



CpSc 4620/6620: Database Management Systems (DBMS) (TEXNH Approach)



HTML Basics

James Wang

What is HTML?



- ✳ To publish information for global distribution, one needs a universally understood language.
- ✳ The publishing language used by the World Wide Web is HTML (from HyperText Markup Language).
- ✳ HTML gives authors the means to:
 - ✳ Publish online documents with headings, text, tables, lists, photos, etc.
 - ✳ Retrieve online information via hypertext links, at the click of a button.
 - ✳ Design forms for conducting transactions with remote services, for use in searching for information, making reservations, ordering products, etc.
 - ✳ Include spread-sheets, video clips, sound clips, and other applications directly in their documents.

What is a HTML file?


- ✳ A file on the web server that follows the HTML specification.
- ✳ It contains small markup tags that tell the Web browser how to display the page .
- ✳ An HTML file must have an htm or html file extension and can be created using a simple text editor .
- ✳ Example:


```
<html>
<head>
<title>Title of page</title>
</head>
<body>
This is my first homepage. <b>This text is bold</b>
</body>
</html>
```


HTML Elements

- ✳ Each HTML file consists of a group elements, which are marked-up by tags.
- ✳ HTML includes element types that represent paragraphs, hypertext links, lists, tables, images, etc.
- ✳ Each *element type declaration* generally describes three parts: a start tag, content, and an end tag.
- ✳ HTML tags are surrounded by angle brackets '<' and '>' .
- ✳ HTML tags normally come in pairs like and .
- ✳ The first tag in a pair is the start tag, the second tag is the end tag. The text between the start and end tags is the element content
- ✳ HTML tags are not case sensitive.
- ✳ Some HTML element types have no content. For example, the line break element BR has no content; Such *empty* elements never have end tags.




Tag Attributes

- ✳ Tags can have attributes which provide additional information to an HTML element.
- ✳ Attributes always come in name/value pairs like this: name="value".
- ✳ Attributes are always specified in the start tag of an HTML element. For instance, <table border="0">.
- ✳ Attribute values should always be enclosed in quotes. Double style quotes are the most common, but single style quotes are also allowed.

Basic HTML tags

- ✳ Head and body:


```
<head> ... </head>      <body> ... </body>
```
- ✳ Headings:


```
<h1> ... </h1>      <h2> ... </h2>      <h3> ... </h3>
<h4> ... </h4>      <h5> ... </h5>      <h6> ... </h6>
```
- ✳ Paragraph:



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


 - ✳ HTML automatically adds an extra blank line before and after a paragraph.
- ✳ Line breaks:


```
<br>. This will force a line break but won't start a new paragraph.
```
- ✳ Horizontal rule:


```
<hr>. This will create a horizontal rule.
```
- ✳ Comments:



```
<!-- This is a comment. -->
```






Text Format Tags

Tag	Description
	Defines bold text
<big>	Defines big text
	Defines emphasized text
<i>	Defines italic text
<small>	Defines small text
	Defines strong text
<sub>	Defines subscripted text
<sup>	Defines superscripted text
<ins>	Defines inserted text
	Defines deleted text
<s>	Deprecated. Use instead
<strike>	Deprecated. Use instead
<u>	Deprecated. Use <u> instead




"Computer Output" Tags

Tag	Description
<code>	Defines computer code text
<kbd>	Defines keyboard text
<samp>	Defines sample computer code
<tt>	Defines teletype text
<var>	Defines a variable
<pre>	Defines preformatted text
<listing>	Deprecated. Use <pre> instead
<plaintext>	Deprecated. Use <pre> instead
<xmp>	Deprecated. Use <pre> instead




Citations, Quotations, and Definition Tags

Tag	Description
<abbr>	Defines an abbreviation
<acronym>	Defines an acronym
<address>	Defines an address element
<bdo>	Defines the text direction
<blockquote>	Defines a long quotation
<q>	Defines a short quotation
<cite>	Defines a citation
<dfn>	Defines a definition term



HTML Character Entities

- Some characters have a special meaning in HTML, like the less than sign (<) that defines the start of an HTML tag. If we want the browser to actually display these characters we must insert character entities in the HTML source.
- A character entity has three parts: an ampersand (&), an entity name or a # and an entity number, and finally a semicolon (;).
- To display a less than sign in an HTML document we must write: < or <
- Non-breaking Space: The most common character entity in HTML is the non-breaking space.**
 - Normally HTML will truncate spaces in your text. If you write 10 spaces in your text HTML will remove 9 of them. To add spaces to your text, use the character entity.
- For other HTML character entities, please check the HTML specification:
<http://www.w3.org/TR/html401/sgml/entities.html>



HTML Links

- How to create links in HTML document?**
 - HTML uses the <a> (anchor) tag and href attribute to create a link to another document.
 - An anchor can point to any resource on the Web: an HTML page, an image, a sound file, a movie, etc.
 - The syntax of creating an anchor:


```
<a href="url">Text to be displayed</a>
```
- Target attribute: Target attribute specifies where you will open your new link.**

```
<a href="http://www.google.com/" target="_blank">Search</a>
```
- Name attribute: Use named anchor to label any text in an HTML document, so that we can create links that can jump directly into this labeled text.**

```
<a name="tips">Useful Tips Section</a>
<a href="http://www.w3.org/html_links.asp#tips"> Jump to the Useful Tips Section</a>
```




HTML Links (cont.)

- A link through an image: You can also use an image as a link:**

```
<a href="nextpage.htm">

</a>
```
- Mail link in your web page:**

```
<a href="mailto:you@foo.com?subject=Hello%20again">
Send Mail</a>
```




HTML Frames

You can display several web pages in the same browser window using frame sets.


```
<frameset cols="25%,75%">
  <frame src="frame_a.htm">
  <frame src="frame_b.htm">
</frameset>
```

A frameset can be embedded into another one.

```
<frameset rows="50%,50%">
  <frame src="frame_a.htm">
  <frameset cols="25%,75%">
    <frame src="frame_b.htm">
    <frame src="frame_c.htm">
  </frameset>
</frameset>
```



13



More Frames

Given the following frame set.

```
<frameset rows="50%,50%">
  <frame src="frame_a.htm" name = "frameA">
  <frameset cols="25%,75%">
    <frame src="frame_b.htm" name = "frameB">
    <frame src="frame_c.htm" name = "frameC">
  </frameset>
</frameset>
```

Display x.htm, y.htm and z.htm in frameA, frameB, and frameC respectively.


```
<a href = "x.htm" target = "frameA">Frame a</a><br>
<a href = "y.htm" target = "frameB">Frame b</a><br>
<a href = "z.htm" target = "frameC">Frame c</a>
```

Inline frame.


```
<iframe src="inframe.html"></iframe>
```

Break out of a frame.

```
<a href="http://www.somewhere.com/" target="_top">Click here!</a>
```



14



HTML Tables


Tables are defined with the <table> tag.

A table is further divided into rows using the <tr> tag.

Each row is divided into data cells by the <td> tag.

A data cell can contain text, images, lists, paragraphs, forms, horizontal rules, tables, etc.

```
<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>
```



15




Table Properties

Within the <table> tag, you may add width, border, bordercolor, and cellpadding.

```
<table width="95%" border="10" bordercolor="black" cellpadding="5">
```

You can also add attributes to the <td> tag.

```
<td bgcolor="aqua" align="right" valign="top">
<td colspan="2" bgcolor="silver" align="center">
```


There are more table properties or elements defined in HTML reference. These include thead, tfoot, tbody, colgroup, col, etc. For more information about table, please read:

<http://www.w3.org/TR/html401/struct/tables.html>


Table heading: use <th> to specify headings.

Embedding table:

- A table can be embedded in any data cell.



16



HTML Lists

Unordered list.


```
<ul>
  <li>CPSC 462</li>
  <li>CPSC 662</li>
</ul>
```

Ordered List.


```
<ol>
  <li>CPSC 462</li>
  <li>CPSC 662</li>
</ol>
```

Definition List:

```
<dl>
  <dt>CPSC 462/662</dt>
  <dd>DBMS Systems</dd>
  <dt>CPSC 862</dt>
  <dd>DBMS System Design</dd>
</dl>
```



17



HTML Images

You need to use tag and src attribute to display an image.


```


```

Create an image map.

```

<map id="mymap" name="mymap">
  <area shape="circle" coords="150,50,10" alt="face" href="face.htm">
  <area shape="rect" coords="0,60,300,160" alt="body" href="body.htm">
</map>
```



18



Embed Flash Video Player

- You can embed a flash video player in your web page.

```
<OBJECT classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000"
codebase="http://download.macromedia.com/pub/shockwave/ca
bs/flash/swflash.cab#version=6,0,40,0" WIDTH="550"
HEIGHT="400" id="myMovieName">
<PARAM NAME=movie VALUE="myFlashMovie.swf">
<PARAM NAME=quality VALUE=high>
<PARAM NAME=bgcolor VALUE=#FFFFFF>
<EMBED src="/support/flash/ts/documents/myFlashMovie.swf"
quality=high bgcolor=#FFFFFF WIDTH="550" HEIGHT="400"
NAME="myMovieName" ALIGN="" TYPE="application/x-
shockwave-flash"
PLUGINSOURCE="http://www.macromedia.com/go/getflashplayer
"></EMBED>
</OBJECT>
```

- For more and up-to-date information, please check:

http://kb.adobe.com/selfservice/viewContent.do?externalId=tn_4150&sliceId=1



Embed Real Media Player

- You can embed a real media player in your web page.

```
<OBJECT id="rvocx" classid="clsid:CFCDAA03-8BE4-11cf-B84B-0020AFB8CCEA" width="320" height="240">
<param name="src" value="http://servername/path/to/media.file">
<param name="autostart" value="true">
<param name="controls" value="imagewindow">
<param name="console" value="video">
<param name="loop" value="true">
<EMBED src="http://servername/path/to/media.file" width="320"
height="240" loop="true" type="audio/x-pn-realaudio-plugin"
controls="imagewindow" console="video" autostart="true">
</EMBED>
</OBJECT>
```

- For more and up-to-date information, please check:

<http://service.real.com/help/library/guides/extend/embed.htm>



Embed Windows Media Player

- You can embed a windows media player in your web page.

```
<OBJECT ID="MediaPlayer" WIDTH=320 HEIGHT=240
CLASSID="CLSID:22D6F312-B0F6-11D0-94AB-0080C74C7E95"
STANDBY="Loading Windows Media Player components..."
TYPE="application/x-oleobject"
CODEBASE="http://activex.microsoft.com/activex/controls/mplay
er/en/nsmp2inf.cab#Version=6,4,7,1112">
<PARAM name="autoStart" value="True">
<PARAM name="filename"
value="http://WebServer/MyFile.wvx">
<EMBED TYPE="application/x-mplayer2"
SRC="http://WebServer/MyFile.wvx" NAME="MediaPlayer"
WIDTH=320 HEIGHT=240>
</EMBED>
</OBJECT>
```

- For more and up-to-date information, please check:

<http://msdn2.microsoft.com/en-us/library/ms983653.aspx>



Embed QuickTime Player

- You can embed a windows media player in your web page.

```
<object classid="clsid:02BF25D5-8C17-4B23-BC80-
D3488ABDDC6B" width="320" height="256"
codebase="http://www.apple.com/qtactivex/qtplugin.cab#version
=6,0,2,0" align="middle">
<param name="src" value="sample.mov" />
<param name="autoplay" value="true" />
<embed src="sample.mov" width="320" height="256"
pluginspage=http://www.apple.com/quicktime/download/
align="middle" autoplay="true" bgcolor="black">
</embed>
</object>
```

- For more and up-to-date information, please check:

http://developer.apple.com/documentation/QuickTime/Conceptual/QTScribing_HTML/QTScripting_HTML_Document/chapter_1000_section_3.html



CSS – Manage Web Page Layout

- What is CSS?

- CSS stands for Cascading Style Sheets
- Styles define how to display HTML elements
- Styles are normally stored in Style Sheets
- Styles were added to HTML 4.0 to separate the content of HTML documents from the document's presentation layout
- External Style Sheets are stored in CSS files so that you do not need to rewrite them in your new HTML file
- Multiple style definitions will cascade into one



Style Cascading Order

- Style sheets allow style information to be specified in many ways.

- inside a single HTML element
- inside the <head> element of an HTML page
- in an external CSS file.
- multiple external style sheets can be referenced inside a single HTML document.

- Cascading Order

- Inline style (inside an HTML element)
- Internal style sheet (inside the <head> tag)
- External style sheet
- Browser default

Note: If the external style sheet link is placed below the internal style sheet in HTML <head>, the external style sheet will override the internal style sheet.





CSS Syntax

selector {property: value}

- The selector is normally the HTML element/tag you wish to define
- the property is the attribute you wish to change, and each property can take a value.
- The property and value are separated by a colon, and surrounded by curly braces.

Examples:

```
body {color: black}
p {font-family: "sans serif"}
p {text-align:center; color:red}
p { text-align: center;
color: black;
font-family: arial }
```

25



Group and Class

- You can group selectors. Separate each selector with a comma.

```
h1,h2,h3,h4,h5,h6 { color: green }
```

- With the class selector you can define different styles for the same type of HTML element.

Style class:

```
p.right {text-align: right}
p.center {text-align: center}
```

HTML:

```
<p class="right"> This paragraph will be right-aligned. </p>
<p class="center"> This paragraph will be center-aligned. </p>
```

26



Class without Tag

- You can also omit the tag name in the selector to define a style that will be used by all HTML elements that have a certain class.

```
.center {text-align: center}
```

```
<h1 class="center"> This heading will be center-aligned </h1>
<p class="center"> This paragraph will also be center-aligned.
</p>
```

27



Styles based on attributes

- The style rule below will match all input elements that have a type attribute with a value of "text":

```
input[type="text"] {background-color: blue}
```

- You can also define styles for HTML elements with the id selector. The id selector is defined as a #.

- The style rule below will match the element that has an id attribute with a value of "green":

```
#green {color: green}
```

- The style rule below will match the p element that has an id with a value of "para1":

```
p#para1 { text-align: center; color: red }
```

28



CSS Comments

- Comments are used to explain your code, and may help you when you edit the source code at a later date.

- A comment will be ignored by browsers.

- A CSS comment begins with "/*", and ends with "*/", like this:

```
/* This is a comment */
p { text-align: center;
/* This is another comment */
color: black;
font-family: arial
}
```

29



Adding Style Sheets to HTML

External Style Sheet

- An external style sheet is ideal when the style is applied to many pages. Each page must link to the style sheet using the <link> tag. The <link> tag goes inside the head section:

```
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

- An external style sheet file should not contain any html tags and should be saved with a .css extension.

```
hr {color: sienna}
p {margin-left: 20px}
body {background-image: url("images/back40.gif")}
```

30



Adding style sheets to HTML (cont.)

Internal Style Sheet

- An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section by using the <style> tag, like this:

```
<head>
<style type="text/css">
  hr {color: sienna}
  p {margin-left: 20px}
  body {background-image: url("images/back40.gif")}
</style>
</head>
```



31



Adding style sheets to HTML (cont.)

Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation.
- Use this method sparingly, such as when a style is to be applied to a single occurrence of an element.
- To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property.

```
<p style="color: sienna; margin-left: 20px">
  This is a paragraph
```

```
</p>
```



32



References

- <http://www.w3.org/TR/html401/>
- <http://www.w3schools.com/>



33