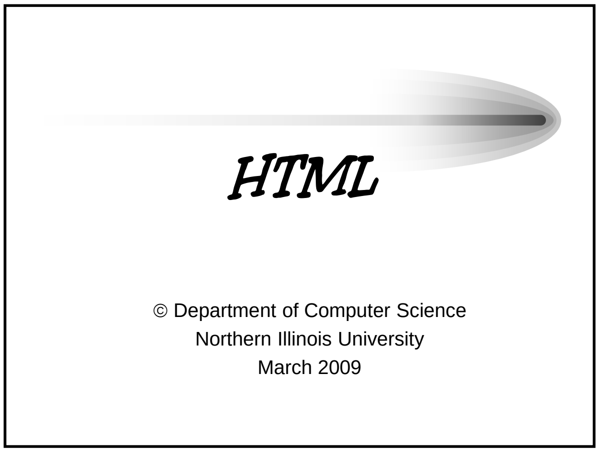
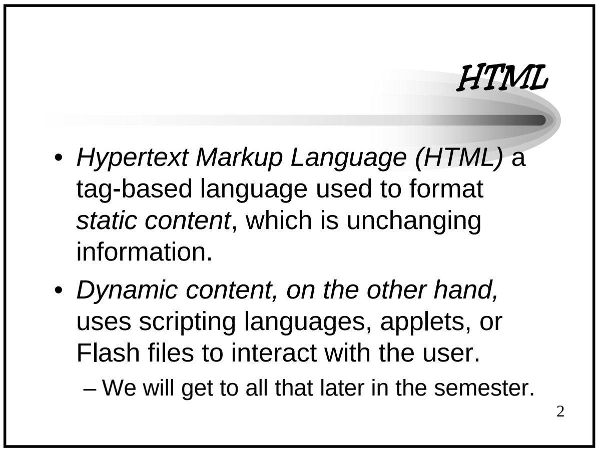


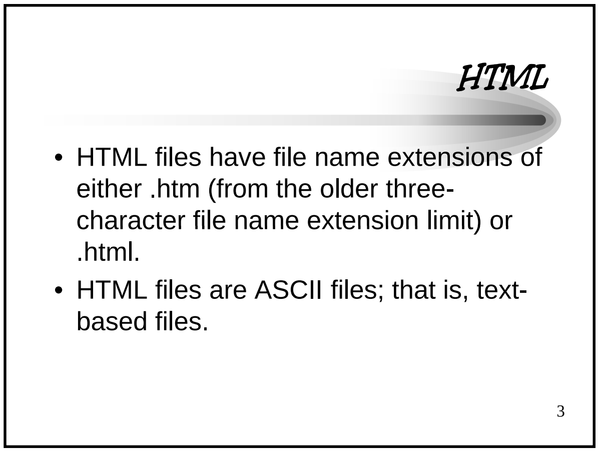
HTML

© Department of Computer Science
Northern Illinois University
March 2009



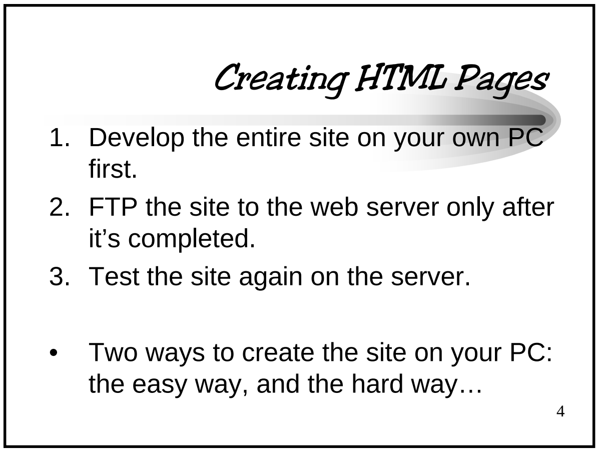
HTML

- *Hypertext Markup Language (HTML)* a tag-based language used to format *static content*, which is unchanging information.
- *Dynamic content, on the other hand,* uses scripting languages, applets, or Flash files to interact with the user.
  - – We will get to all that later in the semester.



HTML

- HTML files have file name extensions of either .htm (from the older three-character file name extension limit) or .html.
- HTML files are ASCII files; that is, text-based files.



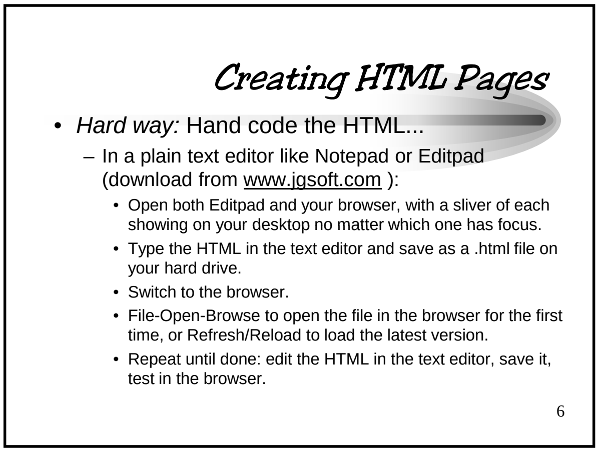
Creating HTML Pages

1. Develop the entire site on your own PC first.
2. FTP the site to the web server only after it's completed.
3. Test the site again on the server.

- Two ways to create the site on your PC: the easy way, and the hard way…

Creating HTML Pages

- *Easy way:* Create the page visually using an integrated development environment (IDE), which translates your visual design to HTML.
  - – Adobe's Dreamweaver
  - – Microsoft's FrontPage (boo-hiss!, but now dead anyway)
  - – Microsoft's Expression Web.
  - – Seamonkey's free HTML editor, http://www.seamonkey-project.org/



Creating HTML Pages

- *Hard way:* Hand code the HTML...
  - – In a plain text editor like Notepad or Editpad (download from www.jgsoft.com):
    - Open both Editpad and your browser, with a sliver of each showing on your desktop no matter which one has focus.
    - Type the HTML in the text editor and save as a .html file on your hard drive.
    - Switch to the browser.
    - File-Open-Browse to open the file in the browser for the first time, or Refresh/Reload to load the latest version.
    - Repeat until done: edit the HTML in the text editor, save it, test in the browser.

Creating HTML Pages

- Do not use a word processor to create HTML files.
  - Native word processor files, like .wpd and .doc files, have hidden formatting characters that will choke the browser.
  - Could do a “save as txt/ASCII”, though, to strip out formatting, leaving just the text.
  - Could do a “save as HTML”, but the code will be awful!

7

Introduction

- We won’t cover everything in HTML; we will cover the basics, and you can look up anything else when the need arises.
- A good online source can be found at

W3Schools:
http://www.w3schools.com/html/default.asp

8

Introduction

- In these PowerPoint presentations, HTML tags (commands) appear in green; while the results that display in the browser appear in yellow.
- The HTML in these slides is not documented; there isn’t enough room on the screen to fit both HTML and doc.
- Formatting is often compromised for the same reason, too – Sorry!

9

Introduction

- Designed originally to define *structure* (the way the parts are inherently related), not *presentation/formatting* (the way the document looks in the browser). Examples:
  - *Structure* : top-level header, sub-head, paragraph text, tables, table cells, bulleted lists, etc.
  - *Presentation* : color, size, positioning, etc.

10

Introduction

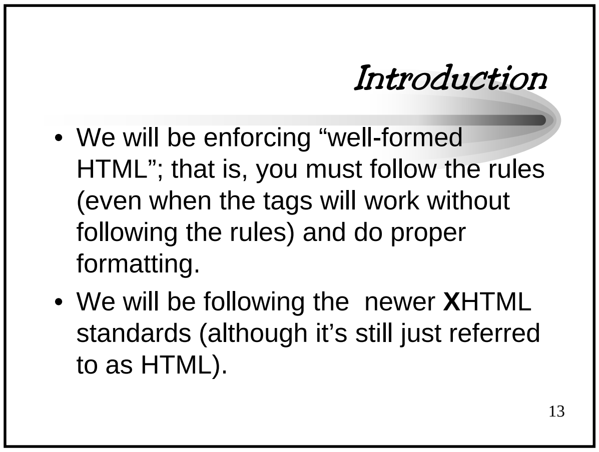
- The name of the homepage should be index.htm or index.html.
  - That’s the default file that a web server delivers if the browser doesn’t specify the name.
  - Search engines look for that file.
  - Get in the habit by using that name for your homepage for this class.

11

Introduction

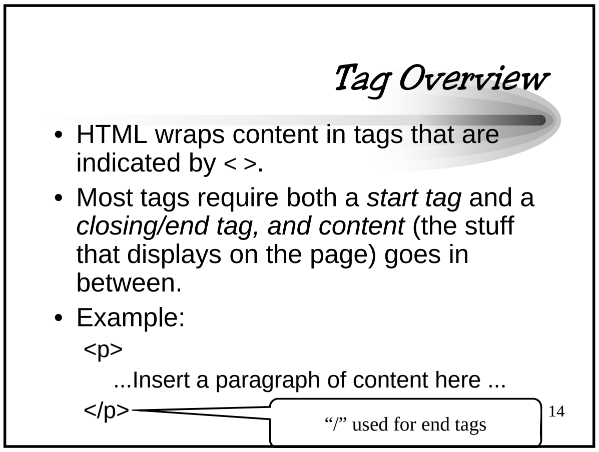
- If you have errors in your HTML, the browser might still attempt to display your page.
- “Attempt” is the key word here; the page might not display at all, or it might not display as you intended.
- Browsers don’t give you error messages the way compilers do.

12



Introduction

- We will be enforcing “well-formed HTML”; that is, you must follow the rules (even when the tags will work without following the rules) and do proper formatting.
- We will be following the newer **X**HTML standards (although it’s still just referred to as HTML).

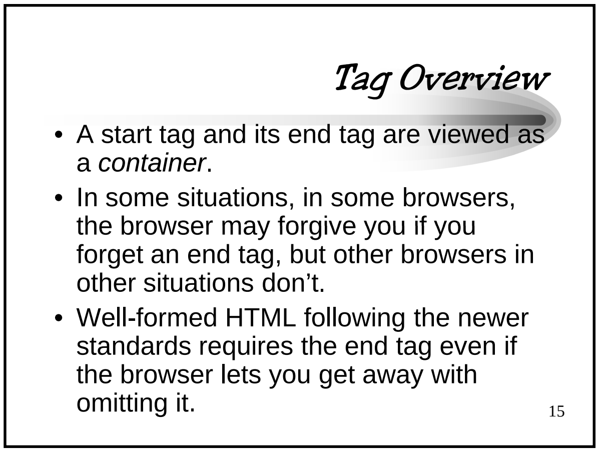


Tag Overview

- HTML wraps content in tags that are indicated by < >.
- Most tags require both a *start tag* and a *closing/end tag, and content* (the stuff that displays on the page) goes in between.
- Example:

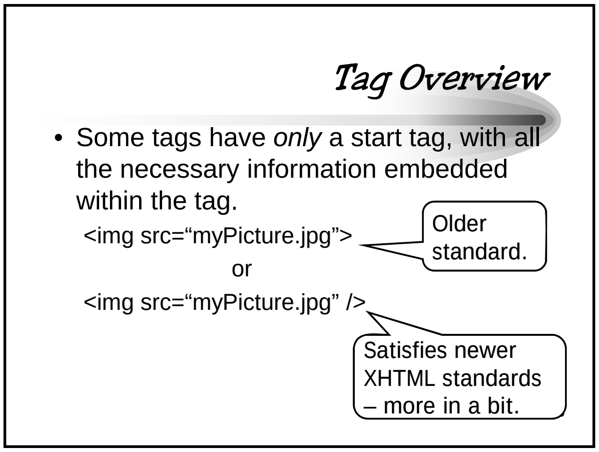
```
<p>
    ...Insert a paragraph of content here ...
</p>
```

“/” used for end tags



Tag Overview

- A start tag and its end tag are viewed as a *container*.
- In some situations, in some browsers, the browser may forgive you if you forget an end tag, but other browsers in other situations don’t.
- Well-formed HTML following the newer standards requires the end tag even if the browser lets you get away with omitting it.



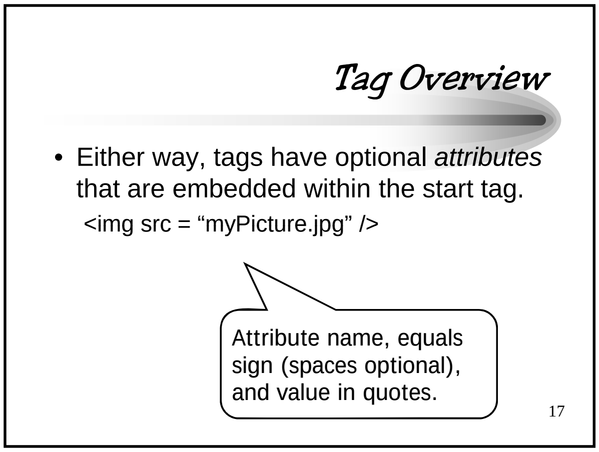
Tag Overview

- Some tags have *only* a start tag, with all the necessary information embedded within the tag.

```
<img src=“myPicture.jpg”>
            or
<img src=“myPicture.jpg” />
```

Older standard.

Satisfies newer XHTML standards – more in a bit.

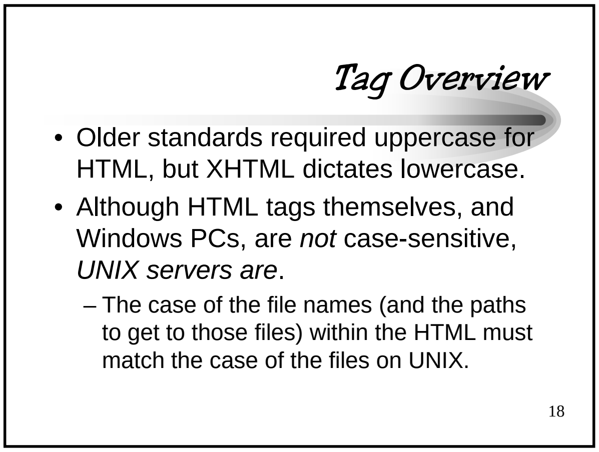


Tag Overview

- Either way, tags have optional *attributes* that are embedded within the start tag.

```
<img src = “myPicture.jpg” />
```

Attribute name, equals sign (spaces optional), and value in quotes.



Tag Overview

- Older standards required uppercase for HTML, but XHTML dictates lowercase.
- Although HTML tags themselves, and Windows PCs, are *not* case-sensitive, *UNIX servers are*.
  - The case of the file names (and the paths to get to those files) within the HTML must match the case of the files on UNIX.

Tag Overview

- Common file naming methods:
  - – fileName.html (Hungarian notation)
  - – file_name.html
- In any case, *be consistent*!

19

Documentation Tags

- Tags that start with <! never display within the browser.
- Two types:
  - – Comments
  - – DOCTYPE tag

20

Documentation Tags

- Comments
  - – Indicated by

    < ! - - insert single or multi-line
    comment here **- - >**
  - – Don’t over-comment because of the download hit – only esoteric stuff.
  - – Do use blank lines liberally to separate chunks of code, and use indentation to show nesting.

21

Documentation Tags

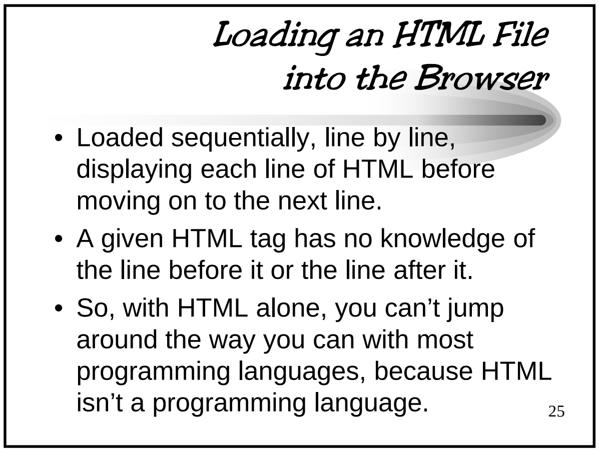
- DOCTYPE Tag
  - – The very first statement in the HTML file, stating standards the file follows.
  - – Safest one these days:

    <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"> (case-sensitive)
  - – This one is “loose” -- that is, it supports the newer standards while allowing older code, too.
  - – Let Dreamweaver put this in.

22

HTML Tags

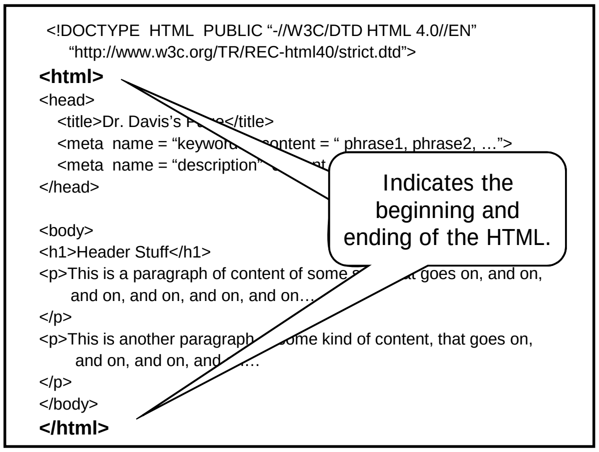
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
   <title>Dr. Davis's Page</title>
   <meta  name = “keywords”  content = “ phrase1, phrase2, ...”>
   <meta  name = “description”  content = “this site does ...”>
</head>

<body>
<h1>Header Stuff</h1>
<p>This is a paragraph of content of some sort, that goes on, and on,
     and on, and on, and on, and on....
</p>
<p>This is another paragraph of some kind of content, that goes on,
     and on, and on, and on...</p>
</body>
</html>
```



Loading an HTML File into the Browser

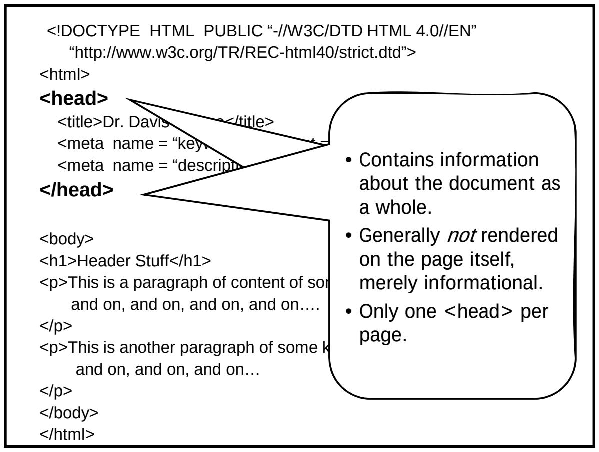
- Loaded sequentially, line by line, displaying each line of HTML before moving on to the next line.
- A given HTML tag has no knowledge of the line before it or the line after it.
- So, with HTML alone, you can’t jump around the way you can with most programming languages, because HTML isn’t a programming language.

25



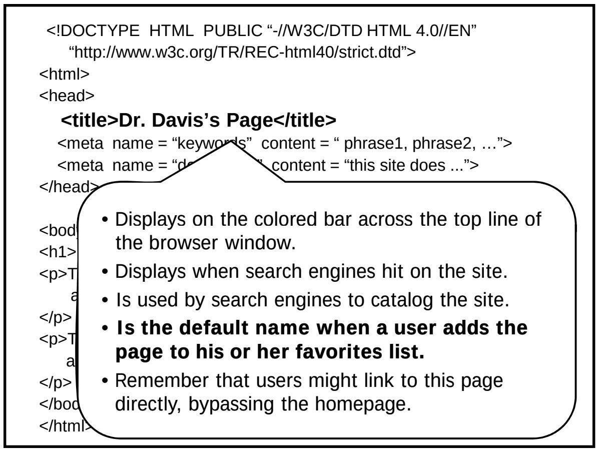
```
  <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD HTML 4.0//EN”
     “http://www.w3c.org/TR/REC-html40/strict.dtd”>
<html>
<head>
   <title>Dr. Davis’s P   </title>
   <meta  name = “keywor      ontent = “ phrase1, phrase2, …”>
   <meta  name = “description”
</head>

<body>
<h1>Header Stuff</h1>
<p>This is a paragraph of content of some          t goes on, and on,
     and on, and on, and on, and on…
</p>
<p>This is another paragraph     some kind of content, that goes on,
      and on, and on, and      …
</p>
</body>
</html>
```

Indicates the beginning and ending of the HTML.



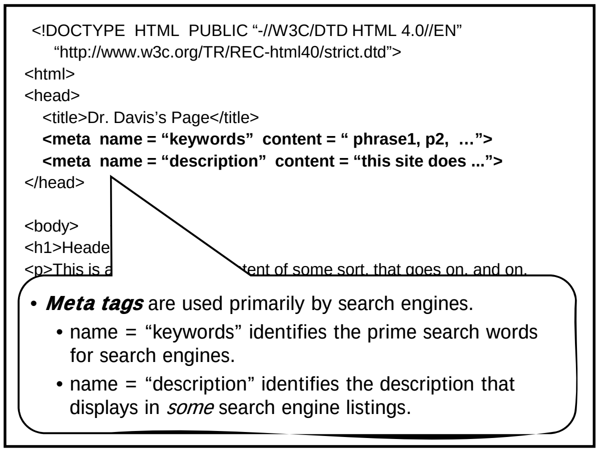
```
  <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD HTML 4.0//EN”
     “http://www.w3c.org/TR/REC-html40/strict.dtd”>
<html>
<head>
   <title>Dr. Davis      </title>
   <meta  name = “key
   <meta  name = “descripti
</head>

<body>
<h1>Header Stuff</h1>
<p>This is a paragraph of content of so
     and on, and on, and on, and on….
</p>
<p>This is another paragraph of some k
      and on, and on, and on…
</p>
</body>
</html>
```

- Contains information about the document as a whole.
- Generally *not* rendered on the page itself, merely informational.
- Only one <head> per page.



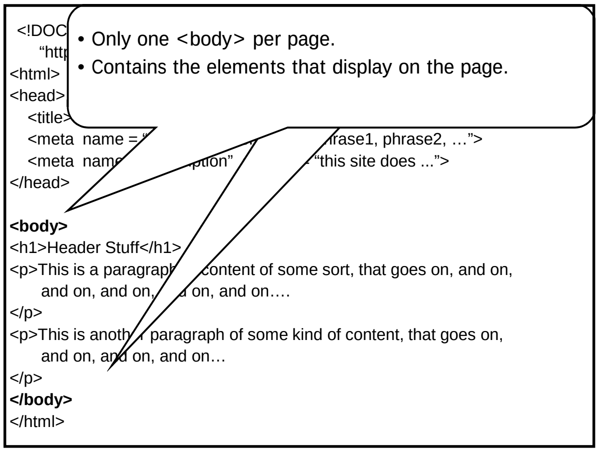
```
  <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD HTML 4.0//EN”
     “http://www.w3c.org/TR/REC-html40/strict.dtd”>
<html>
<head>
   <title>Dr. Davis’s Page</title>
   <meta  name = “keywords”  content = “ phrase1, phrase2, …”>
   <meta  name = “d          ”  content = “this site does ...”>
</head>

<bod
<h1>
<p>T
   a
</p>
<p>T
   a
</p>
</bod
</html>
```

- Displays on the colored bar across the top line of the browser window.
- Displays when search engines hit on the site.
- Is used by search engines to catalog the site.
- **Is the default name when a user adds the page to his or her favorites list.**
- Remember that users might link to this page directly, bypassing the homepage.



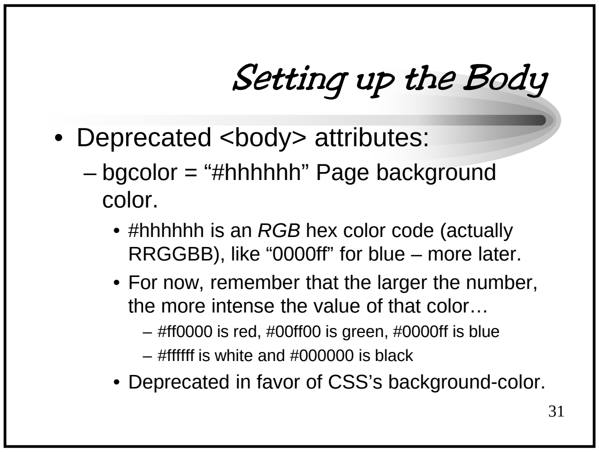
```
  <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD HTML 4.0//EN”
     “http://www.w3c.org/TR/REC-html40/strict.dtd”>
<html>
<head>
   <title>Dr. Davis’s Page</title>
   <meta  name = “keywords”  content = “ phrase1, p2,  …”>
   <meta  name = “description”  content = “this site does ...”>
</head>

<body>
<h1>Heade
<p>This is a              tent of some sort, that goes on, and on,
```

- ***Meta tags*** are used primarily by search engines.
  - name = “keywords” identifies the prime search words for search engines.
  - name = “description” identifies the description that displays in *some* search engine listings.



- Only one <body> per page.
- Contains the elements that display on the page.

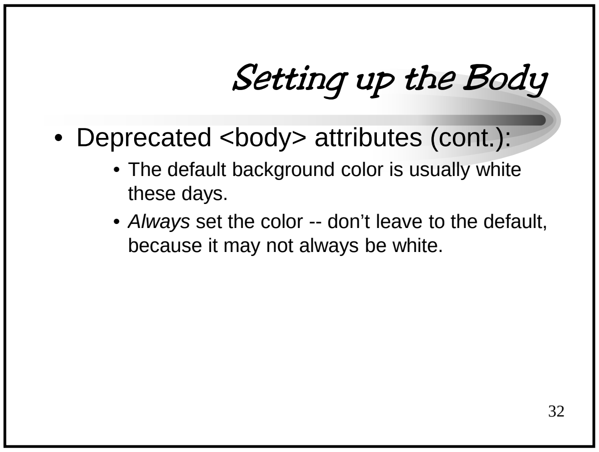
```
 <!DOC
    “http
<html>
<head>
   <title>
   <meta  name = “                    hrase1, phrase2, …”>
   <meta  name         ption”          “this site does ...”>
</head>

<body>
<h1>Header Stuff</h1>
<p>This is a paragrap      content of some sort, that goes on, and on,
     and on, and on,    d on, and on….
</p>
<p>This is anoth   r paragraph of some kind of content, that goes on,
     and on, and on, and on…
</p>
</body>
</html>
```



Setting up the Body

- Deprecated <body> attributes:
  - bgcolor = “#hhhhhh” Page background color.
    - #hhhhhh is an *RGB* hex color code (actually RRGGBB), like “0000ff” for blue – more later.
    - For now, remember that the larger the number, the more intense the value of that color…
      - #ff0000 is red, #00ff00 is green, #0000ff is blue
      - #ffffff is white and #000000 is black
    - Deprecated in favor of CSS’s background-color.

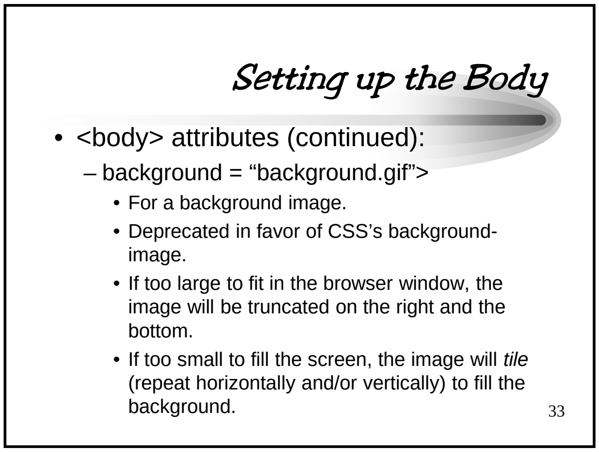
31



Setting up the Body

- Deprecated <body> attributes (cont.):
    - The default background color is usually white these days.
    - *Always* set the color -- don’t leave to the default, because it may not always be white.

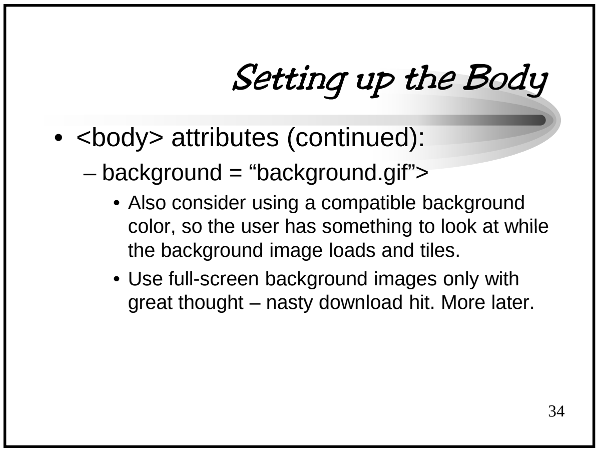
32



Setting up the Body

- <body> attributes (continued):
  - background = “background.gif”>
    - For a background image.
    - Deprecated in favor of CSS’s background-image.
    - If too large to fit in the browser window, the image will be truncated on the right and the bottom.
    - If too small to fill the screen, the image will *tile* (repeat horizontally and/or vertically) to fill the background.

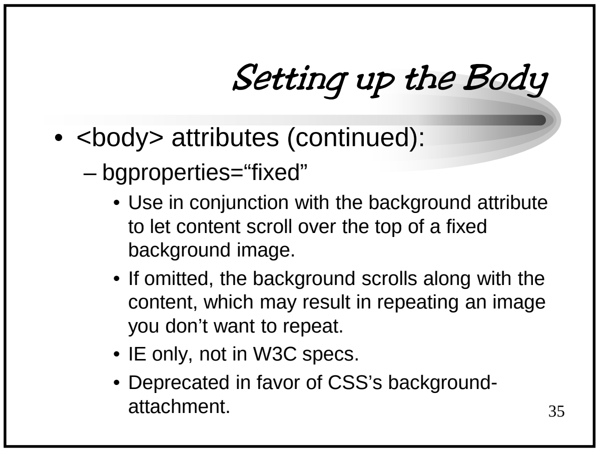
33



Setting up the Body

- <body> attributes (continued):
  - background = “background.gif”>
    - Also consider using a compatible background color, so the user has something to look at while the background image loads and tiles.
    - Use full-screen background images only with great thought – nasty download hit. More later.

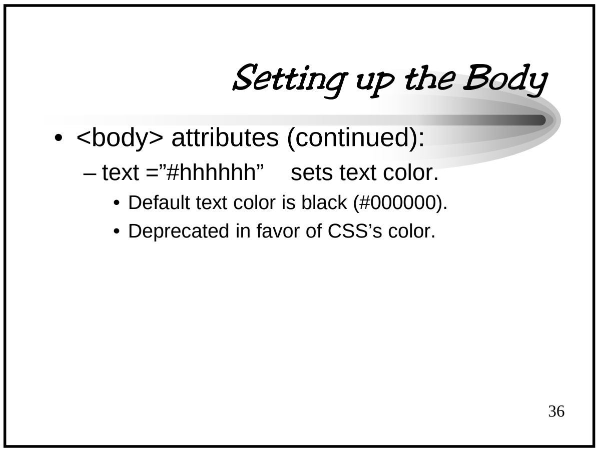
34



Setting up the Body

- <body> attributes (continued):
  - bgproperties=“fixed”
    - Use in conjunction with the background attribute to let content scroll over the top of a fixed background image.
    - If omitted, the background scrolls along with the content, which may result in repeating an image you don’t want to repeat.
    - IE only, not in W3C specs.
    - Deprecated in favor of CSS’s background-attachment.

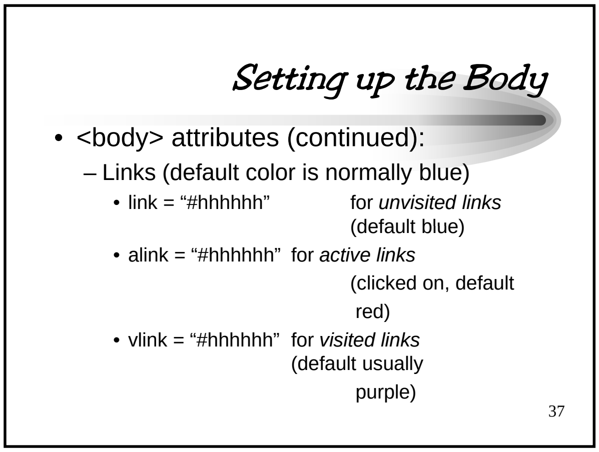
35



Setting up the Body

- <body> attributes (continued):
  - text =”#hhhhhh”   sets text color.
    - Default text color is black (#000000).
    - Deprecated in favor of CSS’s color.

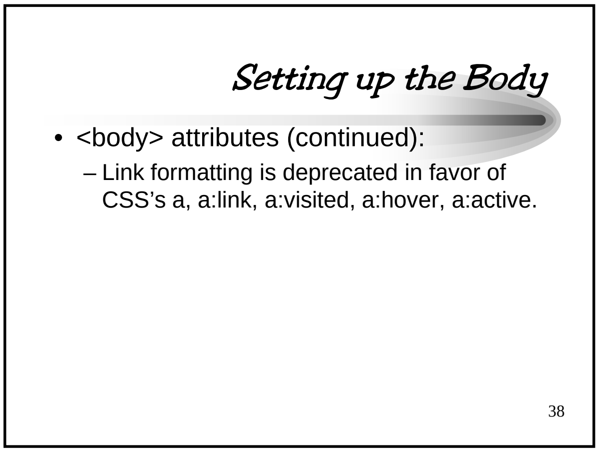
36



Setting up the Body

- <body> attributes (continued):
  - Links (default color is normally blue)
    - link = “#hhhhhh” for *unvisited links* (default blue)
    - alink = “#hhhhhh” for *active links* (clicked on, default red)
    - vlink = “#hhhhhh” for *visited links* (default usually purple)

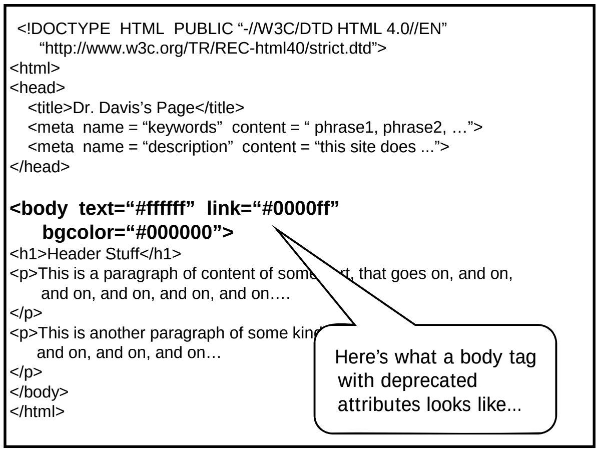
37



Setting up the Body

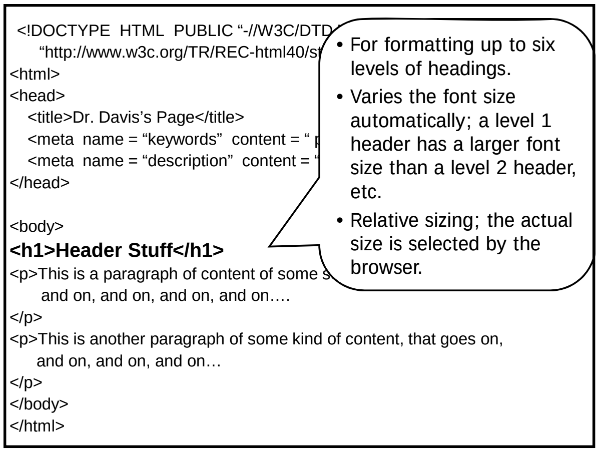
- <body> attributes (continued):
  - Link formatting is deprecated in favor of CSS’s a, a:link, a:visited, a:hover, a:active.

38



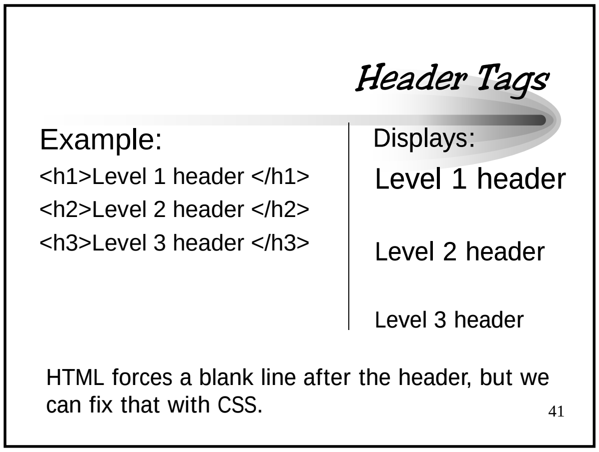
```
 <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD HTML 4.0//EN”
     “http://www.w3c.org/TR/REC-html40/strict.dtd”>
<html>
<head>
   <title>Dr. Davis’s Page</title>
   <meta  name = “keywords”  content = “ phrase1, phrase2, …”>
   <meta  name = “description”  content = “this site does ...”>
</head>

<body  text=“#ffffff”  link=“#0000ff”
     bgcolor=“#000000”>
<h1>Header Stuff</h1>
<p>This is a paragraph of content of some      t, that goes on, and on,
      and on, and on, and on, and on….
</p>
<p>This is another paragraph of some kind
     and on, and on, and on…
</p>
</body>
</html>
```

Here’s what a body tag with deprecated attributes looks like...



```
 <!DOCTYPE  HTML  PUBLIC “-//W3C/DTD
     “http://www.w3c.org/TR/REC-html40/st
<html>
<head>
   <title>Dr. Davis’s Page</title>
   <meta  name = “keywords”  content = “
   <meta  name = “description”  content = “
</head>

<body>
<h1>Header Stuff</h1>
<p>This is a paragraph of content of some s
      and on, and on, and on, and on….
</p>
<p>This is another paragraph of some kind of content, that goes on,
     and on, and on, and on…
</p>
</body>
</html>
```

- For formatting up to six levels of headings.
- Varies the font size automatically; a level 1 header has a larger font size than a level 2 header, etc.
- Relative sizing; the actual size is selected by the browser.

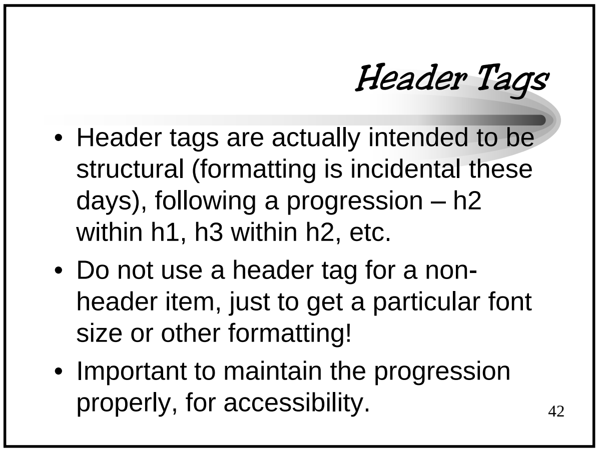


Header Tags

Example:	Displays:
<h1>Level 1 header </h1>	Level 1 header
<h2>Level 2 header </h2>	Level 2 header
<h3>Level 3 header </h3>	Level 3 header

HTML forces a blank line after the header, but we can fix that with CSS.

41



Header Tags

- Header tags are actually intended to be structural (formatting is incidental these days), following a progression – h2 within h1, h3 within h2, etc.
- Do not use a header tag for a non-header item, just to get a particular font size or other formatting!
- Important to maintain the progression properly, for accessibility.

42

- All of the text placed within the paragraph tags appears as a single paragraph.
- The text wraps to fill the available line length within the browser.
- There is a blank line both before and after the paragraph display.
- </p> is required by newer standards even though browsers will accept paragraphs without ending tags.

```
<!
<
<
<
<
<h
<p>This is paragraph of content of some sort, that goes on, and
    on, and on, and on, and on, and on….
</p>
<p>This is another paragraph of some kind of content, that goes
    on, and on, and on, and on…
</p>
</body>
</html>
```

Paragraph Tag

- Blank lines (created with carriage returns) or extra spaces within the text are ignored.
  - In other words, you must do formatting with HTML, not by formatting within the text.

Paragraph Tag

```
<p>
    Fourscore and seven years ago, our
    fathers brought forth on this continent
    a new nation, …
</p>
```

- Display depends upon container width:

Fourscore and seven years ago, our fathers brought forth on this continent a new nation, …

or

Fourscore and seven years ago,
our fathers brought forth on this
continent a new nation, …

Paragraph Tag

```
<p>Dr. Kathi Hogshead Davis
Department of Computer Science
Northern          Illinois          University
DeKalb, IL 60115</p>
```

displays

Dr. Kathi Hogshead Davis Department of Computer Science Northern Illinois University DeKalb, IL 60115

because spaces and line breaks in the text are ignored.

Paragraph Tag

- On the other hand, using <p>...</p> on every line can insert blank lines where you don't want them...

Paragraph Tag

```
<p>Dr. Kathi Hogshead Davis</p>
<p>Department of Computer Science</p>
<p>Northern Illinois University</p>
<p>DeKalb, IL 60115</p>
```

displays

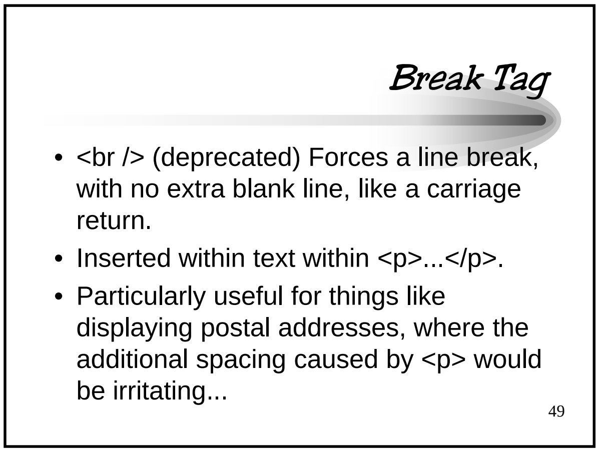
Dr. Kathi Hogshead Davis

Department of Computer Science

Northern Illinois University

DeKalb, IL 60115

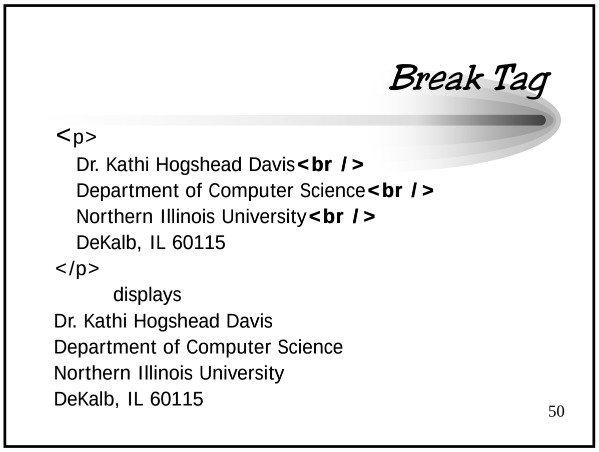
Using <p> tags on each line.



Break Tag

- <br /> (deprecated) Forces a line break, with no extra blank line, like a carriage return.
- Inserted within text within <p>...</p>.
- Particularly useful for things like displaying postal addresses, where the additional spacing caused by <p> would be irritating...

49

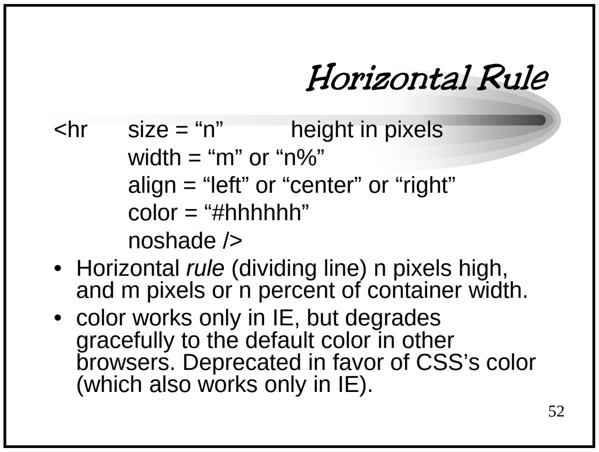


Break Tag

```
<p>
   Dr. Kathi Hogshead Davis<br />
   Department of Computer Science<br />
   Northern Illinois University<br />
   DeKalb, IL 60115
</p>
        displays
Dr. Kathi Hogshead Davis
Department of Computer Science
Northern Illinois University
DeKalb, IL 60115
```

50

Other HTML tags

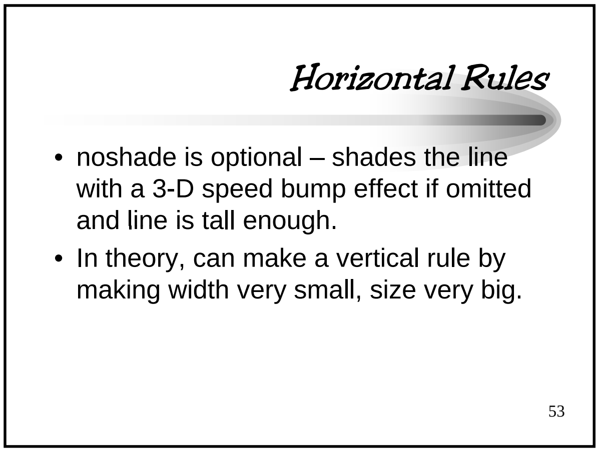


Horizontal Rule

```
<hr     size = “n”          height in pixels
        width = “m” or “n%”
        align = “left” or “center” or “right”
        color = “#hhhhhh”
        noshade />
```

- Horizontal *rule* (dividing line) n pixels high, and m pixels or n percent of container width.
- color works only in IE, but degrades gracefully to the default color in other browsers. Deprecated in favor of CSS’s color (which also works only in IE).

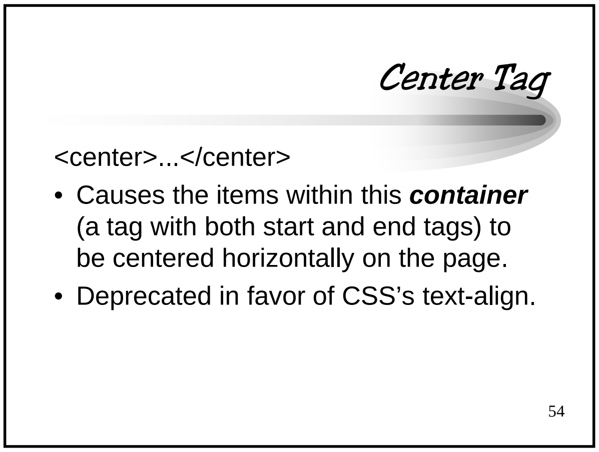
52



Horizontal Rules

- noshade is optional – shades the line with a 3-D speed bump effect if omitted and line is tall enough.
- In theory, can make a vertical rule by making width very small, size very big.

53

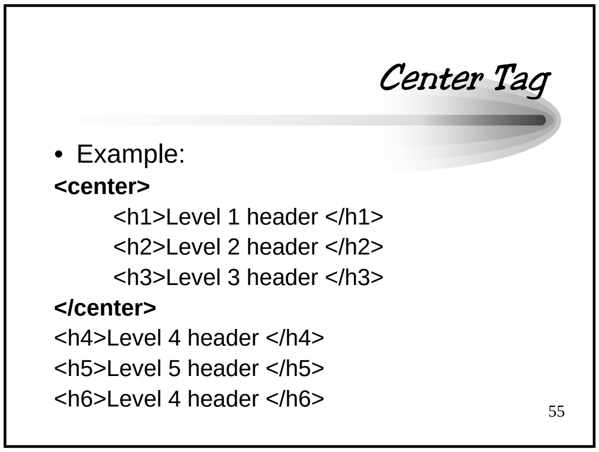


Center Tag

<center>...</center>

- Causes the items within this ***container*** (a tag with both start and end tags) to be centered horizontally on the page.
- Deprecated in favor of CSS’s text-align.

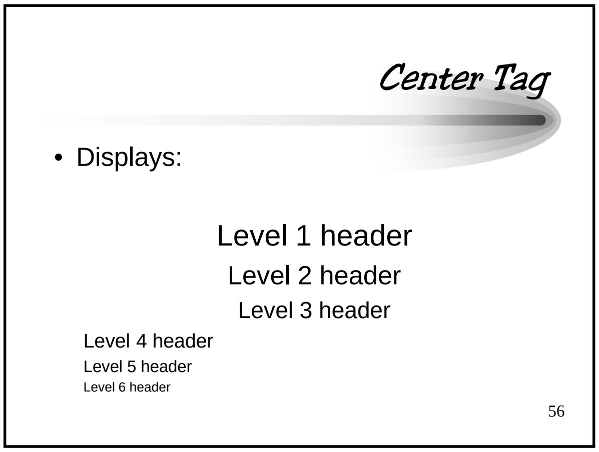
54



Center Tag

- Example:

```
<center>
        <h1>Level 1 header </h1>
        <h2>Level 2 header </h2>
        <h3>Level 3 header </h3>
</center>
<h4>Level 4 header </h4>
<h5>Level 5 header </h5>
<h6>Level 4 header </h6>
```



Center Tag

- Displays:

Level 1 header

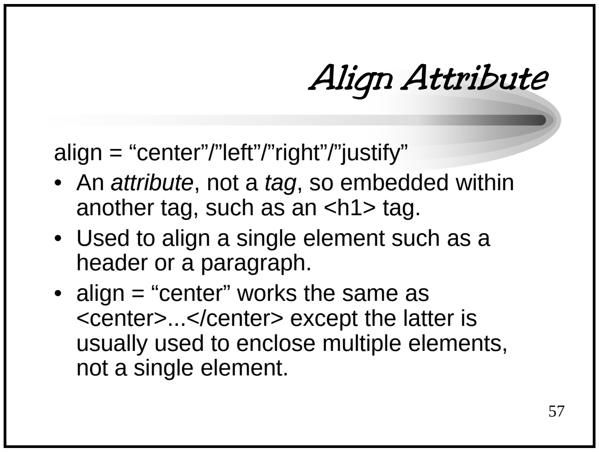
Level 2 header

Level 3 header

Level 4 header

Level 5 header

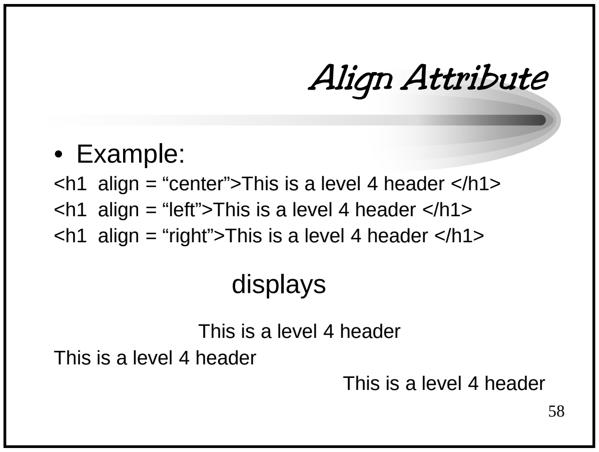
Level 6 header



Align Attribute

align = “center”/”left”/”right”/”justify”

- An *attribute*, not a *tag*, so embedded within another tag, such as an <h1> tag.
- Used to align a single element such as a header or a paragraph.
- align = “center” works the same as <center>...</center> except the latter is usually used to enclose multiple elements, not a single element.



Align Attribute

- Example:

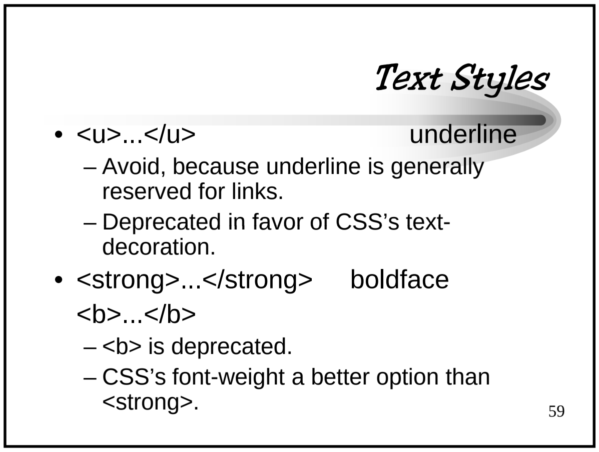
```
<h1  align = “center”>This is a level 4 header </h1>
<h1  align = “left”>This is a level 4 header </h1>
<h1  align = “right”>This is a level 4 header </h1>
```

displays

This is a level 4 header

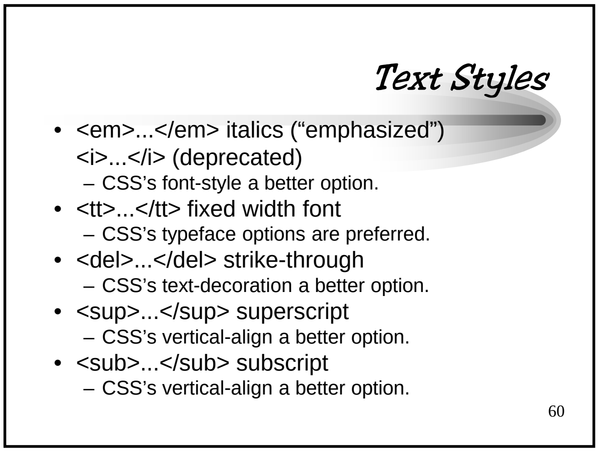
This is a level 4 header

This is a level 4 header



Text Styles

- <u>...</u> underline
  - Avoid, because underline is generally reserved for links.
  - Deprecated in favor of CSS’s text-decoration.
- <strong>...</strong> boldface
  <b>...</b>
  - <b> is deprecated.
  - CSS’s font-weight a better option than <strong>.



Text Styles

- <em>...</em> italics (“emphasized”)
  <i>...</i> (deprecated)
  - CSS’s font-style a better option.
- <tt>...</tt> fixed width font
  - CSS’s typeface options are preferred.
- <del>...</del> strike-through
  - CSS’s text-decoration a better option.
- <sup>...</sup> superscript
  - CSS’s vertical-align a better option.
- <sub>...</sub> subscript
  - CSS’s vertical-align a better option.

Text Styles

- Example:

```
<h1  align = “center”>
   <u>This is a </u><em>level 1<strong>header</strong> </em>
</h1>
```

displays

<u>This is a </u>*level 1* ***header***

61

Text Styles

- Well-formed HTML closes tags in the reverse order in which they are opened.
- Correct:

```
<u> <em> <strong>Hi!</strong> </em> </u>
```

- Incorrect:

```
<u> <em> <strong>Hi!</u> </em> </strong>
```

62

Font Tag

```
<font color = “#hhhhhh”
        size = “n” or “+n” or “-n”
        face = “font name”>
        ...paragraph text here...
</font>
```

- Overrides the defaults in the <body> element.
- Deprecated (viewed as the ultimate evil)! in favor of CSS’s font properties.

63

Font Tag

- size attribute
  - Valid size range is 1-7, with 1 the smallest and 7 the largest.
  - size = 3 is the browser default.
  - +2 (relative sizing) gives a font size of 5, if applied to the base font set in the browser.
  - If the font size has already been increased, say to a 4, then +2 results in a size 6.
  - Best to use relative sizes, for accessibility reasons.

64

Font Tag

- face attribute changes the typeface.
  - The typeface must exist on the user’s browser.
  - You can list multiple typefaces as attributes for face – the browser checks the user’s system for the first one, then the second one, etc. The last one on the list should be a standard font like Times or Ariel, or serif or san-serif..

    face = “Calligrapher, Georgia, Times, serif”

65

Font Tag

- If the browser doesn’t find any of them, it uses the default.
- Nothing to lose here if the font isn’t found; it “degrades gracefully.”

66

Font Tag

- If you need a fancy font for something special, create a text graphic, save it as an image, and use the image.
  - This comes with a download price and is harder to maintain in the future, so use sparingly.
- Newer browsers provide the ability to save fonts with the page.
  - A *huge* download hit (even small font files are around 20K, large font files can be above 100K).
  - Our whole page should be less than 100K!

Preformatted Text

- <pre width="n">...</pre>
  - Preformatted text preserves the formatting in the original, including spaces, line breaks, and tabs.
  - Particularly useful for displaying code listings because the text won't wrap to fit the available space in the browser window.
  - The width attribute specifies the maximum number of characters in a line.
  - Don't use as a way of avoiding HTML/CSS formatting!

Incorporating Images

```
<imgsrc="path to the image"
        height="n"  width="m"
        name = "name you give it"
        id = "name you give it"
        alt="alternate text to display"
        border="n"
        align="see prior discussion"
        hspace="n"
        vspace="n" />
```

Incorporating Images

- src="…"
  - Only two image formats completely and reliably accepted by *all* browsers:
    - .jpg (for continuous-tone images like photos)
    - .gif (for line art like cartoons, logos, etc.)
  - Another format, web-optimized .png (don't use native Fireworks .png!) works in newer browsers, but test features like transparency thoroughly!

Absolute and Relative URLs

- src="path and filename"
- Background on absolute and relative URLs in HTML...
- Absolute URL
  - Contains the complete address, including the protocol, like

    http://www.amazon.com   or
    http://www.cs.niu.edu/~davis/csci475/assign.html

  - Will not work if you forget the "http://"

Absolute and Relative URLs

- Relative URL
  - An address with one or more of the pieces missing, like

    assign.html

  - No path specified = in the same directory where the current HTML file is located.
  - The server assumes that the missing pieces of the target address are *the same as the current page*.

Absolute and Relative URLs

csci475/assign.html

– For the above relative address, the browser would look in the csci475 subdirectory *under* the subdirectory where the current page resides.

73

Absolute and Relative URLs

../csci475/assign.html

– "../" means "go up one subdirectory."

– For the above relative address, the browser would go up one directory in the hierarchy, then down to the csci475 directory.

74

Absolute and Relative URLs

../../csci475/assign.html

– For the above relative address, the browser would go up *two* directories in the hierarchy, then down to the csci475 directory.

75

Incorporating Images

- Back to src="…"
  – Use an absolute address like

    http://www.niu.edu/cs/myimage.gif

    for all addresses not under your own site.

  – Use a relative address like

    ../csci475/assign.html

    for all addresses within your site.

  – Why? Portability!

76

Incorporating Images

- Either way, bad addresses can work when testing on your own computer but break when you put them out on the web.
- *Test from another computer, or rename the directory on your own computer!*

77

Incorporating Images

- height = "nnn"   height, in pixels

  width = "nnn"   width, in pixels

  – height and width default to the exact size of the saved image if not specified, but specify that default anyway.
    - Text on the page displays properly right off the bat, with empty boxes of the correct size as placeholders for the images.
    - Faster display.

78

Incorporating Images

- Don’t use the height and width attributes to change the size of the image on the page.
  - Don’t use to resize image smaller, because you’re still paying the download hit for the larger image.
  - Don’t use to resize the image bigger, because quality will be seriously degraded.
  - Instead, use the image-editing program to resize images and save them in the precise size (in pixels) that you want it to be on the screen.
  - More later, under graphics.

79

Incorporating Images

- name = “name you give it”
- id = “name you give it”
  - Needed only if you want to reference the image by name, for things like mouseovers.
  - name is deprecated (but still works) in favor of id in the newer standards.
  - Use both if in doubt (which is what Dreamweaver does for you, when it needs to reference images).

80

Incorporating Images

- alt = “some text”
  - Text that displays on mouse flyover and that displays if the browser can’t display graphics.
  - It’s good programming practice to *always* (repeat, ***always***) include an alt attribute.
    - Used by screen readers for vision-impaired users.
    - Used by search engines.
  - alt = “” if no meaning attached.

81

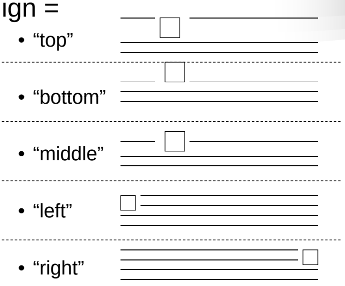
Incorporating Images

- border = “n”
  - border width, in pixels.
  - 0 for no border.
  - Deprecated in favor of CSS border.
  - HTML image borders went out of style for a number of years, but now graceful, one-pixel wide borders are back in style.

82

Incorporating Images

- align =



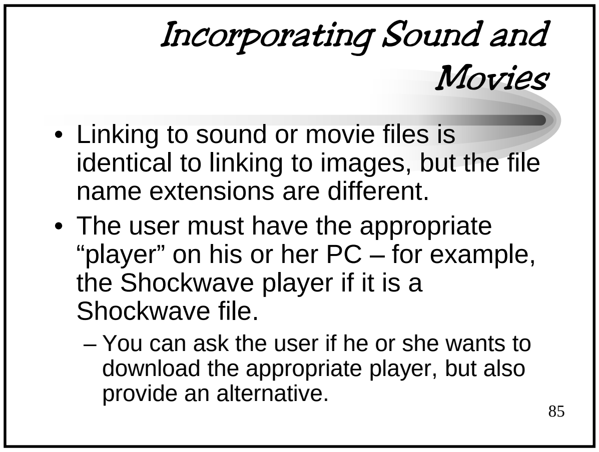
  - “top”
  - “bottom”
  - “middle”
  - “left”
  - “right”

83

Incorporating Images

- hspace=“n” vspace=“n”
  - Vertical and horizontal white space left around the image, in pixels.
  - Each applies to two margins.
  - Default is usually 3 pixels.
  - If you want spacing on only one side, use a transparent GIF spacer or &nbsp; instead (only until you know how to use CSS).
  - Deprecated in favor of CSS margin.

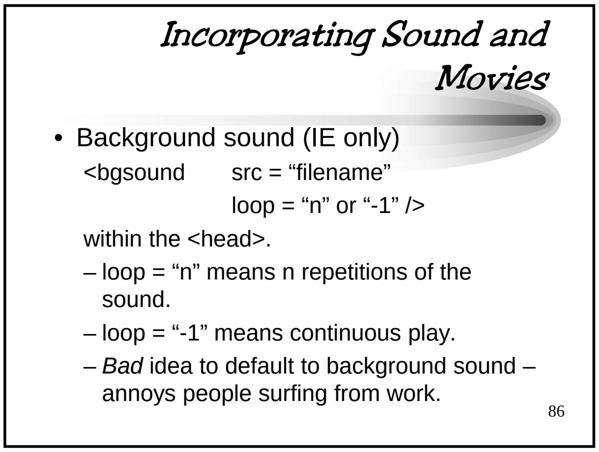
84



Incorporating Sound and Movies

- Linking to sound or movie files is identical to linking to images, but the file name extensions are different.
- The user must have the appropriate “player” on his or her PC – for example, the Shockwave player if it is a Shockwave file.
  - You can ask the user if he or she wants to download the appropriate player, but also provide an alternative.

85



Incorporating Sound and Movies

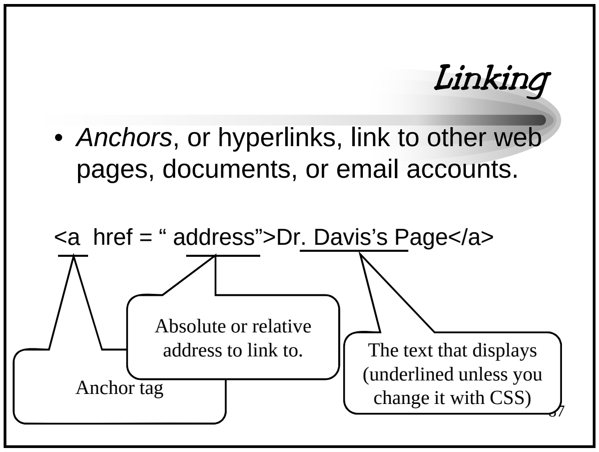
- Background sound (IE only)

```
<bgsound       src = “filename”
               loop = “n” or “-1” />
```

within the <head>.

- loop = “n” means n repetitions of the sound.
- loop = “-1” means continuous play.
- *Bad* idea to default to background sound – annoys people surfing from work.

86



Linking

- *Anchors*, or hyperlinks, link to other web pages, documents, or email accounts.

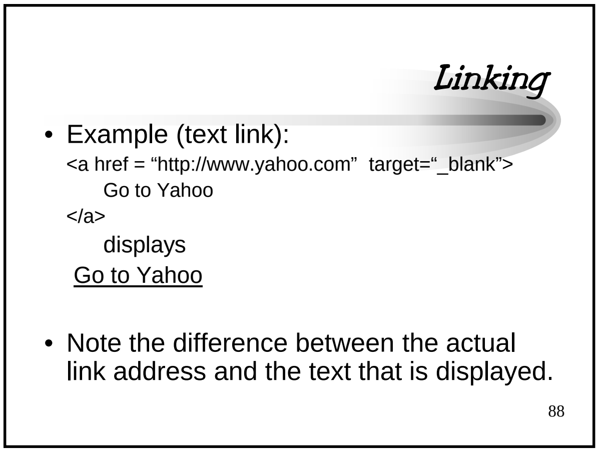
<a href = “ address”>Dr. Davis’s Page</a>

Anchor tag

Absolute or relative address to link to.

The text that displays (underlined unless you change it with CSS)

87



Linking

- Example (text link):

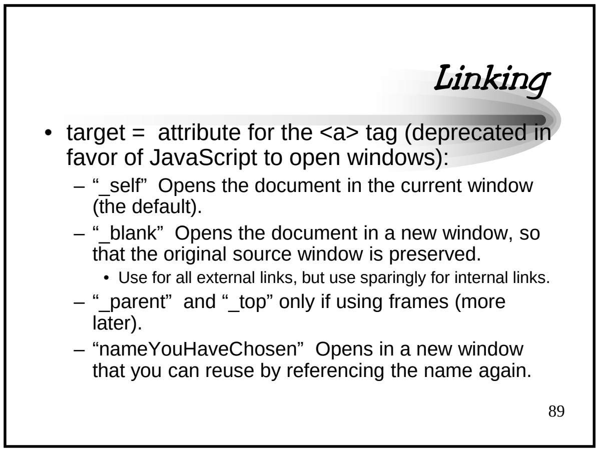
```
<a href = “http://www.yahoo.com”  target=“_blank”>
    Go to Yahoo
</a>
```

displays

Go to Yahoo

- Note the difference between the actual link address and the text that is displayed.

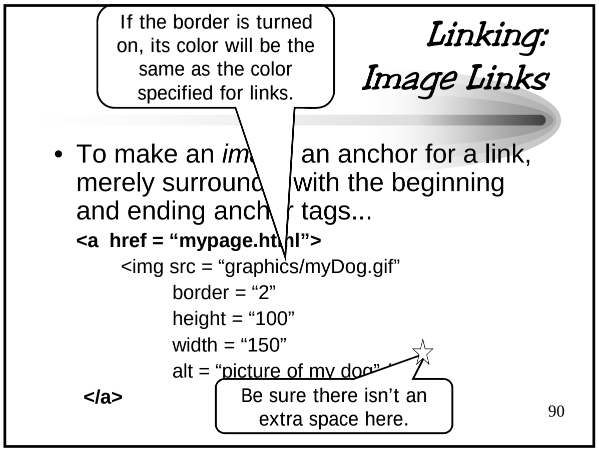
88



Linking

- target = attribute for the <a> tag (deprecated in favor of JavaScript to open windows):
  - “_self” Opens the document in the current window (the default).
  - “_blank” Opens the document in a new window, so that the original source window is preserved.
    - Use for all external links, but use sparingly for internal links.
  - “_parent” and “_top” only if using frames (more later).
  - “nameYouHaveChosen” Opens in a new window that you can reuse by referencing the name again.

89



Linking: Image Links

If the border is turned on, its color will be the same as the color specified for links.

- To make an *im* an anchor for a link, merely surround with the beginning and ending anch r tags...

```
<a href = “mypage.ht nl”>
    <img src = “graphics/myDog.gif”
         border = “2”
         height = “100”
         width = “150”
         alt = “picture of my dog” />
</a>
```

Be sure there isn’t an extra space here.

90

Linking: Automatic Email Links

- If the link is an email address, and you want the user’s default email program to come up with an email automatically addressed to the href address when the link is clicked:

  <a href = **"mailto:kdavis@niu.edu?subject= subject line&body=any body text you want"** >Send me an email</a>

  – This works only if the user has a default email client set up on his or her computer (most do).

Linking: Thumbnails to Larger Images

- Provide users with small *thumbnail images* that link to larger images, so that the user can choose whether or not to pay the download price of the larger image:

```
<a  href = “largeImagePage.html”>
    <img  src = “smallImage.jpg” />
</a>
```

  – This defines the thumbnail image as the clickable link to the page that contains the larger image.

Linking: Thumbnails to Larger Images

– Don’t just use the height and width attributes to downscale the larger image to become the thumbnail; in that case, the thumbnail would take just as long to load as the larger image.

– That would defeat the purpose of having fast load on the little image and letting the user choose whether or not to wait for the larger image.

Linking: Internal Anchors

- Sometimes it might be nice to be able to link to a specific location in the current page, or to a specific location deep in another page, not just to the top of that page.
- HTML has a facility to assign an *internal anchor* to any location in an HTML file; a bookmark, of sorts.
- Then, we can direct the user directly to that location by adding that location name at the end of path to the page.

Linking: Internal Anchors

- Use an anchor tag with no href and no content at the *destination* for the jump:

  <a name = "gohere" id="gohere" ></a>

  - This serves as the bookmark.
  - Specify both name and id, to be backward and forward compatible.
  - Newer browsers support any element (<p>, <h1>, etc.) with an id to be used as a bookmark.

Linking: Internal Anchors

- To jump to that spot...

  <a href = “path/mypage.html**#gohere**”>
  Jump to XYZ
  </a>

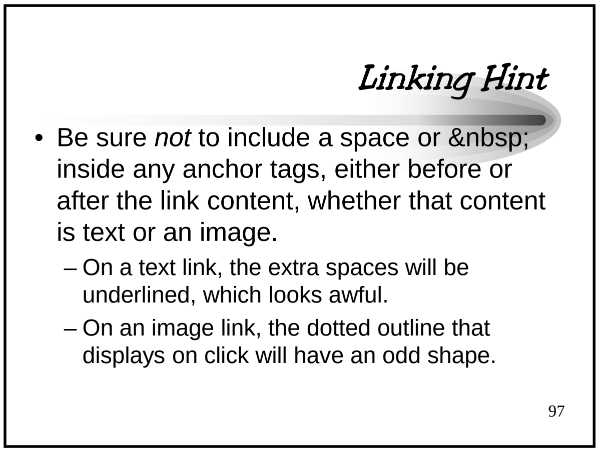
  displays

  Jump to XYZ

  and links to the anchor you specified.

- You can omit the URL/path if the bookmark is within the current page:

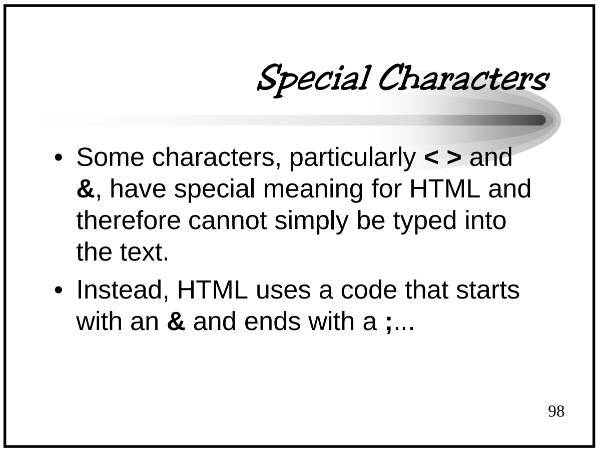
  <a href = “#gohere”>Jump to XYZ</a>



Linking Hint

- Be sure *not* to include a space or &nbsp; inside any anchor tags, either before or after the link content, whether that content is text or an image.
  - On a text link, the extra spaces will be underlined, which looks awful.
  - On an image link, the dotted outline that displays on click will have an odd shape.

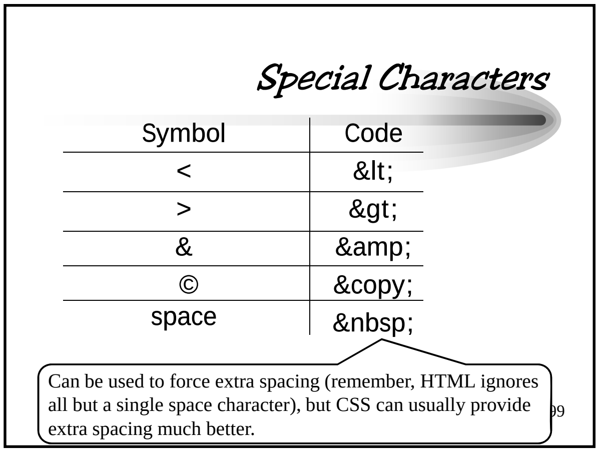
97



Special Characters

- Some characters, particularly **< >** and **&**, have special meaning for HTML and therefore cannot simply be typed into the text.
- Instead, HTML uses a code that starts with an **&** and ends with a **;**...

98

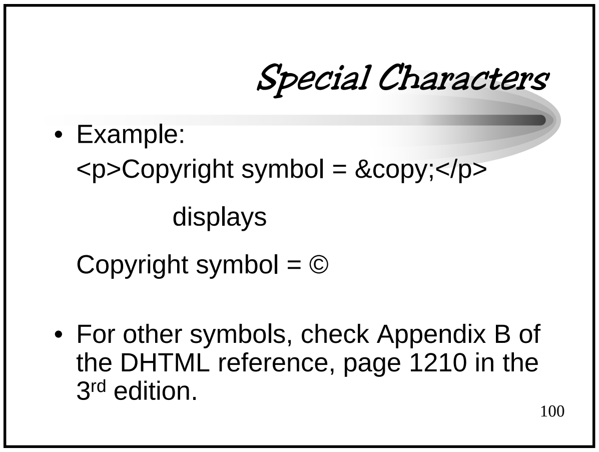


Special Characters

Symbol	Code
<	&lt;
>	&gt;
&	&amp;
©	&copy;
space	&nbsp;

Can be used to force extra spacing (remember, HTML ignores all but a single space character), but CSS can usually provide extra spacing much better.

99



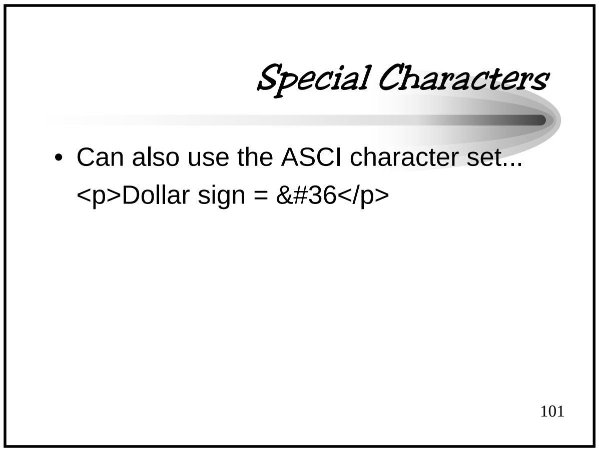
Special Characters

- Example:
  <p>Copyright symbol = &copy;</p>

  displays

  Copyright symbol = ©
- For other symbols, check Appendix B of the DHTML reference, page 1210 in the 3rd edition.

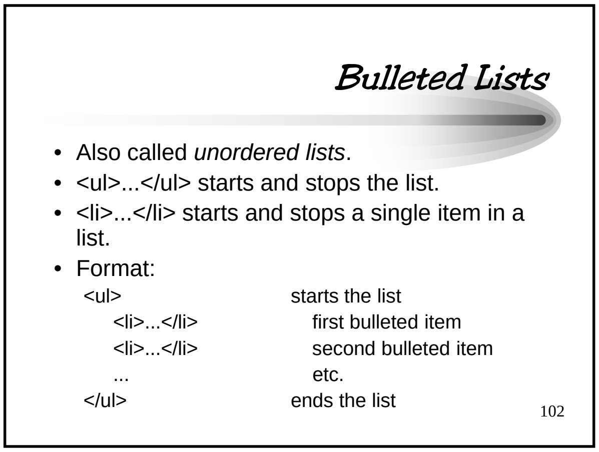
100



Special Characters

- Can also use the ASCI character set...
  <p>Dollar sign = &#36</p>

101

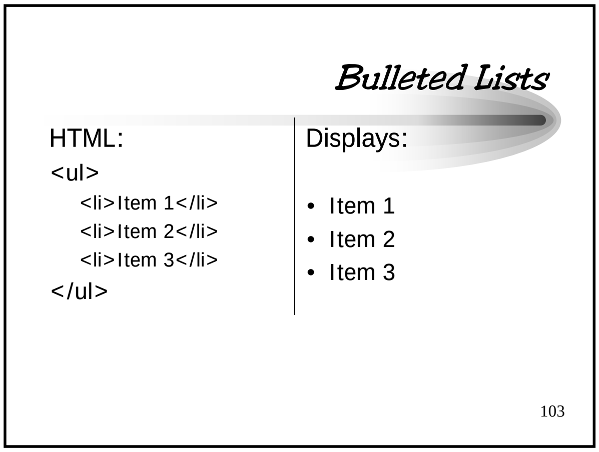


Bulleted Lists

- Also called *unordered lists*.
- <ul>...</ul> starts and stops the list.
- <li>...</li> starts and stops a single item in a list.
- Format:

```
<ul>                      starts the list
   <li>...</li>              first bulleted item
   <li>...</li>              second bulleted item
   ...                       etc.
</ul>                     ends the list
```

102



Bulleted Lists

HTML:

```
<ul>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
</ul>
```

Displays:

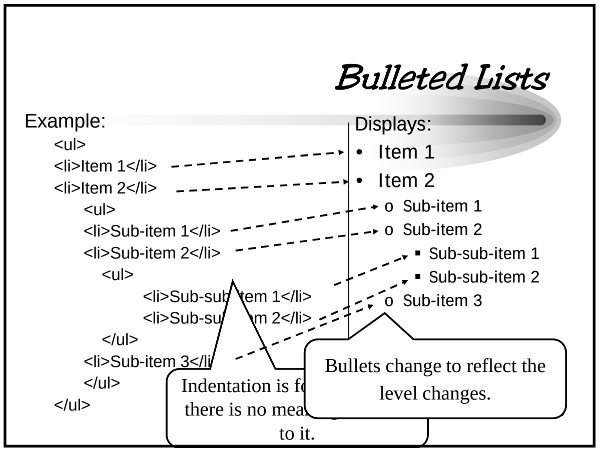
- Item 1
- Item 2
- Item 3

103

Bulleted Lists

- Can also nest bulleted lists...

104



Bulleted Lists

Example:

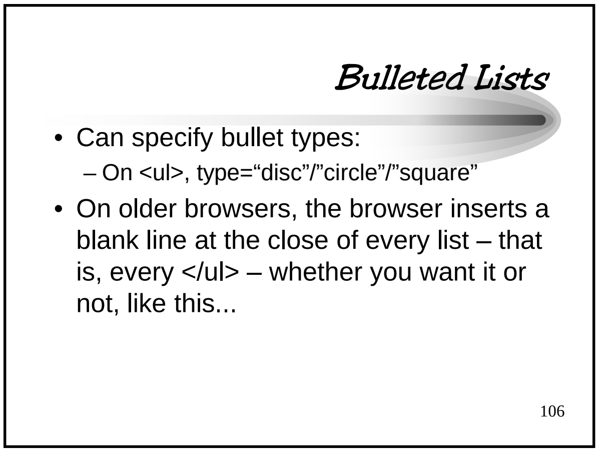
```
    <ul>
    <li>Item 1</li>
    <li>Item 2</li>
        <ul>
        <li>Sub-item 1</li>
        <li>Sub-item 2</li>
           <ul>
                  <li>Sub-sub tem 1</li>
                  <li>Sub-su m 2</li>
           </ul>
        <li>Sub-item 3</li
        </ul>
    </ul>
```

Displays:

- Item 1
- Item 2
    - o Sub-item 1
    - o Sub-item 2
        - ▪ Sub-sub-item 1
        - ▪ Sub-sub-item 2
    - o Sub-item 3

Indentation is fo
there is no mea
to it.

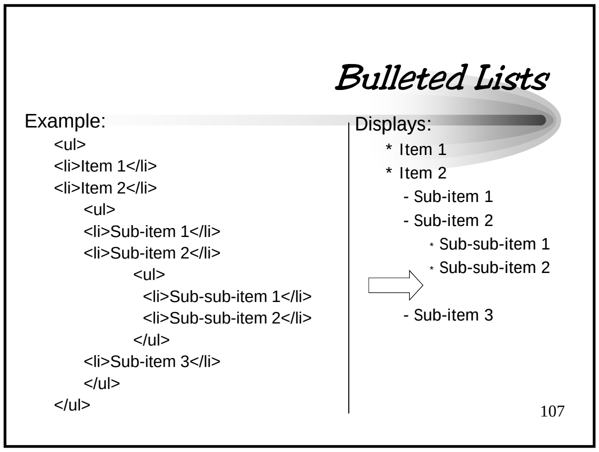
Bullets change to reflect the level changes.



Bulleted Lists

- Can specify bullet types:
    - – On <ul>, type="disc"/"circle"/"square"
- On older browsers, the browser inserts a blank line at the close of every list – that is, every </ul> – whether you want it or not, like this...

106



Bulleted Lists

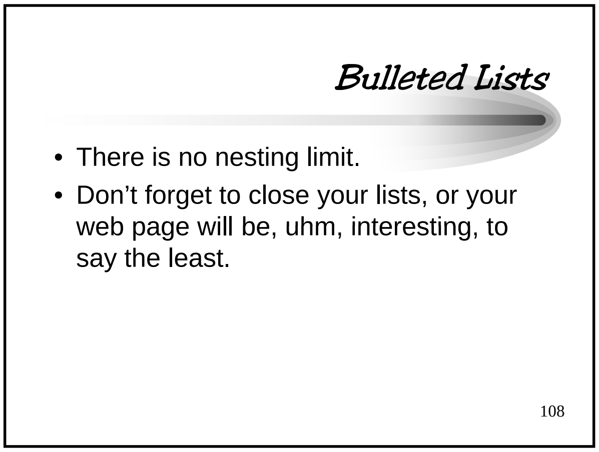
Example:

```
    <ul>
    <li>Item 1</li>
    <li>Item 2</li>
        <ul>
        <li>Sub-item 1</li>
        <li>Sub-item 2</li>
              <ul>
                <li>Sub-sub-item 1</li>
                <li>Sub-sub-item 2</li>
              </ul>
        <li>Sub-item 3</li>
        </ul>
    </ul>
```

Displays:

```
  * Item 1
  * Item 2
    - Sub-item 1
    - Sub-item 2
       ◦ Sub-sub-item 1
       ◦ Sub-sub-item 2

    - Sub-item 3
```

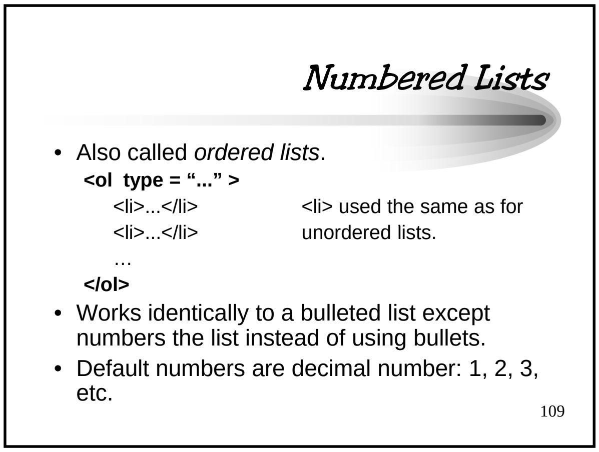
107



Bulleted Lists

- There is no nesting limit.
- Don't forget to close your lists, or your web page will be, uhm, interesting, to say the least.

108



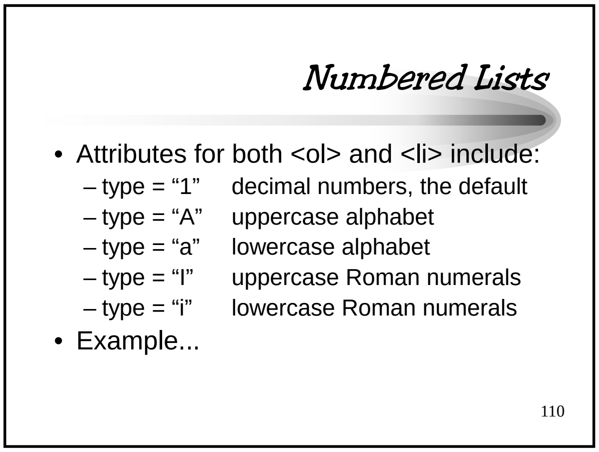
Numbered Lists

- Also called *ordered lists*.

```
<ol  type = "..." >
     <li>...</li>            <li> used the same as for
     <li>...</li>            unordered lists.
     …
</ol>
```

- Works identically to a bulleted list except numbers the list instead of using bullets.
- Default numbers are decimal number: 1, 2, 3, etc.

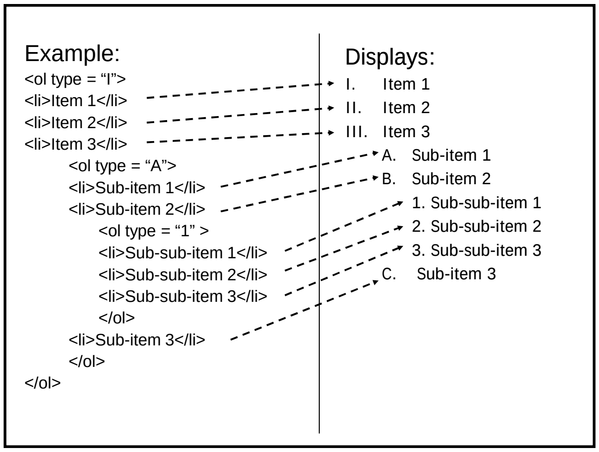
109



Numbered Lists

- Attributes for both <ol> and <li> include:
  - type = "1" decimal numbers, the default
  - type = "A" uppercase alphabet
  - type = "a" lowercase alphabet
  - type = "I" uppercase Roman numerals
  - type = "i" lowercase Roman numerals
- Example...

110

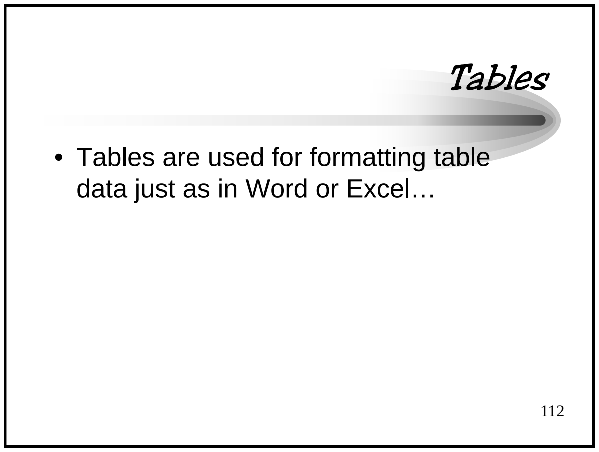


Example:

```
<ol type = "I">
<li>Item 1</li>
<li>Item 2</li>
<li>Item 3</li>
        <ol type = "A">
        <li>Sub-item 1</li>
        <li>Sub-item 2</li>
             <ol type = "1" >
             <li>Sub-sub-item 1</li>
             <li>Sub-sub-item 2</li>
             <li>Sub-sub-item 3</li>
             </ol>
        <li>Sub-item 3</li>
        </ol>
</ol>
```

Displays:

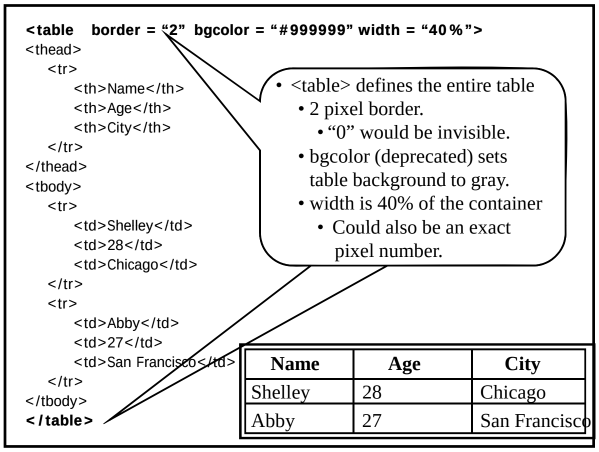
```
I.     Item 1
II.    Item 2
III.   Item 3
A.   Sub-item 1
B.   Sub-item 2
     1. Sub-sub-item 1
     2. Sub-sub-item 2
     3. Sub-sub-item 3
C.    Sub-item 3
```



Tables

- Tables are used for formatting table data just as in Word or Excel…

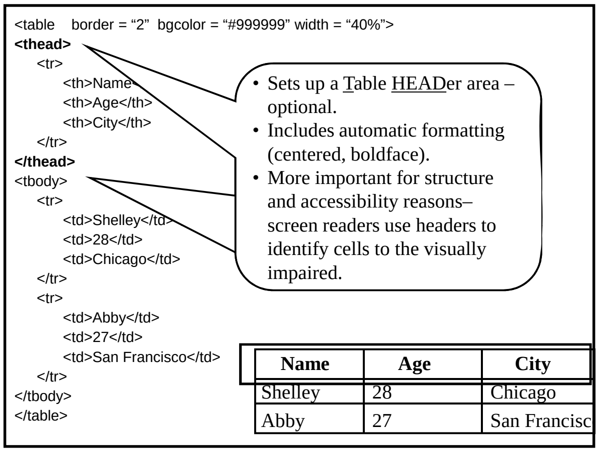
112



```
<table    border = "2"  bgcolor = "#999999" width = "40%">
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

- <table> defines the entire table
  - 2 pixel border.
    - "0" would be invisible.
  - bgcolor (deprecated) sets table background to gray.
  - width is 40% of the container
    - Could also be an exact pixel number.

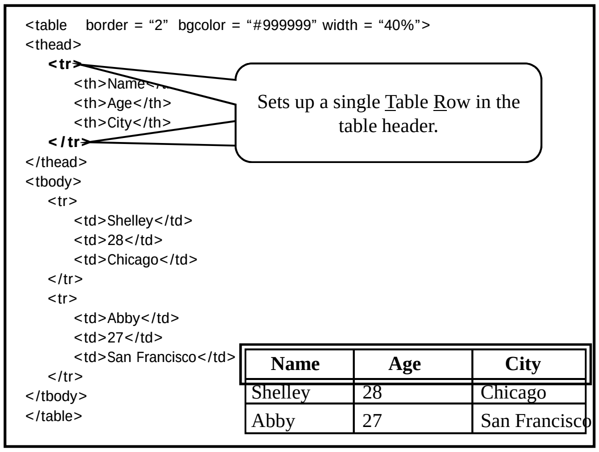
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = "2"  bgcolor = "#999999" width = "40%">
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

- Sets up a Table HEADer area – optional.
- Includes automatic formatting (centered, boldface).
- More important for structure and accessibility reasons– screen readers use headers to identify cells to the visually impaired.

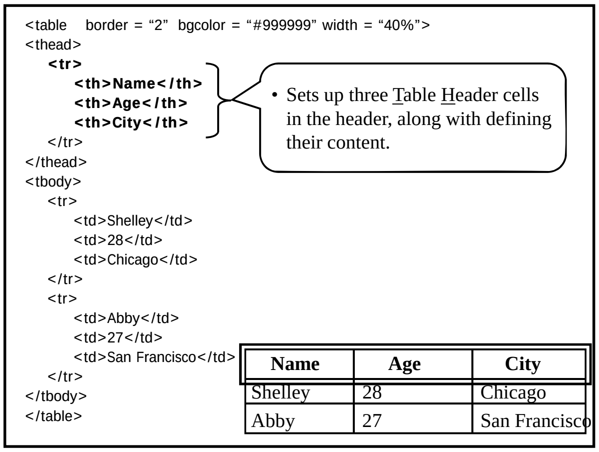
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisc



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

Sets up a single Table Row in the table header.

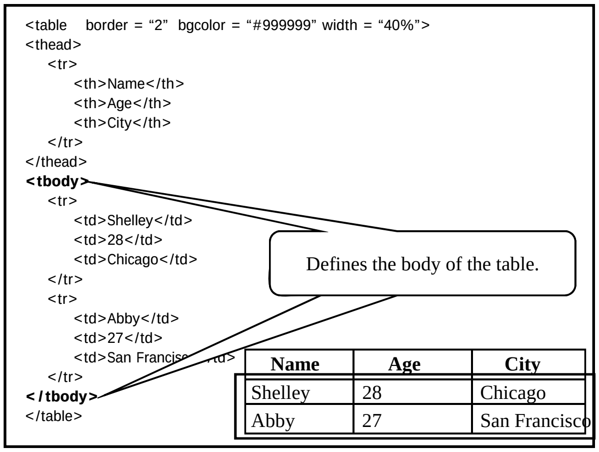
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

- Sets up three Table Header cells in the header, along with defining their content.

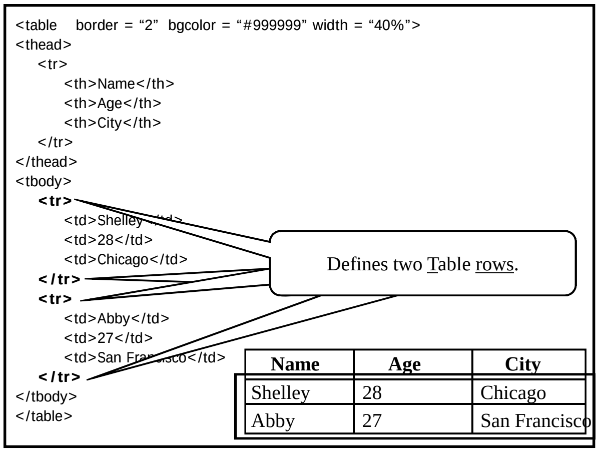
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

Defines the body of the table.

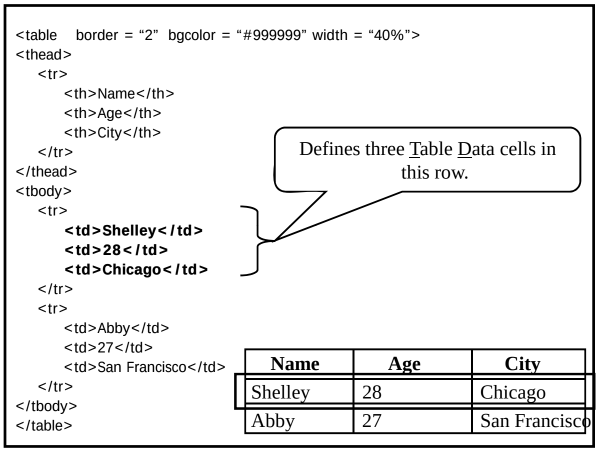
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

Defines two Table rows.

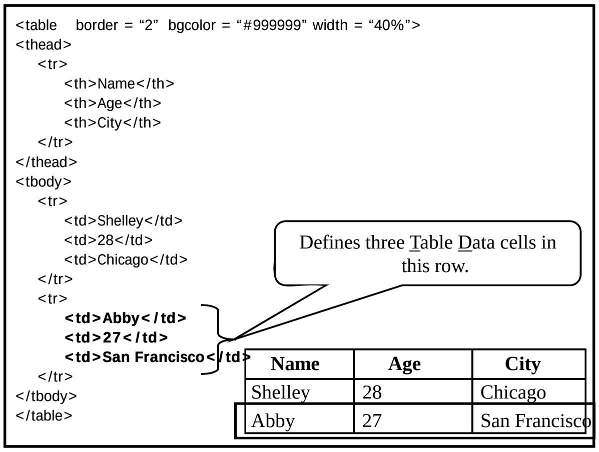
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

Defines three Table Data cells in this row.

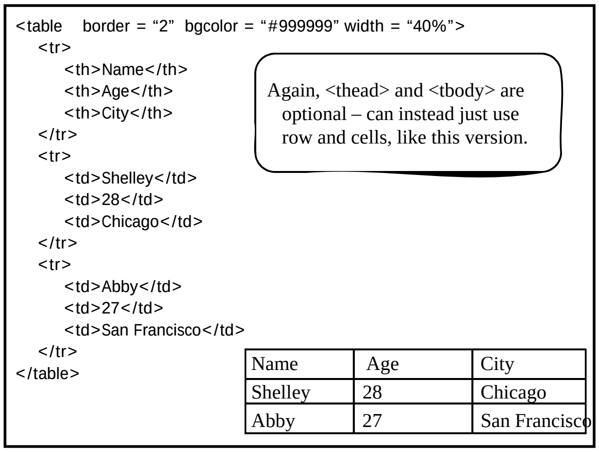
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
<thead>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
</thead>
<tbody>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</tbody>
</table>
```

Defines three Table Data cells in this row.

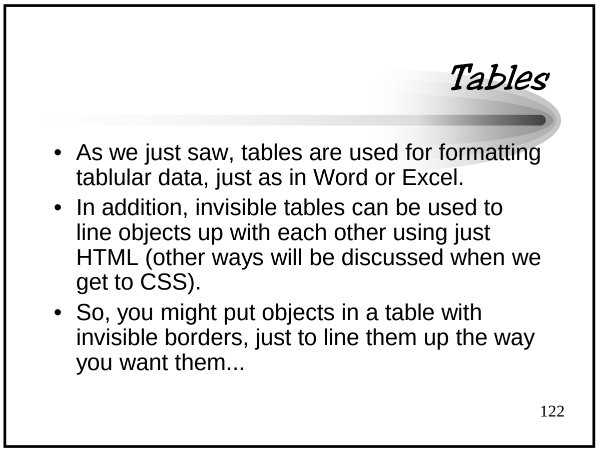
Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



```
<table    border = “2”  bgcolor = “#999999” width = “40%”>
    <tr>
        <th>Name</th>
        <th>Age</th>
        <th>City</th>
    </tr>
    <tr>
        <td>Shelley</td>
        <td>28</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
</table>
```

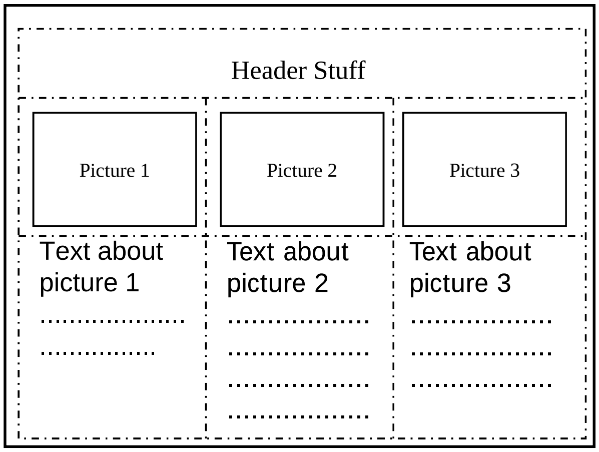
Again, <thead> and <tbody> are optional – can instead just use row and cells, like this version.

Name	Age	City
Shelley	28	Chicago
Abby	27	San Francisco



Tables

- As we just saw, tables are used for formatting tablular data, just as in Word or Excel.
- In addition, invisible tables can be used to line objects up with each other using just HTML (other ways will be discussed when we get to CSS).
- So, you might put objects in a table with invisible borders, just to line them up the way you want them...



Header Stuff

Picture 1

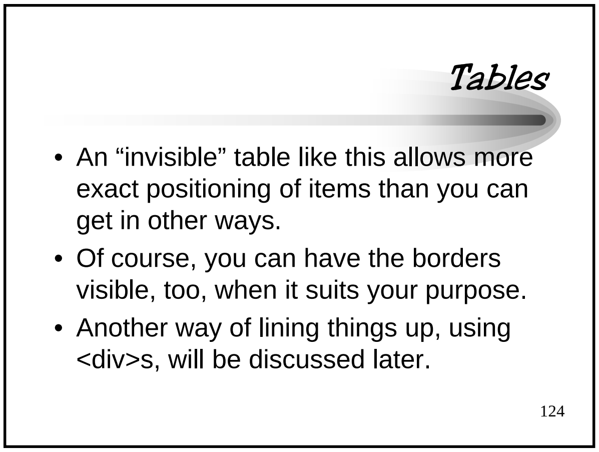
Picture 2

Picture 3

Text about picture 1
....
....

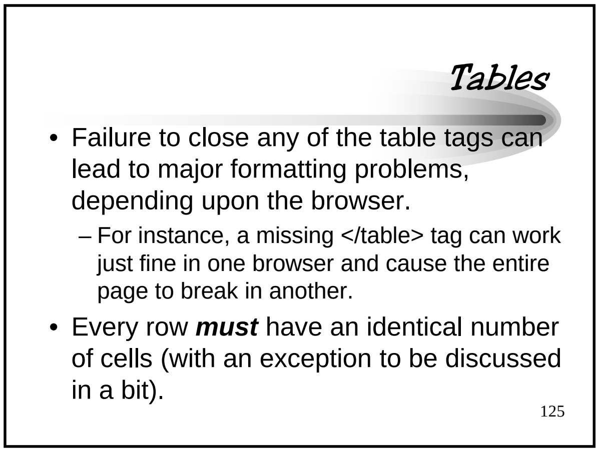
Text about picture 2
....
....
....
....

Text about picture 3
....
....
....



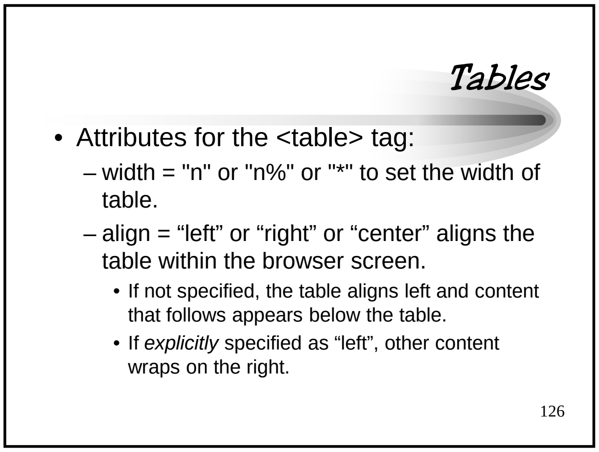
Tables

- An “invisible” table like this allows more exact positioning of items than you can get in other ways.
- Of course, you can have the borders visible, too, when it suits your purpose.
- Another way of lining things up, using <div>s, will be discussed later.



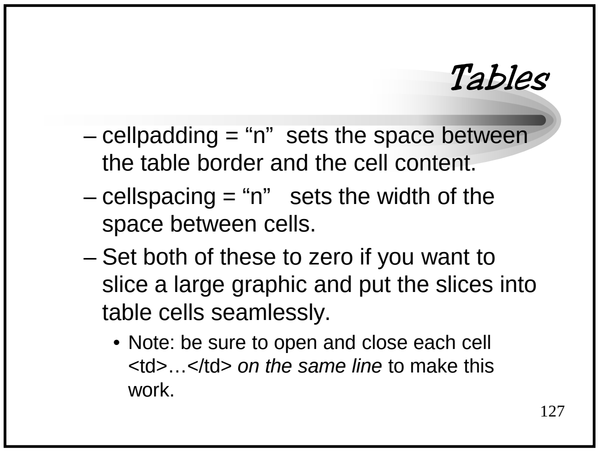
Tables

- Failure to close any of the table tags can lead to major formatting problems, depending upon the browser.
  - For instance, a missing </table> tag can work just fine in one browser and cause the entire page to break in another.
- Every row ***must*** have an identical number of cells (with an exception to be discussed in a bit).



Tables

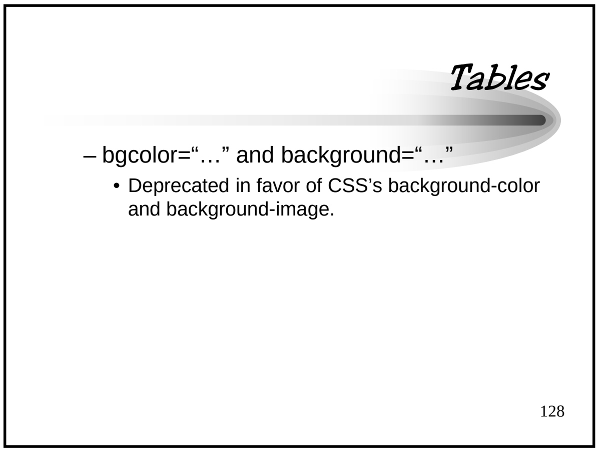
- Attributes for the <table> tag:
  - width = "n" or "n%" or "*" to set the width of table.
  - align = “left” or “right” or “center” aligns the table within the browser screen.
    - If not specified, the table aligns left and content that follows appears below the table.
    - If *explicitly* specified as “left”, other content wraps on the right.



Tables

- cellpadding = “n” sets the space between the table border and the cell content.
- cellspacing = “n”   sets the width of the space between cells.
- Set both of these to zero if you want to slice a large graphic and put the slices into table cells seamlessly.
  - Note: be sure to open and close each cell <td>…</td> *on the same line* to make this work.

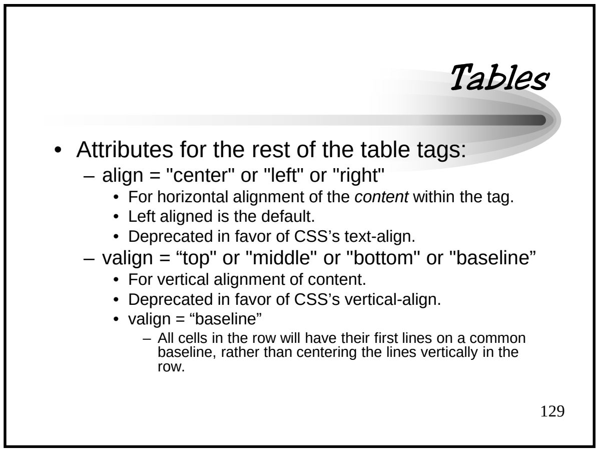
127



Tables

- bgcolor=“…” and background=“…”
  - Deprecated in favor of CSS’s background-color and background-image.

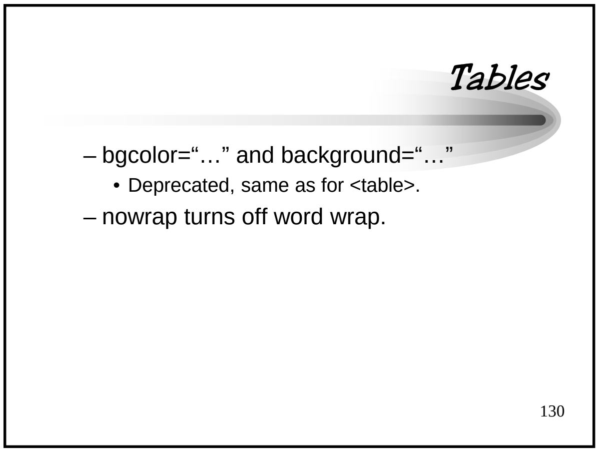
128



Tables

- Attributes for the rest of the table tags:
  - align = "center" or "left" or "right"
    - For horizontal alignment of the *content* within the tag.
    - Left aligned is the default.
    - Deprecated in favor of CSS’s text-align.
  - valign = “top" or "middle" or "bottom" or "baseline”
    - For vertical alignment of content.
    - Deprecated in favor of CSS’s vertical-align.
    - valign = “baseline”
      - All cells in the row will have their first lines on a common baseline, rather than centering the lines vertically in the row.

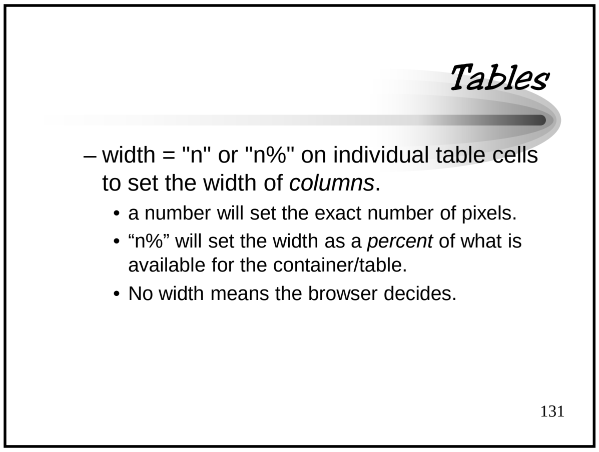
129



Tables

- bgcolor=“…” and background=“…”
  - Deprecated, same as for <table>.
- nowrap turns off word wrap.

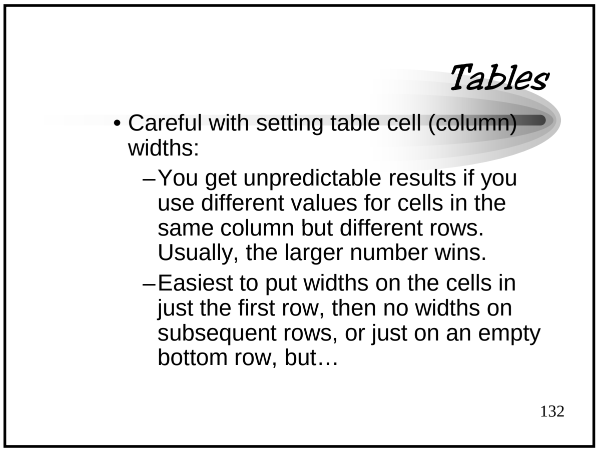
130



Tables

- width = "n" or "n%" on individual table cells to set the width of *columns*.
  - a number will set the exact number of pixels.
  - “n%” will set the width as a *percent* of what is available for the container/table.
  - No width means the browser decides.

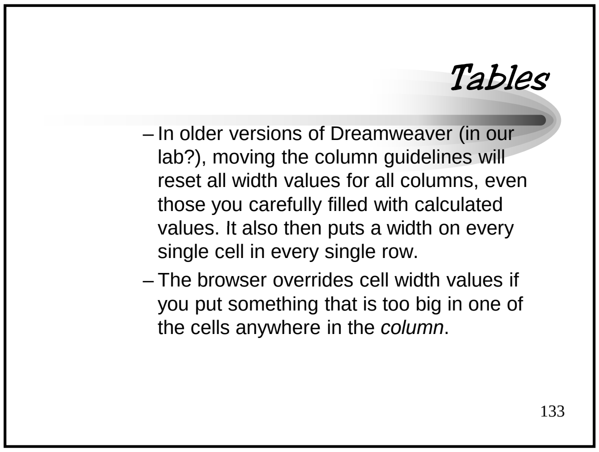
131



Tables

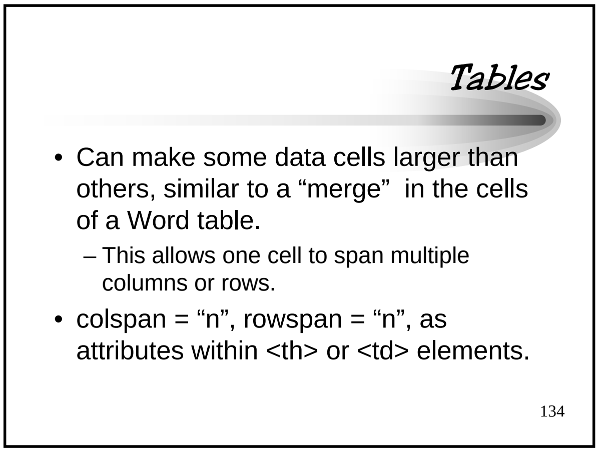
- Careful with setting table cell (column) widths:
  - You get unpredictable results if you use different values for cells in the same column but different rows. Usually, the larger number wins.
  - Easiest to put widths on the cells in just the first row, then no widths on subsequent rows, or just on an empty bottom row, but…

132



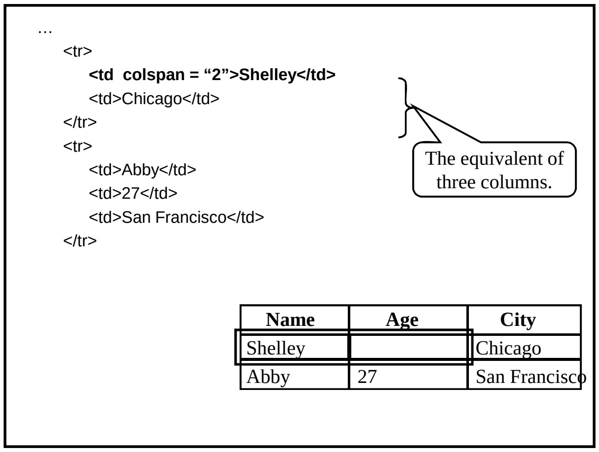
Tables

- In older versions of Dreamweaver (in our lab?), moving the column guidelines will reset all width values for all columns, even those you carefully filled with calculated values. It also then puts a width on every single cell in every single row.
- The browser overrides cell width values if you put something that is too big in one of the cells anywhere in the *column*.



Tables

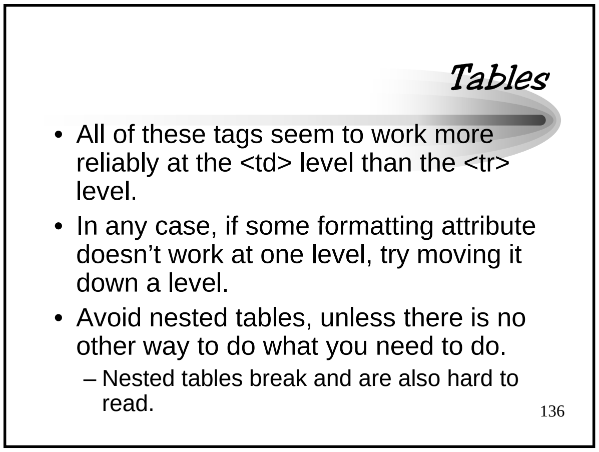
- Can make some data cells larger than others, similar to a "merge" in the cells of a Word table.
  - This allows one cell to span multiple columns or rows.
- colspan = "n", rowspan = "n", as attributes within <th> or <td> elements.



```
…
    <tr>
        <td  colspan = “2”>Shelley</td>
        <td>Chicago</td>
    </tr>
    <tr>
        <td>Abby</td>
        <td>27</td>
        <td>San Francisco</td>
    </tr>
```

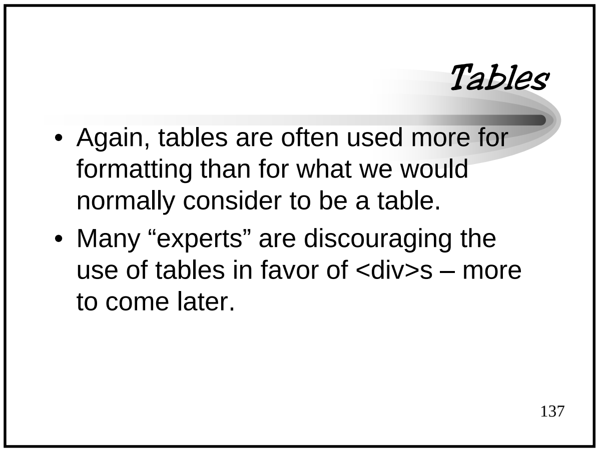
The equivalent of three columns.

Name	Age	City
Shelley		Chicago
Abby	27	San Francisco



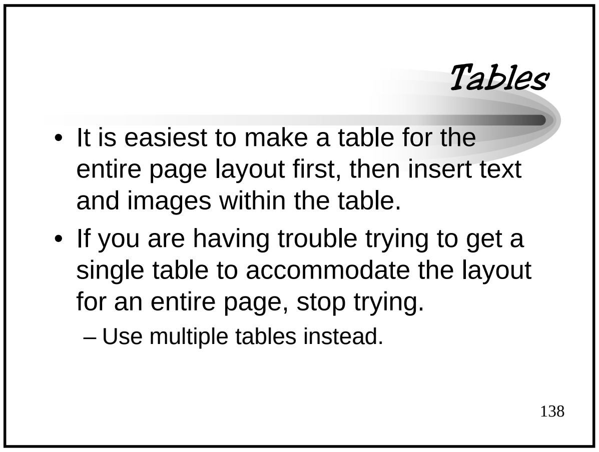
Tables

- All of these tags seem to work more reliably at the <td> level than the <tr> level.
- In any case, if some formatting attribute doesn't work at one level, try moving it down a level.
- Avoid nested tables, unless there is no other way to do what you need to do.
  - Nested tables break and are also hard to read.



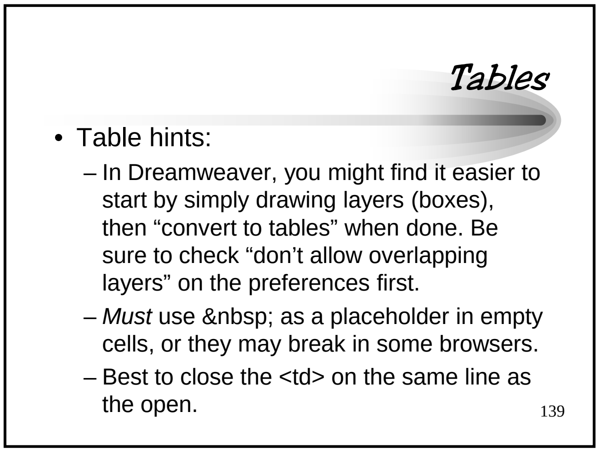
Tables

- Again, tables are often used more for formatting than for what we would normally consider to be a table.
- Many "experts" are discouraging the use of tables in favor of <div>s – more to come later.



Tables

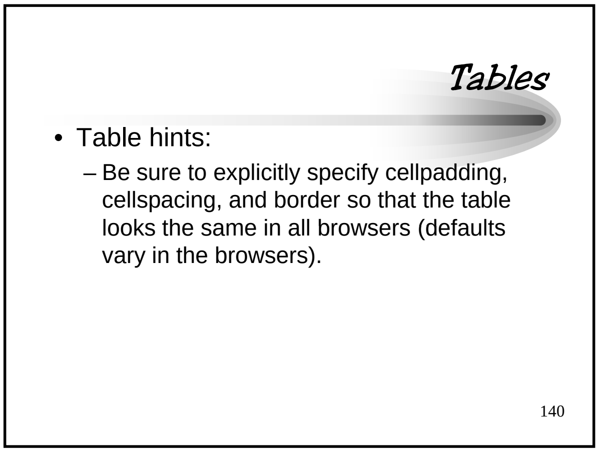
- It is easiest to make a table for the entire page layout first, then insert text and images within the table.
- If you are having trouble trying to get a single table to accommodate the layout for an entire page, stop trying.
  - Use multiple tables instead.



Tables

- Table hints:
  - In Dreamweaver, you might find it easier to start by simply drawing layers (boxes), then “convert to tables” when done. Be sure to check “don’t allow overlapping layers” on the preferences first.
  - *Must* use &nbsp; as a placeholder in empty cells, or they may break in some browsers.
  - Best to close the <td> on the same line as the open.

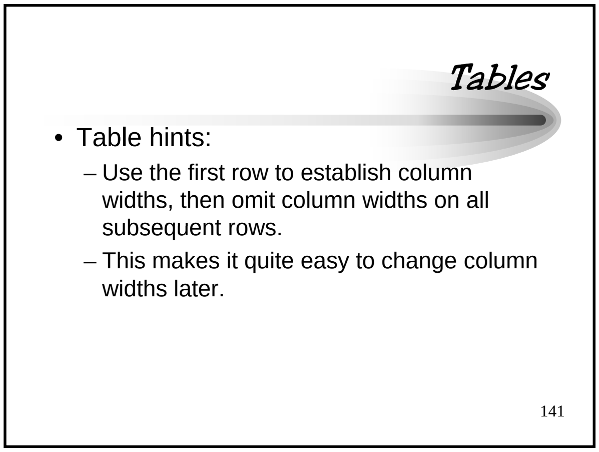
139



Tables

- Table hints:
  - Be sure to explicitly specify cellpadding, cellspacing, and border so that the table looks the same in all browsers (defaults vary in the browsers).

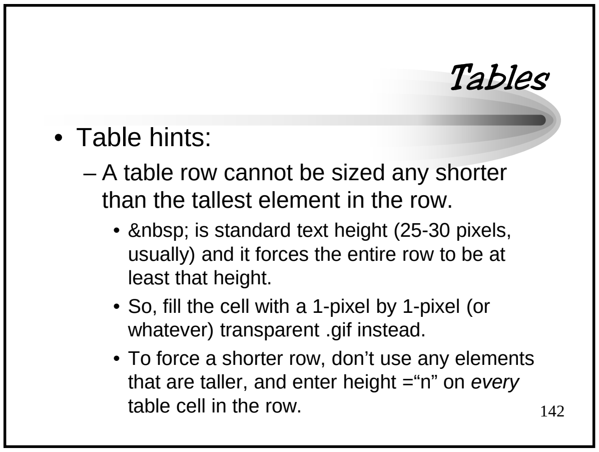
140



Tables

- Table hints:
  - Use the first row to establish column widths, then omit column widths on all subsequent rows.
  - This makes it quite easy to change column widths later.

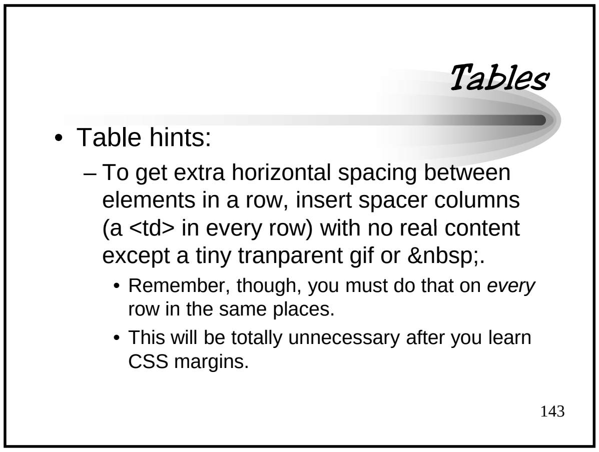
141



Tables

- Table hints:
  - A table row cannot be sized any shorter than the tallest element in the row.
    - &nbsp; is standard text height (25-30 pixels, usually) and it forces the entire row to be at least that height.
    - So, fill the cell with a 1-pixel by 1-pixel (or whatever) transparent .gif instead.
    - To force a shorter row, don’t use any elements that are taller, and enter height =“n” on *every* table cell in the row.

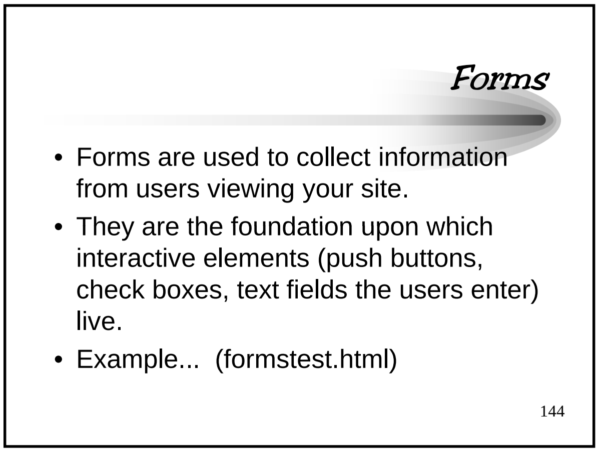
142



Tables

- Table hints:
  - To get extra horizontal spacing between elements in a row, insert spacer columns (a <td> in every row) with no real content except a tiny tranparent gif or &nbsp;.
    - Remember, though, you must do that on *every* row in the same places.
    - This will be totally unnecessary after you learn CSS margins.

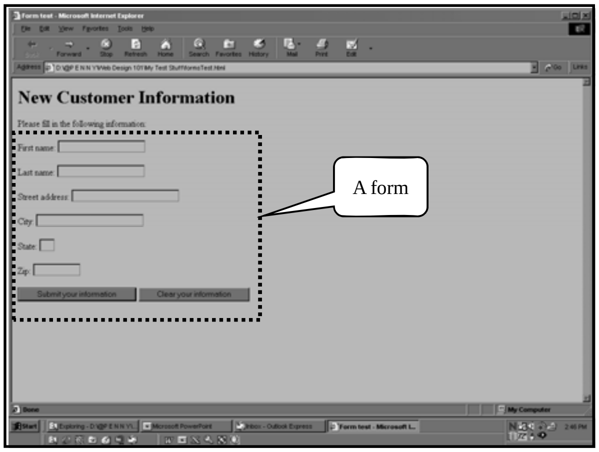
143



Forms

- Forms are used to collect information from users viewing your site.
- They are the foundation upon which interactive elements (push buttons, check boxes, text fields the users enter) live.
- Example... (formstest.html)

144


Form test - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest.html
Go Links
Done
My Computer
Start Exploring - D:\@P E N N Y\... Microsoft PowerPoint Inbox - Outlook Express Form test - Microsoft I...
2:46 PM

New Customer Information

Please fill in the following information:

First name:

Last name:

Street address:

City:

State:

Zip:

Submit your information | Clear your information

A form

Forms

- Note that this is not exactly a sophisticated or pretty input form.
- We will build upon it to make it look better as we know more.
- First, the following two slides show the complete HTML for this form, reproduced just for reference.
- We will look at the statements individually...

146

```
<html>                                              (Form test.html)
      …
<body>
      <h1>New Customer Information</h1>
      <p>Please fill in the following information: </p>
      <form    method = "post"   action = "cgi-bin/getCustomer">

      <p>First name:
      <input   type = "text"   name = "custFirstname" size = "20“ />
       </p>

      <p>Last name:
      <input   type = "text"   name = "custLastname"   size = "20“ />
       </p>

      <p>Street address:
      <input   type = "text"   name = "custStreet"   size = "25“ />
      </p>
```

```
<p>City:
<input  type = "text"   name = "custCity"   size = "25“ />
</p>

<p>State:
<input  type = "text"   name = "custState"   size = "2“ />
</p>

<p>Zip:
<input  type = "text"   name = "custZip"   size = "10“ />
</p>

<p>
<input  type = "submit"  value = "Submit your information“ />
<input  type = "reset"  value = "Clear your information“ />
</p>
</form>
```

```
<html>                                              (Form test.html)
      …
<body>
      <h1>New Customer Information</h1>
      <p>Please fill in the following information: </p>
      <form    method = "post"   action = "cgi-bin/getCustomer">

      <p>First name:
      <input   type = "text        ne = "custFirstname" size = "20“ />
       </p>

      <p>Last name:
      <input   type = "text"   name =
       </p>

      <p>Street address:
      <input   type = "text"   name =
      </p>
```

Specifies information about the entire form, which may include lots of individual form elements.

Forms

<form>...</form>

- Attributes:

  method = “post” or “get”

  – Used by a server-side program for updates or retrieval from a database.

  – Some servers support only one of these, while others support both.

  – get is simpler to use (server-side), while post supports better security and longer forms.

  – Check with your server administrator.

150

Forms

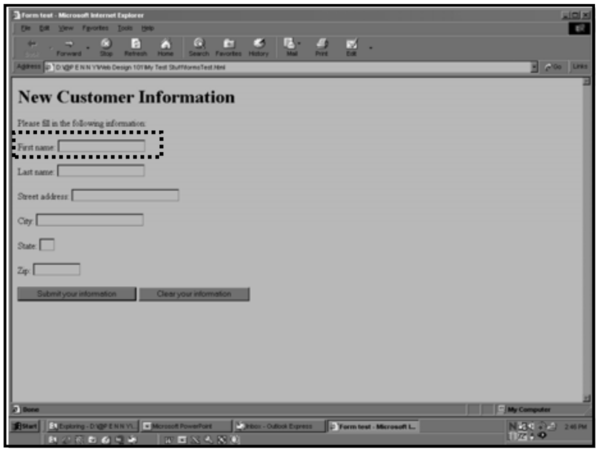
action = “script name or program location”

- When the form is submitted to a script or program, the script or program can access the elements contained in the form.
- The action attribute specifies the path to this script.
- Can be a local function or server-side program.
- For now, you can just auto-email the form:
  action = “mailto:somebody@niu.edu”

- method and action are used in tandem to pass form elements to scripts or programs for processing.

Forms

- Within the form, we specify individual elements...


Form test - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest.html
Go Links
Submit your information
Clear your information
Done
My Computer
Start
Exploring - D:\@P E N N Y\...
Microsoft PowerPoint
Inbox - Outlook Express
Form test - Microsoft I...
2:46 PM

New Customer Information

Please fill in the following information:

First name:

Last name:

Street address:

City:

State:

Zip:

```
<html>                                          (Form test.html)
    …
<body>
    <h1>New Customer Information</h1>
    <p>Please fill in the following information: </p>
    <form   method = "post"   action = "cgi-bin/getCustomer">

    <p>First name:
    <input   type = "text"   name = "custFirstname" size = "20“ />
     </p>

    <p>Last name:
    <input   type = "text"   n
     </p>

    <p>Street address:
    <input   type = "text"   name =
    </p>
```

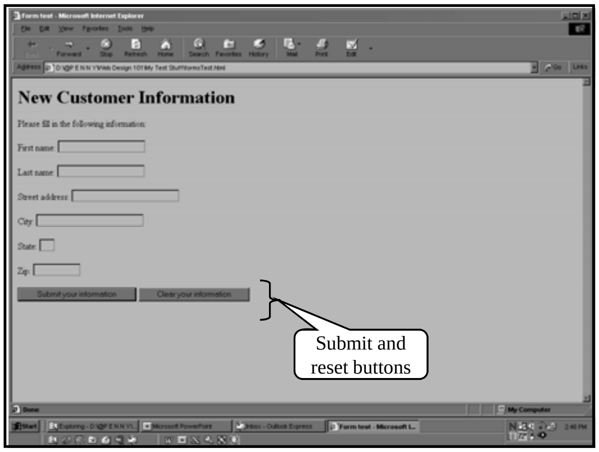
Specifies information about a single input field.

Forms

- Attributes for the input element (one of several types of *controls/widgets*)
  - name = “programmer defined name”
    - An attribute needed for all INPUT types.
    - The name that will be used to refer to this input tag in the scripts or programs that use it.
  - type = “…”
    - Three types for now, for three common uses:
      - To capture a user-input text field.
      - To define reset and submit buttons.
      - To pass invisible (hard-coded) values to the script or program.
    - We will look at each...

Forms

- type = “text” for one-line text input, as in our example.
  - Inserts a one-line text box into which the user can type information.
  - size = “n”
    - The visual size of the input box, in characters.
  - maxlength = “n”
    - The number of characters that can be entered.
  - value = “default value”
    - The value that displays in the box and that will be submitted if the user doesn’t replace it with other text.


Form test - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest.html
Go Links
Done
My Computer
Start Exploring - D:\@P E N N Y\... Microsoft PowerPoint Inbox - Outlook Express Form test - Microsoft I...
2:46 PM

New Customer Information

Please fill in the following information:

First name:

Last name:

Street address:

City:

State:

Zip:

Submit your information | Clear your information

Submit and reset buttons

Forms

- type = “reset” or “submit” for specialized buttons
  - – “reset” creates a specialized button that, when clicked, clears all the input fields on the form back to their initial values.
  - – “submit” creates a specialized button that, when clicked, uses the method attribute and calls the action script to do something with the input data.
  - – value = “label for the button”
    - The text that displays on the button.

Forms

- – Careful with the submit button; use it when hitting the server, but it can cause some quirky bugs when going to JavaScript.
  - Alternative – create your own button that, when clicked, invokes the JavaScript.

```
<p>City:
<input  type = "text"   name = "custCity"   size = "25“ />
</p>

<p>State:
<input  type = "text"   name = "custState"   size = "2“ />
</p>

<p>Zip:
<input  type = "text"   name = "custZip"   size = "10“ />
</p>

<p>
<input  type = "submit"  value = "Submit your information“ />
<input  type = "reset"  value = "Clear your information“ />
</p>
</form>
```

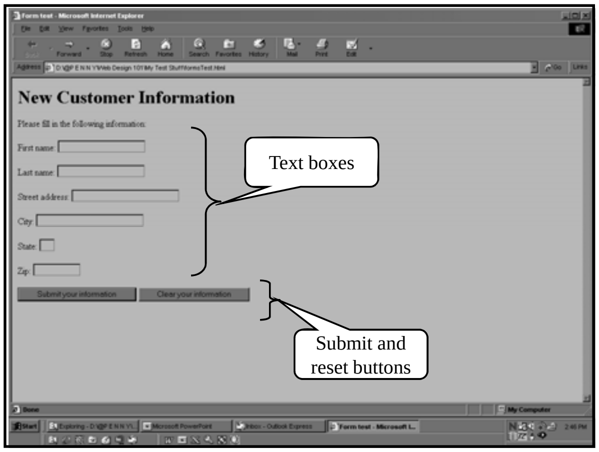
Submit and reset buttons

Forms

- type = “hidden” for hard-coded (hidden) fields that you need to send to the script or program.
  - – value = “the hard-coded value you need to send to the script”

Forms

- Keep in mind that for now, our form won’t actually do anything – we need to associate the form with a script or program, a skill we might (or might not) learn later in the semester.
- Therefore, we will just set up the skeleton of the input form now and worry about making it work later.



New Customer Information

Please fill in the following information:

First name: □

Last name: □

Street address: □

City: □

State: □

Zip: □

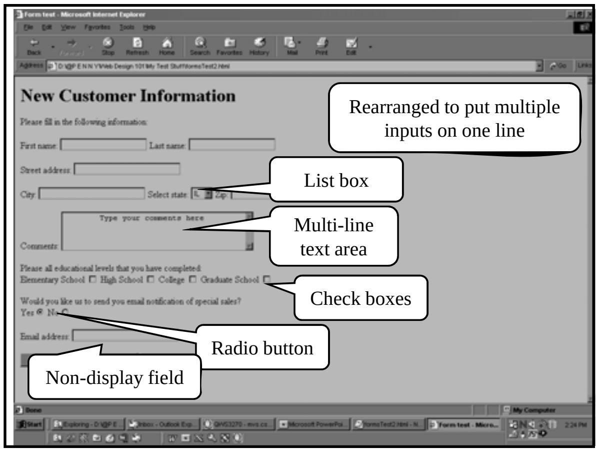
Text boxes

Submit and reset buttons

Forms

- Let’s add a few more features to our form...

(formsTest2.html)



New Customer Information

Please fill in the following information:

First name: □ Last name: □

Street address: □

City: □ Select state: IL Zip: □

Type your comments here

Comments:

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address: □

Rearranged to put multiple inputs on one line

List box

Multi-line text area

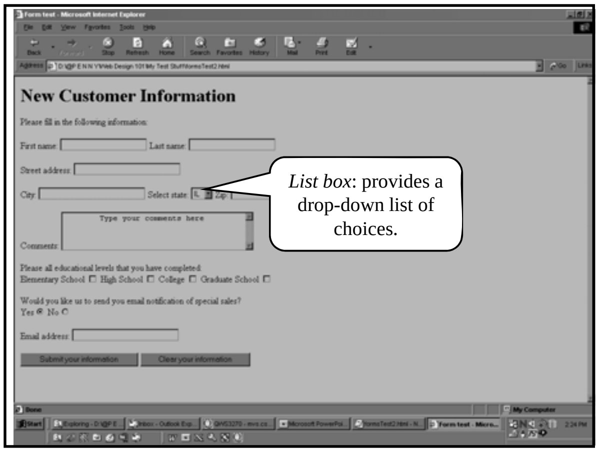
Check boxes

Radio button

Non-display field

```
<html>
      ...
<body>
      ...
<form   method = "post"   action = "cgi-bin/getCustomer">
      <p>First name:
      <input   type = "text"   name = "custFirstname"   size = 20“ />

      Last name:
      <input   type = "text"   name = "custLastname"   size = 20“ />  /p>

      <p>Street address:
      <input   type = "text"   name = "custStreet"   size = 25“ /><
```

Eliminating </p> puts first and last name on one line.



New Customer Information

Please fill in the following information:

First name: □ Last name: □

Street address: □

City: □ Select state: IL Zip: □

Type your comments here

Comments:

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address: □

List box: provides a drop-down list of choices.

```
<p>City:
<input   type = "text"   name = "custCity"   size = 25">
select state:
<select  name = "custState">
      <option value="IA" >IA </option>
      <option  value="IL" selected = "selected" >IL</option
      <option value="IN" >IN </option>
      <option value="WI" >WI </option>
</select>

Zip:
<input   type = "text"                ustZip"   size =
```

List box: used for lists that are too long for radio buttons.

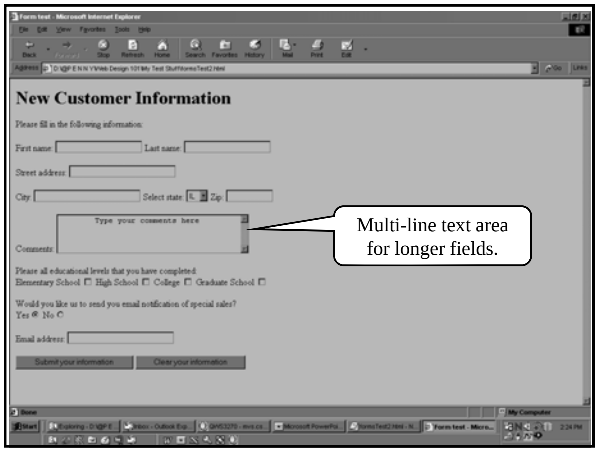
“Selected” element is used as the default value, and for initial position.

- One <option> for each element to be displayed.
- So, if you want to display 50 states, you would have 50 <option>s

Forms

- <select>...</select>
- Attributes:
  - name = “programmer supplied” id=“…”
    - Used to refer to the item in scripts and programs.
  - size = “the number of items displayed at one time”
    - The default is 1.
    - If the size is smaller than the number of items in the list, the list will be scrollable.

169



Form test - Microsoft Internet Explorer

Address: D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest2.html

New Customer Information

Please fill in the following information:

First name: Last name:

Street address:

City: Select state: IL Zip:

Comments: Type your comments here

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address:

Multi-line text area for longer fields.

- name = “…” name of the input field.
- rows = “n”   number of rows to display.
- cols = “n”   number of characters horizontally.
- wrap = “…” see next slide…

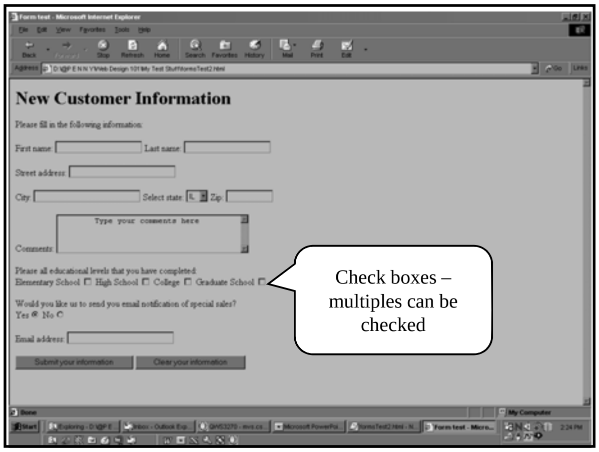
```
<p>Comments:
<textarea  name = "comments" rows = "4" cols = "40" wrap = "soft">
type your comments here</textarea></p>
```

This displays in the textarea as a comment, of sorts, and is submitted if the user doesn’t change the text.

Forms

- wrap =
  - “off” word wrap turned off; user must enter hard carriage returns or text continues to scroll to the right.
  - “hard” word wrap turned on, with carriage returns saved as a part of the field.
  - “soft” (default) word wrap turned on, with carriage returns displayed but not saved with the field.
    - This is probably the most useful – saving hard characters with the field can cause problems later.

172



Form test - Microsoft Internet Explorer

New Customer Information

Please fill in the following information:

First name: Last name:

Street address:

City: Select state: IL Zip:

Comments: Type your comments here

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address:

Check boxes – multiples can be checked

Forms

- *Checkbox*: allows choosing *multiple* items from a list of choices.

  <input type = “checkbox”
          name = “checkbox name/group name)”
          value = “name of that button”>

  - name will be a group name, when several buttons are grouped together.
  - value is used as the name of the individual checkbox within the group.

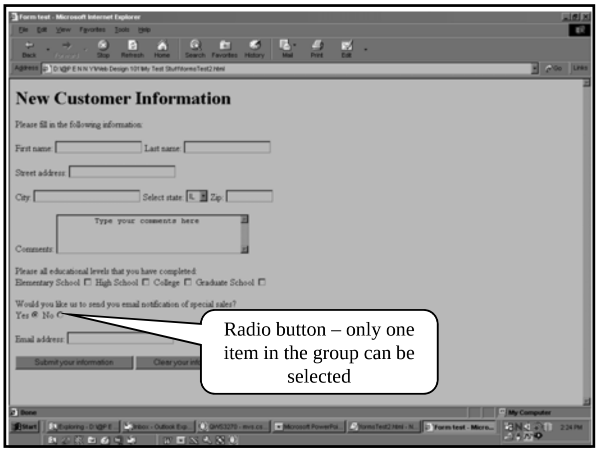
174

```
<p>Please all educational levels that you have completed:<br />
Elementary School
<input   type = "checkbox"   name = "education"   value = "elementary“ />
High School
<input   type = "checkbox"   name = "education"   value = "highSchool“ />
College
<input   type = "checkbox"   name = "education"   value = "college“ />
Graduate School
<input   type = "checkbox"   name = "education"   value = "graduateSchool“ />
</p>
```

type = “checkbox” allows the user to check as many boxes as desired.

Giving them all the same name groups them together.

Giving separate values allows us to access each checkbox separately.



Form test - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest2.html
Go Links
Done
My Computer
Start Exploring - D:\@P E... Inbox - Outlook Exp... QWS3270 - mvs.cs... Microsoft PowerPoi... formsTest2.html - N... Form test - Micro...
2:24 PM

New Customer Information

Please fill in the following information:

First name: Last name:

Street address:

City: Select state: IL Zip:

Comments: Type your comments here

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address:

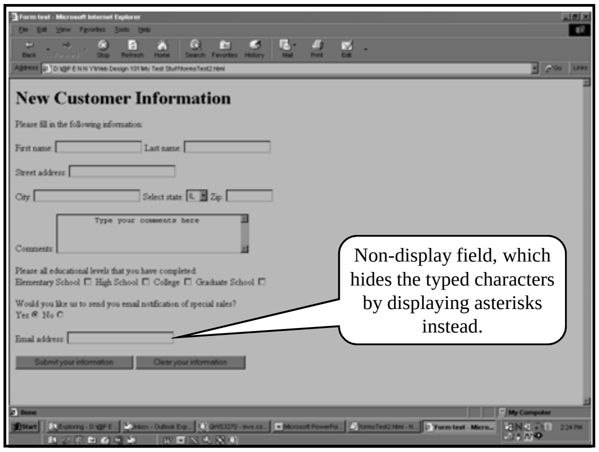
Submit your information | Clear your info

Radio button – only one item in the group can be selected

```
<p>Would you like us to send you email notification of special sales?<br />
Yes<input   type = "radio"  name = "sales"  value = "email"  checked = "checked" />
No<input    type = "radio"  name = "sales"  value = "noEmail“ /></p>
```

Using the same **name** associates these buttons into one radio button group, so that they are mutually exclusive.

Makes “checked” the default for this button.



Form test - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
Address D:\@P E N N Y\Web Design 101\My Test Stuff\formsTest2.html
Go Links
Done
My Computer
Start Exploring - D:\@P E... Inbox - Outlook Exp... QWS3270 - mvs.cs... Microsoft PowerPoi... formsTest2.html - N... Form test - Micro...
2:24 PM

New Customer Information

Please fill in the following information:

First name: Last name:

Street address:

City: Select state: IL Zip:

Comments: Type your comments here

Please all educational levels that you have completed:
Elementary School □ High School □ College □ Graduate School □

Would you like us to send you email notification of special sales?
Yes ● No ○

Email address:

Submit your information | Clear your information

Non-display field, which hides the typed characters by displaying asterisks instead.

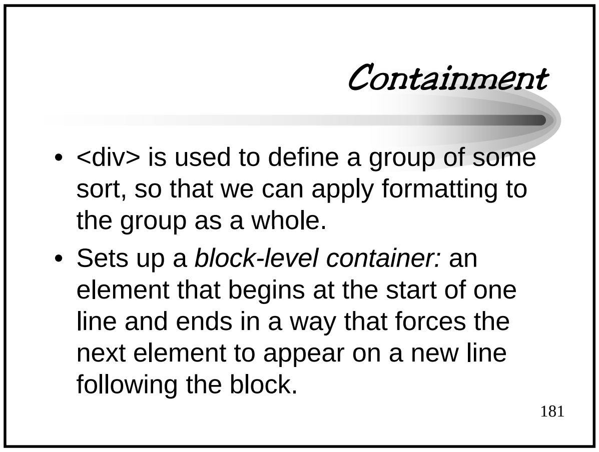
```
    <p>Email address:
    <input  type = "password"   name = "email"    size = "25“ /></p>


    <p>
    <input  type = "
    <input  type = "
</form>
</body>
</html>
```

- Another variation on <input>.
- type = “password” to display asterisks (*****).
- Note that type = “password” does not encrypt the data in any way, just hides it on the screen.
- name = “...”   id = “…” name for scripts and programs to use to refer to this field.
- value = “...” default value.

Containment

- Two new tags used to establish containment:
  - <div>
  - <span>

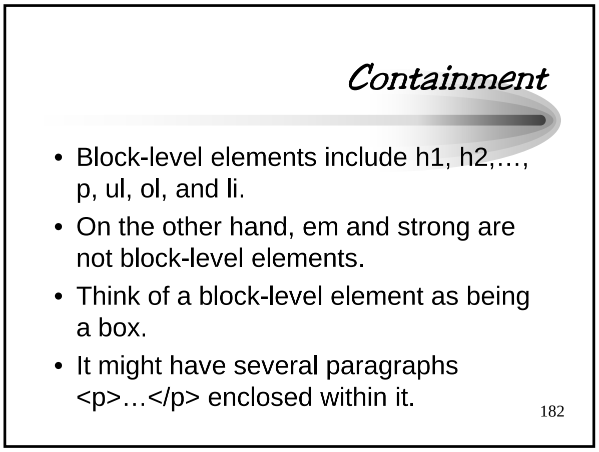
180



Containment

- <div> is used to define a group of some sort, so that we can apply formatting to the group as a whole.
- Sets up a *block-level container:* an element that begins at the start of one line and ends in a way that forces the next element to appear on a new line following the block.

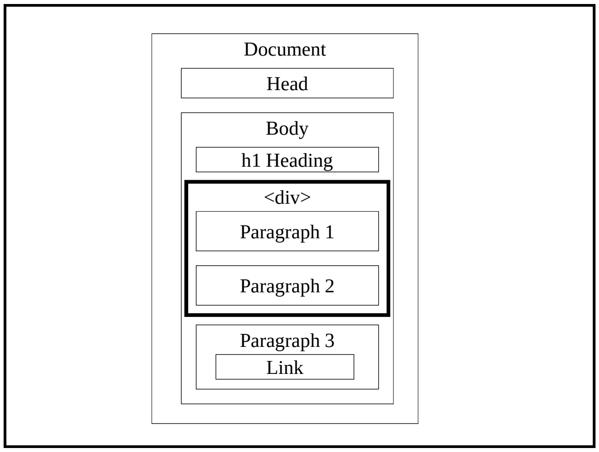
181

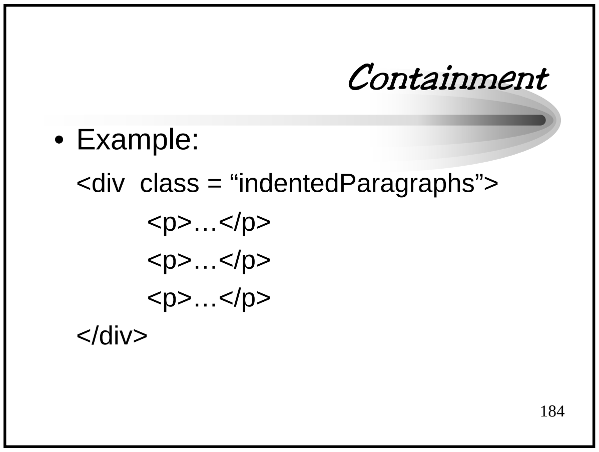


Containment

- Block-level elements include h1, h2,…, p, ul, ol, and li.
- On the other hand, em and strong are not block-level elements.
- Think of a block-level element as being a box.
- It might have several paragraphs <p>…</p> enclosed within it.

182



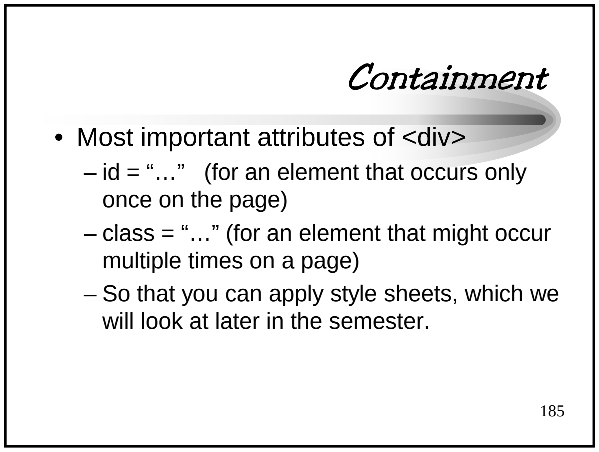


Containment

- Example:

```
<div  class = “indentedParagraphs”>
        <p>…</p>
        <p>…</p>
        <p>…</p>
</div>
```

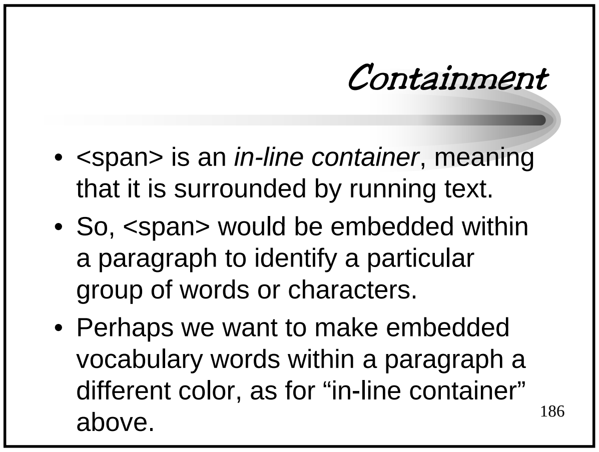
184



Containment

- Most important attributes of <div>
  - id = “…”   (for an element that occurs only once on the page)
  - class = “…” (for an element that might occur multiple times on a page)
  - So that you can apply style sheets, which we will look at later in the semester.

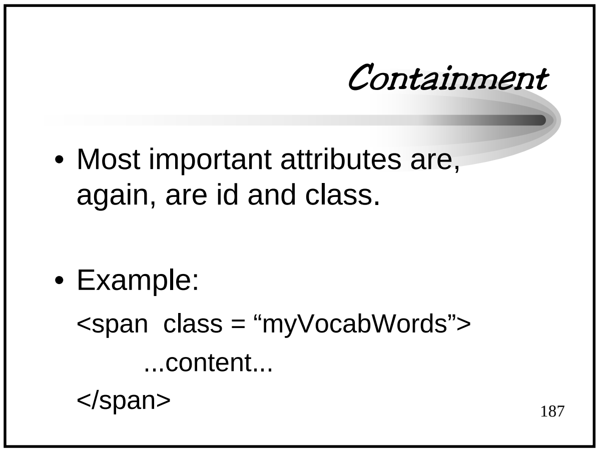
185



Containment

- <span> is an *in-line container*, meaning that it is surrounded by running text.
- So, <span> would be embedded within a paragraph to identify a particular group of words or characters.
- Perhaps we want to make embedded vocabulary words within a paragraph a different color, as for “in-line container” above.

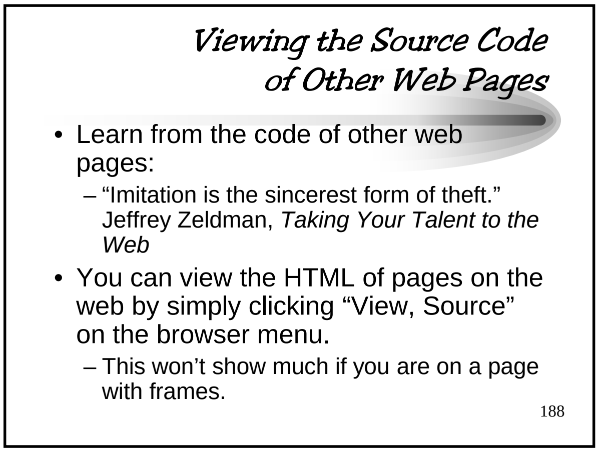
186



Containment

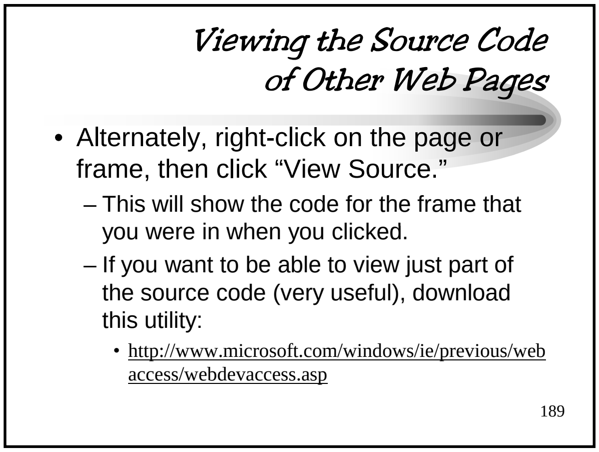
- Most important attributes are, again, are id and class.
- Example:

```
<span  class = “myVocabWords”>
        ...content...
</span>
```



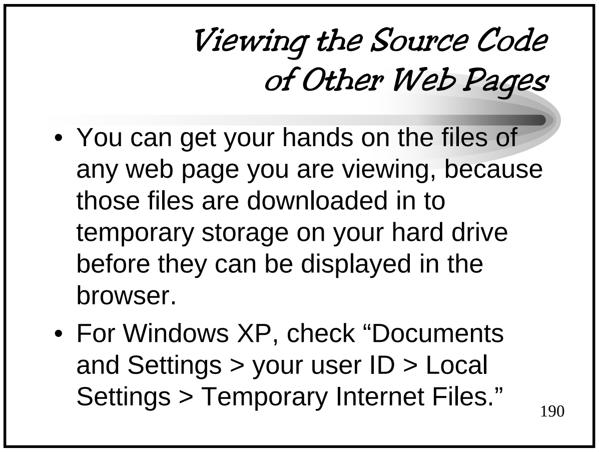
Viewing the Source Code of Other Web Pages

- Learn from the code of other web pages:
  - “Imitation is the sincerest form of theft.” Jeffrey Zeldman, *Taking Your Talent to the Web*
- You can view the HTML of pages on the web by simply clicking “View, Source” on the browser menu.
  - This won’t show much if you are on a page with frames.



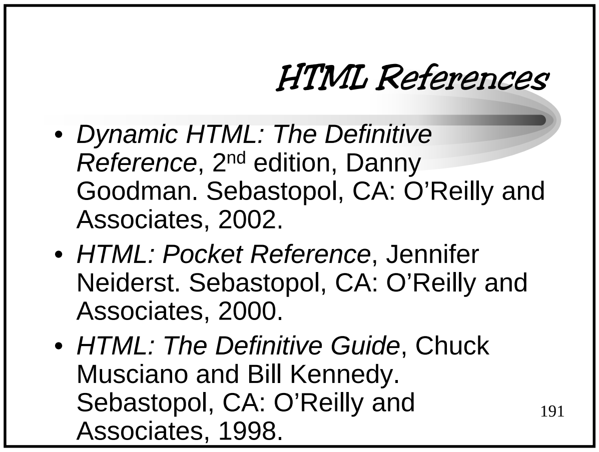
Viewing the Source Code of Other Web Pages

- Alternately, right-click on the page or frame, then click “View Source.”
  - This will show the code for the frame that you were in when you clicked.
  - If you want to be able to view just part of the source code (very useful), download this utility:
    - http://www.microsoft.com/windows/ie/previous/webaccess/webdevaccess.asp



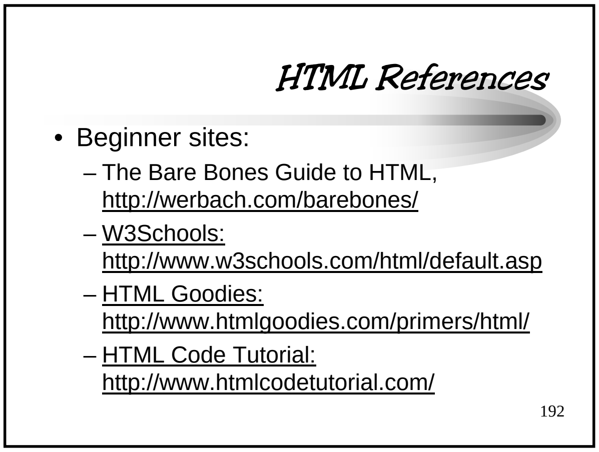
Viewing the Source Code of Other Web Pages

- You can get your hands on the files of any web page you are viewing, because those files are downloaded in to temporary storage on your hard drive before they can be displayed in the browser.
- For Windows XP, check “Documents and Settings > your user ID > Local Settings > Temporary Internet Files.”



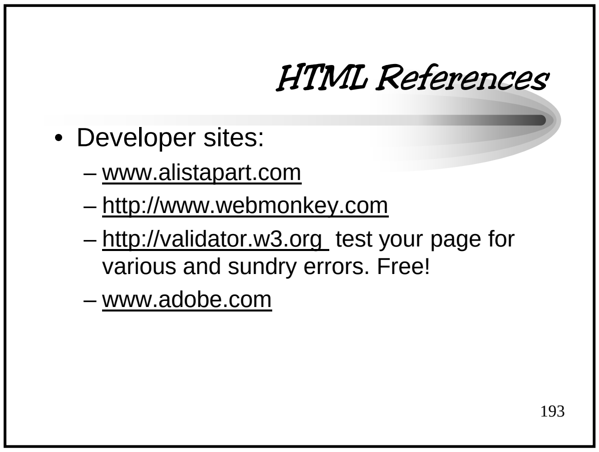
HTML References

- *Dynamic HTML: The Definitive Reference*, 2nd edition, Danny Goodman. Sebastopol, CA: O’Reilly and Associates, 2002.
- *HTML: Pocket Reference*, Jennifer Neiderst. Sebastopol, CA: O’Reilly and Associates, 2000.
- *HTML: The Definitive Guide*, Chuck Musciano and Bill Kennedy. Sebastopol, CA: O’Reilly and Associates, 1998.



HTML References

- Beginner sites:
  - The Bare Bones Guide to HTML, http://werbach.com/barebones/
  - W3Schools: http://www.w3schools.com/html/default.asp
  - HTML Goodies: http://www.htmlgoodies.com/primers/html/
  - HTML Code Tutorial: http://www.htmlcodetutorial.com/



HTML References

- Developer sites:
  - – www.alistapart.com
  - – http://www.webmonkey.com
  - – http://validator.w3.org test your page for various and sundry errors. Free!
  - – www.adobe.com

193