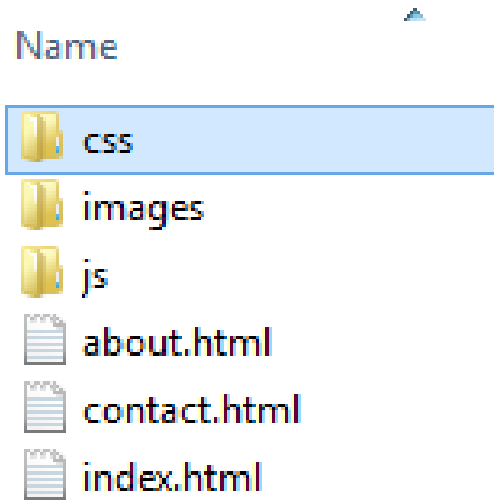
Images, Tables and Forms

CST8285 – Web Programming

Website Structure

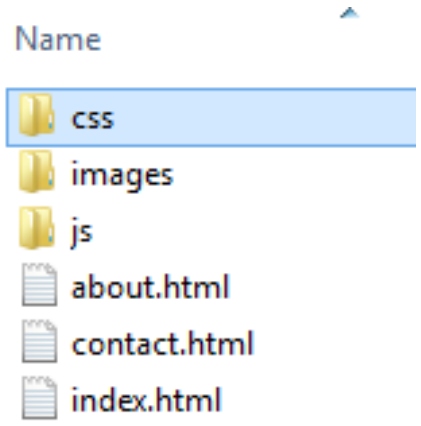
- Websites typically contain multiple files, images, scripts, etc.
- A site can have many folders.



Paths in website files

- When locating a file (image, css, script, etc), the path given is relative to the file that is looking for it.
- For example, if style.css is in the css folder references an image called logo.jpg in the images folder, the correct path would be:

```
../images/logo.jpg
```



Images

- Browsers will display jpg, gif & png images.
- There are a few ways to display images in an HTML document.
- Some ways involve CSS, but it is commonly done using the `<img>` tag

The <img> tag

- The <img> tag is a standalone tag.
- The <img> requires two parameters in HTML 5:
  - The src parameter, which tells the browser the location of the image, and
  - The alt parameter, which is a description of the image.
    - The alt tag is displayed when users have disabled images.
    - The alt tag is also used by search engines and screen readers.

The `<img>` tag

- Optional attributes include:
  - `width` & `height` – measured in pixels
  - `id` – a unique id for the image which is used by CSS and JavaScript
  - `title` – contains advisory information about the image. This is displayed in most browsers when the mouse hovers over the image.

The <img> tag example

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Turning an <img> element into a link

- The process is the same as text; wrap the `<img>` tag with an `<a>` element
- Ex:

```
<a href="http://www.reddit.com"><img
src="images/snoo.jpg" alt="reddit
alien" width="150" height="300" /></a>
```

Tables

- Used to display data in rows and columns, much like a spreadsheet
- In the old days, entire website layouts were done in tables
- Now, used mostly for web forms and displaying data.

The <table> element

- All information for a table is contained in a table element, defined by the <table> tag.
- Rows are defined with the <tr> tag, within the table element.
- Table data, or cells, are defined by the <td> tag. <td> elements are children of the <tr> element.
- The number of <td> elements in a row define the number of columns.
- Table headers <th> are used to define rows and columns. By default, text in a <th> element will appear in **bold.**

Sample table

```
<table border="1">
	<tr>
		<th>Name</th>
		<th>Address</th>
		<th>Email</th>
	</tr>
	<tr>
		<td>Michael Freeman</th>
		<td>1385 Woodroffe Ave</td>
		<td>freemam@algonquincollege.com</td>
	</tr>
	<tr>
		<td>John Doe</th>
		<td>44 here st.</td>
		<td>doej@testing.com</td>
	</tr>
</table>
```

Sample Table Output

Name & Address		Email
Michael Freeman	1385 Woodroffe Ave	freemam@algonquincollege.com
John Doe	44 here street	doej@testing.com

`<table>` border attribute

- The `border` attribute defines whether or not the table should be displayed with a border.
- Accepts either a 0 (no border) or 1 (display border)
- **Ex:** `<table border="0">`

colspan and rowspan

- colspan and rowspan are attributes of the <td> and <th> elements.
- colspan defines the amount of columns a cell should cover
- rowspan defines the amount of rows a cell should cover
- Both accept an integer value for the number of rows/columns to span.

colspan example code

```
<table border="1">
    <tr>
        <td colspan="3">This cell
covers three columns</td>
    </tr>
    <tr>
        <td>Column 1</td>
        <td>Column 2</td>
        <td>Column 3</td>
    </tr>
</table>
```

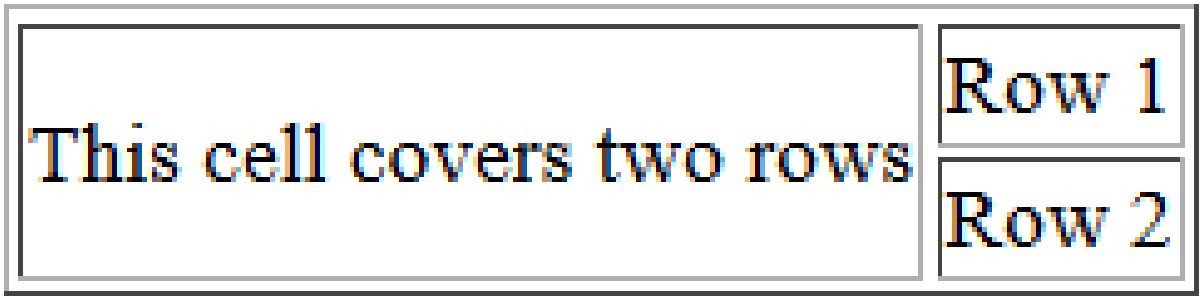
`colspan` example

This cell covers three columns		
Column 1	Column 2	Column 3

rowspan example code

```
<table border="1">
    <tr>
        <td rowspan="2">This
cell covers two rows</td>
        <td>Row 1</td>
    </tr>
    <tr>
        <td>Row 2</td>
    </tr>
</table>
```

`rowspan` example



`thead`, `tbody` **and** `tfoot`

- Used to group row elements (`<tr>`) together in logical sections
- Can be helpful when styling rows with CSS

thead, tbody and tfoot

```
<table border="1">
        <thead>
                <tr>
                        <th>Item</th>
                        <th>Cost</th>
                </tr>
        </thead>
        <tbody>
                <tr>
                        <td>Computer</td>
                        <td>750.00</td>
                </tr>
                <tr>
                        <td>Software</td>
                        <td>250.00</td>
                </tr>
        </tbody>
        <tfoot>
                <tr>
                        <td>Total</td>
                        <td>1000.00</td>
                </tr>
        </tfoot>
</table>
```

HTML Forms

- Used to retrieve data from the user
- HTML forms on their own do nothing.
  - Need some client side/server side processing
- HTML comes with controls to display text boxes, password fields, radio buttons, checkboxes, drop-down lists, selection lists, and more
- HTML5 comes with new features such as date pickers, color pickers, sliders and spinners. However, these are not available on all browsers.

The `<form>` element

- Contains the form controls
- Tells the browser what to do with the data using these attributes
  - `method`: can be `get`, or `post` (required).
    - `get`: form data will be appended to the URL and sent to the browser (less secure)
    - `post`: transmits data in body of the HTTP request (more secure, recommended)
  - `action`: url of server side processing script (required)

The `<form>` element

- Other `<form>` attributes
  - `name`: used to identify the form. Useful for pages with multiple forms (optional)
  - `autocomplete`: can be set to on or off. Tells browser to remember values entered in these fields. (optional)
  - `id`: a unique identifier for the form. Can not be the same as any other id value on the page. (optional)

The <input> element

- Used to display several types of form elements
- Inputs are stand-alone elements.
- Elements identified by the type attribute
- Common attributes for <input> elements:
  - type: the type of form element to display (text box, checkbox, etc)
  - name: unique identifier for the element within the form, used by client and server side scripting
  - id: unique identifier for the element within the page. Used by CSS and scripting.
  - In general, the name and id are the same.

Textbox

- Displays a single line text box.
- Used for names, email addresses, URLs, and more.
- The code for a text box is as follows:

```
<input type="text" name="firstName" id="firstName">
```

- Other attributes
  - `value`: assigns an initial value
  - `maxlength`: the maximum acceptable value length, in characters

Submit button

- Used to call the script in the action attribute of the form element, sending the form data to the server.
- The code for a submit button:

```
<input type="submit"
name="btnSubmit" id="btnSubmit"
value="Submit Form">
```

- Attributes
  - `value`: The text to be displayed in the button

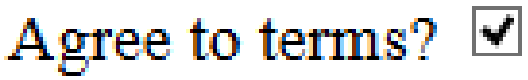
Reset button

- Used to return form elements to their default values.
- The code for a reset button:

```
<input type="reset" name="btnReset"
value="Reset Form">
```

- Attributes:
  - `value`: the text to be displayed in the button.

Check box



- Allows user to select one or more of a group of related items.
- Good for yes/no questions, or scenarios where a "select all that apply" question is being asked.
- The code for a check box:

```
<input type="checkbox" name="agreeToTerms" id="agreeToTerms" value="yes">
```

- Other attributes:
  - `checked`: box is checked by default when displayed in browser.

Radio buttons

- Allows user to select one (and only one) item from a group of items.
- Define multiple elements with the same name to form a group:

```
Male <input type="radio"
name="gender" id="genderMale"
value="male">
<br>
Female <input type="radio"
name="gender" id="genderFemale"
value="female">
```

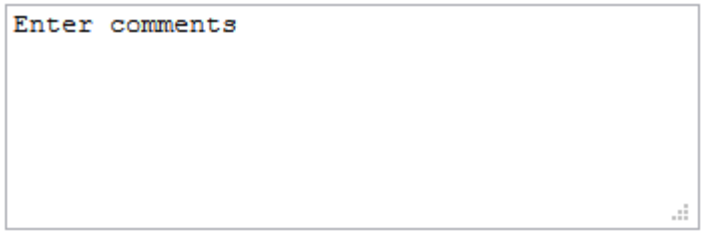
- Other attributes:
  - `checked`: button is checked by default when displayed in browser.

Password field

- Similar to a text box, but the contents are obscured with dots.
- The code for a password is as follows:

```
<input type="password"
name="password"
id="password">
```

Textarea



- Accepts larger amounts of text than a text box.
- Used for comments, questions, or descriptions.
- The code for a textarea is as follows:

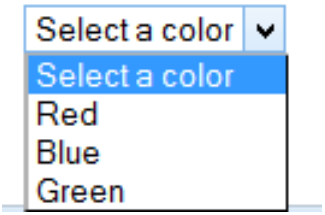
```
<textarea  name="comments" id="comments" cols="40" rows="6">Enter comments</textarea>
```

- `<textarea>` attributes
  - `cols`: the width of the textarea, in characters.
  - `rows`: the height of the textarea, in rows.

Select and option elements

- Can be configured to display a dropdown list, or an option box.
- Configuration is determined by the size attribute, where a size of `1` will display a dropdown box, and a size of `2` or more will display an option box.
- The option elements configure the options presented to the user, and the value of each option that is sent to the browser when selected.

The dropdown list

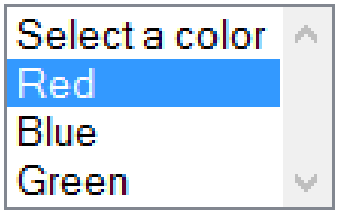


- Using the select and option elements, creates a dropdown list that allows the user to choose one item
- The code for a dropdown box is as follows:

```
<select name="favColor" id="favColor"
size="1">
    <option>Select a color</option>
    <option value="red">Red</option>
    <option value="blue">Blue</option>
    <option value="green">Green</option>
</select>
```

- The value the option element's value attribute is the data that gets sent to the server

The option box



- Using the select and option elements, creates an option list that allows the user to choose one or more items item
- The code for a dropdown box is as follows:

```
<select name="favColor" id="favColor"
size="4">
    <option disabled>Select a color</option>
    <option value="red">Red</option>
    <option value="blue">Blue</option>
    <option value="green">Green</option>
</select>
```

- The value the option element's value attribute is the data that gets sent to the server
- Select attributes:
  - `multiple`: allows user to choose multiple items in a list
- Option attributes
  - `disabled`: prevents a user from selecting the disabled option.

Questions?