

SOEN 287

WEB

PROGRAMMING



<http://www.switched.com/2010/05/11/what-is-html5-and-why-should-you-care/>

Topics

❖ Part1:

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- Meta data
- Images
- Links
- Lists
- Tables

❖ Part2:

- Forms – a first look
- `<audio>` element
- `<video>` element

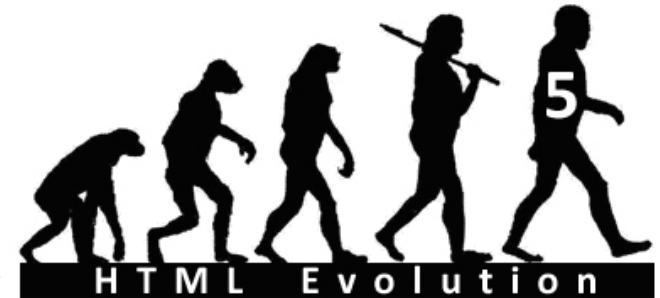


<http://richardstep.com/self-help/survey-results-self-help-subjects/>

Hypertext markup language (HTML)

- Originally Developed to for specifying:
 - contents
 - structure
 - presentation
- “New” way of thinking, use HTML to specify:
 - contents
 - structure
 - **but, leave out presentation details, why?**

HTML Evolution



<http://mycreativity.com/blog/archives/100>

- 1995: HTML V2.0
- 1997: HTML V3.2 (browser wars)
- 1999: HTML V4.01 (introduced many new features and deprecated many older features/cascading style sheets)
- 2000: XHTML 1.0
- 2001: XHTML 1.1 (Modularized 1.0, and drops frames)
- 2009: XHTML 2.0 was stopped; W3C took over development of HTML5
- 2014: HTML V5.0 - designed for the web, both now and in the future

Why XHTML?



Reality:

- Many different browser technologies.
- Some browsers run on computers, and some browsers run on mobile phones or other small devices.
- Smaller devices often lack the resources or power to interpret a "bad" markup language.

Why XHTML?



1. HTML has lax syntax rules, leading to sloppy and ambiguous documents.
2. XHTML syntax is much more strict, leading to clean and clear documents in a standard form.
3. The syntactic correctness of XHTML documents can be validated.

Improved interoperability among different browsers

Topics

- Evolution of HTML
- **HTML syntax & tags**
- Character Entities
- Meta data
- Images
- Links
- Lists
- Tables
- Forms – a first look
- `<audio>` element
- `<video>` element



HTML 5 – Exercise 1



Looking at the displayed [web page](#) and the handout

1. List all of the HTML tags you can find
2. Define the syntax of each tag
3. Define the general syntax of an HTML page?

Basic Syntax

- Content and Structural Elements are defined by **tags**
- Tag format:

```
<element_name>   opening tag  
    [Element content]  
</element_name>  closing tag
```

Example:

```
<p>This is a paragraph</p>
```



<https://www.etsy.com/listing/123914986/html-coffee-mug-html-tags-funny-white>

Basic Syntax (cont.)

- Not all tags have content. If a tag has no content, its form is

```
<element_name />
```

Example:

```
<br />
```

Basic Syntax (cont.)

- Some tag can have attributes

Ex: `<html lang = "en">`

- Comment form:

`<!-- ... -->`

- Browsers ignore:

comments

line breaks

tabs

unrecognized tags

multiple spaces

HTML Structure

```
<!DOCTYPE html>
<!-- File Name and purpose -->
<html lang = "en">
  <head>
    <title> Document title</title>
    <meta charset = "utf-8" />
  </head>
  <body>
    .....
  </body>
</html>
```

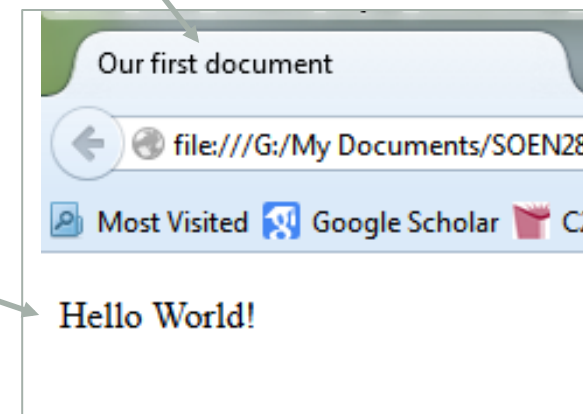
```
1 <html>
2 <head>
3   <title></title>
4 </head>
5 <body>
6
7 </body>
8 </html>
9
```

HTML Structure (cont.)

- Text is normally placed in paragraph elements `<p>`
- The `<p>` tag
 - breaks the current line
 - inserts a blank line
- The new line gets the beginning of the content of the paragraph
- The closing tag `</p>` is required in XHTML, not in HTML

HTML Structure (cont.)

```
<!DOCTYPE html>
<!-- hello.html A trivial document -->
<html lang = "en">
  <head>
    <title> Our first document </title>
    <meta charset = "utf-8" />
  </head>
  <body>
    <p>
      Hello World!
    </p>
  </body>
</html>
```



Common (Basic) HTML Text Tags

<p></p>

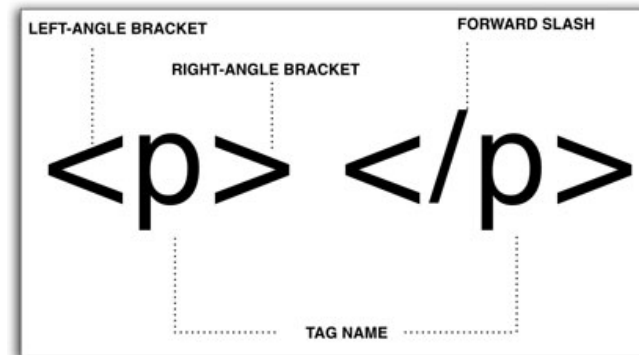
- Defines a paragraph

**
**

- Defines a line break
- This tag is not paired. Note the position of the /

<pre></pre>

- Normally multiple white space is reduced to a single space and line breaks are ignored
- This tag tells the browser to not do this
- Text in a pre element is shown in a fixed-width font



Common (Basic) HTML Text Tags (Cont.)

`<h1></h1>`, `<h2></h2>`, `<h3></h3>`, `<h4></h4>`

- Denotes 1st , 2nd , 3rd and 4th level of headers
- Goes as high as `<h6>`

`<h2>` `<h5>`
`<h1>`
`<h4>` `<h3>`
`<h6>`

`<blockquote></blockquote>`

- It specifies a section that is quoted from another source

``

- Makes text bold.
- Considered poor form and should not be used.
- Use `` instead

Common (Basic) HTML Text Tags (Cont.)

`<i></i>`

- Defines a part of text in an alternate voice or mood
- Content of tag usually displayed in italic.
- Considered poor form and should not be used.
- Use `` instead

``

- Emphasis text
- Generally makes it *italic*

``

- In HTML5 defines important text
- Generally makes it **bold**

Common (Basic) HTML Text Tags

``

- Defines subscript text

``

- Defines superscript text

Common (Basic) HTML Text Tags

`<hr />`

- In HTML5, the `<hr>` tag defines a thematic break.
(meaning)
- In HTML 4.01, the `<hr>` tag represents a horizontal rule.
(presentation)
- However, the `<hr>` tag may still be displayed as a horizontal rule in visual browsers, but is now defined in semantic terms, rather than presentational terms.
- All the layout attributes are removed in HTML5. Use CSS instead.

Topics

- Evolution of HTML
- HTML syntax & tags
- **Character Entities**
- Meta data
- Images
- Links
- Lists
- Tables
- Forms – a first look
- `<audio>` element
- `<video>` element



Common Character Entities

Special characters are denoted with `&XXX;`

- Where `XXX` is a number or html name
- `"` and `"` both mean the `"` character

Common Character Entities (cont.)

Char.	Entity	Meaning
&	&	Ampersand
<	<	Less than
>	>	Greater than
"	"	Double quote
'	'	Single quote
$\frac{1}{4}$	¼	One quarter
$\frac{1}{2}$	½	One half
$\frac{3}{4}$	¾	Three quarters
/	⁄	Fraction slash
°	°	Degree
(space)	 	Non-breaking space
@	©	Copyright
€	€	Euro

For a complete list go to:
http://www.w3schools.com/charsets/ref_html_symbols.asp

What will this display?

- Example:

Ampersand &
frac14; < < frac34; and
< < frac25;
frac14;< < nbsp;nbsp;nbsp;
nbsp;nbsp;nbsp;nbsp;nbsp;frac34;
10⁄34

Output:

Amperсанд &
 $\frac{1}{4} < \frac{3}{4}$ and $< \frac{2}{5}$
 $\frac{1}{4} < \frac{3}{4}$
 $10/_{34}$

Topics

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- **Meta data**
- Images
- Links
- Lists
- Tables
- Forms – a first look
- `<audio>` element
- `<video>` element



Meta Data



- Meta data is data about data
- Often used to provide info about document to search engine
- `<meta >` tag is used within `<head>`
- `<meta >` has two attributes `"name"` and `"content"`
- Examples:

```
<meta name="Author " content= " Mickey  
  Mouse" >
```



```
<meta name="Keywords" content="XHTML, CSS,  
  Javascript" >
```

Topics

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- Meta data
- **Images**
- Links
- Lists
- Tables
- Forms – a first look
-
- `<audio>` element
- `<video>` element



Images



- Images objects are added with the `` tag
- Must have the **src** and **alt** attributes

```
<img src= "logoc.png"  
  alt="My favourite image" width= "200 "  
  height= " 200 " >
```

Image tag by example



Source file location

```

```

Display this text if browser does not
display images

Size in pixels

Normal Image Formats

- **GIF** (Graphic Interchange Format)
 - 8-bit color (256 different colors)
- **JPEG** (Joint Photographic Experts Group)
 - 24-bit color (16 million different colors)
 - Both use compression, but JPEG compression is better
- **PNG** (Portable Network Graphics)
 - Relatively new
 - Should eventually replace both gif and jpeg
 - Files are bigger than jpeg – no lost data!
- Other formats
 - bmp, tif, eps

Image Example

```
<!DOCTYPE html>
<html lang = "en">
  <head>
    <meta charset="utf-8"><title> Images </title>
  </head>
  <body>
    <h1> My favorite coffee </h1>
    <h2> at Starbuck </h2>
    <p>We pour ..... sweetness.</p>
    <br />
    
    <br />
    <p> Yum yum!</p>
  </body>
</html>
```

[WhiteChocolateMoccha.html](#)

Topics Covered

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- Meta data
- Images
- [Links](#)
- Lists
- Tables
- Forms – a first look
- `<audio>` element
- `<video>` element



Links



`<a>`

- Called the anchor tag, it links to another resource
- `href` attribute is required and indicates the resource

1. `URL path`
2. `Relative path`
3. `Internal Link`
(``)

The target Attribute

- Specifies where to open the new document
- `_blank`: Opens the link in a new window or tab
- `_self`: Opens the link in the same window
- Example:
 - `Visit Concordia University!`
- `_parent`: Opens the link in the parent frame
- `_top`: Opens the link in the full body of windows

If you want an image to be your link!

- `<!DOCTYPE html>`
- `<html>`
- `<body>`
- `<h2>Image Links</h2>`
- `<p>The image is a link. You can click on it.</p>`
- ``
- ``
- ``
- `</body>`
- `</html>`

Hypertext links `` by example

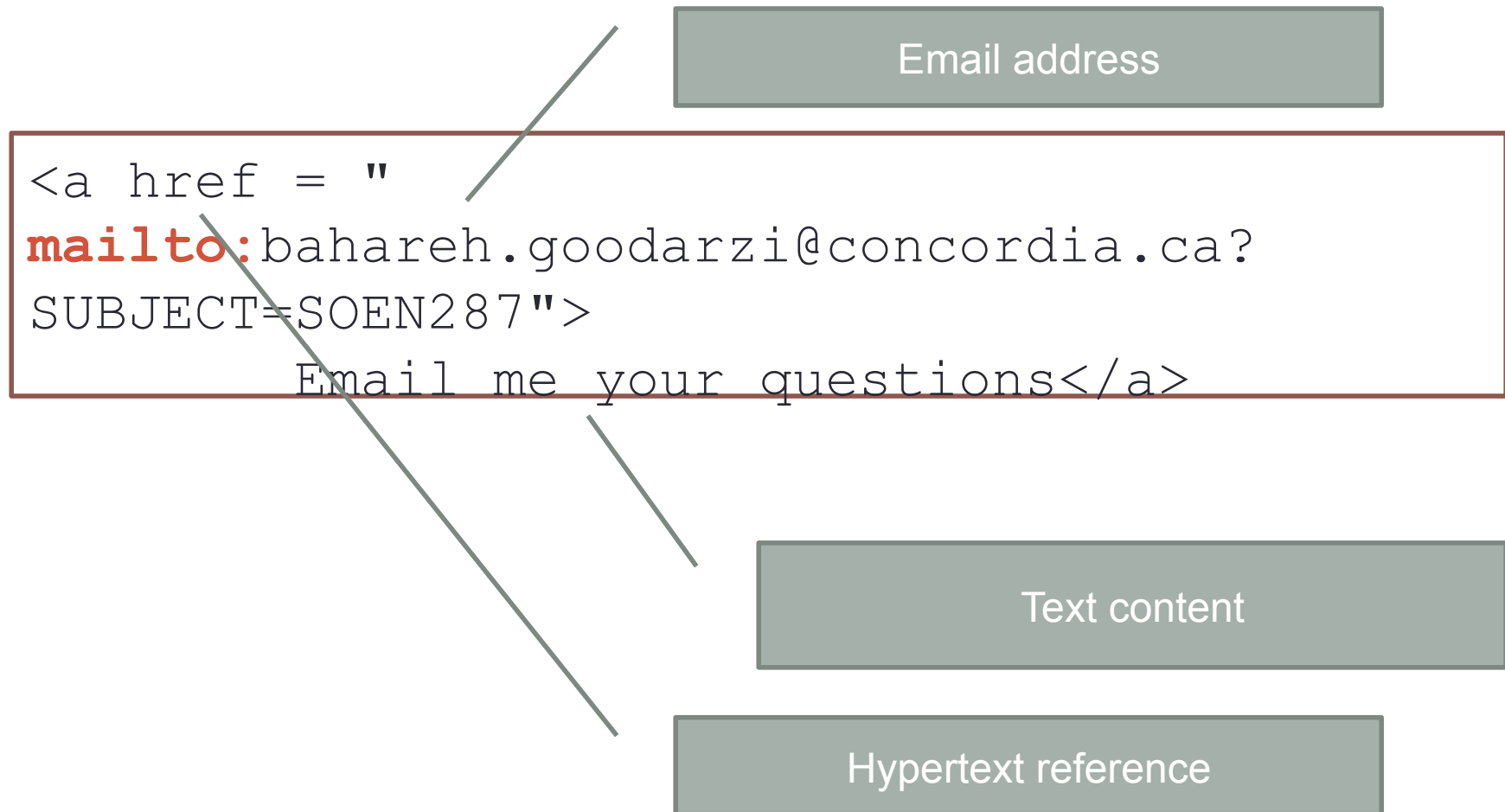
Source file location or url relative path is preferred

```
<a href = " http://www.concordia.ca/  
academics/undergraduate/calendar.html">  
Undergraduate calendar</a>
```

Text content

Hypertext reference

Hypertext links by example



Topics

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- Meta data
- Images
- Links
- **Lists**
- Tables
- Forms – a first look
- `<audio>` element
- `<video>` element



Ordered & Unordered Lists

- Data is normally listed as ordered or unordered
- `` starts an unordered list
- `` starts an ordered list

- List items are enclosed in ``

``

`List item 1`

`List item 2`

``

```
<ol>
<li> Item one </li>
<li> Item two </li>
<li> Item three </li>
</ol>

<ul>
<li> Item one </li>
<li> Item two </li>
<li> Item three </li>
</ul>
```

1. Item one
2. Item two
3. Item three

- Item one
- Item two
- Item three

Definition Lists

- Used to define terms,
- List items are separated: “term” and “definition”
 - `<dl>` defines the definition list
 - `<dt>` encapsulates the term
 - `<dd>` encapsulates the definition

Example:

```
<dl>  
  <dt>Term 1</dt>  
  <dd>Definition of term 1</dd>  
  <dt>Term 2</dt>  
  <dd>Definition of term 2</dd>  
</dl>
```

Definition List - Example

```
<h2>Definitions</h2>
<dl>
  <dt>My name</dt>
  <dd>Bahareh Goodarzi</dd>
  <dt> SOEN 287</dt>
  <dd>Web programming</dd>
</dl>
```

Definitions

My name

Bahareh Goodarzi

SOEN 287

Web programming

Topics

- Evolution of HTML
- HTML syntax & tags
- Character Entities
- Meta data
- Images
- Links
- Lists
- **Tables**
- Forms – a first look
- `<audio>` element
- `<video>` element



HTML 5 – Exercise 2



Looking at the displayed [web page](#) and the handout

1. What are the different tags used when scripting a table
2. What is the syntax for scripting a table?
3. What does each tag represent?

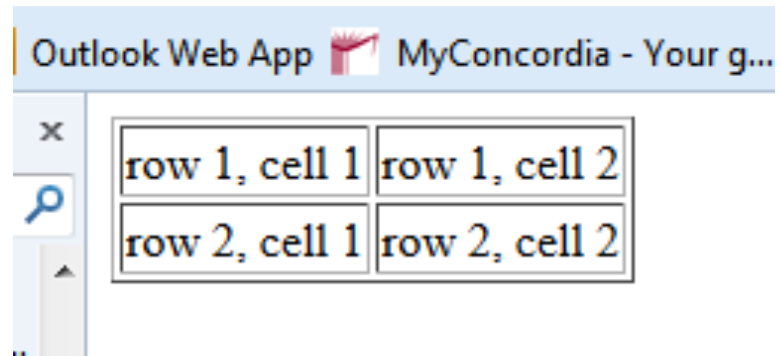
Exercise2

Roll No 1	Name	Team
1001	John	Red
1002	Peter	Henry
1003	Henry	Green

Tables

- Tables are defined with the `<table>` tag
 - Captions are given with `<caption></caption>`
 - **Defined row-by-row not column-by-column**
 - The table size is not given, it is calculated
-
- `<tr></tr>` defines a row
 - `<th></th>` defines a row label
 - `<td></td>` defines a data element

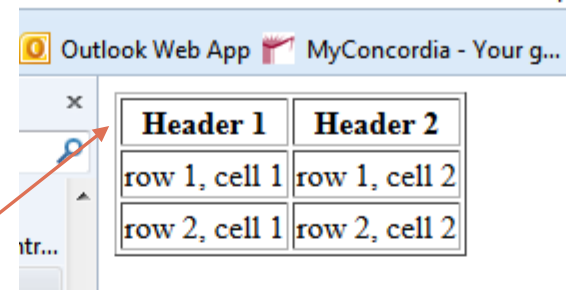
Tables



```
<table border="1">  
  <tr>  
    <td>row 1, cell 1</td>  
    <td>row 1, cell 2</td>  
  </tr>  
  <tr>  
    <td>row 2, cell 1</td>  
    <td>row 2, cell 2</td>  
  </tr>  
</table>
```

Tables with headers

[2-Table1.html](#)



Header 1	Header 2
row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

```
<table border="1">
  <tr>
    <th>Header 1</th>
    <th>Header 2</th>
  </tr>
  <tr>
    <td>row 1, cell 1</td>
    <td>row 1, cell 2</td>
  </tr>
  . . .
</table>
```

Tables

- Merging cells
- `rowspan`: make a cell as long as the number of columns
- `colspan`: make a cell as wide as the number of rows below it

colspan and rowspan

[2-Table2.html](#)

This cell spans all 5 col.				
row 2, cell 1	row 2, cell 2	row 2, cell 3	row 2, cell 4	
row 3, cell 1	row 3 cell 2 spans 2 rows	row 3 cell 3 spans 2 col		
row 4 cell 1		row 4 cell 3	row 4 cell 4	

```
<table border="1">
  <tr >
    <td colspan = 4>This cell spans all 5
col.</td>
  </tr>
```

```
<tr>
  <td>row 2, cell 1</td>
  <td>row 2, cell 2</td>
  <td>row 2, cell 3</td>
  <td>row 2, cell 4</td>
</tr>
```

Continued on next slide

colspan and rowspan ...

[2-Table2.html](#)

This cell spans all 5 col.				
row 2, cell 1	row 2, cell 2		row 2, cell 3	row 2, cell 4
row 3, cell 1	row 3 cell 2 spans 2 rows		row 3 cell 3 spans 2 col	
row 4 cell 1			row 4 cell 3	row 4 cell 4

...

```

<tr>
  <td>row 3, cell 1</td>
  <td rowspan = 2>row 3 cell 2 spans 2
rows</td>
  <td colspan = 2> row 3 cel 3 spans 2
col.</td>
</tr>
<tr>
  <td>row 4 cell 1</td>
  <td>row 4 cell 3</td>
  <td>row 4 cell 4</td>
</tr>
</table>

```


You try #1

- Work out the html code for this table



Audi	BMW	Mercedes
	Lamborghini	Porsche
VW	Tesla	
Range Rover		

You try #2



Work out the html code for this table

A test table with merged cells

	Average		Red eyes
	height	weight	
Males	1.9	0.003	40%
Females	1.7	0.007	43%

Hint: First line is done with <caption> tag and will need the <th> tag and <i> for italic