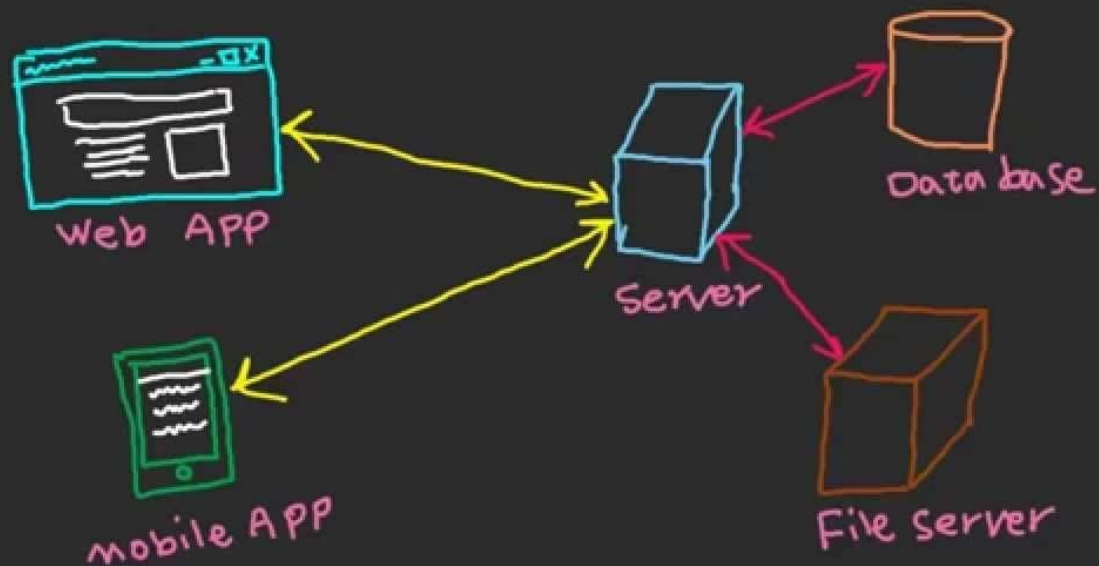


Module 3 - Lecture 1

# Intro to HTML & CSS



# Front-End / Back-End



# 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 elements that the browser renders.
- Elements are defined in code by using tags. Elements may be defined with opening and closing tags, or a single tag.

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

- You may see a trailing slash at the end of a single tag, but it is optional.

`<br>` or `<br />`

- Elements may have attributes within the opening tag. Attributes are listed as key-value pairs after the tag name. Attributes should be surrounded with matching double quotation marks.

``



# HyperText Markup Language

- Whitespace generally 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
- `<h1>` through `<h6>` - Headings
- `<img>` - Image
- `<p>` - Paragraph - a container for text content
- `<table>` - Table - a container for tabular data
- `<ul>` or `<ol>` - Lists - ordered and unordered
- `<br>` - Inserts a single line break
- `<form>` - Form - user input collection and submission
- `<input>` - Various input types (text, button, checkbox, etc)
- `<select>` - Drop down list (single or multiple)
- `<textarea>` - Input for a paragraph of text
- `<button>` - Button for user click interactions





# Semantic HTML Tags

Just a few:

- `<address>` - Holds contact information
- `<article>` - A self-contained section of the page
- `<aside>` - A portion indirectly related to the page
- `<header>` - Often contains a title of a section or other elements
- `<footer>` - Counterpart to header
- `<h1>` through `<h6>` - Headings
- `<main>` - The main section of the page. Should only have 1
- `<mark>` - Highlight
- `<nav>` - Container for navigation
- `<section>` - Standalone container



# 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



Declarations

```
{  
  background-color : red ;  
  border-radius : 3px ;  
}
```

The final semi-colon  
is not necessary, but  
it is good practice

The semi-colon separates  
the two declarations



# 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.

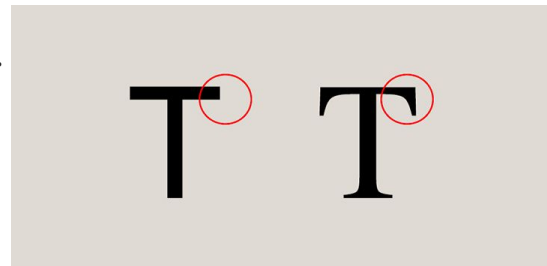
**font-style, text-decoration, text-transform:** italicize, underline, manage casing



# 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](https://www.w3schools.com/cssref/css_websafe_fonts.asp)

Google provides a large array of fonts.

<https://fonts.google.com/>



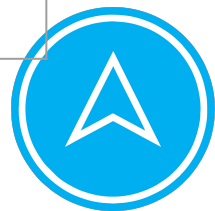


# Colors

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

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

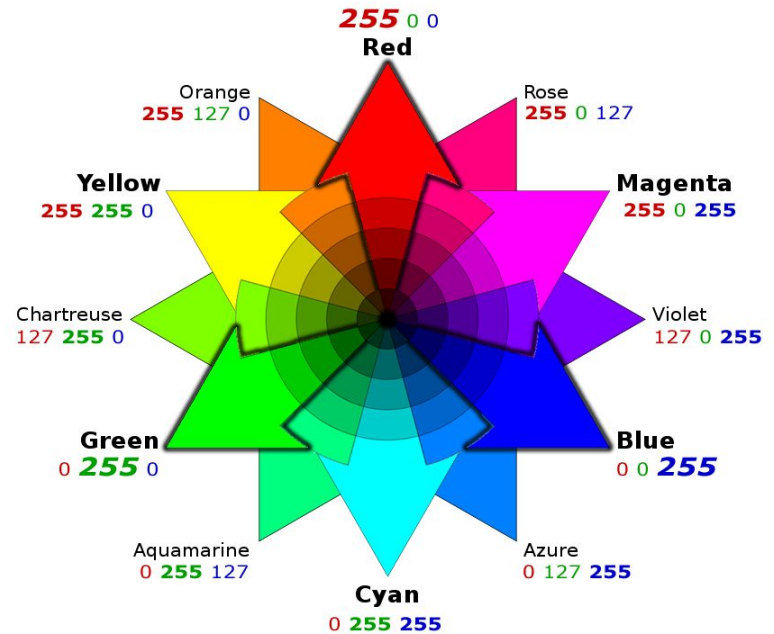
How	Example
Name	blue
Red, Green, Blue, Alpha (optional)	rgba(255, 120, 1, .5) rgb(255, 120, 1) #FF7801
Hue, Saturation, Lightness	hsl(10, 100%, 50%)



**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?

