HTML Basics

Our model to structure documents

In this section we will

Learn about…

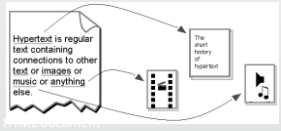
- What is HTML?
- How HTML markup works
- How browsers interpret HTML
- Basic structure of HTML documents

The origin of HTML

- The design of HTML was influenced by a type of SGML, Standard Generalized Markup Language
- SGML markup describes a document's structure such as its paragraphs, quotations, and attributes like author
- Berners-Lee wanted one electronic 'web' for everyone to use, regardless of computer, software, or document

Access content on the Web

- Accessing cross-referenced documents, known as **hypertext linking**, is an important aspect of the Web because it allows your browser to quickly access content on the Web:
  - page text
  - audio and video
  - programs
  - images
  - social network site



World Wide Web

- Referenced content can be a resource stored anywhere on the Internet or another web site.
- The web server type (e.g. Apache, Microsoft `IIS`) which is hosting content doesn't matter to the browser.
- When you "click" a hyperlink in the browser, the information referenced by the hyperlink is displayed to you either from the browser's cache or from where ever on the internet that information is stored.

Before the W3C

- In the 90's web page authors began to find it necessary to write customized HTML for each web browser vendor (e.g. Microsoft Explorer, Netscape Navigator).
- Each browser vendor supported its own "flavour" of HTML (the so-called 'extensions') to gain market share through enhanced capabilities (e.g. multi-column text layout like a magazine or newspaper).

  - Browser-specific extensions to the HTML meant more work was needed to maintain and develop web pages

The W3C

- To address the growing need for web page standards, Tim Berners-Lee established the **World Wide Web Consortium**, or **W3C**, in 1994 at MIT to oversee the development of Web technology standards.

The W3C

- The W3C does not release a version of a particular technology. Instead, it issues a formal recommendation for a technology, which essentially means that the technology is (or will be) a recognized industry standard

HTML Documents

- A **target output format** refers to the medium in which a document will be displayed, such as a Web page, mobile device, or a printer

HTML Documents

- In the early to mid 1990's it was common to use a text editor to create HTML documents
- **Hypertext Markup Language (HTML)** is a simple markup language used to create HTML content (or 'web pages')
- HTML is **not** a programming language

HTML Documents

- A **markup language** is a set of characters or symbols which define a document's logical structure.

These are markup tags.

<title> A Tale of Two Cities **</title>**
<quote> It was the best of times. It was the worst of times. **</quote>**
<address> 48 Doughty Street London WC1N 2LX **</address>**

HTML Documents

Step by Step…

1. Start with Content
2. Give the document structure
3. Identify text elements
4. Add an image

Basic HTML Syntax

- HTML documents are text documents consisting of:
  - instructions called **tags or more precisely, 'elements'**
  - and the text to display on a Web page
- Most HTML elements have a start and end tag

  `<html>` … `</html>` `<p>` … `</p>`
- Some HTML elements use just the start tag…

  `<img>` `<hr>` `<br>`

HTML is structure not style

- HTML presentation tags are deprecated in favour of CSS so that style definitions are kept separate to simplify web page design and maintenance
- Use HTML tags to indicate the structure of the document content rather than its style
- Structure type tags can specify a heading, paragraph, article, form, table, list, division, span, etc.

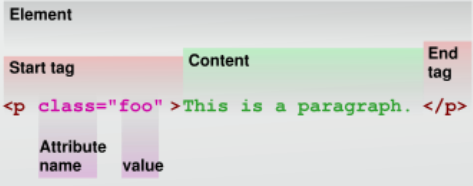
How much do you already know?

- A lot of CMS (Content management Systems) such as Wordpress, Drupal or Joomla! Allow you to enter content either as plain text with the ability to format or as HTML
- In pairs (or in groups of 3 to 4) what are the HTML tags you know?

What you already know!

HTML Rulez!

- HTML tag names can be either upper or lowercase but by convention use lowercase <BODY> = <body>



HTML file name

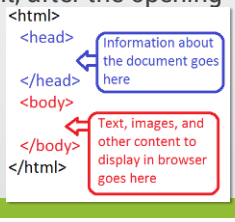
- An HTML file will usually have an extension of .html or .htm (predefined, static HTML page)

  e.g. index.html or main.htm
- But not necessarily, sometimes HTML content is created by web server program scripts such as PHP, Java server pages, Microsoft ActiveServer pages (dynamic HTML page)

  e.g. reports.php or menu.jsp or default.aspx

Basic HTML Syntax

- The **<head>** element contains information used by the Web browser, and you place it at the start of an HTML document, after the opening **<html>** tag



Basic HTML Syntax

- The **<head>** element and the tags it contains are referred to as the **document head**
- Following the document head is the **<body>** element, which contains the document body

Basic HTML Syntax

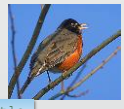
- The **<body>** element and the text and tags it contains are referred to as the **document body**
- Most browsers will make an effort to figure out the HTML if head and body elements are not defined
- The **<body>** element is the container of the document's HTML content.
- A Web browser's process of assembling and formatting an HTML document is called **parsing** or **rendering**

HTML content syntax example

Basic HTML Syntax

- Additional element parameters, called **attributes**, configure many HTML tags
- Attributes appear before the closing bracket of the starting tag, and separated from the tag name or other attributes with one or more spaces
- Sequence order of the attributes does not matter inside the element
- Attributes within an element should not be duplicated
- Typically all attribute values are enclosed by single or double quotes

```
<img src="robin.png"
  alt="photo of a robin"
  title="Photo of a robin">
```



This element has three attributes: `src`, `alt` and `title`

HTML and Content

- HTML defines how content is structured
- Web pages with same HTML tags all share identical style (e.g. all headings appear the same)
- Style sheets enable web designers to customize the appearance of the displayed content
- If the style changes for one tag, then the style definition for that tag only has to be updated – not all occurrences of that tag.
- We will use CSS (Cascading Style Sheets) to define styles in later labs

HTML element

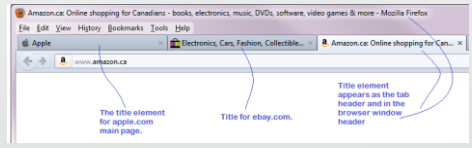
- The `html` element represents the root of an HTML document
- The attribute lang provides the document's language, which aids speech synthesis tools to determine what pronunciations to use

```
<html lang="en">   Document's language is English
  ...   HTML content goes in here
</html>
```

In the <head> </head>

- Each HTML page should have a <title> element defined within the head element
- This is the text appearing as the window title in the browser
- Only text – not HTML– can be defined within the <title> element
- The title is used in many search engines
- The title is used in browser History lists, Favourites and Bookmarks

<title> Order Information </title>



In the <head> </head>

- International characters are supported starting with HTML version 4 (web becomes multilingual)
- In HTML5: Unicode UTF-8 is default
- Makes it easier for some browsers with different default character encodings (languages) to view the pages
- In the head element the first element can be set:

```
<meta http-equiv="content-type"
            content="text/html; charset=utf-8">
```

http://www.sitepoint.com/do-you-know-your-character-encodings/

In the <head></head> Meta tag

- Within the head element of the HTML content additional information about the HTML is specified using the <meta> tag
- <meta> does not render anything in the browser.

```
<meta name="author" content="John W. Smith">

<meta name="description"
   content="Free pictures of cats and dogs">

<meta name="keywords"
   content="cat, dog, feline, canine,
        animal, mammal, free pictures">
```

<meta http-equiv="refresh" content="5"> automatically refresh the current web page every five seconds

HTML comments

- HTML comments provide descriptive information to the human reader only – not to the browser
- You may not nest comments (define a comment inside an existing comment)
- Comments can appear anywhere but they usually appear in the <head> section.

```
<!--  Author: John P. Smith.
      Created:  Sept 28, 2012
-->
```

Inline elements

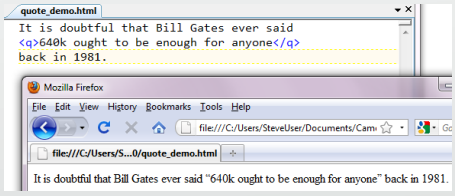
Inline elements do not force a new line:

- `<a> anchor </a>`
- `<b> bold </b>`
- `<img>`
- `<span> generic inline container </span>`
- `<object> plug-in resource </object>`
- `<q> Short quotation </q>`

…<input>, <label>, <select>, <textarea>

Inline Quote

- The <quote> element is an inline version of blockquote.
- HTML 5 forces blockquote text in IE browsers!



Line Break

- The rendered HTML needs to provide the necessary formatting you want to see rendered properly in the browser:

 is the HTML line break element to force a new line

Anchor

- Anchor tag defines a hypertext link to another resource on the internet, or another part of the **same HTML document**
- Anchors can be defined for text or images
- Typically the hypertext link is indicated in the browser by three cues:
  - The image is bordered in blue by default
  - The text is underlined and coloured blue by default
  - When the cursor hovers over link, the status bar shows the reference and the cursor changes shape

Anchor

- Anchor attribute href is for hypertext reference

```
<a href="internet resource">some text
</a>
```

- Reference can be absolute URL or relative URL

```
Visit <a href="http://www.apple.com"> Apple
</a>

My dog <a href="images/myDog.jpg">Spot</a>
```

Anchor destination

- If the supplied URL is not accessible, the web site will return an HTTP 404 error code
- Caused by a "dead link" also called "broken link"
- Be aware of "link rot" – the process by which website links become irrelevant or broken as time progresses – servers move, folders copied, content changes, redirect to new locations, information becomes out of date
  - a serious problem for search engines

Link Text Guidelines

- Limit the length of the link text. Avoid making entire sentences or paragraphs as link text.
- Provide information about the link if it is a very large file or will open a new browser window or requires a plug-in.

Link Text Guidelines

- Write text as if there are no links -- make the text of the link meaningful

  e.g. `<a href="index.html">Home</a>`

  vs `<a href="index.html">Start page</a>`

  Link text

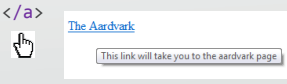
  ```
  The <a href="internet-info.html">Internet</a>
  uses hyperlinks.
  ```

- For usability integrate your links into your text. "Sign-up to attend a session."

Anchor title

- The title attribute specifies a tooltip text to add information about a link for the user
- Can be used by those who are visually impaired to cause the browser to "speak" the link

```
<a href="aardvark.html" title="This link
will take you to the aardvark page"> The
Aardvark </a>
```



Anchor target window

- By default the clicked reference will open in the same browser tab
- The target attribute can direct the browser to open a new tab (or window) instead with `target="_blank"`
- But it can make your HTML page non-compliant for strict XHTML

```
<a href="http://www.cbc.ca"
target="_blank">  Open news in new tab</a>
```

Block elements

Block elements automatically force a new line by default.

- `<p>` A new paragraph … `</p>`
- `<h1>` A new heading `</h1>`, `<h2>`, etc, `<h6>`
- `<table>` … `</table>`
- `<form>` … `</form>` - online form
- `<div>` … `</div>` - generic block-level container
- `<ol>` ordered list of items `</ol>`
- `<ul>` unordered list of items `</ul>`
- `<hr>` horizontal line

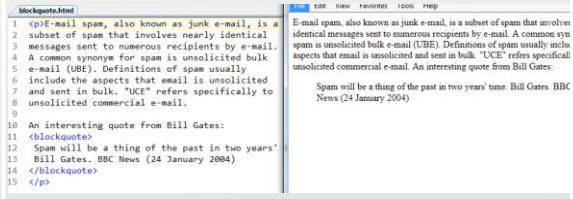
Block elements

- Only block elements can have a width property (exceptions: input element, image and object element)
- More block level tags:
  - `<dl>` definition list `</dl>`
  - `<blockquote>` block quotation `</blockquote>`

  … this list is not complete

Blockquote

- The <blockquote> shows a formatted quote



File names

- HTML files have a file extension of .html
- The HTML file name should not contain non-alphanumerics such as spaces ~ / | \ * ? & < > " .
- Good HTML file names

  favSongs.html
  report_2008.html
  memberList_08.html
  memberList$08.html

- Invalid HTML file names

  fav Songs.html
  report~2008.html
  notes
  March*list.html

File name case

- Unix file names are **case sensitive**
- The CST deepblue server runs the Unix operating system so … when you save your HTML files on your personal network drive, note the case of the file names you use (and folder names too)
- A file name on that drive is `Lab_01.html` the URL must reference `Lab_01.html` not `lab_01.html`

HTML Entities

- Many characters (for example: < > & “) have a special use in HTML, and therefore cannot be used in the HTML document as regular text
- To display them in the browser, you use an HTML entity, which is an encoded version, either entity name or entity number

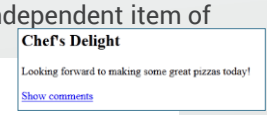
Result	Description	Entity Name	Entity No. (Decimal)
	Non-breaking space		
<	Less than	&lt;	&#60;
>	Greater than	&gt;	&#62;
&	Ampersand	&amp;	&#38;
“	Double quote	&quot;	&#34;
€	Euro	&euro;	&#8364;

HTML 5

- HTML version 5 – http://www.w3.org/TR/html5/
  - Backwards compatible with version 4 but with new features to accommodate new “user agents” (i.e. cellphones, PDAs, etc)
  - Use of the DOM (Document Object Model) to be part of the language
  - New elements <section> <article> <aside> <header> <footer> <nav> <dialog> <audio> <video> <canvas> <time> <meter> and more…
  - New attributes for handling multimedia
  - Current versions of browsers support only most characteristics of HTML5
  - There is only one !DOCTYPE <!DOCTYPE HTML>

Article

- An article element is a self-contained text such as a forum post, a magazine or newspaper article, a blog entry, a user-submitted comment, an interactive widget, or any other independent item of content




```
<article>
  <header>
    <h1>Chef's Delight</h1>
  </header>
  <p>Looking forward to making some great pizzas today!</p>
  <footer>
    <a href="?comments=1">Show comments</a>
  </footer>
</article>
```

Section

- The section element represents a generic portion or a document (e.g. chapter).

```
1  <!DOCTYPE HTML>
2  <body>
3    <section>
4      <article>
5        <header>
6          <h1>Updates</h1>
7        </header>
8        <section>
9          <h2>Employees</h2>
10           <p>This is an update for new employees ...
11           </p>
12       </section>
13     </article>
14   </section>
15   </body>
```

Updates

Employees

This is an update for new employees ...

Content that would make sense to appear grouped together (e.g. news or sports) should be within a section element rather than a div element. Use div element for content that just needs to be styled as a block.

Aside

- The aside element represents content that is tangentially related to main topic. Useful for sidebars or pull quotes.

```
<!DOCTYPE HTML>
<body>
<p>He later joined a large company, continuing on the same work.
<q>I love my job. People ask me what I do for fun when I'm not at
work. But I'm paid to do my hobby, so I never know what to
answer. Some people wonder what they would do if they didn't have to
work... but I know what I would do, because I was unemployed for a
year, and I filled that time doing exactly what I do now.</q></p>

<aside>
 <q> People ask me what I do for fun when I'm not at work. But I'm
 paid to do my hobby, so I never know what to answer. </q>
</aside>

<p>Of course his work – or should that be hobby? –
isn't his only passion. He also enjoys other pleasures.</p>
  </body>
```

Header

- The header element represents introductory content for its section content.
- Your H1-H6 elements are usually found here.
- Can also be used to wrap a section's table of contents, a search form, or logos.

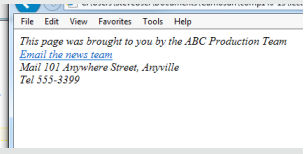
```
<!DOCTYPE HTML>
<body>
<header>
   <p>Welcome to ...</p>
   <h1>Springfield Zoo!</h1>
</header>

</body>
```

Address

- The <address> element is intended to show the web page author contact information
- Usually appears in header or footer of the web page

address_demo.html

```
<address>
This page was brought to you by
   the ABC Production Team<br>
 <a href="mailto:news@abc.org">Email
    the news team</a><br>
  Mail 101 Anywhere Street, Anyville<br>
  Tel 555-3399
</address>
```



Footer

- The footer element represents footer content for its section content.
- Can show who wrote the content, links to related content, copyright data.

```
<!DOCTYPE HTML>
<body>
<footer>
   <p>Published in Victoria, BC, 2013</p>
   <a href="../">Back to index page</a>
</footer>

</body>
```

Structuring HTML Text

- Headers are defined based on the intended emphasis <h1> ... </h1> is the highest ; <h6> ... </h6> is lowest
- Use <h1> for major chapter headings

Paragraph

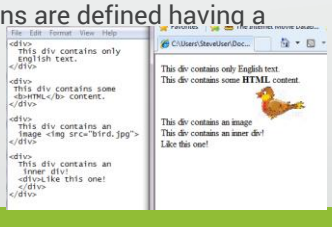
- The element defines a paragraph
- If a paragraph's end tag is missing, the browser may assume the next tag starts a new paragraph
- Paragraphs may not contain block elements

paragraph_demo.html

```
<p>The quick brown fox jumped over the
lazy dog.  The quick brown fox jumped over
the lazy dog.</p>
<p>Mary had a little lamb.  Its fleece
was white as snow.</p>
<p>Once upon a time there lived in a land
far away a rather bored dragon named Marvin.</p>
```

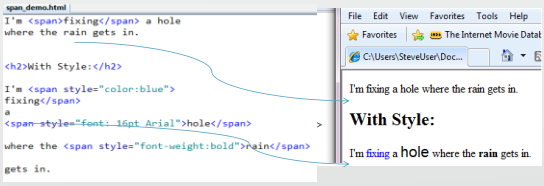
Division

- Divisions are similar to paragraphs but are used to visually 'block up' related text or image content on the page – "generic block"
- Usually divisions are defined having a CSS class



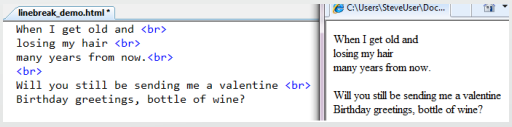
Span

- Similar to div but span elements are inline
- Defines a generic region of text
- By itself span provides no text attributes



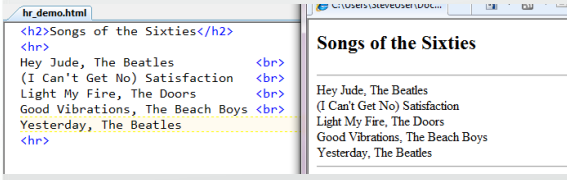
Line Break

- The <br> element forces a line break
- Do not use <br> to add space between paragraphs...use the CSS margin property instead



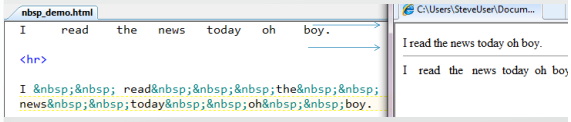
Horizontal Line

- HTML <hr> element has been deprecated in favour of CSS but it is still used in web pages



Forcing a space

- The HTML entity   is a non-breaking space
- It forces a space to appear where one would not normally be shown



Lists

- Ordered Lists
  1. Open application
  2. Click File menu
  3. Select Open option
- Unordered Lists
  - apple
  - banana
  - cherry

List items

Lists

- A list can appear as a list item within an outer list -- but the newer HTML, version 5, may not validate this.

```
<ul>
 <li>
     <ol>
        <li> Open application </li>
     </ol>
 </li>
</ul>
```

Ordered Lists

- Use the `<ol> </ol>` tags with list items identified by the tags `<li>` and `</li>`

```
<ol>
 <li>Open application  </li>
 <li>Click File menu   </li>
 <li>Select Open option</li>
</ol>
```

Lists

- A list item can be text, images, multimedia, hypertext references, tables, etc
- The numbering type of ordered lists (Roman numerals, e.g.) and the bullet types for unordered lists (square bullets, e.g.) is defined with CSS

Unordered Lists

- Use the `<ul> </ul>` tags with list items identified by `<li>` and `</li>`

```
<ul>
 <li>apple  </li>
 <li>banana </li>
 <li>cherry </li>
</ul>
```

Definition Lists

- Defines a **term** and its **description**

```
<dl>
 <dt>CIO</dt>
 <dd>Chief Information Officer, the
 person
 responsible for directing
 information technology policies
 within an organization</dd>
 <dt>hacker</dt>
 <dd>Highly skilled computer
 programmer</dd>
</dl>
```

Definition List

```
<dl>
 <dt>Coffee</dt>
 <dd>Black hot drink</dd>
 <dt>Milk</dt>
 <dd>White cold drink</dd>
</dl>
```

Coffee
Black hot drink
Milk
White cold drink

Text Format

- The use of HTML to format the appearance of text is no longer recommended – use CSS instead
- Physical style (deprecated)

   Bold

   Italics   <u> Underline </u>

  <tt> `Typeset` </tt> <pre> `abc` </pre>
- Logical style (preferred, if required)

   Emphasis

   Strong   <del> ~~deleted text~~ </del>

  <code> `keyword` </code> <ins> inserted text </ins>

URI

- Uniform Resource Identifier (URI) is used to uniquely identify the location and method of access to a resource (file, image , video, etc)
  - (URLs are a subset of URIs)
- URI can be absolute or relative e.g.:

http://www.example.org/absolute.html

or

relative/index.html

HTML Table Element

- <table> </table> define a table element
- Is a block element
- Consists of rows and columns of cells each having the same dimensions of width and height
- By default each column's width is the minimum width needed to display the widest element within a column
- Row heights accommodate the text or image contained in the cell
- A table will not normally fill out the entire width of the screen or its container
- Captions can be used to give a brief description

HTML Table Example 1

```
<table border="1">
  <caption>Summary of 2012 sales</caption>
  <tr>
    <th>Sales Region</th>
    <th>Winter</th>
    <th>Spring</th>
    <th>Summer</th>
    <th>Fall</th>
  </tr>
  <tr>
   <th>Western Canada</th>
   <td>1000</td>
   <td>1200</td>
   <td>1500</td>
   <td>1650</td>
  </tr>
  <tr>
   <th>Eastern Canada</th>
   <td>2000</td>
   <td>3200</td>
   <td>4500</td>
   <td>5650</td>
  </tr>
</table>
```

Table border

Summary of 2012 sales

Sales Region	Winter	Spring	Summer	Fall
Western Canada	1000	1200	1500	1650
Eastern Canada	2000	3200	4500	5650

The column widths are not the same.
The text in the cells is aligned left by default.
The table does not span the entire screen within the browser window.
The **<th>** elements are shown in bold by default.

HTML Tables

- Basic table structure:
- Within the <table> </table> tags are the table row <tr> </tr> tags – one for each row in the table
- Within the <tr> </tr> tags are the table data <td> </td> tags – one for each cell in the row
- Usually each row has the same number of <td> </td> tags defined

HTML Tables

- What goes between the <td> </td> tags?
- Anything: Text. Pictures. HTML. Lists. Headers. Table.

```
<table>
    <tr>
        <td>This is row one, first cell. </td>
        <td>This is row one, second cell.</td>
    </tr>
    <tr>
        <td>This is row two, first cell. </td>
        <td>This is row two, second cell.</td>
    </tr>
</table>
```

HTML Tables

- If your HTML is missing a closing `</td>` or `</tr>` or `</table>` tag, the browser may correctly figure out what was intended to be rendered ... but no guarantees – always define the closing tags to be safe

Using paper and pen…

Remember this?
Write out the HTML markup for this table…

Summary of 2012 sales

Sales Region	Winter	Spring	Summer	Fall
Western Canada	1000	1200	1500	1650
Eastern Canada	2000	3200	4500	5650

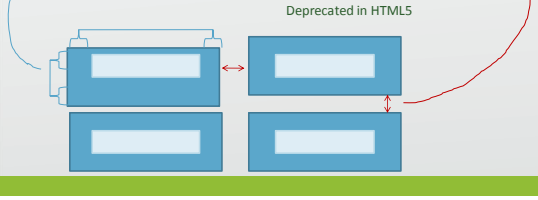
Table Attributes

- Optional attributes for the `<table>` tag
- `border="n"` n is number of pixels
  - By default a table is shown without borders unless the attribute `border="1"` is specified
- `width="n"` or = "p%" n is number of pixels
  - The maximum width of the table, or if a %, then the percentage width of the container.
- `summary="text"` description of table's purpose – not shown in the browser

Table Attributes

- `cellspacing` = "n" or "p%" – defines the amount of space separating each cell
- `cellpadding` = "n" or "p%" – defines the amount of space between the cell contents and the cell's border

Deprecated in HTML5



Cellspacing & Cellpadding

```
<table cellspacing="10">
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
</table>
```

```
<table cellpadding="10">
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
</table>
```

Note: The cellspacing and cellpadding attributes are not supported in HTML5. USE CSS!

Cellspacing & Cellpadding

Table with cellspacing:

Month	Savings
January	$100

Table with cellpadding:

Month	Savings
January	$100

Deprecated in HTML 5! Use CSS!!!

Table Attributes

- Some commonly used attributes are now deprecated in favour of CSS
- `align` – specifies the position of table within the document – again something that should be included in your CSS file.

Table elements

- caption tag is optional

```
<caption> Summary of Sales</caption>
```

- table row `<tr>`
- table data `<td>`
- table header `<th>` -- by default renders the text in bold – used in place of `<td>` for the first row or first column

Table structure

- For long tables containing many rows you can define sections `<thead>` `<tfoot>` and `<tbody>` to support the scrolling of tables – must define in that order

```
<table>
  <thead>
       <tr>
            <th>  ...header </th>
      </tr>
  </thead>
  <tbody>
        <tr>   ... first row </tr>
        <tr>   ...second row </tr> ...
  </tbody>
  <tfoot>
       <tr>  ...footer </tr>
  </tfoot>
</table>
```

Table Data

- The `<td>` tag has optional attributes **rowspan** and **colspan** to define a cell that stretches into another row or column

`<td rowspan="2"> </td>` - cell spans its row and the row below it

`<td colspan="2"> </td>` - cell spans its column and the column to the right

Colspan

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

row 1 cell 1.	row 1 cell 2
row 2 cell 1	

Rowspan

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

row 1 cell 1	row 1 cell 2
	row 2 cell 2

Column groups

- You may want to format a number of different columns in the same way (e.g. identical text font, colour, background)
- Use the `<colgroup>` element
- `<colgroup span="n" format>` `</colgroup>` groups the first n columns together in the same *format*

```
<table>
  <colgroup span="5" width="10">
  </colgroup>
    -- make the first five columns 10 pixels wide
```

Col element

- Within the `<colgroup>` element you may specify style information for a column set within that group using `<col>`

```
    <colgroup></colgroup>
<colgroup>
     <col span="3">
</colgroup>
```

-- first column by itself; next three columns in a group – two parts separated by a border

<colgroup> example

```
<table>
 <colgroup>
  <col span="2" style="background-color:red">
  <col style="background-color:yellow">
 </colgroup>
 <tr>
  <th>ISBN</th>
  <th>Title</th>
  <th>Price</th>
 </tr>
 <tr>
  <td>3476896</td>
  <td>My first HTML</td>
  <td>$53</td>
 </tr>
 ...
```

ISBN	Title	Price
3476896	My first HTML	$53
5869207	My first CSS	$49

Find the errors

- In pairs, find five errors in this table markup, correct and draw the table by hand.

```
<caption>Primetime Television 1965</caption>
<table>Thursday Night
        <tr></tr>
                <th>7:30</th>
                <th>8:00</th>
                <th>8:30</th>
        <tr>
                <td>Shindig</td>
                <td>Donna Reed Show</td>
        <tr>
        <tr>
                <colspan>Lardedo</colspan>
                <td>Daniel Boone</td>
        </tr>
</table>
```

Did you find all 5?

1. <caption> should be the first element inside the <table> element.
2. There can't be text directly in the table element, it must go in a <th> or <td>
3. The <th> elements must go inside the <tr> element
4. There is no <colspan> element, it is an attribute, <td colspan="2">, for example.
5. The second <tr> set is missing a closing tag.

Images

- The `<img>` element specifies that an image is to be shown
- Attribute `src` defines the location and name of the image file (the source)
- Attribute alt defines text to display if image cannot display (if it is missing, for example)
- Image types : jpg, png, bmp, gif, pcx, etc..

Images

```
<img
 src="http://www.mypics.com/bird.png"
 alt="robin" title="Robin in flight">

<img src="images/spot.jpg"
 alt="blue spot"> (we may not always
 want to have titles)

<img src="bigBlue.bmp" alt="IBM logo
 title="IMB logo">
```

Images

- Images can be hypertext links
- The image by default will be bordered in blue
- Use the anchor tag surrounding the img tag

```
<a href="myDog.html"
   title="Visit my dog">
  <img src="spot.jpg">
</a>
```

Image attributes

- width="n" or "p%" -- override the image width dimension (obsolete – use CSS)
- height="n" or "p%" – override the image height dimension (obsolete – use CSS)
- alt is strongly recommended to describe the picture in case it cannot be displayed
  - avoid irrelevant or meaningless alternate text

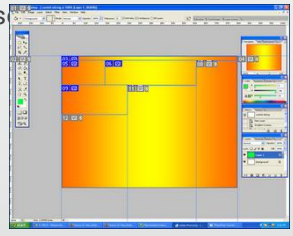
```
<img src="myDog.png" alt="My dog
 Spot is a Golden Retriever.">
```

Image Thumbnails

- Rather than display an entire selection of large pictures – a "thumbnail" version of each picture can be shown instead – and each thumbnail image is a link to the larger version
- Saves bandwidth, more efficient
- Do not use the height and width attributes in the HTML to scale down the original image to make the thumbnail – make a separate i instead

Image Slicing

- Images can be 'sliced' using photo editing software into smaller pieces – downloaded s integrated by the browser into a single seamless image.



Deprecated HTML tags

- Many formerly commonly used HTML tags have fallen out of usage – *presentation* tags
- These deprecated tags have been replaced with CSS. Most browsers will still accept them though
- Examples of HTML tags no longer recommended:

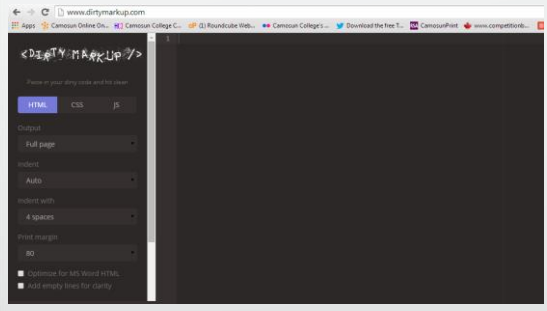
```
<applet>
<background>
<font>
<center>
<strike>
<u>
```

Usually any HTML tag that affects the display of the content text has been deprecated.

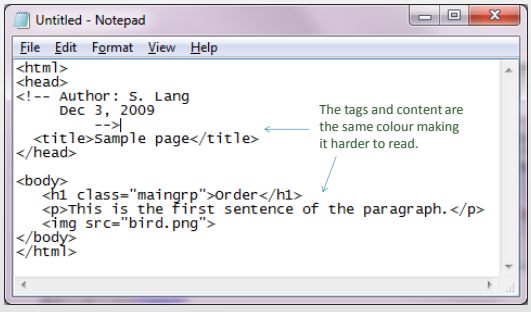
Creating HTML

- Since HTML is text, any text editor can be used to create and edit HTML documents
- In this course we will use TextPad in the labs
- Sublime Text/Notepad++/Kompozer are alternatives to TextPad and highly recommended !
- Later labs we will use Adobe Dreamweaver, which previews your HTML (WYSIWYG), formats and organizes your web site content

HTML Readability



Notepad HTML



TextPad HTML

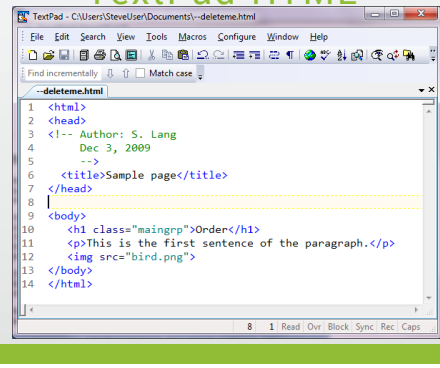
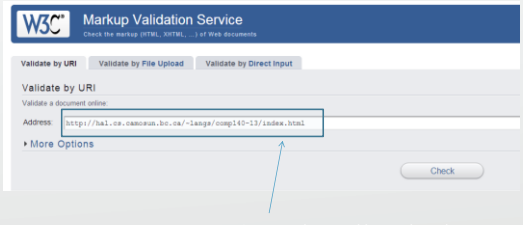


Image attributes - deprecated

- align – define position of image on the current text line (top, left, bottom, middle, right)
- border – define border width around image
- hspace – define amount of white space to the left and right of the image
- vspace – define amount of white space above and below the image
- Use CSS instead

HTML Validation

Validator.w3.org



Type in your web page address to have the HTML checked for correctness.

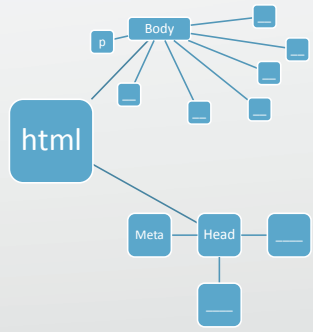
Parents and Children

- HTML elements are parents to their contained HTML elements
- Also called *nesting*, example:

```
<body>
 <p>The sky is a hazy shade of
     <strong> winter</ strong >
 </p>
</body>
```

The body element is the parent to the p element. The strong element is a child of the p element. Because the p element is inside the body element, we say the p element is "nested" inside the body element.

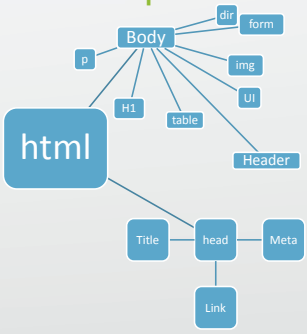
Draw and complete



Note: There are many "right" answers.

When you are finished check and see what your neighbour has written…

One possible solution



Note: There are many "right" answers.

When you are finished check and see what your neighbour has written…

HTML DTD

- Perform a "view source" on any major commercial web page in a browser …

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.
<head>
<meta content="text/html; charset=UTF-8" http-equiv="Content-Type"/>
<link href="http://purl.org/DC/elements/1.0/" rel="schema.DC"/>
<link href="//www.ibm.com/favicon.ico" rel="SHORTCUT ICON"/>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en" xml:lang="en">
```

HTML DTD

- An HTML document requires a special header defining the "Document Type Definition" (the DTD is also used in some XML files)
- HTML DTD defines the type of HTML rules the document is following (for backward compatibility)
  - Strict – no deprecated HTML elements allowed

- Transitional – presentation elements like <font> allowed
- Frameset – for frameset documents (90's feature)

These are for HTML version 4 only

HTML v4 DOCTYPE

In order to validate an HTML document, the DOCTYPE declaration may be used

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01
//EN" "http://www.w3.org/TR/html4/strict.dtd">
Or
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
  Frameset//EN"
  "http://www.w3.org/TR/html4/frameset.dtd">
```

This header indicates that the following HTML follows the strict form of HTML version 4

- There is some debate about how DOCTYPE is used by the browser – see http://www.w3schools.com/tags/tag_doctype.asp

HTML v4 DOCTYPE

This header indicates that the following HTML follows the HTML version 4 transitional form, which is a looser form of the strict version (can accept some deprecated elements)

```
<!DOCTYPE html PUBLIC
    "-//W3C//DTD HTML 4.01
 Transitional//EN"
 "http://www.w3.org/TR/html4/loose.dtd"
 >
```

HTML DOCTYPE

- DOCTYPE is a **declaration** not an HTML element
- Here are the parts of DOCTYPE

!DOCTYPE - the identifier, tells the browser that the information defines what type of document this is

HTML – the Top Element, tells the browser what is the top level element (<html>)
Public – the availability of the document
"-//W3C//DTD HTML 4.01 Transitional//EN" – Formal Public Identifier made up of : W3C – Organization name; DTD – the type of DOCTYPE; HTML 4.01 Transitional – the human readable label; EN – the DTD language

HTML DOCTYPE

- Which DOCTYPE to use in your HTML ?
- Depends. Unless the web page specifically needs to be XML compliant, use either the HTML 5 (recommended) or the 4.01 Transitional format (or do not supply one) for greater compatibility to other browsers

References

- Detailed history of the WWW and HTML: www.w3.org/People/Raggett/book4/ch02.html
- How HTML5 differs from HTML 4.01 www.w3.org/TR/html5-diff/
- Textbook companion website: http://learningwebdesign.com
- Web Standards Project: http://webstandards.org