

CSE 154

LECTURE 2: MORE CSS

Nesting tags

```
<p>  
  HTML is <em>really,  
  <strong>REALLY</em> lots of</strong> fun!  
</p>
```

HTML

- tags must be correctly nested
 - (a closing tag must match the most recently opened tag)
- the browser may render it correctly anyway, but it is invalid HTML
 - (how would we get the above effect in a valid way?)

Comments: `<!-- ... -->`

comments to document your HTML file or "comment out" text

```
<!-- My web page, by Suzy Student  
      CSE 190 D, Spring 2048      -->  
<p>CSE courses are <!-- NOT --> a lot of fun!</p>
```

HTML

CSE courses are a lot of fun!

- many web pages are not thoroughly commented (or at all)
- still useful at top of page and for disabling code
- comments cannot be nested and cannot contain a --

Web Standards

It is important to write proper HTML code and follow proper syntax.

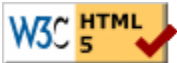
Why use valid HTML and web standards?

- more rigid and structured language
- more interoperable across different web browsers
- more likely that our pages will display correctly in the future
- can be interchanged with other XML data: [SVG](#) (graphics), [MathML](#), [MusicML](#), [etc.](#)

W3C HTML Validator

```
<p>  
  <a href="http://validator.w3.org/check/referer">  
      
  </a>  
</p>
```

HTML



output

- validator.w3.org
- checks your HTML code to make sure it follows the official HTML syntax
- more picky than the browser, which may render bad HTML correctly

HTML Character Entities

a way of representing any [Unicode](#) character within a web page

character(s)	entity
< >	< >
é è ñ	é è ñ
™ ©	™ ©
π δ Δ	π δ Δ
И	И
" &	" &

- [Complete list of HTML entities](#)

- How would you display the text & on a web page?

W3C CSS Validator

```
<p>  
  <a href="http://jigsaw.w3.org/css-validator/check/referer">  
    </a>  
</p>
```

HTML



output

- jigsaw.w3.org/css-validator/
- checks your CSS to make sure it meets the official CSS specifications
- more picky than the web browser, which may render malformed CSS correctly

Cascading Style Sheets (CSS): `<link>`

```
<head>
  ...
  <link href="filename" type="text/css" rel="stylesheet" />
  ...
</head>
```

HTML

- CSS describes the appearance and layout of information on a web page (as opposed to HTML, which describes the content of the page)
- can be embedded in HTML or placed into separate .css file (preferred)

Basic CSS rule syntax

```
selector {  
    property: value;  
    property: value;  
    ...  
    property: value;  
}  
  
p {  
    font-family: sans-serif;  
    color: red;  
}
```

- a CSS file consists of one or more rules
- a rule's selector specifies HTML element(s) and applies style properties
- a selector of * selects all elements

CSS properties for colors

```
p {  
    color: red;  
    background-color: yellow;  
}
```

CSS

This paragraph uses the style above.

output

Property	Description
<u>color</u>	color of an element's text
<u>background-color</u>	color that will appear behind the element

Specifying colors

```
p { color: red; }  
h2 { color: rgb(128, 0, 196); }  
h4 { color: #FF8800; }
```

CSS

This paragraph uses the first style above.

This h2 uses the second style above.

This h4 uses the third style above.

output

- color names: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, (white), yellow
- RGB codes: red, green, and blue values from 0 (none) to 255 (full)
- hex codes: RGB values in base-16 from 00 (0, none) to FF (255, full)

CSS properties for fonts

property	description
<u>font-family</u>	which font will be used
<u>font-size</u>	how large the letters will be drawn
<u>font-style</u>	used to enable/disable italic style
<u>font-weight</u>	used to enable/disable bold style
<u>Complete list of font properties</u>	

font-family

```
p {  
  font-family: Georgia;  
}  
h2 {  
  font-family: "Courier New";  
}
```

CSS

This paragraph uses the first style above.

This h2 uses the second style above.

output

- enclose multi-word font names in quotes

More about font-family

```
p {  
  font-family: Garamond, "Times New Roman", serif;  
}
```

CSS

This paragraph uses the above style.

output

- can specify multiple fonts from highest to lowest priority
- generic font names:
 serif, *sans-serif*, *cursive*, **FANTASY**, *monospace*

font-size

```
p {  
    font-size: 14pt;  
}
```

CSS

This paragraph uses the style above.

output

- units: pixels (px) vs. point (pt) vs. m-size (em)
16px, 16pt, **1.16em**
- vague font sizes: xx-small, x-small, small, medium, large, x-large, xx-large,
smaller, **larger**
- percentage font sizes, e.g.: 90%, **120%**

font-weight, font-style

```
p {  
  font-weight: bold;  
  font-style: italic;  
}
```

CSS

This paragraph uses the style above.

output

- either of the above can be set to normal to turn them off (e.g. headings)

Grouping styles

```
p, h1, h2 {  
  color: green;  
}  
h2 {  
  background-color: yellow;  
}
```

CSS

This paragraph uses the above style.

This h2 uses the above styles.

output

- A style can select multiple elements separated by commas
- The individual elements can also have their own styles

CSS comments: /* ... */

```
/* This is a comment.  
   It can span many lines in the CSS file. */  
p {  
    color: red;  
    background-color: aqua;  
}
```

CSS

- CSS (like HTML) is usually not commented as much as code such as Java
- the // single-line comment style is NOT supported in CSS
- the <!-- ... --> HTML comment style is also NOT supported in CSS

CSS properties for text

property	description
<code>text-align</code>	alignment of text within its element
<code>text-decoration</code>	decorations such as underlining
<code>line-height</code> , <code>word-spacing</code> , <code>letter-spacing</code>	gaps between the various portions of the text
<code>text-indent</code>	indents the first letter of each paragraph

[Complete list of text properties](http://www.w3schools.com/css/css_reference.asp#text) (http://www.w3schools.com/css/css_reference.asp#text)

text-align

```
blockquote { text-align: justify; }
```

```
h2 { text-align: center; }
```

CSS

The Emperor's Quote

[TO LUKE SKYWALKER] The alliance... will die. As will your friends. Good, I can feel your anger. I am unarmed. Take your weapon. Strike me down with all of your hatred and your journey towards the dark side will be complete.

output

- can be left, right, center, or justify (which widens all full lines of the element so that they occupy its entire width)

Text-decoration

```
p {  
  text-decoration: underline;  
}
```

CSS

This paragraph uses the style above.

output

- can also be overline, ~~line-through~~, blink, or none
- effects can be combined:

```
text-decoration: overline underline;
```

text-shadow

```
p {  
    font-weight: bold;  
    text-shadow: 2px 2px gray;  
}
```

CSS

This paragraph uses the style above.

output

- shadow is specified as an X-offset, a Y-offset, and an optional color

The list-style-type property

```
ol { list-style-type: lower-roman; }
```

CSS

Possible values:

- i. none : No marker
- ii. disc (default), circle, square
- iii. Decimal: 1, 2, 3, etc.
- iv. decimal-leading-zero: 01, 02, 03, etc.
- v. lower-roman: i, ii, iii, iv, v, etc.
- vi. upper-roman: I, II, III, IV, V, etc.
- vii. lower-alpha: a, b, c, d, e, etc.
- viii. upper-alpha: A, B, C, D, E, etc.
- x. lower-greek: alpha, beta, gamma, etc.
- others: hebrew, armenian, georgian, cjk-ideographic, hiragana...

Embedding style sheets: <style> (BAD!)

```
<head>
  <style type="text/css">
    p { font-family: sans-serif; color: red; }
    h2 { background-color: yellow; }
  </style>
</head>
```

HTML

- CSS code can be embedded within the head of an HTML page
- this is *bad style*; DO NOT DO THIS (why?)

Inline styles: the style attribute (BAD!)

```
<p style="font-family: sans-serif; color: red;">  
This is a paragraph</p>
```

HTML

This is a paragraph

output

- higher precedence than embedded or linked styles
- used for one-time overrides and styling a particular element
- this is *bad style*; DO NOT DO THIS (why?)

Content vs. presentation

- HTML is for **content**; *what* is on the page (heading; list; code; etc.)
- CSS is for **presentation**; how to display the page (bold; centered; 20px margin; etc.)
- keeping content separate from presentation is a very important web design principle
- If the HTML contains no styles, its entire appearance can be changed by swapping .css files
- see also: [CSS Zen Garden](#)

Styles that conflict

```
p, h1, h2 { color: blue; font-style: italic; }  
h2 { color: red; background-color: yellow; }
```

CSS

This paragraph uses the first style above.

This heading uses both styles above.

output

- when two styles set conflicting values for the same property, the latter style takes precedence

Cascading style sheets

- It's called Cascading Style Sheets because the properties of an element *cascade* together in this order:
 - browser's default styles (reference)
 - external style sheet files (in a `<link>` tag)
 - internal style sheets (in a `<style>` tag in the page header)
 - inline style (the `style` attribute of an HTML element)

Inheriting styles (explanation)

```
body { font-family: sans-serif; background-color: yellow; }  
p { color: red; background-color: aqua; }  
a { text-decoration: underline; }  
h2 { font-weight: bold; text-align: center; }
```

CSS

This is a heading

A styled paragraph. Previous slides are available on the website.

- A bulleted list

output

- when multiple styles apply to an element, they are inherited
- a more tightly matching rule can override a more general inherited rule
- not all properties are inherited (notice link's color above)

CSS properties for backgrounds

property	description
background-color	color to fill background
background-image	image to place in background
background-position	placement of bg image within element
background-repeat	whether/how bg image should be repeated
background-attachment	whether bg image scrolls with page
background	shorthand to set all background properties

background-image

```
body {  
    background-image: url("images/draft.jpg");  
}
```

CSS

This is the first paragraph

This is the second paragraph...

It occupies 2 lines

- background image/color fills the element's content area

background-repeat

```
body {  
  background-image: url("images/draft.jpg");  
  background-repeat: repeat-x;  
}
```

CSS

This is the first paragraph

This is the second paragraph..

It occupies 2 lines

- can be repeat (default), repeat-x, repeat-y, or no-repeat

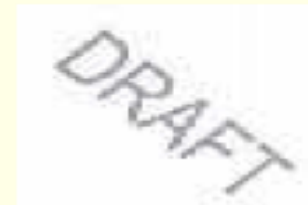
background-position

```
body {  
  background-image: url("images/draft.jpg");  
  background-repeat: no-repeat;  
  background-position: 370px 20px;  
}
```

CSS

This is the first paragraph

This is the second paragraph...
It occupies 2 lines



- value consists of two tokens, each of which can be top, left, right, bottom, center, a percentage, or a length value in px, pt, etc.
- value can be negative to shift left/up by a given amount