Front End Development

Roadmap for Today

- HTML

  - The foundation of any web page

- CSS

  - Adding style to the page

HTML

HTML

Hyper **T**ext **M**arkup **L**anguage

Hyper Text: Text that can contain links to other resources

Markup Language: Special markers add information to the text that is not visible to users. In HTML we use tags to tell the browser how to display the text

HTML is not a programming language

HTML

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 – First Page</title>
</head>

<body>
    <h1>First Web Page</h1>
    <p>My content</p>
    <div id="myDiv"></div>
</body>
</html>
```

Save this in a file with a .html extension and open it in a web browser to see the web page below

First Web Page

My content

HTML - Elements

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 – First Page</title>
</head>

<body>
    <h1>First Web Page</h1>
    <p>My content</p>
    <div id="myDiv"></div>
</body>
</html>
```

HTML uses angle brackets to define elements

Each element has an open tag <h1> and close tag </h1>

Everything between the open and close tag is the content of that element

Elements can be nested
-The h1, p, and div elements on this page are nested inside the body element

HTML - Elements

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 – First Page</title>
</head>

<body>
    <h1>First Web Page</h1>
    <p>My content</p>
    <div id="myDiv"></div>
</body>
</html>
```

head - Content that does not appear on the page

title - The text that appears on the browser tab

body - Content that appears on the page

h1 - Header 1 (can use h1 - h6 where h1 is the largest header)

p - Paragraph of text

div - A division. Typically used as a featureless container

HTML - Elements

`<img src="slides.png"/>`

`<br/>`

`<hr/>`

Some elements are self-closing

The open and close tags are contained in one tag

img - image

br - Line break

hr - horizontal rule (line)

HTML - Attributes

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 – First Page</title>
</head>

<body>
    <h1>First Web Page</h1>
    <p>My content</p>
    <div id="myDiv"></div>
</body>
</html>
```

Elements can contain properties which are defined in the open tag of the element

These Attributes are key-value pairs

We have an empty division with a property named id with a value of "myDiv"

HTML - Comments

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 - First Page</title>
</head>

<body>
    <h1>First Web Page</h1>
    <!--<p>My content</p>-->
    <div id="myDiv"></div>
</body>
</html>
```

HTML only supports block comments

<!-- Starts a comment

--> ends a comment

HTML - Unicode

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 – First Page</title>
</head>

<body>
    <h1>&#9820;   Web Page</h1>
    <!--<p>My content</p>-->
    <div id="myDiv"></div>
</body>
</html>
```

Insert any unicode character with the syntax &#<unicode_value>;

♜ == ♜

Some common characters have names

→ == →

Extra white space is ignored in HTML. Add extra spaces with   (non-breaking space)

HTML

That's HTML.

We'll use many more elements and attributes as they come up

You are expected to pick up HTML quickly and understand new elements (Links, lists, tables, etc.) by studying documentation

I recommend W3 Schools to explore other elements/attributes available to you

https://www.w3schools.com/html/default.asp

CSS

CSS

Used to add style to HTML elements

Keep CSS in an external file to separate structure from style (Good practice)

HTML should only be concerned with raw content and basic organization of the page

CSS is concerned with how that content is styled

CSS

Note: You will not be graded on the quality of your CSS in this class (This is not an art class)

We'll cover the absolute basics so you are aware of CSS and how it functions

You are encouraged to explore CSS further if you want to make your visually appealing sites

CSS

```css
body {
    background: aqua;
}

p {
    color: #ff0000;
    font-size: 50px;
}
```

CSS allows us to edit to look of each element

Hear we change the background color to "aqua" which is a named color

We change the text of each paragraph using the RGB value of red and setting the font size to 50 pixels

Many more properties that can be set

CSS

```css
body {
    background: aqua;
}

p {

    color: #ff0000;
    font-size: 50px;
}
```

First Web Page

My content

We "import" our CSS file from the head of our HTML file using the link element

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

<head>
    <meta charset="UTF-8">
    <title>CSE312 - First Page</title>
    <link rel="stylesheet" type="text/css" href="style.css"/>
</head>

<body>
    <h1>First Web Page</h1>
    <p>My content</p>
    <div id="myDiv"></div>
</body>
</html>
```

CSS

```css
p {
    color: #ff0000;
    font-size: 50px;
}
```

But this sets every paragraph on our page to same style

What if we want more flexibility?

```html
<p>I want this to be red</p>
<p>I want this to be green</p>
```

CSS - Classes

```css
p {
    font-size: 50px;
}

p.red {
    color: #ff0000;
}

p.green {
    color: #00ff00;
}
```

Add classes to each element to determine which style(s) should be applied

Here, all paragraphs will have large text and the specific classes will be the assigned colors based on their class

```html
<p class="red">I want this to be red</p>
<p class="green">I want this to be green</p>
```

CSS

```css
p {
    font-size: 50px;
}

.green {
    color: #00ff00;
}

p.red {
    color: #ff0000;
}
```

We can apply styles to different subsets of elements

.<class_name> (Ex. .green) will apply the style to all elements of that class regardless of elements type

<element_type>.<class_name> (Ex. p.red) will apply to all elements matching both element type and class name

```html
<p class="red">I want this to be red</p>
<p class="green">I want this to be green</p>
<div class="red">This is NOT red</div>
```

CSS

```css
p {
    font-size: 50px;
}

p.red {
    color: #ff0000;
}

.green {
    color: #00ff00;
}

#myDiv {
    border-style: double;
}
```

Apply style to a single element using ids

HTML: Can give any element an id which must be unique

CSS: #<element_id> will apply the style only to the element with that id

```html
<p class="red">I want this to be red</p>
<p class="green">I want this to be green</p>
<div class="red" id="myDiv">This is NOT red, but has a double border</div>
```

CSS - Multiple Classes

```css
.green {
    color: #00ff00;
}

.wide {
    width: 100%;
}
```

Elements can have multiple classes to apply combinations of styles

Multiple classes are separated by spaces

```html
<div class="green wide" id="myDiv">Div Content</div>
```

CSS

There are many more features of CSS that we won't cover

As with HTML, I recommend W3 Schools for more

https://www.w3schools.com/css/default.asp