

XML

Unit 6

October 31

XML, review

- XML is used to markup data
- Used to describe information
- Uses tags like HTML
 - But all tags are user-defined
 - Must be contained within a root element
- XML is easily transferable from one system to another
 - All you need is the Document Type Definition (DTD) or the schema
- Some schema include: XHTML, SVG, MathML, and OpenOffice

XML, review cont.

- XML is stored in plain text files
 - Just like HTML
 - Can edit with any text editor
- Can display in web pages
- Can separate data from your HTML
 - Your data can change without having to rewrite your webpage
 - Think product information on your site
 - Simple as showing how much is in stock would require rewriting your HTML or using a database

Naming Conventions for Tags

- Names can contain letters, numbers, and other characters
 - <name>
 - <date1>, <date2>
- Names cannot start with punctuation or numbers
 - <1date>
 - <24-hours>
 - <?question>
 - <.tagname>

Naming Conventions, cont.

- Do not begin names with XML, or xml, or Xml, or any variation thereof.
- Names cannot contain spaces
 - <first name>
 - <item 1>
- It is good to use underscores _
 - <first_name>
 - <item_1>
- Or you can capitalize letters instead
 - <firstName>
 - <lastName>
 - <productStockCount>

Naming conventions, cont.

- Avoid using – or .
 - Dashes can be mistaken for subtraction symbols
 - “.” is often used in programming
 - <first-name>, <name.first>
- You can use non-English characters, but for portability, you shouldn't.
- Cannot use colons either
 - “:” is reserved for namespaces

Attributes

- You can use attributes in XML
- They are done the same way that we do attributes in HTML
- `<student major = "comm">`
- But,
 - If the attribute is actually describing data, better to make it an element
- `<student>`
 - `<major>comm</major>`
 -
- More extendable this way

In Class Demo of XML File

- Save xml files as .xml
- Can be viewed in your browser

Styling your XML

- You can use CSS to style your XML
- XML actually has it's own stylesheet language called XSL
 - We will discuss this later
- With HTML and CSS we should specify the display property
 - Inline, block, or list-item (or none)
 - Tells the browser how to display the item

In-Class Example

- Adding style to a list of students
- Adding a style to a product list

Viewing Your XML File

- Can view your XML file in your browser
- It doesn't look like a regular text file
 - Has special formatting
- We can use the “-” to collapse parts of the file for viewing
- Use the “+” to expand parts of the file for viewing
- But where do the “-” and “+” come from?

Relationships between Elements

- Products is the *parent* of bouquet
- Bouquet is the *child* of products
- Flower, name, and price are *children* of bouquet
- Flower, name, and price are *siblings* (they have the same parent)

```
<products>
  <bouquet id = "dozen">
    <name>Dozen Roses </name>
    <flower>
      <quantity>12 </quantity>
      Red Roses
    </flower>
    <price>$49.95 </price>
  </bouquet>
</products>
```

Element Content

- Elements can have different types of content
 - *Element*: Contains other elements
 - *Mixed*: Contains elements and text
 - *Simple* or *Text*: Only contains text
 - *Empty*: Contains no elements or text

Content, cont.

- **Products:** element
 - Contains elements bouquet

```
<products>
```
- **Bouquet:** element
 - Contains name, flower, price

```
<bouquet id = "dozen">
```
- **Name:** simple
 - Contains the name of the bouquet and no other elements

```
<name>Dozen Roses
```

```
</name>
```
- **Flower:** mixed
 - Contains quantity (an element) and text

```
<flower>
```

```
<quantity>12 </quantity>
```

```
Red Roses
```

```
</flower>
```
- **Price:** simple
 - Only contains the price, which is text

```
<price>$49.95 </price>
```

```
</bouquet>
```

```
</products>
```

Data Islands

- We can insert XML directly into our HTML files
 - But, this is not supported in most browsers
 - Not supported in Firefox
 - This is for your information, but do **NOT** use it in this course
 - We won't be able to read your file
- Either we can put XML into the .html file

```
<xml id = "studentlist">
  <student>
    <firstName>.....
  </xml>
```
- Or, we can embed the xml file

```
<xml id = "studentlist" src = "studentlist.xml"></xml>
```

XSL

- XSL is more complicated than CSS
 - eXtensible Stylesheet Language
- XSL has 3 parts:
 - *XSLT*: transforms XML into XHTML
 - *XPath*: for navigating XML documents
 - *XSL-FO*: for formatting XML documents
- *XSLT* is probably the most important bit
 - Uses XPath to match parts of the XML file to a template and produces a new document
 - Usually to XHTML elements
 - We'll begin going over XSLT on Wednesday

Questions?

