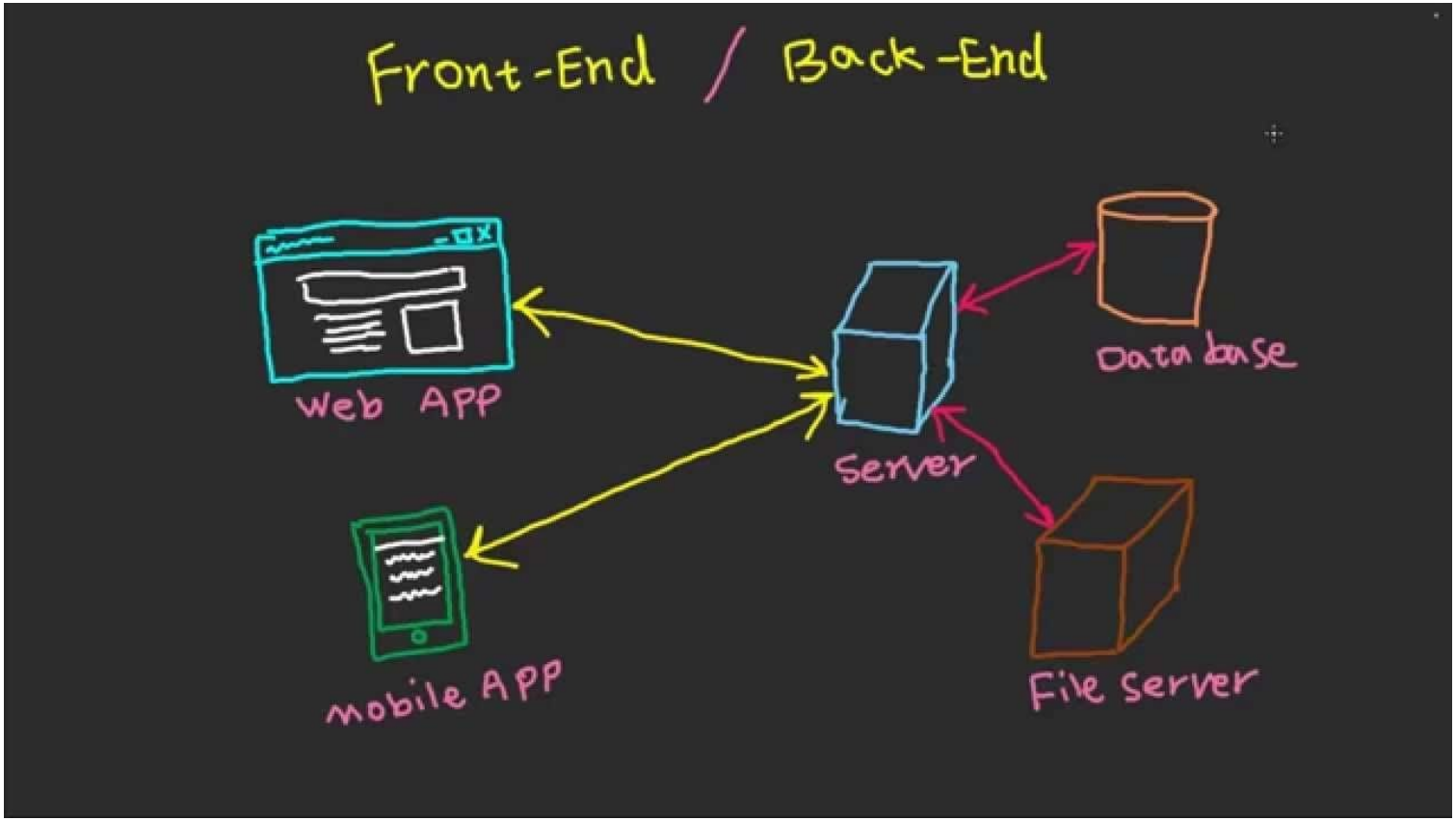
Module 3 - Lecture 1

Intro to HTML & CSS


Front-End / Back-End
Web APP
Server
Database
mobile APP
File Server

Division of Labor

- **HTML** - Content
- **CSS** - Design
- **JavaScript** - Interactivity

HyperText Markup Language

- **HyperText**: text displayed on an electronic device that links to other text.

- **Markup**: Annotation of a text document used for formatting and/or describing the text content.

Markup Languages are not programming languages.

HyperText Markup Language

- Goal: define how a web browser should render content.
- Made up of tags that the browser renders as elements.
- Elements may have opening and closing tags, or a single tag.

```
<p>Text</p>
<br>
```

- Elements may have attributes as key-value pairs. Attributes should be surrounded with matching single or double quotation marks.

```
<img src=”test.jpg”>
```

- Whitespace does not matter.
- Comments

```
<!-- Comment in here -->
```

DOCTYPE defines version / what's valid

<head> defines metadata

<body> defines content

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>

<body>
  <header>
    <h1>Header</h1>
  </header>

  <main>
    <ul>
      <li>Item One</li>
      <li>Item Two</li>
      <li>Item Three</li>
    </ul>
  </main>
</body>

</html>
```

HTML Tags

Just a few:

- <a> - Anchor - hyperlink
- <form> - Form - user input collection and submission
- <h1> through <h6> - Headings
- <img> - Image
- <input> - Input - accept user input
- <p> - Paragraph - a container for text content
- <table> - Table - a container for tabular data
- or <ol> - Lists - ordered and unordered

HTML 5

- Encouraging semantic (meaningful) markup
- Separating design from content
- Promoting accessibility and design responsiveness
- Supporting rich media experiences while eliminating the need for plugins such as Flash or Java

Semantic HTML

In programming, **Semantics** refers to the *meaning* of a piece of code — for example "what effect does running that line of JavaScript have?", or "what purpose or role does that HTML element have" (rather than "what does it look like?".)

- Search engines will consider its contents as important keywords to influence the page's search rankings
- Screen readers can use it as a signpost to help visually impaired users navigate a page
- Finding blocks of meaningful code is significantly easier than searching though endless divs with or without semantic or namespaced classes
- Suggests to the developer the type of data that will be populated

Semantic HTML Tags

Just a few:

- <address>
- <article>
- <aside>
- <footer>
- <h1> through <h6>
- <header>
- <main>
- <mark>
- <nav>
- <section>

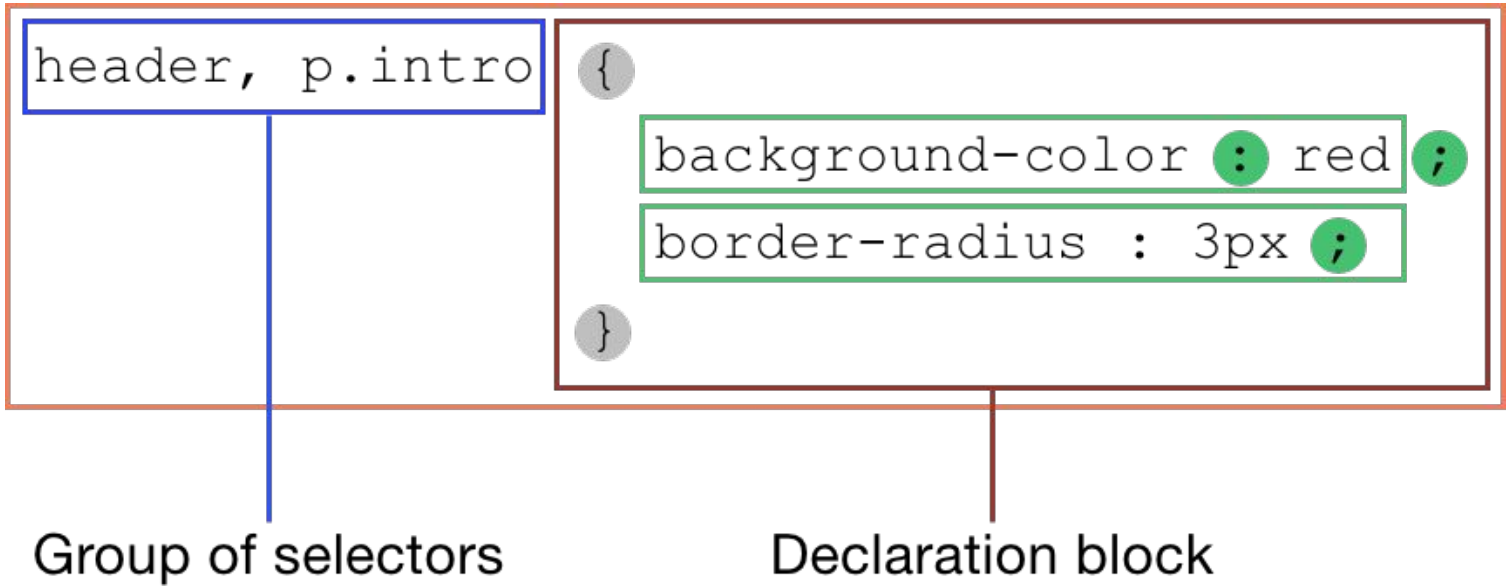
CSS: The Basics

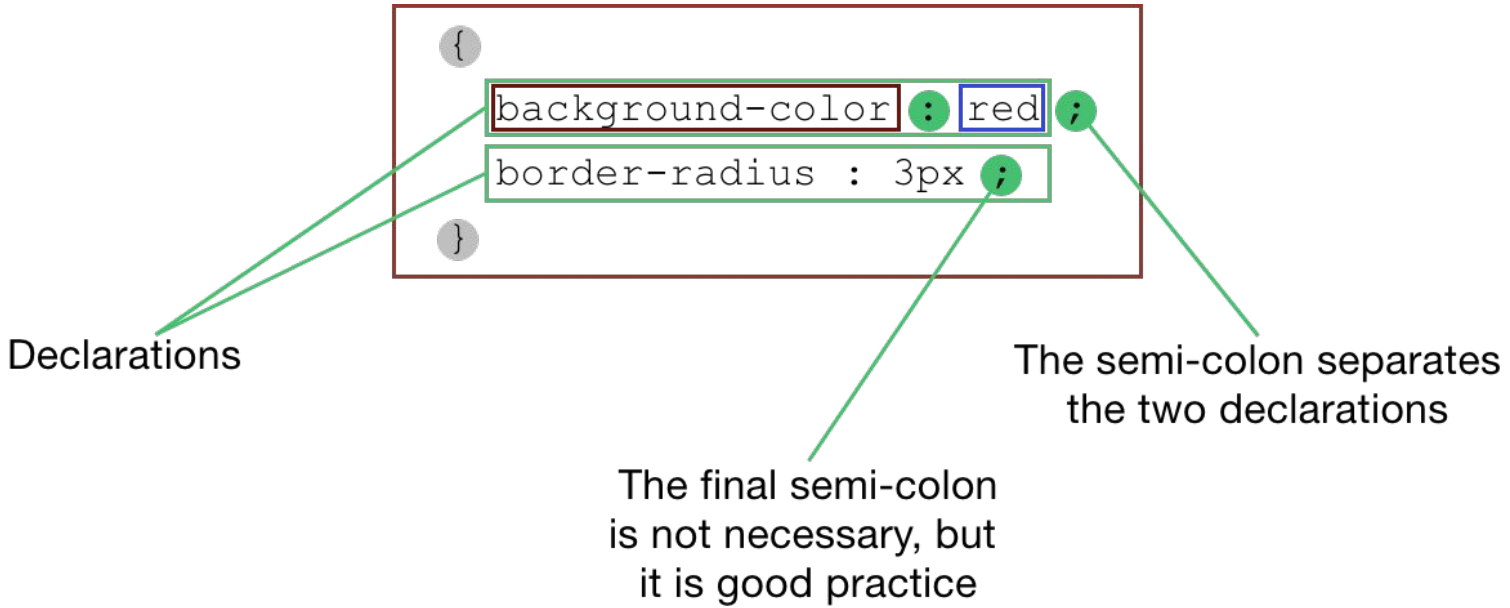
CSS: Cascading Style Sheets

- A mechanism to add style to a web document.

- CSS can be applied in a few different ways:
  - **inline**, within an attribute of an HTML element.
  - **within the web document** contained within a style element.
  - **in an external document**, referenced by a link element

https://developer.mozilla.org/en-US/docs/Web/CSS/Reference


header, p.intro
{
background-color : red ;
border-radius : 3px ;
}
Group of selectors
Declaration block


{
background-color : red ;
border-radius : 3px ;
}
Declarations
The semi-colon separates the two declarations
The final semi-colon is not necessary, but it is good practice

Styling Text

Text has a number of different properties that can be applied to it.

font-family: the type of font to use. Comma-separated in an ordered list of font preferences.

font-size: control the size of a font. Use pixels for now.

font-weight: the boldness of a font. Range from 100-900. 400 is normal.

line-height: how much space a single line of text uses. Pixels or multiplier.

text-align: horizontal alignment of text. Left, Right, Center, Justify.

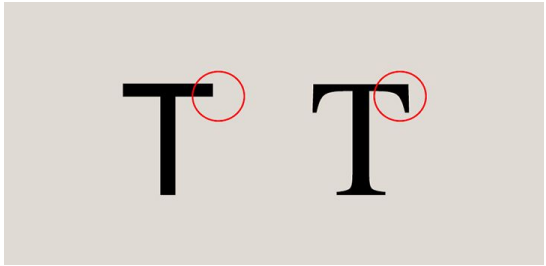
font-style, text-decoration, text-transform: italicize, underline, manage casing

Font Family

Fonts fall into one of 2 camps, **serif** and **sans-serif**

- Serif fonts are easier to read for paragraphs of text.
  - Georgia, Times New Roman

- Sans-serif fonts are generally used on the web.
  - Arial, Tahoma, Verdana



Fonts may also be **monospace**, meaning each letter takes up the same horizontal and vertical space.

- `Courier New is an example of a monospace font.`

Font Family

Font families are located on your computer. When choosing a font-family for your web page, it is important to either use a generally available font, a **web font**, or provide a link to the font file so that it can be downloaded with your web page.

Web Fonts
https://www.w3schools.com/cssref/css_websafe_fonts.asp

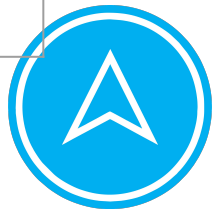
Google provides a large array of fonts.
https://fonts.google.com/

Colors

Color is applied using two CSS properties, **color** and **background-color**

The value of a color can be represented in a few different ways.

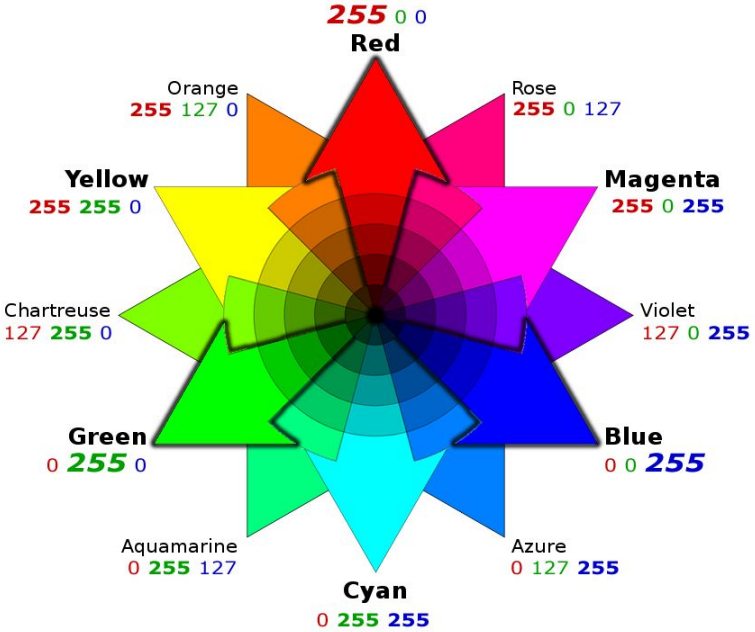
How	Example
Name	blue
Red, Green, Blue, Alpha (optional)	rgba(255, 120, 1, .5) rgb(255, 120, 1) #FF7801
Hue, Saturation, Lightness	hsl(10, 100%, 50%)



RGB defines how much red, green, and blue is included in a color. Each color ranges from 0 to 255.

Optionally, you may define the **alpha channel** which controls transparency/opacity on a scale from 0 to 1.

Each component of RGB can be translated to a hexadecimal value using 2 hex characters per component.



Hue Saturation Lightness

- **Hue**: The color as it is positioned on a 360 degree color wheel. Red = 0. Yellow = 60. Green = 120. etc

- **Saturation:** Intensity of the color. Gray to pure color.

- **Lightness:** Brightness of the color. From black to the color to white.

Developer Tools Demo & Lecture Code

QUESTIONS?