computing: nature, power and limits—robotics applications (cis1.0)
fall 2006—lecture # A.4
monday 11-sep-2006

today

- basic HTML

- lists

- images

- special characters

- tables

- image maps

- style sheets

- see on-line tutorials at:
  `http://www.w3.org/MarkUp/Guide/`
  `http://www.w3.org/MarkUp/Guide/Advanced.html`
  `http://www.w3.org/MarkUp/Guide/Style.html`

- reading: Reed chapter 2

basic HTML

- opening *tag*: `<html>`

- closing *tag*: `</html>`

- header:
  `<head>... </head>`

- body:
  `<body>... </body>`

- title (goes inside the header):
  `<title>My first HTML document</title>`

- "heading" text:
  ```
  <h1>An important heading</h1>
  <h2>A slightly less important heading</h2>
  ```

- paragraphs:
  ```
  <p>This is the first paragraph.</p>
  <p>This is the second paragraph.</p>
  ```

- line breaks:
  ```
  This is the first line.<br>
  This is the second line.
  ```

- emphasis:
  ```
  This is a really <em>interesting</em> topic!
  ```

- italics:
  ```
  This is a really <i>interesting</i> topic!
  ```

- bold:
  ```
  This is a <b>boldly interesting</b> topic!
  ```

- preformatted text

  ```
  <pre>
  hello world
  hello
  world
  again
  </pre>
  ```

- links:

  ```
  This a link to <a href="http://www.google.com">google</a>.
  This a link to <a href="http://www.google.com" target=_blank>google</a>
  that opens up another window.
  ```

lists

- un-ordered list:

```
<ul>
<li>the first list item</li>
<li>the second list item</li>
<li>the third list item</li>
</ul>
```

- ordered list:

```
<ol>
<li>the first list item</li>
<li>the second list item</li>
<li>the third list item</li>
</ol>
```

- definition list:

```
<dl>
<dt>the first list item</dt>
<dd>the definition of the first item...</dd>
<dt>the second list item</dt>
<dd>the definition of the second item...</dd>
<dt>the third list item</dt>
<dd>the definition of the third item...</dd>
</dl>
```

- notes:

  - end of list item tags (e.g., `</li>` and `</dt>` and `</dd>`) are optional
  - lists can be *nested*, which means you can put one list inside another list:

```
my shopping list
<ul>
<li>bread
<li>apples
<li>ice cream
<ul>
<li>vanilla
<li>chocolate
<li>mango
</ul>
```

```
            <li>peanut butter
            </ul>
```

images

```
<img src="buckingham-palace.jpg" width="200" height="150" alt="Buckingham Palace">
```

- width, height

- border

- alignment

    ```
    <p><img src="sun.jpg" alt="sunburst graphic"
    width="32" height="21" align="left"> This text will be
    flowed around the right side of the graphic.</p>

    <p><img src="sun.jpg" alt="sunburst graphic"
    width="32" height="21" align="right"> This text will be
    flowed around the left side of the graphic.</p>

    <p><img src="sun.jpg" alt="sunburst graphic"
    width="32" height="21" align="left"> This text will be
    flowed around the right side of the graphic.<br clear="all">
    This starts a new line below the floated image.</p>
    ```

- in tables

special characters

- forcing spaces:

- accents and other special characters (there are many more — see the "advanced" tutorial, listed above):

symbol	code
copyright	`©`
registered trademark	`®`
trademark	`™`
less than	`<`
greater than	`>`
ampersand	`&`
long dash	`—`
double quotes	`"`
é	`é`
è	`è`
ö	`ö`
ñ	`ñ`

tables

- begin a table with `<table>`

- end a table with `</table>`

- begin each row with `<tr>` and end each row with `</tr>`

- begin each column with `<td>` and end each column with `</td>`

- options:

    - borders
    - *cellpadding* (padding within a cell)
    - *cellspacing* (spacing between cells)
    - width and height (in pixels)

- tricks:

    - empty cells — use ` `
    - *spanning* multiple rows or columns

- coloring cells:
  `<td bgcolor="red">ASDF</td>`

- aligning cell content:

    - horizontally: left, center, right
    - vertically: top, middle, bottom

- advanced formatting:

    - cell padding (extra space inside the cells)
    - cell spacing (space between the cells)

- width of table, of cells
  - alignment of cell content
  - empty cells ( )
  - multi-row and multi-column cells
  - borders
  - coloring cells
  - headings

image maps

```
<img src="pages.gif" width="384" height="245"
alt="site map" usemap="#sitemap" border="0">
<map name="sitemap">
<area shape="circle" coords="186,44,45"
href="Overview.html" alt="Getting Started">
<area shape="circle" coords="42,171,45"
href="Style.html" alt="A Touch of Style">
<area shape="circle" coords="186,171,45"
alt="Web Page Design">
<area shape="circle" coords="318,173,45"
href="Advanced.html" alt="Advanced HTML">
</map>
```

- origin is upper left corner (pixel)

- rect: left-x, top-y, right-x, bottom-y

- circle: center-x, center-y, radius

- poly: x1,y1, x2,y2, ... xn,yn

style sheets

- text color and background color:

```
<style type="text/css">
  body { color: black; background: white; }
</style>
```

- linking to a separate style sheet (in another file):

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

and the "style file" looks like this:

```
/* style.css - a simple style sheet */
body {
  color: black; background: white;
}
```

- margins, left and right indents:

```
body { margin-left: 10%; margin-right: 10%; }
h1 { margin-left: -8%;}
h2,h3,h4,h5,h6 { margin-left: -4%; }
p { text-indent: 2em; margin-top: 0; margin-bottom: 0; }
```

- white space above and below:

```
h2 { margin-top: 8em; margin-bottom: 3em; }
```

- fonts:

  - styles:

```
em { font-style: italic; font-weight: bold; }
strong { text-transform: uppercase; font-weight: bold; }
```

  - text-transform can be: uppercase, lowercase
  - font families: Verdana, Garamond, "Times New Roman", sans-serif, e.g.
    ```
    body { font-family: Verdana, sans-serif; }
    ```

- divisions:

  - borders
  - colors
  - name the divisions using "class"
  - example:
    in the style file:

```
div.box { border: solid; border-width: thin; width: 100% }
```

    in the html file:

```
<div class="box">
The content within this DIV element will be enclosed
in a box with a thin line around it.
</div>
```

- link colors:

```
:link { color: rgb(0, 0, 153) }  /* for unvisited links */
:visited { color: rgb(153, 0, 153) } /* for visited links */
a:active { color: rgb(255, 0, 102) } /* when link is clicked */
a:hover { color: rgb(0, 96, 255) } /* when mouse is over link */
```

- colors:
  - there are some "named" colors (black, silver, gray, white, maroon, red, purple, magenta, green, lime, olive, yellow, navy, blue, teal, aqua, ...)
  - all colors have a six-digit hexadecimal definition: 2 digits each for Red, Green and Blue $\rightarrow RGB$ color table
  - "browser safe" or "web safe" colors accommodate older systems that only show up to 256 colors (at one time), so each RGB can only be one of the following: $00, 33, 66, 99, CC, FF$ (in hex)

- no style sheet?
  - body tag:

    ```
    <body bgcolor="white" background="texture.jpeg" text="black"
    link="navy" vlink="maroon" alink="red">
    ```

    where "link" for unvisited links, "vlink" for visited links, "alink" for the color when you click on the link (before you release the mouse)
  - font tag:

    ```
    <font face="sans-serif" color="red" size="5">
    ...
    </font>
    ```