cs002 Lab 5
An Introduction to CSS

Assigned: October 31, 2016 **Due: November 11, 2016**

Introduction

Last week, we started working with HTML, a markup language for describing how content on web pages should be laid out. You may have noticed that the pages you created looked like they belong to professors (like this one). This week, we're going to continue working with HTML, but this time we're going to do it with *style*.

CSS (Cascading Style Sheets) is the modern way to style a web page. If you want to color some text, change the position of a link, or even change the cursor when you hover over an image, you use CSS. Back in the 90's, people used HTML tags to change the font and color of a web page, but this resulted in a mess where the structure and information of a web page was mixed in with how it should look. The W3C (World Wide Web Consortium), the standards body that controls HTML and other web related standards, created CSS as a solution to more easily manage the look and feel of websites.

Lab Goals

- Continue working with HTML to create web pages with interesting content
- Add CSS to web pages to make them more visually appealing
- Experiment with different CSS selectors and properties
- Practice reading and understanding pre-existing code.

Lab Assignment

Important Note Before Getting Started:

> You *cannot* copy-and-paste the example code we provided, because quotes and other special characters will not copy-and-paste correctly. For practice and to avoid copy-and-paste errors, **you should always type out your own code and do not just copy-and-paste from this document**.

An important concept within CSS is the selector. Selectors are used to determine what part of your web page you want to affect. While there are many different types of selectors, these three are the most common and most important to know:

- Tag name: You can select all tags of a certain type in order to affect them and their descendants. To select everything enclosed by a tag `<div>` in the HTML, you just write "div" in the CSS.
- Tag ID: You can select a tag with a specific ID (IDs must be unique). To select a

tag with the HTML ID my_id (`id="my_id"`), write "#my_id" in your CSS file.

- Class: You can select all tags in your HTML file that are members of a class (`class="my_class"`) by writing ".my_class" (that's a period before "my") in your CSS file.

You can then set the properties of parts of your page as follows:

```
:selector: {
     property-name : value;
}
```

The placeholder ":selector:" shows where you can write one of the above-mentioned selectors. "property-name" is the property you want to set for the elements that you select. "value" is what you are setting this property to. Here are some common properties you might want to use:

Property name	Description	Accepted Values
`color`	Sets the text color	Color names (red, green, teal), RGB values (rgb(x, y, z), or hexadecimal values (#ffffff, #FFCC33)
`text-align`	Aligns text	left, right, center, justify
`font-size`	Sets the size of the text	Values in px or em (12px, 2em)
`font-weight`	Sets the weight of text	normal, bold, bolder
`text-decoration`	Sets decoration added to text	underline, overline, line-through, none
`font-family`	Specifies the font family for text	Generic font names or descriptions ("times", "courier", "arial", "serif", "cursive")
`background-color`	Sets the background color of an element	Color names (red, green, teal) or hexadecimal values (#ffffff, #FFCC33)

Other CSS properties you might find interesting are those relating to an element's position on a page (`top`, `bottom`, `left`, `right`, and `position`) and `cursor` (which specifies the type of cursor to display). A large list of CSS properties (and brief descriptions of what they do) can be found at w3schools.

Great, so which selector should I use?

There's no right answer! However, as a general rule:

- Select by tag when you want to apply the same style to everything with a specific tag.

  Example: "Make paragraphs red and right-aligned"

```
p {
   color: red;
   text-align: right;
}
```

- Select by class when you want to apply the same style to multiple elements that don't have the same tag, or multiple elements with the same tag but not EVERY element with that tag.

  Example: "Given a page with six headings (`<h2>` tags), make the first, third, and fifth appear on yellow backgrounds."
  Assuming the first, third, and fifth headings have `class="odd-heading"`:

```
.odd-heading {
     background-color: yellow;
}
```

- Select by ID when you need a style once only (any more than that and you're repeating yourself when you could use a different selector instead).

  Example: "Make the second paragraph of this page use a 35px font".
  Assuming the second paragraph has `id="second"`:

```
#second {
     font-size: 35px;
}
```

Note that there is a hierarchy to selector importance. For instance, ID has a higher

importance than class, which means that if your class says a given paragraph should have green text but your ID says it should have blue, then that paragraph will ultimately have blue text.

Adding CSS to HTML pages

There are two ways to include CSS in HTML pages:

1. Embed it directly in `<style>` tags.
   Example:

```
<html>
    <head>
        <style type="text/css">
            p {
                color : red;
            }
            .bold {
                font-weight: bold;
            }
            #this {
                text-decoration: overline;
            }
        </style>
    </head>
    <body>
        <p>
            <span id="this">This</span> is some
            <span class="bold">bold</span> text!
        </p>
    </body>
</head>
```

2. (*Preferred*) Write CSS in a separate .css file, then link it in the HTML page header. To do this:
   a. Create a file with the .css file extension (such as myFileName.css) in the same folder where your .html file is saved.
   b. Inside the `<head>` tag of every HTML page you want to use that CSS for, add a link tag telling the browser to load your file and treat it as CSS. This looks something like: `<link rel="stylesheet" type="text/css"`

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`href="myFileName.css" />`.

Note: The above link only works if the css file myFileName.css is in the same folder as the html file. If the css file is one folder above the html file, then the link would look like: `<link rel="stylesheet" type="text/css" href="../myFileName.css" />`.

This is preferred not only because it allows you to keep your HTML and CSS separate from each other but also because it lets you reuse the same CSS in multiple places without having to copy-paste (and if you need to change it, you change it once instead of however many times you copied it).

A Few (small) Things to Remember

- Lines that set a property must end with a semicolon (;) in CSS.
- Styles are inherited by everything within a tag, unless overridden by a more specific style - so styles defined on the `<body>` tag will be applied to everything on your page unless otherwise specified.
  Discussion of what makes a style more specific, as well as what is done in other kinds of conflicts (what if you have two CSS files, each of which says paragraphs should be a different color?) can be found on webteacher.

Task 1: Reading CSS

Open **lab5sample.css** and read through it. Then, answer the questions at the bottom.

Task 2: Writing CSS

We've provided you with an HTML template file for this lab to save a little time.

1. Open **lab5template.html** in the text editor of your choice (*Recommended*: Sublime or Notepad++) and replace the template text with your own content to create a web page about a topic of your choosing. Feel free to add more HTML elements if you so desire.
2. Create a separate CSS file called **lab5.css.** Add some styles to **lab5.css** so that it meets the requirements below. Don't forget to link your HTML page to your css! You may find it useful/necessary to add IDs and/or classes to some of the provided HTML elements.

Check-off Requirements

- Have correct answers to the six questions in **lab5sample.css**.

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- Have the files **lab5template.html** containing your modifications to the provided template and **lab5.css** containing your CSS.
- Within **lab5.css**, use at least two of the three types of selectors (tag, class, ID) and both types of colors (names and hexadecimal values).
- Within **lab5.css**, have defined styles such that your web page displays the following:
    a. Paragraph text should be yellow on a black background, except in the second paragraph, where it should be red on a pink background.
    b. All headings (regardless of size) should be bolded.
    c. Some text within a paragraph is not the same size as the text around it.
    d. Some text within a paragraph (but not the same text as in part c.) is not the same font as the text around it.
    e. Some text within a paragraph (but not the same text as in parts c. or d.) is bolder than the text around it.

Submission

To submit this lab, please raise your hand so a TA can come check your work. Make sure you tell the TA to check you off their list, or else you will not receive credit. If you do not finish your lab in the allotted time, please either come to office hours or another lab section to finish your work. If you are unable to complete this lab due to sickness or injury, please contact BOTH Don and the cs002 TAs via email. Please contact the cs002 TA's if you have any further questions.

cs002 TA Email: cs002tas@cs.brown.edu

Don Stanford's Email: don.stanford@gmail.com