

More HTML & Intro to Cascading Style Sheets

Essentials of Web Design
CSCI 1210

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HTML

A Little More HTML

Let's talk about a little more HTML and then jump into Cascading Stylesheets

There are a couple of important attributes we need to be aware of

id, and

class

A Little More HTML

Both are similar, but there are important differences

id, as its name implies, assigns an identification value to an element

This identifier can be accessed later for styling (CSS) or scripting (JavaScript)

Value must be unique on a given page

```
<p id="demo">Demo</p>
```

The name can be [almost] anything, as long as it starts with a letter or an underscore

A Little More HTML

Both are similar, but there are important differences

class, allows us to identify a group of similar elements so that we can manipulate those elements selectively

Assigns a value to one or more elements that can be accessed later

Value may be used multiple times on a page

```
<p  
  class="quote">Quotation</p>
```

The name can be [almost] anything, as long as it starts with a letter or an underscore

Class and ID

We'll see later how we can use classes to customize our styling

Ids can also be used for styling, but, in general are used by Javascript

...which is a bit beyond the scope of this class

Syntax / Use

Assigning a **class** or **id** to an element simply requires adding the appropriate attribute to the element's opening tag

```
<p class="someClass">
  Lorem Ipsum...
</p>
```

<!-- OR -->

```
<p id="paragraph1">
  I am the first paragraph
</p>
```

Multiple Classes

We can assign multiple classes to an element to further specify its presentation

For example, let's say we have classes defined to display text in red (named **red-text**) color and to change the element's background color to light gray (named **gray-background**)

```
<p class="red gray-background">
  Lorem Ipsum...
</p>
```

👍 Notice that the list of classes is space-separated. We can use as many classes as we need (not just two)

👍 We'll discuss the mechanics of 'defining' classes soon

Layout

Review - HTML5 Page Structure

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8"> <!-- Other meta
tags, too -->
    <title>Title of the document</title>
</head>
<body>
    CONTENT GOES HERE TO BE DISPLAYED WHEN THE
PAGE LOADS
</body>
</html>
```

Layout

There are many page layout options

This is a basic, one column layout

Each page still has a header, navigation bar, content section, & footer

The content section is subdivided into its own sections, based on the page's actual content

Body <body>

Header <div>

Nav <div> <a> <a> <a> <a>...

Content <div>

Heading <h1>

Paragraph <p>

Paragraph <p>

Footer <div>

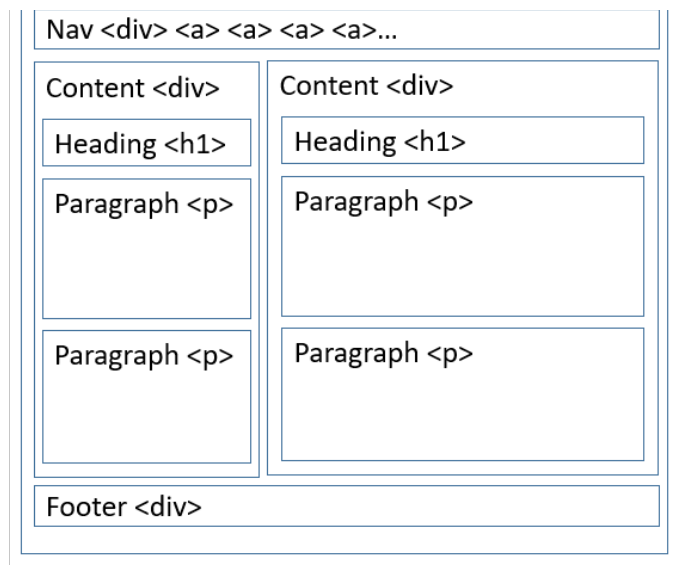
Layout

There are many page layout options

This is a basic, two column layout

Each page still has a header, navigation bar, & footer

But here we have two content sections which display as two columns. One could be, a 'main content' column and the other an 'aside' column



Layout

Here we can see a page that's laid out as a single column

The content is nested inside another container

This way, we can style the container and the contents independently

Body <body>

Header <div>

Nav <div> <a> <a> <a> <a>...

<div> (container)

<div> (content)

Heading <h1>

Paragraph <p>



Paragraph <p>

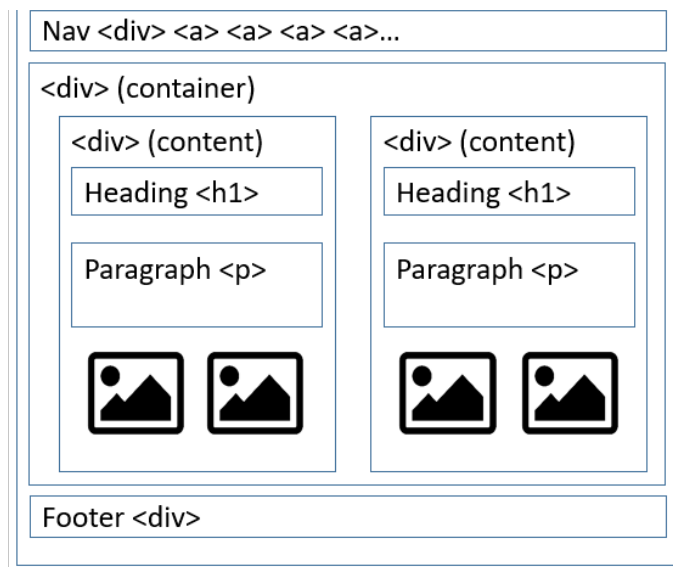
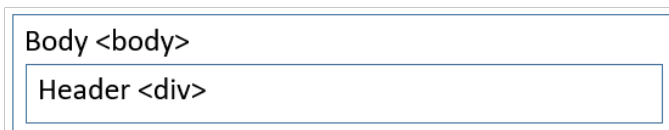
Footer <div>

Layout

This is similar to the previous example

The content is subdivided into two columns and nested inside the container

Again, this provides a more granular way to style the container and the contents independently



Key Issues With Layout

- ✓ Layout is a critical element that makes a website to be a success. Or a failure
- ✓ A website layout is a pattern (or framework) that defines a website's structure
- ✓ It has the role of structuring the information present on a site both for the website's owner and for users
- ✓ It provides clear paths for navigation within web pages and puts the most important elements of a website front and center

Key Issues With Layout

- ✓ A good layout keeps users on the site because it makes important information easily accessible and intuitive to find
- ✓ A bad layout frustrates users which then quickly leave the site because they can't find what they are looking for
- ✓ There's a strong relationship between the layout and the engagement of users with the website
- ✓ It determines how long they dwell on the website pages, how many pages they browse and how often they come back to the website

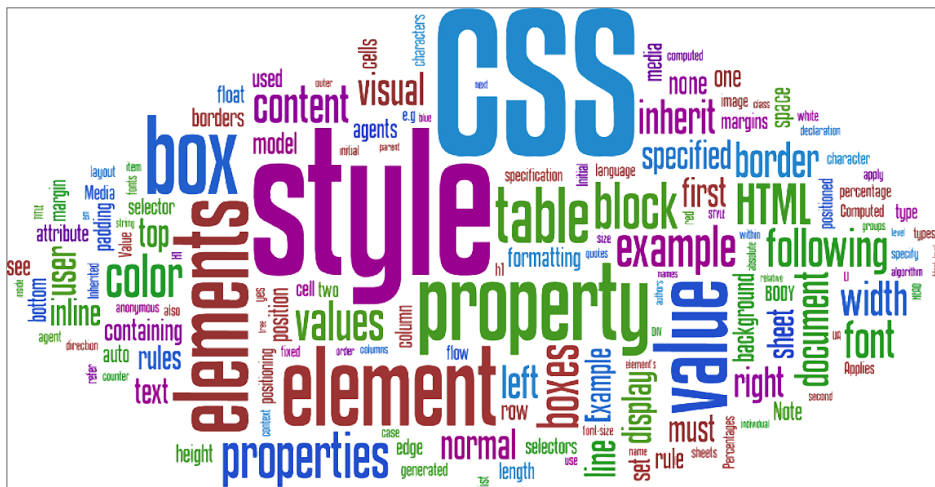
Key Issues With Layout

We will discuss this in greater detail when we explore design

At this point, we have a good working knowledge of HTML

So now, let's discuss its companion - CSS

Cascading Stylesheets



(<http://www.csszengarden.com/>)

The Power of CSS

HTML defines structure

CSS defines style

Separating the two concerns makes each easier to write and maintain

Back in the day, what would have been

```
<h1>
  <font color="#3366ff"
  face="Helvetica">
    Welcome to CSS
  </font>
</h1>
```

The Power of CSS

HTML defines structure

CSS defines style

Separating the two concerns makes each easier to write and maintain

Is now

```
h1 {
  color: #3366ff;
  font-family: 'Helvetica';
}
```

What is CSS?

Allow users to apply typographic and design styles for elements on a page

Done by using established HTML elements and specifying rules for how that element should be displayed

One you have learned the syntax - how to write a set of rules - learning CSS mostly involves learning the different properties you can use

🌐 **W3Schools is an excellent resource ()**

Advantages

Greater, more granular page layout and style control

Size, color, line spacing, placement, margins, etc.

Separates style from structure in the HTML document

Easier site maintenance

Make style changes to many pages - even the entire site - at once

Disadvantages

Not uniformly implemented in browsers

Older browsers don't support. Newer browsers have variances in display

Different versions - CSS2 and CSS3

HTML5 became standard on October 28, 2014

CSS3 still doesn't have an 'official' date to be made standard, but most modern browsers are actually 'ahead of the standards'

Ways to Define Styles

One or more rules

External style sheet (linked)

Internal style sheet (embedded)

Applied directly to an element (inline)

Defining Styles

Stylesheet rule syntax

Property/value pairs separated by semicolons

A property *may* have more than one value

```
/* Syntax */
selector {
    property: value;
}

/* Examples */
h1 {
    color: red;
}

p {
    width: 500px;
    background-color: #ff9933;
    margin: 0 auto;
}

div {
    width: 800px;
    margin: 20px auto;
    border: 1px solid #0000aa;
}
```

External Stylesheets

One way we can implement CSS is through external (linked) style sheets

With external style sheets we create a second document and name it with a .css extension

This second file contains only the CSS expressions (and comments)

Preferred method for employing CSS

External stylesheets allow for modifying style across multiple HTML documents from a single location

External Stylesheets

Within every page that needs to use the external style sheet, we add the following tag to the head section of the document:

```
<link href="style.css" type="text/css" />
```

The advantage to external style sheets is that we can create one (or several) css file(s) and our entire website can use it/them

More examples

```
/* Heading */
h2 {
    font-style: italic;
    text-align: center;
    font-weight: 300;
}

/* paragraph */
p {
    width: 50%;
    margin: auto;
    background: rgba(200,200,200,.5);
    padding: 15px;
    text-indent: 20px;
}

/* span */
span {
    font-family: monospace;
    font-weight: bold;
    font-size: 1.3rem;
}
```

```
/* anchor element */
a {
    display: block;
    width: 50px;
    margin-right: 10px;
    text-decoration: none;
    text-align: center;
    background-color: #f9f9f9;
    color: #aa00aa;
    font-size: 16px;
    font-weight: bold;
    line-height: 1.5rem;
}
```

So how does this work?

Let's say we have an external stylesheet with the following rules:

```
/* Heading */  
h1 {  
    font-weight: bold;  
    color: red;  
    font-size: 36px;  
}  
  
/* paragraph */  
p {  
    color: green;  
    font-family: Arial, Helvetica,  
    sans-serif;  
}
```

index.html

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <link rel="stylesheet" href="style.css">
    <title>Basic web page</title>
    <meta charset="utf-8">
  </head>
  <body>
    <h1>This would display bold, red, and font 36px</h1>
    <p>This would display green and font family Arial</p>
  </body>
</html>
```

Embedded (Internal) Stylesheets

Embedded style sheets are defined in the head section of the document

<style>...</style>

Embedded stylesheets only apply to the page they're included (embedded) in

Good for page-specific styling

Embedded Stylesheets

```
<head>
  <meta charset='utf-8'>
  <title>Embedded CSS
Example</title>
  <style>
    h1 {
/* heading 1 */
      color: red;
/* text color */
      font-size: 36px;
/* text size */
    }
    p {
      color: green;
/* text color */
      font-family: Arial;
/* font family */
    }
  </style>
</head>
```

The spacing here is for readability

We could, for example, put all of the properties/values on one line

Inline CSS

Our final option is inline CSS

This will apply CSS rules to a single element on a page

```
<!-- Syntax -->  
<tag style="property: value;  
property: value"> ... </tag>
```

```
<!-- Examples -->  
<h1 style="color: red;  
26px;">Hello</h1>  
  
<p style="color: green;  
    My text is green  
</p>
```

Hello

My text is green

Order of Operation

So what happens if more than one style is applied to a tag?

The more specific rule is applied

So in order of highest priority to lowest priority, we would have:

- Inline

- Embedded

- Linked (External)

- Browser default

Examples

```
<head>
  <title>Stylesheet Demo</title>
  <style>
    h1 {color: green; font-size: 36px;}
    em {color: blue;}
    h2 {color: red; font-size: 36px;}
    h2 {font-size: 24px;}
  </style>
</head>
<body>
  <h1><em>How does this line display and why?</em></h1>
  <h2>How does this line display and why?</h2>
  <h1 style="color:red">How does this line display and why?</h1>
</body>
```

How does this line display and why?

Examples

```
<head>
  <title>Stylesheet Demo</title>
  <style>
    h1 {color: green; font-size: 36px;}
    em {color: blue;}
    h2 {color: red; font-size: 36px;}
    h2 {font-size: 24px;}
  </style>
</head>
<body>
  <h1><em>How does this line display and why?</em></h1>
  <h2>How does this line display and why?</h2>
  <h1 style="color:red">How does this line display and why?</h1>
</body>
```

How does this line display and why?

Examples

```
<head>
  <title>Stylesheet Demo</title>
  <style>
    h1 {color: green; font-size: 36px;}
    em {color: blue;}
    h2 {color: red; font-size: 36px;}
    h2 {font-size: 24px;}
  </style>
</head>
<body>
  <h1><em>How does this line display and why?</em></h1>
  <h2>How does this line display and why?</h2>
  <h1 style="color:red">How does this line display and why?</h1>
</body>
```

How does this line display and why?

Order of Operation (Cascading)

So what happens if more than one style is applied to a tag using different forms of CSS?

In other words, what happens if one property is set to two different values in different places?

The more recent the definition the higher the priority (i.e., the rule that is closest to the element in the HTML that it affects)

So let's say in the below example, style.css has a rule that changes all paragraphs to a background color of blue

Order of Operation (Cascading)



Commenting

In CSS we can also include comments to explain our code

The syntax is `/* This is a comment */`

```

        h1 {
heading 1 */
            color: red;
text color */
            font-size: 36px;
text size */
        }
        p {
paragraph */
            color: green;
text color */
            font-family: Arial;
font family */
        }

```

Commenting

We'll include the following comment block with our external stylesheets

```

/*
    Name:          Your Name
    Course:        CSCI 1210
    Assignment:    Lab x
    Due Date:      xx.xx.2020
    Purpose:       The purpose of
this .css is to style
                    the page(s) in
this lab
*/

```

CSS Text Properties

text-align: (left, right, center, justified)

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

text-indent: (pixels or percentage)

```
p { text-indent: 5%; }
```

text-decoration: (none, overline, underline, line-through)

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

CSS Text Properties

letter-spacing: (pixels)

```
p { letter-spacing: 5px; }
```

word-spacing: (pixels)

```
p { word-spacing: 5px; }
```

line-height: (pixels, percentage, number)

```
p { line-height: 2; }
```

CSS Text Properties

color: (name, hex, rgb, rgba)

```
p { color: red }
```

font-family: (specific, to, general)

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

font-size: (px, pt, em, rem, or %)

```
p { font-size: 32px;
```

CSS Text Properties

font-weight: ('lighter', 'bold', 'bolder' or value 100-900)

```
p { font-weight: bold;
```

font-style: (italic, oblique)

```
p { font-style: italic;
```

Background

```
/* background properties */
p { background-color: blue; }
/* name, hex, rgb, rgba */
p { background-image: url(path-to-image);
  } /* path to the image */
p { background-repeat: no-repeat; }
/* repeat, no-repeat */
p { background-size: cover; } /*
width, height in px or %, or cover */
```

Summary

These are a few of the most often used CSS properties

Again, once you've figured out the syntax, the rest is just learning how the properties work

We'll become better acquainted with them and others throughout the remainder of the semester

Questions?



Lecture Quiz

1. What CSS property do you think we could use to change the size of a paragraph's text?

- A. **text-size**
- B. **font-size**
- C. **font-weight**
- D. **font-style**

Lecture Quiz

2. What is the current accepted version of CSS?

- A. version 1
- B. version 1.51
- C. version 2
- D. version 3

Lecture Quiz

3. Which block level element do we refer to as the 'building block' of HTML?

- A. ``
- B. `<blockquote>`
- C. `<div>`
- D. `<p>`

Lecture Quiz

4. Which HTML element can we use to apply CSS to a specific bit of text, without breaking the flow?

- A. ``
- B. `<blockquote>`
- C. `<div>`
- D. `<p>`

Lecture Quiz

5. How do we make a comment in CSS?

- A. `<!-- -->`
- B. `/* */`
- C. `//`
- D. `##`

Lecture Quiz

6. Which HTML attribute has to be unique on a page?

- A. **id**
- B. **class**
- C. **src**
- D. **href**

Lecture Quiz

7. (T/F) Cascading Stylesheets don't allow for a given property to have two different value definitions.

- A. True
- B. False

Lecture Quiz

8. What do we call a stylesheet that appears in the head element of an HTML document?

- A. External
- B. Inline
- C. Linked
- D. Embedded

Lecture Quiz

9. What is the preferred way to apply CSS to HTML documents?

- A. External
- B. Inline
- C. Linked
- D. Embedded

Lecture Quiz

10. (T/F) Though modern browsers support it, CSS3 is still not the 'official' standard

A. True

B. False

Have a nice day!

