Some advanced features in HTML

HTML Tables
Color codes

Tables

- Tables allow neat information organization
  - in columns and rows
  - border and divider lines are optional and in choices of width in pixels
  - may have colored background

- Table cells can have own features
  - different cell sizes
  - individual colored background
  - content alignment
  - allowing better controlled image display in page

  Basically, you can do everything in a table cell as outside.

- Basic table syntax
  - Starts and ends with <table> and </table>, respectively
  - A row in table uses the pair <tr> and </tr>
  - An item in a row uses the pair <td> and </td>

  </tr> and </td> are optional

  There is no column tag.

  http://www.cs.odu.edu/~shen/cs312/htmldir/table.html

Some important characteristics of tables

- Rows in a table can have different numbers of items
  - The number of columns of a table
    - Same as the number of items in a row that has the most items
  - Items in a column have the same width
  - A table cell may span multiple item positions
    - Taking up the summed width

- Items in a row have the same height
- A table cell can span more than one row

Consider the following table with cells labeled.

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td></td>
<td>f</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td></td>
<td></td>
<td>j</td>
</tr>
<tr>
<td>g</td>
<td>h</td>
<td>i</td>
<td></td>
</tr>
</tbody>
</table>

How many rows and columns does the table have?
How many items do cells f and j span?
Example:

```html
<table border=4 cellspacing=2 cellpadding=8>
<tr><th colspan="2">Assignments</th><th colspan="1">Scores</th><th colspan="2">Efforts for CS312</th></tr>
<tr><td>Assignment 1</td><b>E-mail</b><td>100</td><td colspan="2"><center><strong><em>total score</em></strong></center><td>180<br>80
<br>180</td><strong><em>average score</em></strong><td>90</td></tr></table>
</html>
```

http://www.cs.odu.edu/~shen/cs312/htmldir/tableHeading.html

**Example**

A fancy table with heading.

```html
<h2>A fancier table</h2>
<table border=4 cellspacing=2 cellpadding=8
bgcolor="yellow">
...<br>th is table header tag, meaning a cell, centered and bold. colspan specifies number of items. rowspan specifies number of rows.
```

**Example**

A table with border, cell dividing lines and padding

```html
<h2>A table with border</h2>
<table border=10 cellspacing=0 cellpadding=8>
...<br>td colspan="2">rowspan="3">Efforts <br>for CS312</br>
```

**Example**

Same table with no cellspacing specification.

```html
<h2>Same table with no cellspacing specification.</h2>
...<br>cellspacing=0
```

**Example**

How many rows and columns are in this table?

```html
http://www.cs.odu.edu/~shen/cs312/htmldir/tableHeading.html
```

http://www.cs.odu.edu/~shen/cs312/htmldir/tableBorder.html

http://www.cs.odu.edu/~shen/cs312/htmldir/tableBorderless.html

http://www.cs.odu.edu/~shen/cs312/htmldir/tableHeading.html

http://www.cs.odu.edu/~shen/cs312/htmldir/tableBorderNoSpacing.html

http://www.cs.odu.edu/~shen/cs312/htmldir/tableHeading.html

Can specify table color background. Caption can be above or below table.
Assignments<br><br>Efforts for CS312<br><br>Assignments 1: E-mail<br>Scores: 100<br>Assignments 2: Search book<br>Scores: 80<br>Total Score: 180<br>Average Score: 90

Digital RGB color scheme
- Modern monitors allow 24-bit color representation
  - The 3-D Color Space
  - True color: 24 bits for representation, 8 bits for each base color. 2^8 = 256 possibilities per base color. 2^24 = 16.7 million colors. More than our eyes can distinguish.

Hexadecimal color codes
- You can specify colors for texts and background
- You can specify with some named colors
  - e.g., red, yellow, aqua, etc.
- You can specify accurately with hexadecimal codes
  - e.g., #FF0000, #FFFF00, #00FFFF, etc.
  - To get more color codes:
    - Table 2.4, p.75 in the textbook has some examples.
- Table width
  - A table can take as much width as it needs (default)
  - or can be set at specific width
  - or at some specific percentage of the browser window’s varying width (dynamically changes)
    - <table width = "700"> 700 pixels in width
    - <table width = "50%"> 50% of the window width
- Column width
  - Without specification, a column is as wide as it needs to be.
  - May specify column width in the table header tag, or the first row of table data tags.
  - Default in pixels, or in percentages.
    - Fixed pixels override percentage specification.
    - <td width="30%"> 30% of table width
    - <td width="300"> 300 pixels
  - When there is conflict in specification, display is determined by the browser in use.
    - Browsers tolerate conflicts, but resolve conflicts in their own ways.
    - Most anything can appear in a cell.
    - Image can appear together with or in place of text in a cell.
• Example
  Widths in fixed pixels override % specification
  
  <HTML>
  <h2>Table with pixel and percentage specifications</h2>
  <table border=4 cellspacing=2 cellpadding=8
  width="600">
  <tr> <th colspan="2"> Assignments </th>
  <th colspan="1"> Scores </th>
  <th colspan="2" rowspan="3">
    <img src="../tpersonh.jpg" alt="a Tibetan person" width="191"
    height="229">
  </th>
  <tr> <td width="25%"> Assignment 1 </td>
  <td width="25%"> E-mail </td>
  <td width="30%"> center>100<em> </center> </td>
  <tr> <td width="25%"> Assignment 2 </td>
  <td width="35%"> Search book </td>
  <td width="30%"> center>80<em> </center> </td>
  <tr> <td colspan="2"> center><em>total score</em> </td>
  <td width="10%"> center>average core<em> </center> </td>
  <td width="10%"> center>90<em> </center> </td>
  </tr>
  </table>
  </HTML>

  http://www.cs.odu.edu/~shen/cs312/htmldir/tableWidth.html

• Table within a table
  – HTML allows recursive structures of tables. This allows fancy page content layout.
  
  Photos From A Trip to Tibetan Highlands

  A Great Young Yak Tibetan Rider Brothers Magnificent Yak

  http://www.cs.odu.edu/~shen/cs312/htmldir/tableInTable.html