XML

Session 6

Extensible Stylesheet Language (XSL)

Styling XML documents with CSS

Comparing XSL to CSS – Use of CSS to specify styles for HTML/XHTML

- Cascading Style Sheets are one way of formatting XML data (the other is using XSLT)
- CSS is used for presentation of XML data in a web browser
- As with HTML, you specify an element and the style it should have.
  Example:

```
title
{
    display: block;
    margin: 1em;
    text-align: justify;
    color: #0000FF;
}
```

Filename: Books.css

- To link a stylesheet to an XML document, you declare it as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="Books.css"?>
<!DOCTYPE root SYSTEM "Books.dtd">
<root>
    <book>
        <title>SAMS Teach Yourself XML In 21 Days</title>
        <publisher>SAMS</publisher>
        <author>Steven Holzner</author>
        <isbn>0672325764</isbn>
        <price>28.99</price>
    </book>
</root>
```

Filename: Books.xml

- You cannot specify class or id selectors in your style sheets. These are only applicable to HTML.
- Style rules apply only to elements.
- Used to present XML data in a meaningful way.
- Can be combined with other XML technologies e.g. XSLT, XLinks
- Browsers have “quirks” when implementing CSS.

Use of XSL to specify styles for XML Elements

- Apply styles to all elements, specific elements or descendents of elements
  - Basic Style XML Sample

```
aaa
{
   text-align: left;
   color: blue;
}
```

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
        <aaa>Letter A</aaa>
</example>
```

  - Grouped Styles XML Sample

```
aaa, bbb
{
    font-family: Arial;
    color: green;
}
```

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
        <aaa>Letter A</aaa>
        <bbb>Letter B</bbb>
</example>
```

– Descendents

XML Sample

```
bbb ccc
{
   color: red;
}
```

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
              <example>
    <bbb>
         <bbb>Letter B</bbb>
         <ccc>Letter C</ccc>
    </bbb>
</example>
```

– Immediate Children

XML Sample

```
example > ccc
{
 color: green;
}
```

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
         <ccc>Letter C</ccc>
         <bbb>Letter B</bbb>
         <aaa>
            <ccc>Letter C</ccc>
         </aaa>
</example>
```

- **Immediate Sibling**

```
aaa + bbb
{
   border-left: 1px solid green;
}
```

XML Sample

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
    <aaa>Letter A</aaa>
    <bbb>Letter B</bbb>
    <bbb>Letter B</bbb>
    <ccc>Letter C</ccc>
</example>
```

CSS Attributes

- Elements with attributes can have rules applied to them. You can select elements with particular attributes or attribute values by the use of square brackets.
  - Example of an element that has an attribute:

Style	XML Sample
aaa[asciichar]	<?xml version="1.0" encoding="UTF-8"?>
{	<?xml-stylesheet type="text/css" href="example.css"?>
font-weight: bold;	<example>
font-size: 0.8em;	<aaa asciichar=“41”>**Letter A**</aaa>
}	</example>

- Example of an element that has an attribute with a particular value:

Style

```
aaa[show=“no”]
{
   display:none;
}
```

XML Sample

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
          <aaa asciichar=“41” show=“no”>Letter A</aaa>
          <aaa asciichar=“61” show=“yes”>Letter a</aaa>
</example>
```

– Example of an element with an attribute value as part of a list.

Example:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="example.css"?>
<example>
        <aaa tasks="letter character alphabet">Letter A</aaa>
        <bbb>Letter B</bbb>
</example>
```

```
aaa[tasks~=“letter”]
{
    color: blue;
}
```

Note: attribute has value of “letter”

```
aaa[tasks|=“character”]
{
   font-weight:bold;
}
```

Note: attribute has a hyphen-separated list of values beginning (from the left) with “character”

CSS – Pseudo-class

- You can apply styles according to certain conditions specified by a pseudo-class.

Syntax for pseudo-classes:

```
selector:pseudo-class {property: value}
```

Syntax for using a CSS class with a pseudo-class:

```
selector.class:pseudo-class {property: value}
```

- **Examples (Anchor Pseudo-classes)**

```
a:link
{
        color: #0000FF                                  Note: Unvisited hyperlink
}

a:visited
{
        color: #FE0000                                  Note: Visited hyperlink

}

a:hover
{
        color: #FF00FF                                  Note: Hover mouse over hyperlink
}

a:active
{
        color: #0A00FF                                  Note: Hyperlink was clicked
}
```

- **Examples (CSS class with a pseudo-class)**

Sample Style

```
a.blue:visited
{
        color: #0000FF;
}
```

Sample HTML

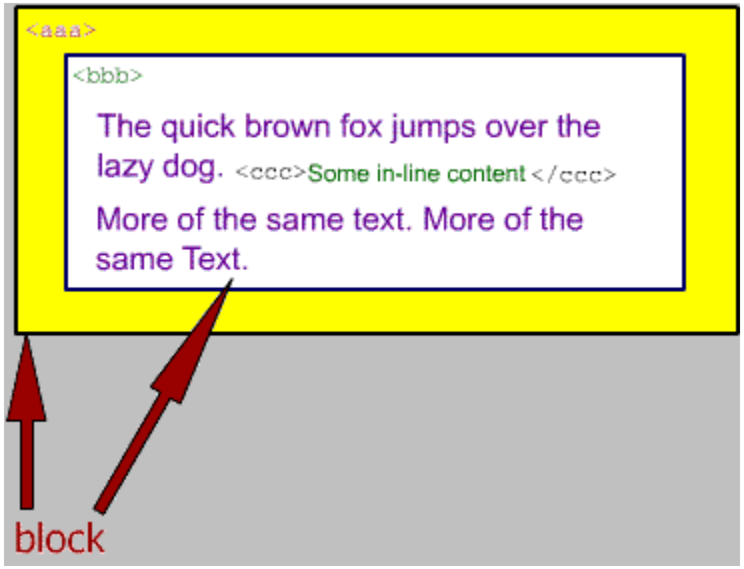
```
<a class=“blue" href=“sample.html">Click Me</a>
```

CSS – Pseudo-elements

- Apply styles according to certain conditions specified by a pseudo-element
  - First Line: aaa:first-line {color:green;}
  - First Letter:
    aaa:first-letter {font-weight:bold; font-size:1.2em;}
  - Before: aaa:before {content:open-quote;}
  - After: aaa:after {content:close-quote;}

CSS – Blocks & in-line

- Elements in CSS are considered block or inline, as defined by the display property.

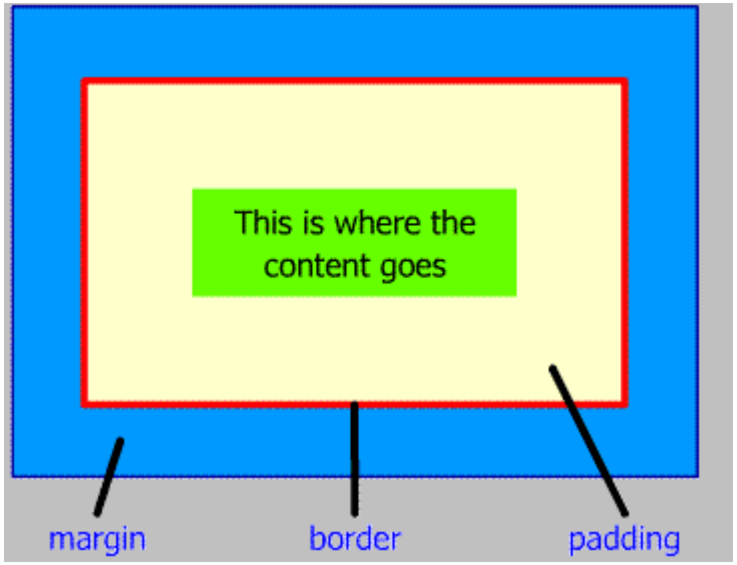

<aaa>
<bbb>
The quick brown fox jumps over the lazy dog. <ccc>Some in-line content</ccc>
More of the same text. More of the same Text.
block

CSS – “display” property

- Used to specify how an element is to be displayed: Possible values are:
    - block
    - inline
    - inline-block
    - table
    - inline-table
    - table-row
    - table-cell
    - list-item
    - run-in
    - none

CSS – Margins, Borders, Padding

- Margins, borders and padding can add spacing and lines around content



XSL is composed of three components

- XSLT – used for transforming XML documents.
- XPATH – used for addressing portions of an XML document.
- XSL-FO (Formatting Objects) – used for controlling the layout of printed documents output to a monitor, printer or other devices.