HTML5 and CSS3

ICT 580

Ali Khalil, Ph.D.
Computer Science / Software Engineering
University of Calgary - Continuing Education

UNIVERSITY OF
CALGARY

Essential HTML5 Components

Lesson Outcomes

By the end of this lesson, you will be able to:

- Create a new HTML5 web page from scratch

- Use HTML5 elements within an interactive web page

- Demonstrate how and when to use HTML5 elements

Review Discussion

Any questions from last class?

Review Discussion

How do you comment your code and why is it important?

Review Discussion

What is semantic markup and why should you use it?

Why does HTML evolution matter?

- HTML5 is supported by modern browsers but **not all HTML5 markup** may be implemented yet
  - Browsers need to keep up with the HTML standards
  - You must ensure your HTML will work in your target browser
  - You can check browser support at the W3school reference site https://www.w3schools.com/html/default.asp

Common Head Tags

- \<title> your web page title

- \<meta> informs the browser about your site such as character set, page description, keywords, author etc.

- \<style> how you add internal CSS

- \<link> how you add external CSS

- **\<script>** how you add internal scripting statements and external scripts such as JavaScript

Meta Tag Structure

- Metadata is not displayed on a web page

- The browser uses metadata information to understand what the page is about, who created it and more.

- Metadata is declared in the head tag and doesn't require a closing tag

```
<meta name="keywords" content="keyword, keyword">
```

	Name	Value		Name	Value
	Attribute 1			Attribute 2	

Open/start **tag**

<div>

- Container that holds any content.

code

```
<div>
  <h1>My first div</h1>
</div>
```

browser

My first div

<div>

- Use the id attribute so you can link to the div or target it for styling

code

```
<div id="mydiv">
  <h1>My first div</h1>
</div>
```

browser

My first div

UNIVERSITY OF
CALGARY

HTML5 Semantic Elements

- Semantic elements are a type of tag that describes your content to search engines and screen readers.

  For example, you can use the:

  <header>My Introduction content</header>

  to tell the browser that the content inside the header is introducing a topic or web page.

<header>

- Semantic container that holds introductory content

code

```
<header>
        My introduction to the page
</header>
```

browser

My introduction to the page

<nav>

- Semantic container that holds navigation links

code

```
<nav>
          <a href="mynavlink.html"> My Nav Link</a>
</nav>
```

browser

My Nav Link

<section>

- Semantic container that allows you to easily categorize groups of content

```
<section id="myArticles">
        <h2>My First Article</h2>
        <p>Lorem ipsum dolor sit amet…</p>
        <p>Nunc sed augue lacus viverra…</p>
        <p>Ultrices eros in cursus…</p>
        <p>Nisl tincidunt eget nullam…</p>
        <p>Vestibulum rhoncus est…</p>
</section>
```

My First Article

Lorem ipsum dolor sit amet…

Nunc sed augue lacus viverra…

Ultrices eros in cursus…

Nisl tincidunt eget nullam…

Vestibulum rhoncus est…

<article>

- Semantic container that allows you to group self-contained content together

```
<article>
        <h2>My First Article</h2>
        <p>Lorem ipsum dolor sit amet...</p>
        <p>Nunc sed augue lacus viverra...</p>
        <p>Ultrices eros in cursus...</p>
        <p>Nisl tincidunt eget nullam...</p>
        <p>Vestibulum rhoncus est...</p>
</article>
```

browser

My First Article

Lorem ipsum dolor sit amet…

Nunc sed augue lacus viverra…

Ultrices eros in cursus…

Nisl tincidunt eget nullam…

Vestibulum rhoncus est…

<aside>

- Semantic container that groups content that is related to other content. For example, author information for an article

code

```
<aside>

    <h3>Author Bio</h3>

    <p>Lorem ipsum dolor sit amet, consectetur
    adipiscing elit. Nulla congue, lorem at posuere
    vestibulum, magna dolor fringilla sapien, ac
    efficitur est risus non est.  Maecenas ac eros id
    nibh egestas tristique. Aenean eros est,
    sollicitudin in velit non, tempor eleifend
    ipsum. Suspendisse nec mattis libero. Ut id
    interdum nisi, ac  efficitur nibh.</p>

</aside>
```

browser

Author Bio

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla congue, lorem at posuere vestibulum, magna fringilla sapien, ac efficitur est risus non est. Maecenas ac eros id nibh egestas tristique. Aenean eros est, sollicitudin in velit non, tempor eleifend ipsum. Suspendisse nec mattis libero. Ut id interdum nisi, ac efficitur nibh.

<footer>

- Semantic container that allows you to group content that resides in the bottom of the page

```
<footer>
        <p>My footer</p>
        <p><a href="#">My Footer link</a></p>
</footer>
```

My Footer link

<figure>

- Semantic container that allows you to group an image and caption together

code

```
<figure>
        <img src="img/beach-53118_small.jpg"
        alt="The Cabana">
</figure>
```

browser

<figcaption>

- Specifies a caption for the figure tag

```
<figure>
        <img src="img/beach-53118_small.jpg"
        alt="The Cabana">
        <figcaption>My first Caption</figcaption>
</figure>
```

My first Caption

HTML Video

- The video tag was introduced in HTML5 and allows you to call a video

- Supported formats:
  - Mp4 (only format supported by all browsers)
  - webM
  - Ogg

- The video tag allows you to display a message if the video cannot play.

- Audio and video are often grouped together in a folder named media

<video>

- Attributes include: autoplay, controls, height and width, loop, muted, poster, preload and src

```
<video width="560" height="315" controls muted autoplay>
        <source src="media/Beach-10890.mp4">
        You cannot view this video with your current browser.
</video>
```

Embedding YouTube videos

- YouTube and other video streaming services allow their content to be embedded in your web page by using the iframe tag. To embed a YouTube video, do the following:
    1. Go to the YouTube video you want to embed
    2. Click on the share button and select embed
    3. A pop up will open with the code you need to copy
    4. If you want the video to begin at a moment other that the beginning, select the "start at" checkbox and specify the insertion point.
    5. Click the copy button to copy the code
    6. Paste the code where you want the video to appear in the web page

Embedding YouTube videos - example

```
<iframe
    width="560"
    height="315"
    src="https://www.youtube.com/embed/zaDclp6Fyjc?autoplay=1&mute=1"
    allow="autoplay"
    allowfullscreen>
</iframe>
```

HTML Audio

- The audio tag was introduced in HTML5 and allows you to play audio in your webpage.

- Supported formats:
  - Mp3 (only format supported by all browsers)
  - Wav
  - Ogg

- The audio tag allows you to display a message if the audio cannot play

- Audio and video are often grouped together in a folder named media

Common Webpage File Structure

- Images are usually grouped into a folder named **images** or **img**

- Videos are usually grouped into a folder named **media** or **video**

- Pages is usually grouped into a folder named **pages**

- **Note:** folder name convention.

Links Revisited – absolute & relative links

- In general, only use **absolute** links if you are referring to a site outside your website.

- Often, absolute links use the target="_blank" to open the link in a new window or tab.

- Reserve opening links in a new window for **absolute** links that link to remote resources or for files such as **PDFs** that are in your site but do not have easy ways to return to your web page.

- Use **relative** links when linking to other pages in your site.

Anchor Links

- ## An anchor to a section of your webpage

```
<a href="#myvideosection">My anchor link: to a
specific spot on a page</a>

<h2 id="myvideosection">My Video Section</h2>
```

browser

My anchor link: to a specific spot on a page

My Video Section

Email Links

- You can specify an email address by adding mailto: in front of an email address in the href attribute

- You can specify the subject of your email by adding ?Subject=My Subject after the email address

My email link

Note: you should use the %20 to replace spaces as browsers do not like spaces and the link may break if spaces are used.

Adding Forms

- The form element contains the elements required to collect data and submit a form

```
<form  action="#">
```
Declares a form. Action attribute sets what to do with the data you collect

```
  <p>
    First Name: <input type="text" name="fname">
    Last Name: <input type="text" name="lname">
  </p>
```
Declares an input field
No closing tag required

```
  <p>
    <input type="submit" value="submit">
  </p>
</form>
```
Declares a submit button
No closing tag required

Adding form input types

- There are many input types available for use with forms

- Input types require the name attribute in order to pass the input on when the user submits the form

- Be sure to name the input type logically so it makes sense when analyzing the submitted data

Adding form input types – text

- Use the text input type to ask the user to supply a single line of text

code

```
<form>
        <p>First Name <input type="text"
        name="firstname">
        </p>
</form>
```

browser

First Name [   ]

32

Adding form input types – email

- *Use the email input type to ask the user to supply an email address*

```
<form>

        <p>Email <input type="email"
        name="email">

        </p>
</form>
```

Email [   ]

Adding form input types – radio

- *Use the radio input type to ask the user to choose between a number of options*

code

```
<form>
        <p>
                <input type="radio"> My radio 1
                <input type="radio"> My radio 2
                <input type="radio"> My radio 3
        </p>
</form>
```

browser

○My radio 1 ○My radio 2 ○My radio 3

UNIVERSITY OF CALGARY

Adding form input types – checkbox

- Use the checkbox input type to ask the user a yes or no question or to choose one or more of options from a list of options

code

```
<form>
        <p>
                <input type="checkbox"> I would like
                to be added to your newsletter
        </p>
</form>
```

browser

☐ I would like to be added to your newsletter

35

Adding form text areas

- Use the text area tag to ask the user to supply multiple lines of text, commonly used to ask for comments

code

```
<form>
        <p>
                Comments or Questions <br/>
                <textarea rows="5"></textarea>
        </p>
</form>
```

browser

Comments or Questions

Adding a select dropdown

- Use the select tag and option tags to create a dropdown list

code

```
<form>
        <p>
                <select name="favouritebeach">
                        <option>Mexico</option>
                        <option>Caribbean</option>
                        <option>Hawaii</option>
                </select>
        </p>
</form>
```

Adding a button

- *Use the button tag to create a clickable button*
- *You must define the type of button*

code

```
<form>
        <p>
                <button type="reset">Reset the form
                </button>
        </p>
</form>
```

browser

Reset the form

Adding a submit button

- *Use the submit input type to create a button that submits user data to a server page that processes the data*

```
<form>
        <p>
                <input type="submit">Submit
        </p>
</form>
```

Submit

What code belongs in the head tag?

Review Question

What does a div tag do?

Review Question

What are semantic elements?

Review

In this class we discussed the following tags:

- Meta tag
- Div tag
- Header tag
- Nav tag
- Section tag
- Article tag
- Aside tag

- Footer tag
- Figure tag
- Video tag
- Audio tag
- Anchor link
- Email link
- Form tag

- Input tag
- Label tag
- Textarea tag
- Select tag
- Button tag

Explore on your own

Take a look at the Cheat-sheet for this class to see additional form related tags, input types and attributes.

Create an HTML5 Webpage (20%)

Questions?