Lesson | Tuesday

Introduction to Programming (/introduction-to-programming) / Git, HTML and CSS (/introduction-to-programming/git-html-and-css) / CSS: Styling Text and Best Practices

Text | Cheat sheet

I'll be the first to admit it: the web pages we've made so far are pretty ugly. Let's learn our first **CSS**, which stands for **Cascading Style Sheets**. They're called *cascading* because often a single element on a webpage will have multiple sources that style it, and CSS resolves those differences to create the style you see on the screen. But we'll get into more of that later.

Note: if trying to make something look pretty is your idea of an awful time, don't worry, this isn't a design course! We're going to learn enough about styling to get you to the point where you can apply styles that other people develop without having to do any design yourself. And if you love design and want to learn more, I'll point you in the right direction at the end of this section.

Styling Text in `my-first-webpage` with CSS

For this exploration of CSS, let's return to the `favorite-things.html` file within our `my-first-webpage` project folder.

Adding Inline Styles

The simplest way we can add style to our HTML is by adding a `style` attribute to any HTML element in the body of our document. For example, we can style our header element by giving it blue text:

favorite-things.html

```
<!DOCTYPE html>
<html lang="en-US">
<head>
  <title>Michael's favorite things</title>
</head>
<body>
  <h1 style="color:blue">My favorite things</h1>

  ...

</body>
</html>
```

Now, if we refresh the page, our heading is blue!

Notice how we've added a `style` attribute to the `<h1>` tag:

```
  <h1 style="color:blue">My favorite things</h1>
```

This is called an **inline style**, because the CSS style is declared directly on our HTML element. We can add `style` attributes to any tag within and including the `<body>` tags. Since we've added the style attribute to the `<h1>` tag, it will only update the styles for that singular tag.

The value of the `style` attribute is always surrounded in quotes and includes one or more CSS declarations. A CSS **declaration** consists of a property and value. In our example, we have one

property called `color`, which is set to a **value** `blue`.

If we want to add multiple properties, we need to separate them with a semicolon `;`. Check out the following example that adds a hot pink background color to our `<h1>` tag:

favorite-things.html

```
  <h1 style="color:blue;background-color:hotpink">My favori
te things</h1>
```

Now we have two CSS properties applied to our `<h1>` tag: `color` and `background-color`.

Exploring CSS Styles

There are many, many CSS properties our there, and each property can have many possible values. Generally the best way to learn about new CSS properties is by doing a general search on what you want to achieve with your styling. Here are some example searches:

- "Center element on page with CSS"
- "Change CSS font"
- "Change width of image CSS"

Otherwise, you can peruse sites that contain large reference pages that list all CSS properties and possible values. There are many good resources out there. Here's two to explore in the practice projects that you build:

- W3School's CSS Reference (https://www.w3schools.com/css/default.asp)
- MDN Web Doc's CSS Reference (https://developer.mozilla.org/en-US/docs/Web/CSS)

Organizing CSS Styles into Separate Files

Even though we can set inline styles for our HTML elements using the `style` attribute, it's best practice to list CSS styles in a separate file (with a `.css` extension) for these reasons:

- We can set styles that apply to multiple elements.
- When we separate our code into multiple files, it's easier to read and update.

Separate files that store CSS styles are called **external stylesheet**. At Epicodus, we'll primarily apply CSS styles to our sites using external stylesheets. The only cases when we'll use inline styles is when we update our webpage's styling with JavaScript and when we start styling React components, but we're not ready to learn about either of those cases.

Next, let's learn how to create an external stylesheet and connect it to our HTML.

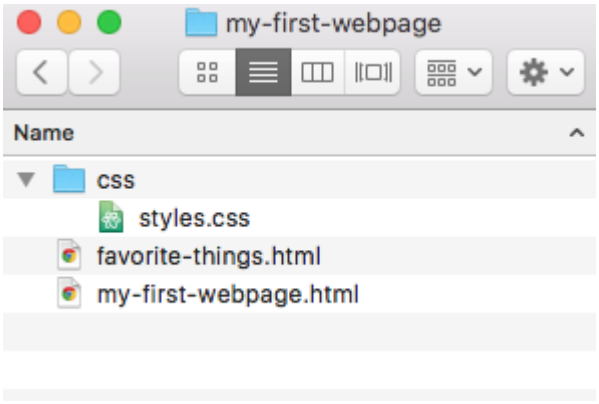
First, remove the inline styles we've set in our HTML. Our `<h1>` tag should look like this again:

favorite-things.html

```
<h1>My favorite things</h1>
```

Then, within the `my-first-webpage` project folder, make a folder called `css` inside of your `my-first-webpage` project folder. Create a new file in that `css` folder called `styles.css`.

Here's what our `my-first-webpage` directory structure should look like now:



Next, we need to tell our HTML document to use the `css/styles.css` file for our website's CSS styles. To do this, we'll add a new `<link>` tag to the `<head>` tags of our document:

favorite-things.html

```
<!DOCTYPE html>
<html lang="en-US">
<head>
  <link href="css/styles.css" rel="stylesheet" type="text/c
ss">
  <title>Michael's favorite things</title>
</head>
<body>
  ...
</body>
</html>
```

We're leaving out everything above and below the `<head>` tag for the sake of brevity.

HTML link elements direct our HTML document to load resources stored in separate files:

- To specify where the resource is located, we give a value to the `href` attribute that contains the path to our file. Our `href` attribute contains `css/styles.css` as the value, because *in*

relation to this favorite-things.html file, the `styles.css` file is in a subdirectory named `css`.
    - If the `styles.css` file were in the same directory as the favorite-things.html file, then the link would just be to `"styles.css"` rather than to `"css/styles.css"`.
- To describe what type of resource we're loading we specify two additional attributes:
    - `rel` specifies the relationship of the resource to our HTML document. In this case, the external resource is a `stylesheet`!
    - `type` specifies the media type of the resource. We list `text/css` because our resource is a CSS stylesheet.

Adding Our First CSS Rule

In our `styles.css` file, let's adapt our previous inline style into a CSS **rule**:

styles.css

```
h1 {
  color: blue;
}
```

What we just wrote is called a CSS **rule**:

- The `h1` part is called a **selector**, because it selects the HTML elements that the rule applies to.
- The curly brackets `{ }` indicate the start and end of the **declaration block** where we describe the styles of our CSS rule.
- `color` is called a **property**, and `blue` is called a **value**.
- The property and value together, like `color: blue`, is called a **declaration**.

Note, every declaration block can have multiple declarations separated by a semicolon `;`. For example, if we added a `hotpink` background, our CSS rule would look like this:

```
h1 {
  color: blue;
  background-color: hotpink;
}
```

CSS Indentation and Spacing

Notice the indentation in the first rule we added: the property and value are indented two spaces, because they are inside the selector:

```
h1 {
  color: blue;
}
```

This follows the commonly held indentation and spacing convention for CSS, which has been determined to be the most readable. On your projects, your teachers will give you feedback on your CSS indentation and spacing based on whether or not it follows the common convention.

Examples of Poor CSS Indentation and Spacing

While we can write our CSS like this and get it to function:

```
/* This is poor indentation and spacing! Do not do this. */
h1{
color:blue;
}
```

Or like this:

```
/* This is poor indentation and spacing! Do not do this. */
h1 {color: blue;}
```

Neither example follows common indentation and spacing conventions.

Comments in CSS

You might be wondering about this syntax `/* */` from the examples above:

```
/* This is poor indentation and spacing! Do not do this.*/
```

This is what a **comment** looks like in CSS. We first discussed comments in the lesson on HTML indentation, spacing, and comments. As a refresher, comments are messages for humans to read — the machine ignores them so they don't get run as code.

Developers use comments to describe what their code does in short messages. In general, your code should speak for itself. That means when someone looks at your code, it should be self-explanatory such that you don't need a comment to explain it. However, this won't always be the case! For CSS, it's common to use comments to identify groups of rules that apply to one feature on a webpage. For example, if your webpage has a menu and a footer with two separate styles, in your CSS, you might use comments to separate the rules that belong to each feature. (Another solution to this is to have separate CSS files for each feature, but more on this later.)

Developers also use comments to "comment out" code that they don't want the program to run. This can be helpful in troubleshooting bugs in your CSS. Generally speaking, you shouldn't leave large blocks of code commented out in your projects.

There is a shortcut for commenting code out in VS Code. Simply highlight what you'd like to comment (or uncomment) and then hold down `Command + /` on Macs and `CTRL + /` on Windows. This will comment out the code if it's not commented and uncomment it if it is commented. Also, VS Code will automatically use the correct syntax for commenting for the language you are using.

Adding More CSS Rules

Let's add some more rules:

styles.css

```
h1 {
  color: blue;
  text-align: center;
}

h2 {
  font-style: italic;
  text-align: center;
}

p {
  font-family: sans-serif;
}

ul {
  font-size: 20px;
  line-height: 30px;
}
```

This should be mostly self-explanatory, but here are a couple notes:

- `px` is short for **pixels**, which are a unit of measurement.
- *Sans Serif* is a kind of font.
- Named colors, like the `blue` we used for our `h1`, aren't used very commonly. Instead, it's more typical to use a three- or six-digit *hexadecimal code* like this:

```
h1 {
  color: #00f;
}
```

or like this:

```
h1 {
  color: #0000ff;
}
```

Both of these are equivalent to the named color `blue`. If you use a graphics program, it usually can tell you the hex code for the colors you're using. There are also a lot of online tools for picking colors and getting their hex codes.

The Strength of CSS: Changing Styles in Many Places at Once

Finally, you might be wondering why we made our `<h2>`s italic in CSS instead of just adding the `<em>`, like we did with this rule:

```
h2 {
  font-style: italic;
  text-align: center;
}
```

The reason is two-fold. First, we can modify the `<em>` tag just like any other HTML tag. Remember, `<em>` stands for *emphasize*, and at some point, we might decide that things that need emphasis should be bolded in addition to being italicized, which we might not want for our `<h2>`s. Second, one of the great advantages of CSS is that it makes it easy to change styles in many places at once. Let's say we use an `<em>` tag inside our `<h2>`s to make them italic. If we later change our mind and want them to be bold, we have to remove all of the `<em>` tags and replace them with `<strong>` tags. By using CSS instead, we only have to change the one CSS rule, and every single `<h2>` on every single web page that uses this CSS file will be updated.

My apologies for the long lecture, but this last point is really important. Building web sites is fundamentally different from building physical things. When you finish building a bridge, you're more or less done: there's not much you can change besides a coat of paint. But when you finish building a website, you've only just begun. There *will* be additions, deletions, changes, redesigns, and a whole lot more. CSS gives us some powerful tools to make it easier to change what we've built. **If you remember nothing else, remember this: *good code is code that is easy to change*.**

To see the beauty of using CSS, check out CSS Zen Garden (http://csszengarden.com/). On the right side of the page, clicking one of the links will apply a different stylesheet to the same HTML. The page is totally transformed — no changes to the HTML needed. While experienced designers built these pages, they can also be a starting point for CSS in your own sites.

If you're following along and your CSS file isn't actually adding styles to your web page, see the next lesson, which introduces debugging.

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