Session 4

Style Sheets (CSS)

Reading & References

- Reading
  en.wikipedia.org/wiki/Css

- Style Sheet Tutorials
  www.htmldog.com/guides/cssbeginner/

- A reference containing tables of CSS properties
  web.simmons.edu/~grabiner/comm244/weekthree/css-basic-properties.html
Learning Objectives

- Understand the advantages of CSS style sheets in HTML documents
- Become familiar with the syntax of CSS

Limitations of HTML

- Maintenance
- Site compatibility
- Quick change to a site look and feel
- User overrides
- Handling by differing User Agents
Styling in HTML

In pure HTML, viewing information is included in the HTML tag:

```html
<td width="20" bgColor="#333399">
```

Styling is usually contained within the tag – and applies to that element.

Styling in HTML/CSS

With style sheets (CSS), styling information is contained within a style sheet:

```css
td {color:#333399;}
```

Styling is usually contained within a style sheet – and applies to any matching element.
What are Style Sheets?

- A way to separate the appearance of Web pages from the content of Web pages
- HTML should not contain information about how data is displayed
- A recommendation of the W3C
- A way to standardize appearance for many pages in a Web site
- Contained within
  - A text file (with a css suffix) written according to a grammar (CSS 1, CSS 2, CSS 2.1, CSS 3, or CSS 4)
  - An HTML style tag
  - Your browser

Do Many Web Sites Use Style Sheets?

- In wide use today, most of it is auto generated by an html generation tool
- Browser support
  - Vastly improved for current browsers
  - Variations in display are possible
Style Sheet Example

Each of these CSS statements contains directives, referred to as a rule set:

- `body` {font-family: verdana, "minion web", helvetica, sans-serif;
  font-size: 1em;
  text-align: justify;}

- `code` {font-family: courier, sans-serif;
  font-size: 1em;}

Final ";" in a list is not required, but it is good style to use it.

Selectors

Selectors specify how to apply a given style to the html document. Possibilities include:

- All of the elements
  `td {color:#333399;}`

- Some of the elements
  `td.some {color:#333399;}`

- One of the elements
  `td#one {color:#333399;}`

To apply to elements, the affected elements are coded as:

`<td class="some">`
`<td id="one">`

The token (in this case "some") can be any string.
Selectors

- A selector token can match to
  - multiple elements (class attribute)
  - A single token (id attribute)
- You can also use a psuedoclass (represents a special characteristic of an element)
- Examples:
  
  ```
  .danger { color: red; }
  a:link { color: green; }
  a:visited { color: red; }
  ```

Some Selector Types

- HTML element or list of elements (e.g., body, table, h1)
- Class, as in:
  ```
  .instruction {css statements}
  ```
  and
  ```
  <p class="instruction">
  ```
- Pseudo-selectors (e.g., mouseover changes, first line & first letter)
  ```
  a:anchor { background-color: yellow }
  ```
- Contextual (e.g., paragraphs inside lists)
CSS Syntax

- Every CSS file contains a series of statements
- A statement:
  - Identifies the elements it affects (selector)
  - Suggests how the element will be presented to the user (directive properties)
- A rule-set statement contains a selector and any number of directives enclosed in {}

```css
body
{font-family: verdana, "minion web", helvetica, sans-serif;
 font-size: 1em;
 text-align: justify;}
```


How to Refer to the Style Sheet

- As an attribute in a tag
  `<body style="background-color:#FC6">`
  **Syntactically correct, but not a good abstraction**

- Embedded (in the head element of the HTML):
  `<style type="text/css"> ... </style>`
  **Good for debugging**

- Linked (to an external .css file):
  **Good for production**
Properties

- Categories
  - Text style
  - Text layout
  - Background
  - Border
  - Margin
  - Padding
  - Page layout (absolute, fixed, relative, static)
  - Element type
  - User interface (cursor, focus-outline)

- Values
  - Length
  - Percentage
  - URL
  - Color
  - Keyword
  - Others

Typical Values

- Units
  - Absolute values (in, cm, mm, pt, em, px)
  - Relative values (large, percentage)

- Colors
  - RGB
  - Shorthand notation
  - Percentage primary color contribution

- Font
  - Family (serif, sans serif, monospace)
  - Weight
  - Size
div and span Elements

- In pure HTML, you can apply styling to a collection of elements by enclosing them in a styling element (e.g., font, center, b)
  
  `<font face=arial,helvetica size=-2>Forgot Password?</font>`

- These styling elements are not allowed in newer html versions, so you enclose elements in a container – and then apply styling to the container

- In HTML, the containers are:
  - div – for block elements
  - span – for in-line elements

How Do You Convert Spacing

- CSS assumes that the page is presented by displaying a collection of blocks
- Each block is displayed using the CSS box model

![CSS Box Model Diagram]

Values of the padding, border, and margin can be set to 0

Sides can be set individually or for the entire box
HTML Style Attribute

- It is syntactically correct to apply a CSS style to an individual element
- Example

```html
<table width="715">
    Can be replaced with
    
    <table style="width:715">
```

- But of limited usefulness

Multiple Style Sheets

- Cascading implies a priority list of styling operations (usually the order they are encountered in the rendering process)
  - Style tag
  - Additional style tags
  - Style attribute within the html
  - Style within the browser
- Cascading allows individual tailoring without eliminating global styles
CSS Concept Summary

- Applying a style sheet
  - Selector tells you where a style is applied
  - Property tells you what style is being applied
- Apply a style to a container (e.g., div block)
- Use class attributes to apply a style to a semantic block not recognized component not known to html (e.g., error message)
Have You Satisfied the Lecture Objectives

- Understand the advantages of CSS style sheets in HTML documents
- Become familiar with the syntax of CSS