweaver is a good XML editor
- Dreamweaver 8 is a solid tool in the XML world
  - Learn XML and XSL concepts (XML and XSLT O'Reilly Reference)
- Dreamweaver offers Visual XSL Transformation features
- XSL Transformation
  - Client-side
  - Server-side

### Resources

- W3 Schools  
<http://www.w3schools.com/default.asp>
- Zvon  
<http://www.zvon.org/>

