Background

Cascading Style Sheets (**CSS**) are used to control the appearance of a web page in a browser. You should use HTML to organize content and CSS to control how it looks. This is why stylistic HTML tags like B for bold and TT for "teletype font" are deprecated, and you should never do things like using empty HTML paragraphs to insert vertical whitespace.

The importance of separating content and appearance has increased dramatically in recent years with the explosion in mobile devices, such as smart phones and tablets. CSS makes it possible to deliver the same HTML content in different formats appropriate to the desktop, tablet, and smart phone. This can be a major savings in effort needed to develop sites for multiple platforms.

CSS is very different from HTML. It is not a markup language, but a language for writing **rules**. Rules have **conditions** that say when the rule should be used and **actions** to take when the rule applies. In CSS rules, the conditions are **selectors** that say which HTML elements the rule should appy to, and the actions are **style attributes** and **values**. For example, the selector P says "this rule is for paragraphs" and the actions "font-size 12pt; color: red" say "make the text 12pt and red."

CSS rules can be specified in several ways, but the best is to put them in **external stylesheet files**, so that all the pages on a website can use the same styles and have a uniform look and feel.

In general, multiple CSS rules will match each HTML element on a page. For example, a paragraph might be selected by a rule that applies to all elements, another that applies to all paragraphs, and another that applies to all paragraphs inside a DIV with the ID warning. **All** these rules are applied, so if one rule says the font should be Arial and another says the color should be red, the result will be red Arial text. When two rules have conflicting actions, e.g., one says 12pt and another says 16pt, meta-rules choose which rule to use, based on **specificity**. See *Resources* to learn more about how conflicting rules are resolved.

Required Resources

CSS

- *Build Your Own Website The Right Way Using HTML & CSS* by Ian Lloyd
    - Chapter 3 introduces CSS stylesheets and the basics, such as styling fonts. Read Chapter 3 all the way through once to get an idea of what CSS looks like and how it's used to control how HTML appears on screen.
    - Chapter 4 describes how to position elements with CSS, critical for putting things like images in the right place on a page.
- **Learn to Code HTML & CSS: Develop & Style Websites** by Shay Howe
    - Lessons discuss concepts first, then demonstrate them in practice through building a sample site.
    - Lessons 1 and 3 introduce CSS basics. If you haven't read the CSS sections, you'll find them helpful now.
    - Lessons 4 and 5 provide help on positioning content.
- Current Page Link Styles - A common problem with navigation links is making the link for the page you are on look different. This site describes several approaches.

Debugging CSS

CSS styles interact in very complex ways.

- What CSS is applied to an element will be affected by all the selectors in all the CSS files. For example, the CSS rule `p { color: red; }` doesn't necessarily make all paragraphs red. There might be another CSS rule somewhere with a more specific selector that overrides that rule.
- What CSS does on an element may depend on the elements that contain the element. The CSS rule `div.column { width: 50%; }` will make a div half the width of the element that contains it, but what that width is depends what width the containing element is given by some CSS rule.

Debugging CSS is in many ways harder than debugging code. Code is executed in sequence and there are debuggers to help run code one step at a time. There is no simple way to trace the logic of how CSS is applied by the browser.

The following resources are good guides to how to analyze what is happening with your CSS on a web page:

- MDN's Debugging CSS -- some good advice on how to use the browser debugger to see what CSS is actually being applied to your HTML
- MDN Common HTML and CSS problems
- Viewing and Changing CSS in the Chrome Debugger -- An interactive tutorial; sometimes the best way to see what your CSS is doing it to try changing bits of it; Chrome supports many useful tools for this
- 10 CSS mistakes every web designer should avoid

Additional Resources

CSS

- The Web Design Group's Guide to CSS - This resource provides information on how to use CSS for design purposes.
- The CSS Zen Garden - This resource has been a classic demonstration site for years for how stylesheets can make the same HTML appear dramatically different.
- Eric Meyer's CSS Site - This resource has many examples and articles. (His books are excellent too.)
- Cascading Order - This resource describes how conflicting rules in stylesheets are resolved.

CSS Validator

- The W3C CSS Validator - This resource generates a report on everything incorrect, incomplete, or non-standard about your stylesheet. It works similarly to the HTML validator.