Introduction to HTML and CSS

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Agenda

- 1:00 – 1:15 Overview of HTML
- 1:15 – 1:30 Walk through creating an HTML page
- 1:30 – 1:45 Using CMU hosting
- 1:45 – 2:00 Overview of CSS
HTML Overview
What is a web page made of?
What is a web page made of?

- **Website content is described using HTML (.html)**
  - Stands for Hyper Text Markup Language
  - Can be edited in a text editor
  - Uses a tag hierarchy to describe document content

- **Content is styled using CSS (.css)**
  - Cascading Style Sheet
  - Can apply styles to elements of a certain type/class

- **Interactive content uses JavaScript (.js)**
  - Won’t be covering this today
Tags

**<h1>Some Content</h1>**

- Opening tag
- Content
- Closing tag

**<img src="awesome_image.png">**

- Attribute
HTML Page structure

Tags are translated into a tree-like hierarchy

```
<html>
    <head>
        <title>Hello World!</title>
    </head>
    <body>
        <h1>I'm a heading!</h1>
        <p>I'm some content!</p>
    </body>
</html>
```
HTML Page structure

The HTML tag contains all the other elements

```html
<html>
  <head>
    <title>Hello World!</title>
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p>I'm some content!</p>
  </body>
</html>
```
HTML Page structure

The HEAD tag contains metadata about the page (and links to CSS/JS files)

```html
<html>
  <head>
    <title>Hello World!</title>
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p>I'm some content!</p>
  </body>
</html>
```
HTML Page structure

The BODY tag contains the main content of the document

```html
<html>
  <head>
    <title>Hello World!</title>
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p>I'm some content!</p>
  </body>
</html>
```
HTML Page structure

The DOCTYPE declaration (not a tag) tells the browser this is an HTML file

```html
<!DOCTYPE html>
<html>
  <head>
    <title>Hello World!</title>
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p>I'm some content!</p>
  </body>
</html>
```
Common tags
Headings

- Are declared using the H1, H2, ... H6 tags.
- H1 is the largest
- Are used by search engines to index content
Paragraphs

- Necessary since HTML ignores whitespace

```html
<p>First paragraph</p>
<p>Second paragraph</p>
```
Line breaks

● Create a new line without adding space
● Interpreted differently by search engines/screen readers
Links

- Links to another HTML file on your computer or the internet
- Created using anchor tags
- Destination page can be specified as a relative or absolute path

\[\text{Click here!}\]
Images

- Can point to any image the browser supports (.jpg, .png, .svg, etc.)
- Alt text is required
- Height/Width can be controlled with CSS
Divs

- Used to split page into rectangular regions
- Can be positioned/styled independently using CSS
Tag summary

<h1>, <h2>, ... - Headings
<p> - Paragraph
<br> - Line break
<a href=“url”>content</a> - Hyperlink
<img src=“path” alt=“description”> - Image
<div> - Div (rectangular portion of a page)
<ul>, <ol> - Unordered and ordered lists
<li> - List item
CSS Overview
CSS applies styles to HTML elements. The styles *cascade* down the hierarchy.

```css
body {
    font-family: Arial, serif;
    font-weight: bold;
    font-size: 12px;
    background-color: red;
}
```
CSS

CSS is referenced from an HTML file using the LINK tag.

```html
<html>
  <head>
    <title>Hello World!</title>
    <link rel="stylesheet" type="text/css" href="style.css">
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p>I'm some content!</p>
  </body>
</html>
```
CSS Structure

Tag name

body {
  font-family: Arial, sans-serif;
  font-weight: bold;
  font-size: 12px;
}

Class name

.colorful {
  color: #ff0000;
  background-color: blue;
}
Element id

#mascotImage {
  width: 10%;
  float: right;
  margin: 10px;
}

CSS Structure
Classes and ids can determine where styles are applied

```html
<html>
  <head>
    <title>Hello World!</title>
    <link rel="stylesheet" type="text/css" ... 
  </head>
  <body>
    <h1>I'm a heading!</h1>
    <p class="colorful">I'm some content!</p>
    <img id="mascotImage" src="scotty.jpg" ... 
  </body>
</html>
```
Positioning elements

**margin** – Amount of space around element

**padding** – Space between element and contents

**width/height** – Uses units of **em**, **px**, or **%**

**float** – Place content off to the side