

# CSC 121 Computers and Scientific Thinking

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## HTML and Web Pages

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## HTML & Web Pages



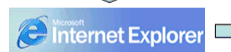
*recall:* a Web page is a text document that contains additional formatting information in the HyperText Markup Language (HTML)

- HTML specifies formatting within a page using *tags*
- in its simplest form, a tag is a word or symbol surrounded by brackets (< >)

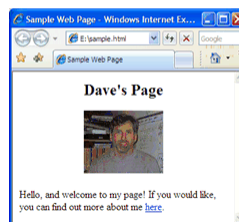
```
sample.html - Notepad
File Edit Format View Help
<html>
<!-- sample.html      Dave Reed -->
<!-- Sample web page. -->
<!-- =====>
<head>
<title> Sample web page </title>
</head>
<body>
<div style="text-align:center">

</div>
<p>Hello, and welcome to my page! If you
would like, you can find out more about me
<a href="personal.html">here</a>.</p>
</body>
</html>
```

A Web page is a text document that contains HTML formatting.



A Web browser is a program that interprets the HTML and displays the page.



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# HTML Tags

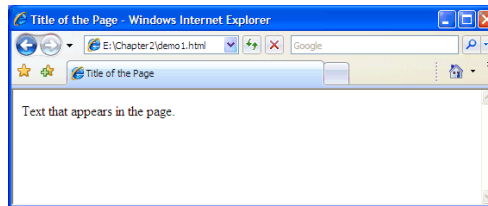
required tags in a Web page:

- `<html>` and `</html>` enclose the entire HTML document
- the HEAD section (enclosed between `<head>` and `</head>`) contains information that the browser uses to control the look of the page
  - the HEAD can contain a title for the browser window, enclosed between `<title>` and `</title>`
- the BODY section (enclosed between `<body>` and `</body>`) contains the text that will appear in the page

```

1. <html>
2. <!-- demol.html      Dave Reed -->
3. <!-- This is a simple Web page. -->
4. <!-- ===== -->
5.
6. <head>
7.   <title> Title of the Page </title>
8. </head>
9.
10. <body>
11.   <p> Text that appears in the page. </p>
12. </body>
13. </html>

```



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# HTML Elements

tags and the text they enclose form an *HTML element*

`<title> Title of the Page </title>` is a TITLE element

```

<head>
  <title> Title of the Page </title>
</head>

```

is a HEAD element (which contains a nested TITLE element)

most HTML elements have opening and closing tags, but not all

`<!-- demol.html Dave Reed -->` is a COMMENT element

- a comment is ignored by the browser (it does not appear in the rendered page)
- comments are used by the page developer to document page features

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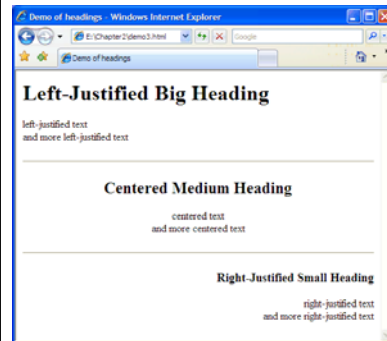
## Headings & Alignment (cont.)

the DIV element groups multiple elements, so can be formatted together

```

1. <html>
2. <!-- demo3.html           Dave Reed -->
3. <!-- This page demos headings & alignment. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of headings </title>
8. </head>
9.
10. <body>
11. <h1>Left-Justified Big Heading</h1>
12. <p>
13.   left-justified text <br />
14.   and more left-justified text
15. </p>
16.
17. <hr />
18. <h2 style="text-align:center">Centered Medium Heading</h2>
19. <p style="text-align:center">
20.   centered text <br />
21.   and more centered text
22. </p>
23.
24. <hr />
25. <div style="text-align:right">
26.   <h3>Right-Justified Small Heading</h3>
27.   <p>
28.     right-justified text <br />
29.     and more right-justified text
30.   </p>
31. </div>
32. </body>
33. </html>

```



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## Font Formatting

text can be formatted in a variety of ways

- bold (<b> ... </b>), italics (<i> ... </i>), underlined (<u> ... </u>)

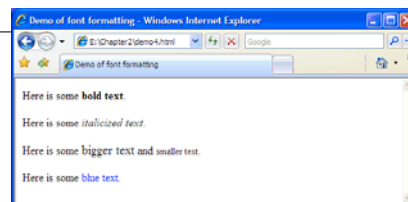
colored text is enclosed in <span style="color:????"> ... </span>

- common colors can be used (e.g., red, green, orange, light blue, dark blue)

```

1. <html>
2. <!-- demo4.html           Dave Reed -->
3. <!-- This page demos font formatting. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of font formatting </title>
8. </head>
9.
10. <body>
11. <p>Here is some <b>bold text</b>.</p>
12.
13. <p>Here is some <i>italicized text</i>.</p>
14.
15. <p>Here is some <big>bigger text</big> and <small>smaller text</small>.</p>
16.
17. <p>Here is some <span style="color:blue">blue text</span>.</p>
18. </body>
19. </html>

```



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# Hyperlinks

a *hyperlink*, or just *link*, is a connection to another Web page

- by default, a link appears as underlined text in the page
- when the user clicks on the link, the corresponding page is retrieved and displayed

a link is specified using ANCHOR tags `<a>` and `</a>`

- text that appears within the tags is displayed as the link in the page
- must have an HREF attribute that specifies the associated Web address

```
<a href="http://www.creighton.edu">Creighton University</a>
```

```
<a href="personal.html">Local Page</a>
```

note: the browser displays links underlined and in color

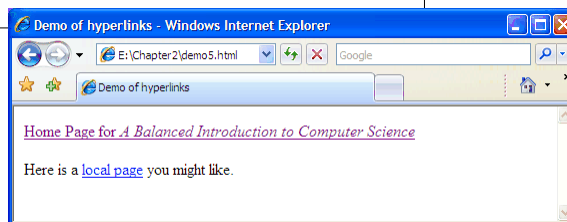
- by default, links whose pages have not yet been visited are blue
- by default, links whose pages have previously been visited are purple

# Hyperlinks (cont.)

```

1. <html>
2. <!-- demo5.html          Dave Reed -->
3. <!-- This page demos hyperlinks. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of hyperlinks </title>
8. </head>
9.
10. <body>
11.
12. <a href="http://dave-reed.com/book">
13. Home Page for <i>A Balanced Introduction to Computer Science</i></a>
14. </p>
15.
16. <p>
17. Here is a <a href="local.html">local page</a> you might like.
18. </p>
19. </body>
20. </html>

```



# Images

Web pages can contain other types of media besides text and links

- images are embedded in a page using an IMG tag ( `<img />` )
- similar to `<br />` and `<hr />`, there is no closing tag so it ends with a slash

IMG attributes

- SRC specifies the location of the image file
- ALT specifies alternate text that is displayed if the image fails to load

```

1. <html>
2. <!-- demo6.html           Dave Reed -->
3. <!-- This page demos images. -->
4. <!-- ===== -->
5.
6. <head>
7.   <title> Demo of images </title>
8. </head>
9.
10. <body>
11.   <div style="text-align:center">
12.     
13.   </div>
14.   <p>This is a picture of the author.</p>
15. </body>
16. </html>
17. </html>

```



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# Lists

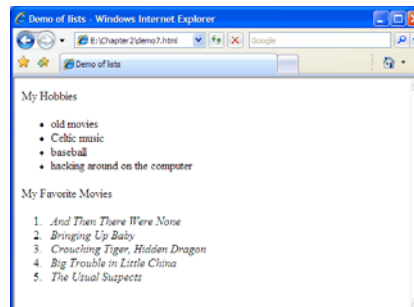
HTML lists organize items in sequence

- `<ul>...</ul>` enclose an unordered list; `<ol>...</ol>` enclose an ordered list
- `<li>...</li>` enclose a list item

```

1. <html>
2. <!-- demo7.html           Dave Reed -->
3. <!-- This page demos unordered and ordered lists. -->
4. <!-- ===== -->
5.
6. <head>
7.   <title> Demo of lists </title>
8. </head>
9.
10. <body>
11.   <p>My Hobbies</p>
12.   <ul>
13.     <li>old movies </li>
14.     <li>Celtic music </li>
15.     <li>baseball </li>
16.     <li>hacking around on the computer </li>
17.   </ul>
18. </p>
19.
20.   <p>My Favorite Movies</p>
21.   <ol>
22.     <li><i>And Then There Were None</i> </li>
23.     <li><i>Bringing Up Baby</i> </li>
24.     <li><i>Crouching Tiger, Hidden Dragon</i> </li>
25.     <li><i>Big Trouble in Little China</i> </li>
26.     <li><i>The Usual Suspects</i> </li>
27.   </ol>
28. </p>
29. </body>
30. </html>

```



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## Lists (cont.)

a style attribute can be used to format the list elements

```

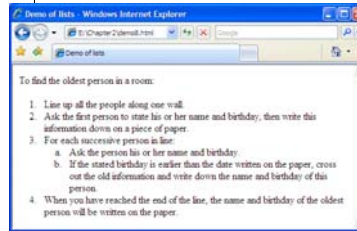
<ol style="list-style-type:square">    → Items preceded by squares.
<ol style="list-style-type:lower-alpha"> → Items preceded by lowercase
letters (a, b, c, d, ...).
<ol style="list-style-type:upper-alpha"> → Items preceded by uppercase
letters (A, B, C, D, ...).
<ol style="list-style-type:lower-roman"> → Items preceded by lowercase
roman letters (i, ii, iii, iv, ...).
<ol style="list-style-type:upper-roman"> → Items preceded by uppercase
roman letters (I, II, III, ...).

```

```

1. <html>
2. <!-- demo8.html           Dave Reed -->
3. <!-- This page demos formatted lists. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of lists </title>
8. </head>
9.
10. <body>
11. <p>To find the oldest person in a room:</p>
12.
13. <ol>
14. <li>Line up all the people along one wall. </li>
15. <li>Ask the first person to state his or her name and birthday,
16. then write this information down on a piece of paper. </li>
17. <li>For each successive person in line:
18. <ol style="list-style-type:lower-alpha">
19. <li>Ask the person his or her name and birthday. </li>
20. <li>If the stated birthday is earlier than the date
21. written on the paper, cross out the old information
22. and write down the name and birthday of this person. </li>
23. </ol> </li>
24. <li>When you have reached the end of the line, the name and
25. birthday of the oldest person will be written on the paper. </li>
26. </ol>
27. </body>
28. </html>

```



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## Tables

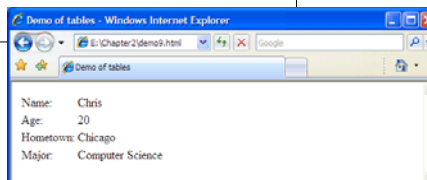
text can be aligned into rows and columns using a TABLE element

- `<table>` and `</table>` encapsulate the table data
- `<tr>` and `</tr>` encapsulate a row within the table
- `<td>` and `</td>` encapsulate table data within a row (i.e., a column entry)

```

1. <html>
2. <!-- demo9.html           Dave Reed -->
3. <!-- This page demos a borderless table. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of tables </title>
8. </head>
9.
10. <body>
11. <table>
12. <tr> <td> Name: </td> <td> Chris </td> </tr>
13. <tr> <td> Age: </td> <td> 20 </td> </tr>
14. <tr> <td> Hometown: </td> <td> Chicago </td> </tr>
15. <tr> <td> Major: </td> <td> Computer Science </td> </tr>
16. </table>
17. </body>
18. </html>

```



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## Tables with Borders

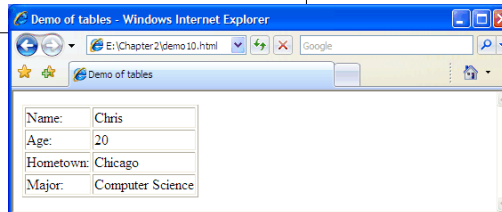
borders can be added to tables using the border attribute

- the numeric value assigned to the attribute specifies thickness

```

1. <html>
2. <!-- demo10.html           Dave Reed -->
3. <!-- This page demos a bordered table. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of tables </title>
8. </head>
9.
10. <body>
11. <table border="1">
12. <tr> <td> Name: </td> <td> Chris </td> </tr>
13. <tr> <td> Age: </td> <td> 20 </td> </tr>
14. <tr> <td> Hometown: </td> <td> Chicago </td> </tr>
15. <tr> <td> Major: </td> <td> Computer Science </td> </tr>
16. </table>
17. </body>
18. </html>

```



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## Tables for Alignment

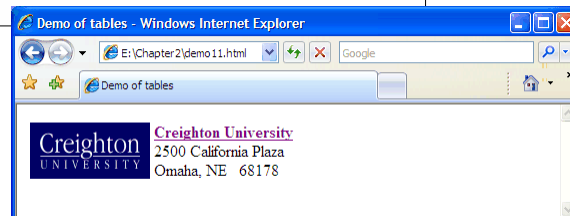
```

1. <html>
2. <!-- demo11.html           Dave Reed -->
3. <!-- This page demos a table for alignment. -->
4. <!-- ===== -->
5.
6. <head>
7. <title> Demo of tables </title>
8. </head>
9.
10. <body>
11. <table>
12. <tr>
13. <td></td>
14. <td><a href="http://www.creighton.edu"><b>Creighton University</b></a>
15. <br />
16. <td>2500 California Plaza <br />
17. <td>Omaha, NE &nbsp;&nbsp;&nbsp;68178</td>
18. </tr>
19. </table>
20. </body>
21. </html>

```

tables are commonly used to align elements in the page

- here, an image is aligned to the left of some text



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