CS 683 Emerging Technologies
Fall Semester, 2004
Doc 2 CSS
Contents

References 2
Cascading Style Sheets – CSS 3
  Linking CSS to a Web page 6
    Linking to an External Style Sheet 7
    Embedding a Style Sheet 12
    Importing a Style Sheet 14
  Linking Styles to Html – Selectors 15
    Descendant Selectors 18
    Child Selectors 19
    Universal Selector 20
    Adjacent Sibling Selector 20
    Attribute Selector 21
    Class Selectors 24
    ID Selectors 25
  DIV 26
  Boxes & Displays 28

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References

CSS Pocket Reference, 2nd Ed., Eric Meyer, O'Reilly, 2004

Web Design Group's Guide to Style Sheets,
http://www.htmlhelp.com/reference/css/

Cascading Style Sheets, level 2 revision 1 CSS 2.1 Specification
http://www.w3.org/TR/CSS21/

Resources

http://www.randsinrepose.com/archives/2004/05/04/your_redesign_toolbox.html
- Rands list of useful CSS links

http://www.csszengarden.com/ css Zen Garden –
- Demonstrates the power of CSS
  - This site is amazing. With the same html page, a number of completely different pages are displayed. You have to see this site to see how different one can vary the display of one page.

http://www.w3.org/Style/CSS/
- Official definition of CSS
- Useful tools (validator)
- Some tutorials

Cascading Style Sheets – CSS

A language to describe the layout of html and xml pages

```
<p style="color: red; background: blue;margin: 0.5em;">
   This is an example of inline css.
</p>

<p style="color: red; font-size: xx-large;text-align: center; ">
   Use Inline CSS sparingly!
</p>
```

Output

This is an example of inline css.

Use Inline CSS sparingly!

Some History

1960s – Standard General Markup Language (SGML)

Large companies (like General Motors, IBM) and the US government worked to create SGML to define document structure. Computer then could be used to print the document. Since SGML defined just the structure and not how to display the document, a document could be layed out in many different ways. Also the document could be searched and parts of the document used in other documents.

1990s – HTML

The creators of HTML really missed the point of SGML. HTML was simple and worked, but scaled poorly. It contains tags and attributes that describe layout, making it hard to maintain a number of pages and modify the layout over time and on differing types of devices.

- Layout tags

  Center the text

- Layout attributes

  <td width=”105”>A Wide table data cell</td>

CSS & HTML

CSS

- Richer set of layout commands than html
- Finer control over layout
- Can be separated from html
- Use different layouts for different devices

Use CSS for layout

Use html (xhtml) to define the structure of the page

Linking CSS to a Web page

- Link to External Style Sheet
- Embedding a Style Sheet
- Importing a Style Sheet
- Inlining a Style Sheet

Linking to an External Style Sheet

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
      "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
<head>
   <meta http-equiv="content-type" content="text/html; charset=iso-8859-1"
/>
   <title>Sample</title>
   <meta name="generator" content="BBEdit 7.1.4" />
   <link rel="Stylesheet" href="simple.css" type="text/css" media="all" />
</head>
<body>
<p>A Smalltalk example </p>
<p class="code">1000 factorial printString size</p>
</body>
</html>
```

simple.css

```
p.code
{
   margin: 0 .5in 0 .5in;
   padding: 5px;
   border-style: solid;
   border-width: 1px;
   border-color: #CCCCCC;
   background-color: #F4F4F4;
}
```

Linking to Multiple External Style Sheets

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
      "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
<head>
  <meta http-equiv="content-type" content="text/html; charset=iso-8859-1"
/>
  <title>Sample</title>
  <meta name="generator" content="BBEdit 7.1.4" />
  <link rel="Stylesheet" href="simple.css" type="text/css" media="screen"
/>
  <link rel="Stylesheet" href="small.css" type="text/css" media="handheld"
/>
  <link rel="Stylesheet" href="print.css" type="text/css" media="print" />
</head>
```

Media Types

all

braille

Braille tactile feedback devices.

embossed

Intended for paged braille printers.

handheld

Intended for handheld devices

print

Intended for paged material and for documents viewed on screen in print preview mode.

projection

Intended for projected presentations, for example projectors.

screen

Intended primarily for color computer screens.

speech

Intended for speech synthesizers

tty

Intended for media using a fixed-pitch character grid

tv

Intended for television-type devices

Combining Multiple Style Sheets

```
<link rel="StyleSheet" href="basics.css" title="Contemporary" />
<link rel="StyleSheet" href="tables.css" title="Contemporary" />
<link rel="StyleSheet" href="forms.css" title="Contemporary" />
```

Since all three links have the same title they form a single style sheet

Conflicts

If basics.css contains:

```
p.code { margin: 0 .5in 0 .5in; }
```

and tables.css contains:

```
p.code { margin: 0 2in 0 .2in; }
```

Then the later is used as tables.css is linked after basics.css

There are a number of ways to link multiple styles sheets to a document. When style definitions clash the later one is used.

Preferred & Alternate Style Sheets

```
<link rel="StyleSheet" href="basics.css" />
```

rel=”StyleSheet” indicates the style is persistent

persistent style is one that is used when style sheets are enabled

```
<link rel="alternate stylesheet" href="basics.css" />
```

rel=”alternate stylesheet” indicates an alternative style

Currently most browsers do not provide the ability to select and alternative style sheet

Embedding a Style Sheet

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
      "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
<head>
   <meta http-equiv="content-type" content="text/html; charset=iso-8859-1"
/>
   <title>Sample</title>
   <meta name="generator" content="BBEdit 7.1.4" />
<style type="text/css" media="all">
      <!--
      p.code
      {
         margin: 0 .5in 0 .5in;
         padding: 5px;
         border-style: solid;
         border-width: 1px;
         border-color: #CCCCCC;
         background-color: #F4F4F4;
      }
      -->
</style>
</head>
<body>
<p>A Smalltalk example </p>
<p class="code">1000 factorial printString size</p>
</body>
</html>
```

Be kind to Early Browsers

Some early browsers do not know about style sheets

- Netscape 1, 2,
- IE 1, 2

They will display the style sheet

So embed the style sheet in html comment

```
<style type="text/css" media="all">
    <!--
    p.code {margin: 0 .5in 0 .5in; }
    -->
</style>
```

Importing a Style Sheet

```
<style type="text/css" media="screen, projection">
<!--
  @import url(http://www.htmlhelp.com/style.css);
  @import url(/stylesheets/punk.css);
  dt { background: yellow; color: black }
-->
</style>
```

import statements must be at the top of a style tag

External style sheets (linked or imported) can also import other style sheets

Linking Styles to Html – Selectors

A style or rule has a selector and one or more declarations

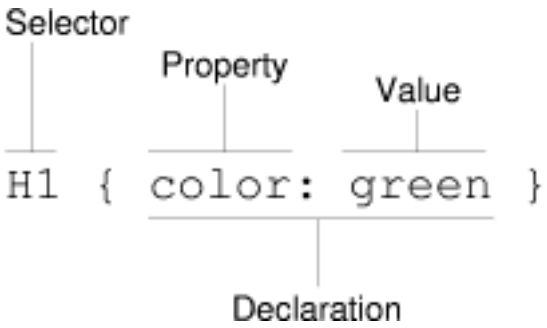


Image from http://www.w3.org/Style/LieBos2e/enter/

See http://www.w3.org/TR/CSS21/selector.html#q1 for a table of all types of selectors

See http://www.w3.org/TR/CSS21/selector.html for details of each selector type

Multiple declarations

```
h1
{
   font-style: normal;
   font-weight: bolder;
   text-align: center;
   font-size: medium;
}
```

Grouping Selectors

```
h1
{
   font-style: normal;
   text-align: center;
}

h2
{
   font-style: normal;
   text-align: center;
}
```

The above two rules can be combined into one rule

```
h1, h2
{
   font-style: normal;
   text-align: center;
}
```

Descendant Selectors

```
h1 { color: red }
em { color: red }
h1 em { color: blue }
```

h1 em will match any em tag that is nested in a h1 tag

```
<H1>This <SPAN class="myclass">headline
is <EM>very</EM> important</SPAN></H1>
```

You can nest selecters as deep as you need

```
h1 td ul il a { color: green }
```

Child Selectors

```
h1 > em { color: blue }
```

h1 > em will match any em tag that is directly inside a h1 tag

It does not match the em tag below

```
<H1>This <SPAN class="myclass">headline
is <EM>very</EM> important</SPAN></H1>
```

Universal Selector

* matches any tag

```
* { color: green }

h1 > * { color: blue
```

The later makes all child tags of h1 blue

Adjacent Sibling Selector

```
table + p { color: green }
```

Matches a <p> that follows a table

The rule matches the following <p>
pure text between table and p are ignored

```
<table border="1"><tr><td>A Cell</td></tr>
</table>
foo
<p>bar</p>
```

There are no matches below

```
<table border="1"><tr><td>A Cell</td></tr>
</table>
<div>foo</div>
<p>bar</p>
```

Attribute Selector

```
<div name="sam">1</div>
<p name="sam" >2</p>
<p>3</p>
<a href="index.html" name="pete">4</a>
<p name="sam roger pete" >5</p>

[name] { color: lightblue}
```

results in

```
<div style="color: lightblue;" name="sam">1</div>
<p style="color: lightblue;" name="sam" >2</p>
<p>3</p>
<a style="color: lightblue;" href="index.html" name="pete">4</a>
<p style="color: lightblue;" name="sam roger pete" >5</p>

a[name] { color: lightblue}
```

results in

```
<div  name="sam">1</div>
<p  name="sam" >2</p>
<p>3</p>
<a style="color: lightblue;" href="index.html" name="pete">4</a>
<p name="sam roger pete" >5</p>
```

More Examples

```
[name=pete] {color: lightblue}
```

```
<div  name="sam">1</div>
<p  name="sam" >2</p>
<p>3</p>
<a style="color: lightblue;" href="index.html" name="pete">4</a>
<p name="sam roger pete" >5</p>
```

```
[name~=pete] {color: lightblue; }
```

results in

```
<div  name="sam">1</div>
<p  name="sam" >2</p>
<p>3</p>
<a style="color: lightblue;" href="index.html" name="pete">4</a>
<p style="color: lightblue;" name="sam roger pete" >5</p>
```

Attribute Selector Rules

[att]

Match when the element sets the "att" attribute, whatever the value of the attribute.

[att=val]

Match when the element's "att" attribute value is exactly "val".

[att~=val]

Match when the element's "att" attribute value is a space-separated list of "words", one of which is exactly "val".

[att|=val]

Match when the element's "att" attribute value is a hyphen-separated list of "words", beginning with "val". The match always starts at the beginning of the attribute value.

Class Selectors

class is a special attribute of tags

```
<div  class="sam">1</div>
<p  class="sam" >2</p>
<p>3</p>
<a  class="pete">4</a>
<p name="roger sam pete" >5</p>

.sam { color: lightblue }
```

results in

```
<div style="color: lightblue;" class="sam">1</div>
<p style="color: lightblue;" class="sam" >2</p>
<p>3</p>
<a href="index.html" class="pete">4</a>
<p style="color: lightblue;" class="roger sam pete" >5</p>
```

```
p.sam { color: lightblue }
```

results in

```
<div  class="sam">1</div>
<p style="color: lightblue;" class="sam" >2</p>
<p>3</p>
<a href="index.html" class="pete">4</a>
<p style="color: lightblue;" class="roger sam pete" >5</p>
```

ID Selectors

Two id attributes cannot have the same value in a single document

Browser vary on how they enforce this rule

```
#sam { color: lightblue }
```

matches both

```
<p id="sam" >2</p>
<a id="pete">4</a>
```

```
p#sam { color: lightblue }
```

matches

```
<p id="sam" >2</p>
```

but not

```
<a id="pete">4</a>
```

DIV

Div is a block-level element used to group other elements

Block-level elements usually start on a new line

```
<div class="note">
   <h1>Divisions</h1>
   <p>
      The DIV element is defined in HTML 3.2, but
only the ALIGN attribute is permitted in HTML 3.2.
HTML 4.0 adds the CLASS, STYLE, and ID attributes,
among others.
   </p>
   <p>
      Since DIV may contain other block-level
containers, it is useful for marking large sections
of a document, such as this note.
   </p>
   <p>
      The closing tag is required.
   </p>
</div>

div.note { color: lightblue }
```

Matches all the elements above

When you match an element you match all the elements inside it

SPAN

Span is an inline element used to use style that cannot be attached to regular html elements

Inline elements usually do not begin on a new line

```
<p>
   <span class="firstwords">The first few words</span> of a paragraph could be in small-caps. Style may also be inlined, such as to change the style of a word like <span style="font-family: Arial"> Arial</span>.
</p>
```

Boxes & Displays

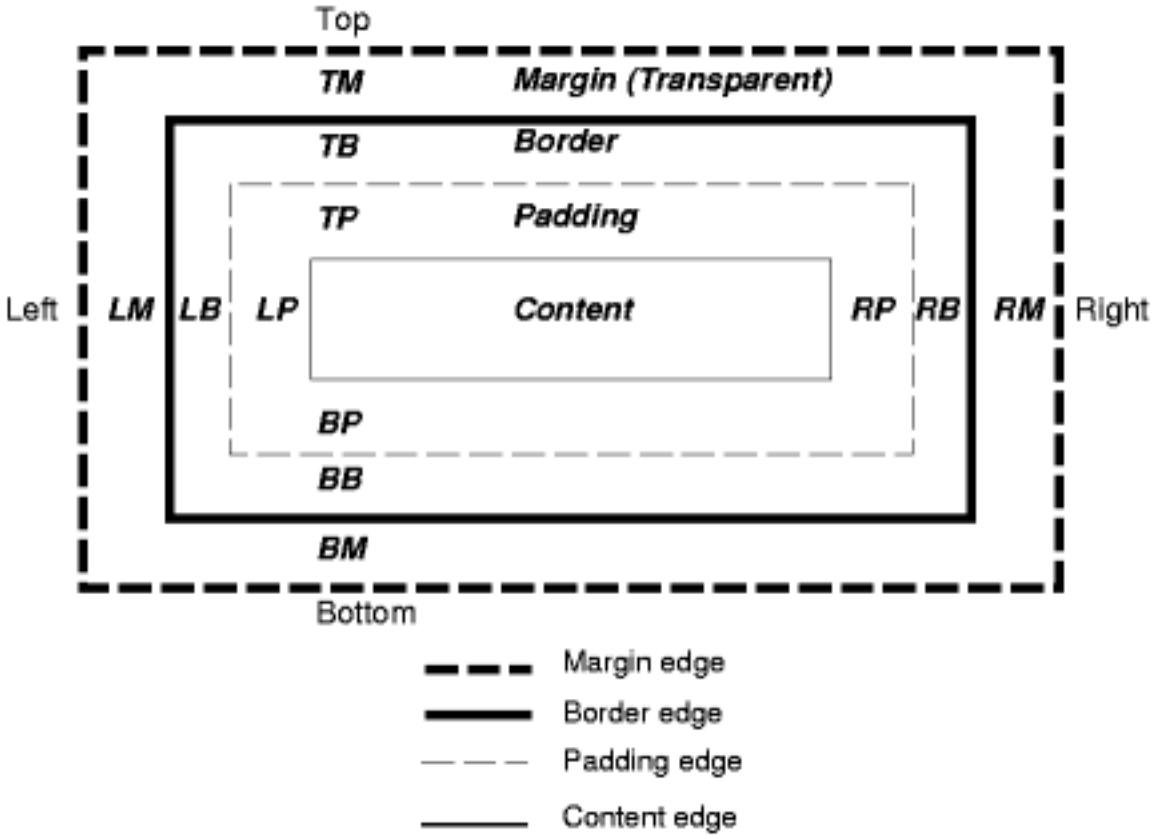


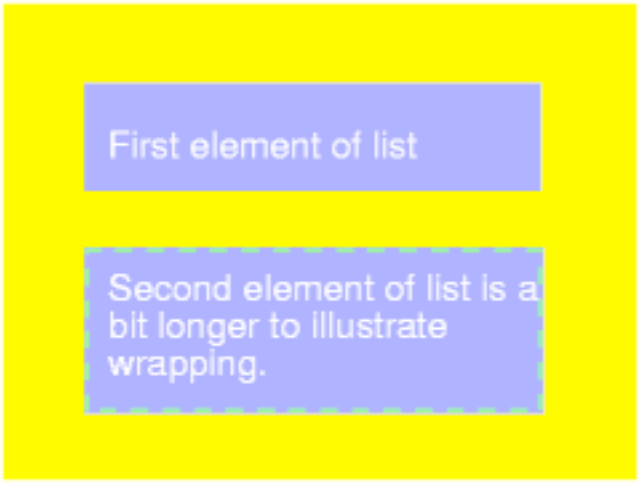
Image from http://www.w3.org/TR/CSS21/box.html

Example

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0//EN">
<HTML> <HEAD>
   <TITLE>Examples of margins, padding, and borders</TITLE>
   <STYLE type="text/css">
    UL {
      background: yellow;
      margin: 12px 12px 12px 12px;
      padding: 3px 3px 3px 3px; }
    LI {
      color: white;              /* text color is white */
      background: blue;          /* Content, padding will be blue */
      margin: 12px 12px 12px 12px;
      padding: 12px 0px 12px 12px; /* Note 0px padding right */
      list-style: none           /* no glyphs before a list item */
}
    LI.withborder {
      border-style: dashed;
      border-width: medium;      /* sets border width on all sides */
      border-color: lime; }
   </STYLE>
  </HEAD>
  <BODY>
   <UL>
    <LI>First element of list
    <LI class="withborder">Second element of list is
        a bit longer to illustrate wrapping.
   </UL>
  </BODY>
</HTML>
```

Example from http://www.w3.org/TR/CSS21/box.html

Example Displayed



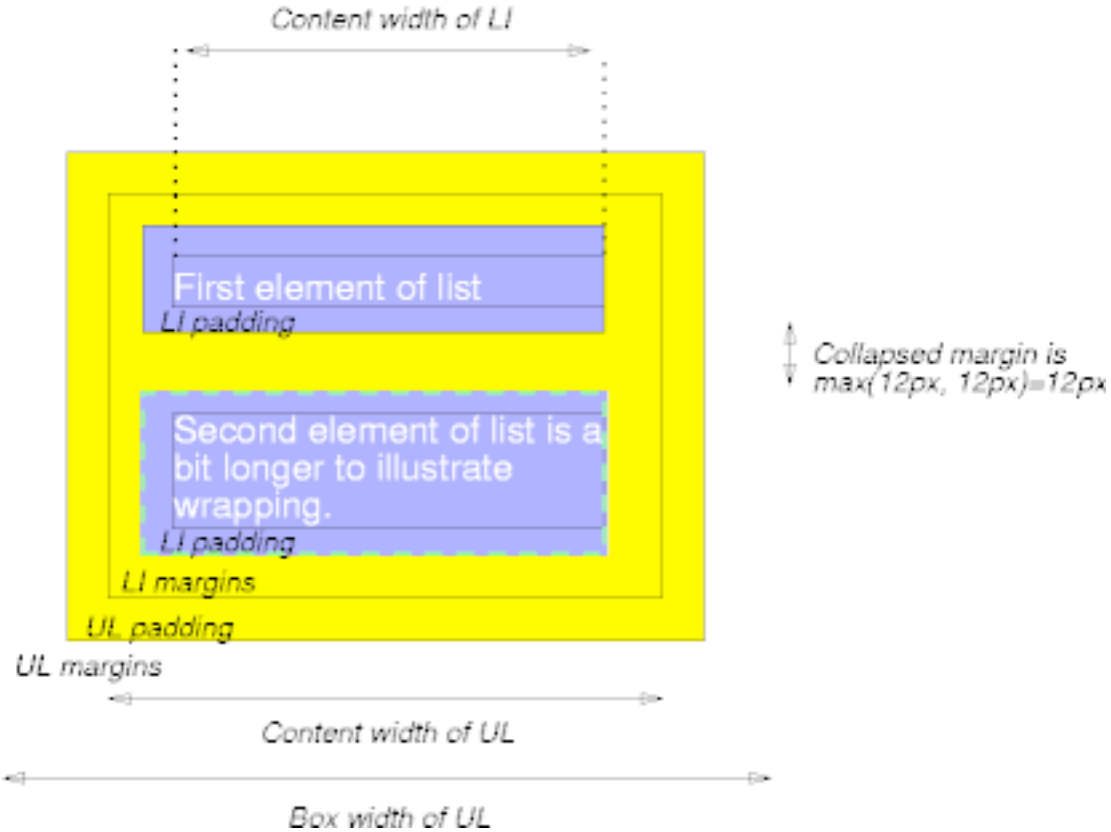


Image from http://www.w3.org/TR/CSS21/box.html