Chapter 5 — Internal and External Style Sheets

Style is how we tell our browsers how to display the information we have encoded in HTML. In Chapter 2, inline style was shown as a way to add style directly into your HTML document. While inline style is useful for making small, quick additions to your webpage, it is much more effective to organize your style into internal or external style sheets. Doing so will allow your style to be easily maintained and potentially applied throughout multiple pages.

Learning Outcomes for this Chapter

Upon completion of the reading of this chapter and assignments found at the end, a student should be able to:
- create an external style sheet and link that sheet back to one or more HTML documents,
- create an internal style sheet in the head of a page,
- cse the tag, id, and class selectors to target style to elements on a page,
- implement selectors with more than one style in them.

External Style Sheets

An external style sheet is simply a list of style rules for the web browser to read and apply that are saved into a separate file or document.[76] Just as an HTML document uses the file extension `.html`, an external style sheets uses the `.css` extension. As discussed in Chapter 2, CSS stands for Cascading Style Sheet, and refers to the hierarchical way that style elements are applied in a document. The more specific the rule/selector is, the more precedence it takes should it conflict with another.

The plain text CSS file contains a list of rules that are formatted with a selector, curly-braces (`"{"` and `"}"`), and within them the style commands. So, for example, a rule for changing the font color of all instances of **<p>...</p>** to blue in a CSS document would appear as such:

```
p {
     color: blue;
}
```

Linking an external style sheet to your HTML document is a necessity, and is added simply by using the void element **<link>** tag inside of the **<head>...</head>** of your document. The **<link>** tag requires the **href**, **rel**, and **type** attributes, and is written like:[77]

---

76   https://html.spec.whatwg.org/multipage/semantics.html#the-style-element
77   https://html.spec.whatwg.org/multipage/semantics.html#the-link-element

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

- The **href** attribute stands for "hypertext reference" and is used to load or "reference" your external style sheet. Most style sheets will end with the .css extension. You can name your CSS document however you'd like, but be sure to spell it the same way in your HTML as it is saved, and be wary of capitalization.

- **rel** is short for relation and communicates to the HTML document what kind of item it is reading.

- The **type** attribute communicates to the HTML document what kind of characters it can be expected to read.

Here is an example of an external style sheet and the accompanying HTML document. Note that anything written within a **/* */** will not be interpreted by the web browser, and can be used to make notes for yourself or others that are working with you:

```css
/* sample.css - Sample CSS Sheet for Chapter 5 */

/* a rule for the body that cascades to all of the child elements */
body {
        font-family: Tahoma, Verdanda, Arial, sans-serif;
}

/* a rule for the h1 tags */
h1 {
        font-family: "times new roman", serif;
        color: red;
}

/* this rule just changes the element with the id mainmenu */
#mainmenu {
        background-color: grey;
        color: blue;
}

/* apply this style to all tags with the class "bright" */
.bright {
        background-color: yellow;
        color: orange;
}

/* apply this style to all tags with the class "dull" */
.dull {
```

```
        background-color: #e0e0e0;
        color: #808080;
}
```

```html
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <title>title</title>
        <link href="sample.css" rel="stylesheet" type="text/css">
    </head>
    <body>
        <header id="mainmenu">
            <h1>Sample Page with External CSS</h1>
            <nav>
                <p><a href="http://www.yahoo.com">Yahoo</a>
                <a href="http://www.google.com">Google</a>
                <a href="http://www.ubuntu.com">Ubuntu</a></p>
            </nav>
        </header>
        <section id="centersection">
            <h2>Center Section</h2>
            <p>This is a <em class="bright">paragraph</em> with special
            <em class="dull">text</em> that is bright and dull.</p>
        </section>
        <footer>
            <p><small class="dull">All external links
            are provided only as an illustration of what can be done.
            The author and publisher of this material assume no
responsibility
            for the content of the external sites.</small></p>
        </footer>
    </body>
</html>
```
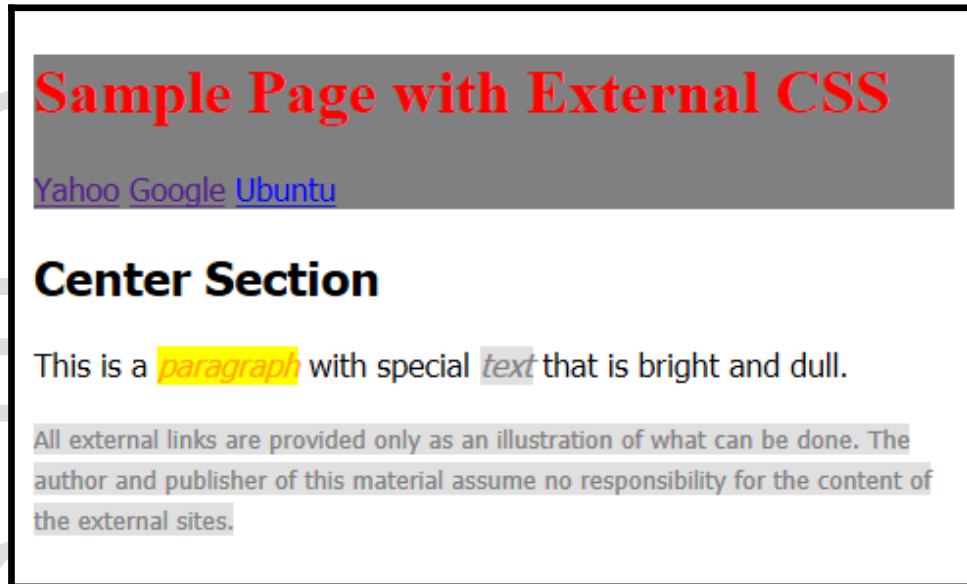
Illustration 17: Page with External Style Sheet

Internal Style Sheets

An internal style sheet functions much like an external style sheet, however it is contained within the **`<style>`**...**`</style>`** tag that lies within the **`<head>`**...**`</head>`** of an HTML document. While more organized than inline style, it must be included in every document of your website, making is far less convenient than external style. For this reason we recommend using external style sheets for more complex Web pages.

Selectors

There are several ways to select tags and items in internal and external style sheets, but for now we will discuss the main three that you will use most often, which are tags, IDs, and classes. Using these selectors properly allow for complex style that can be applied to an entire website.

Tag Selectors

Take a look at the previous example of an external style sheet and make a note of the **`body`** and **`h1`** selectors. This is an example of a tag selector, named that way because it selects tags within your document to apply style to. A tag selector will apply the specified style to each and every instance of that tag throughout your entire document. Referencing the example above, all instances of **`<h1>`**...**`</h1>`** tags on the page will have red text.

Using the **body** as a selector is a useful way to apply style quickly to an entire page, as all visible content is contained within it. Anything that you want to all of the tags on the page, should be there. You may override this rule simply by creating a selector that is more specific that overrides the prior selector. In the example above, though the **body** selector specifies that all font will be Tahoma, the **h1** child selector, which is written below, overrides the parent and makes all **<h1>...</h1>** tags display their font as Times New Roman.

ID Selectors

In previous chapters you have seen the **id** attribute that is optionally defined on some tags. Adding an **id** to an element gives it a unique name that can later be easily accessed in places such as anchors, style sheets, and JavaScript. An ID selector in a CSS document assigns style to the tag with the specified **id**. Keep in mind that identifiers are unique to a webpage and each identifier should not be used more than once in an HTML document.

An ID selector in a CSS document begins with a **#** (referred to as a hash tag, pound sign, number sign, or octothorp depending on the use), and is followed by the id assigned to the tag.[78] In the above example you can see the **id** selector **#mainmenu** refers to the tag with the **id** mainmenu which has been assigned to the **<header>...</header>** tag. Any style that is applied to this selector will affect only the single tag that has that ID.

Class Selectors

The class selector functions differently from the **id** selector, because a class can select one or more tags and a tag may have zero or more classes. In CSS a class selector is written with a period as its first character. You can see the class selector at work in the above example as the **.bright** and **.dull** selectors specify different background and font colors for text within a **<p>...</p>**.

Validating your CSS

Validating your CSS document is crucial as one error can alter your webpage in ways that you did not intend. Thankfully the W3 provides an easy way to quickly check your documents, which can be found at:

- http://jigsaw.w3.org/css-validator/

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78   http://en.wikipedia.org/wiki/Number_sign

Advanced Topics for Exploration

Vocabulary

- class
- class selector
- curly braces
- external
- id selector
- internal
- selector
- style sheet
- tag selector

Exercises

Word Search

```
                    c a r e x t e r n a l x r
                    c u s y s e l e c t o r s
                    t s r a e l i h r t s a s
                    d t l l r l l l a a n a h
                    h y s c y i n t e r n a l
                    t l l   s     r l r e u y
                    a e s t e i b s a t b t s
                    g   t t s s t r r e t y a
                    l s s c t h a x a e e o r
                    e h c l l g e t a c h i d
                    l e o a s o y r s l e a h
                    l e h s a l i e g b e s a
                    i t l s o c e s l e l t y
```

class, curly braces, external, id, internal, selector, style
sheet, tag

Problems