

## CMPSC 2323 Internet Programming

**Introduction to HTML and Web Pages (cont.):** Lets' continue our study of HTML by seeing how to add the following features to a web page.

1. Create a table.
2. Position a table.
3. Work with *style sheets* (if time permits).

**Template:** Let's start by copying the template HTML code in `template.htm` to a file named `Exercise4.htm`. The HTML code we discuss in this lesson will be added to file `Exercise4.htm` which you will submit to Blackboard when you complete the lesson. Submit file `Exercise4.htm` to Blackboard to be graded on or before the day exercise 4 is due. The due date will be posted on Blackboard and announced in class.

Edit file `Exercise4.htm` and change `Template` in the title and the text following the title to `Exercise 4` and change `Mary Smith` to *your* first and last name. Save file `Exercise4.htm` and display the web page to ensure that you see *your* first and last name on the web page and `Exercise 4` on both the web page, and the tab above the web page (if you are using Mozilla Firefox). If so, you are ready to start this lesson. File `Exercise4.htm` should look as follows but with *your* first and last name replacing `Mary Smith` *everywhere* it occurs.

```
<html>
<! CMPSC 2323
    Exercise 4
    Mary Smith >
<head>
<title> Exercise 4 </title>
CMPSC 2323 <br>
Exercise 4 <br>
Mary Smith <br>
</head>
<body>
</body>
</html>
```

## Tables in a Web Page

**Table:** Let's add a table to the web page. Add the following HTML code, on the next page, that describes a table, in the body of the web page, that is, between the begin tag `<body>` end tag `</body>`.

```

<br>
<!-- Define a simple table.  The default
      column width allows for a single space
      between columns. -->
<table>
<tr>
  <td>Jill</td>
  <td>Smith</td>
  <td>50</td>
</tr>
<tr>
  <td>Eve</td>
  <td>Jackson</td>
  <td>94</td>
</tr>
</table>

```

A table in HTML is defined by the matching tags `<table>` and `</table>`. The rows and columns of the table are specified between the tags `<table>` and `</table>`. Matching tags `<tr>` and `</tr>` define a row in the table. The HTML code above defines a table with two rows. Data items in a row are placed between the matching tags `<td>` and `</td>`. The HTML code above specifies data items *Jill*, *Smith* and *50* in the first row of the table and data items *Eve*, *Jackson* and *94* in the second row. Now is a good time to save your HTML code. *Reload* your web page to view the table.

The default column width in a table, like the one described above, allows for a single space between columns. This is often not enough spacing between columns. To override the default column width, include the *style* attribute in the begin tag for the table. Consider the HTML code below that uses the *style* attribute to specify column width.

```

<br>
<!-- Define a second table.  Use the style
      attribute to change the column width
      to 300px where px represents a so-called
      "magic unit" used in a Cascading Style
      Sheet (CSS). -->
<table style="width:300px">
<tr>
  <td>Jill</td>
  <td>Smith</td>
  <td>50</td>
</tr>
<tr>
  <td>Eve</td>
  <td>Jackson</td>
  <td>94</td>
</tr>
</table>

```

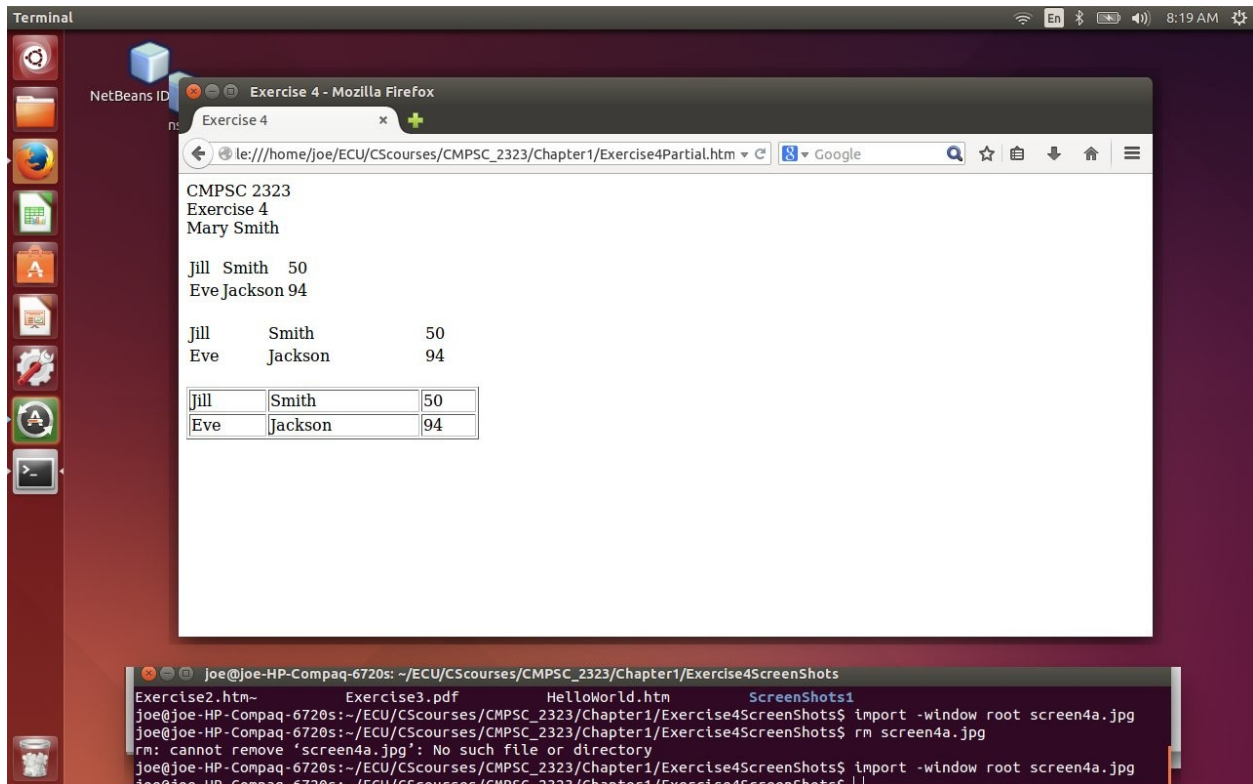
A column width of "width:300px" is defined in the style attribute. The unit px is a so-called "magic unit" that is used in what is referred to as a *Cascading Style Sheet* (CSS). If time permits, we can discuss the magic unit and CSS. For now, let's continue with tables. The second table is just like the first table except the column width is larger. Now is a good time to save your HTML code. *Reload* your web page to view both tables.

Let's add a border to the table and display it as a third table on the web page. The *border* attribute is used to add a border. To see how it is used consider the following HTML code shown below.

Add the HTML code below to your HTML file as a third table. Then save your HTML code and *reload* the web page to see what the third table looks like.

```
<br>
<!-- Define a third table. Use the border
      attribute to add a border to the table. -->
<table border="1" style="width:300px">
<tr>
  <td>Jill</td>
  <td>Smith</td>
  <td>50</td>
</tr>
<tr>
  <td>Eve</td>
  <td>Jackson</td>
  <td>94</td>
</tr>
</table>
```

In the HTML code above, border="1" specifies that the table will have borders around the entire table and around each data item in the table. Your web page should look like the screen shot below, on the next page, except with *your* first and last name instead of Mary Smith.



## Exercise 4 Web Page with Three Tables

Let's add a fourth table that has a heading and a different border. Add a fourth table with the following HTML code shown below.

```
<br>
<!-- Define a fourth table. Specify a
      different border, a table title
      and column headings. -->
<table border="5" style="width:300px">
<tr>
  <th colspan="3">
    <h3>Mary Smith Table</h3>
  </th>
</tr>
  <th>First Name</th>
  <th>Last Name</th>
  <th>Age</th>
<tr>
  <td>Jill</td>
  <td>Smith</td>
  <td>50</td>
</tr>
<tr>
  <td>Eve</td>
  <td>Jackson</td>
  <td>94</td>
</tr>
</table>
```

In the HTML code above, `border="5"` specifies that the table will have a different border. A table heading is defined using the matching tags `<th>` and `</th>`. The heading is placed between the tags. If you want a heading to span across more than one column use the *colspan* attribute in the tag `<th>` as shown above.

The matching tags `<h3>` and `</h3>` specify the *size* of the heading. The smaller the number, the larger the size. For example, `<h1>` and `</h1>` is larger than `<h3>` and `</h3>`, whereas `<h4>` and `</h4>` is smaller than `<h3>` and `</h3>`.

In the HTML code above, the attribute `colspan="3"` in the tag `<th colspan="3">` indicates that the first heading, namely, `Mary Smith Table`, spans across 3 columns. Change `Mary Smith` to *your* first and last name, save your HTML code and *reload* the web page to see the fourth table.

Let's center the data *horizontally* in each cell of the table. Consider the HTML code below, shown on the next page.

```
<br>
<!-- Define a fifth table.  Center the
      data horizontally and vertically
      in each cell of the table. -->
<table border="5" style="width:300px">
<tr>
  <th colspan="3">
    <h3><br>Mary Smith Table</h3>
  </th>
</tr>
  <th>First Name</th>
  <th>Last Name</th>
  <th>Age</th>
<tr align="center">
  <td>Jill</td>
  <td>Smith</td>
  <td>50</td>
</tr>
<tr align="center">
  <td>Eve</td>
  <td>Jackson</td>
  <td>94</td>
</tr>
</table>
```

In the HTML code above, the `<br>` tag *forces* vertical alignment of Mary Smith Table in the cell. However, it also changes the cell size.

The *align* attribute is used as follows `<tr align="center">` to horizontally align the data in the center of each cell of the table. Add the above HTML code to display a fifth table on your web page. Save your HTML code and *reload* your web page to see the fifth table.

Next, let's position another table relative to the top, left corner where the next thing would be displayed on the web page, namely, the next thing after the fifth table. Consider the HTML code below, on the next page.

```

<br>
<!-- Define a sixth table. Position the table relative to the top
left corner of the web page immediately below the fifth table. -->
<table border="5" table style="width:300px; margin-top:150px;
margin-left:350px;">
<tr>
<th colspan="3">
<h3><br>Mary Smith Table</h3>
</th>
</tr>
<th>First Name</th>
<th>Last Name</th>
<th>Age</th>
<tr align="center">
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr align="center">
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
</table>

```

The HTML code above positions a sixth table 150 magic units down and 350 magic units to the right of the top left corner just after the fifth table on the web page.<sup>1</sup> If you *resize* the web browser's window, you will see that all tables remain in their current position. Add the above HTML code to produce a sixth table, save your HTML code and *reload* your web page to see what it looks like.

Your web page should look like the screen shot below, on the next page, except Mary Smith will be replaced with *your* first and last name. The entire web page cannot fit in a single screen shot. Part of the fourth table and all of the fifth and sixth tables are displayed below.

Save your HTML code and *reload* your web page to ensure that it looks correct. When you complete this lesson submit your HTML code in `Exercise4.htm` to Blackboard.

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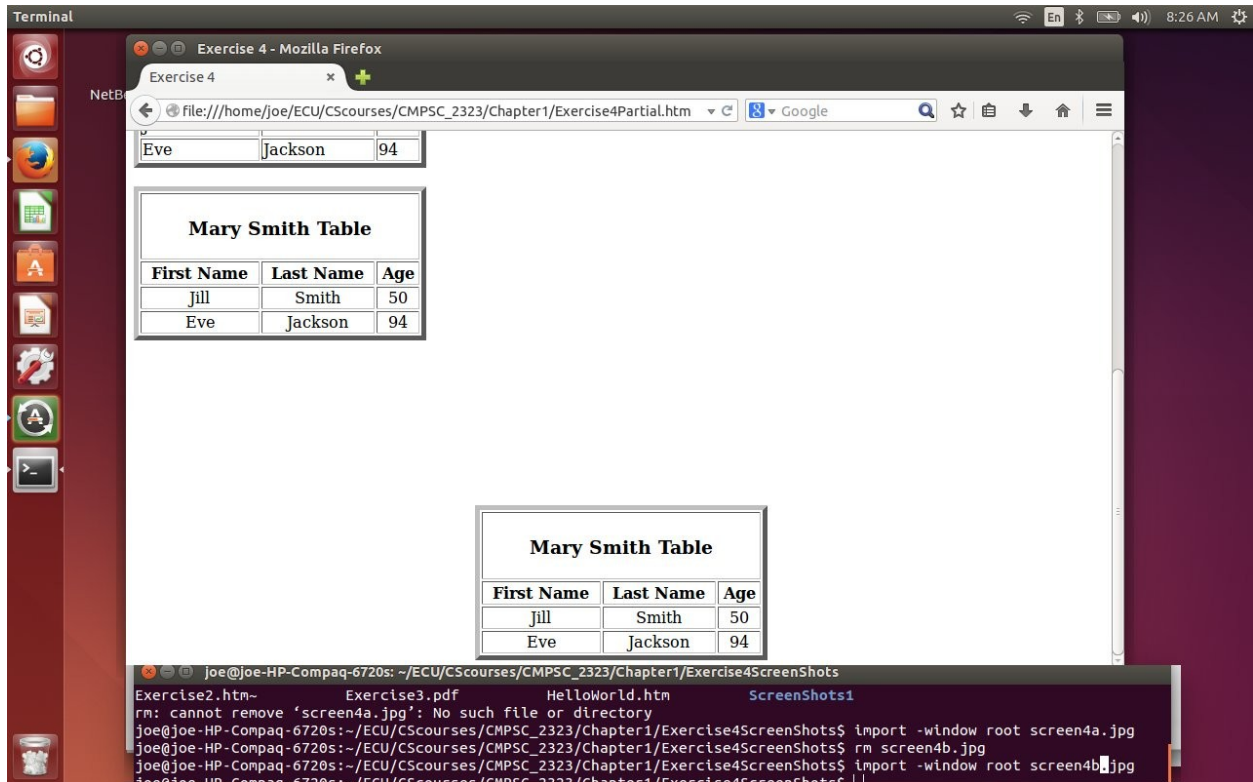
1 If you copy and paste the above HTML code for the sixth table using some editors, the code

```

<table border="5" table style="width:300px; margin-top:150px;
margin-left:350px;">

```

does not copy and paste correctly. The margin-top and margin-left need to be retyped because the - sign does not appear to copy and paste correctly.



## Exercise 4 Web Page with Sixth Table Offset Relative to Fifth Table

**Exercise 4 (10 points):** Submit your HTML code in file `Exercise4.htm` on or before the day exercise 4 is due. The due date for exercise 4 will be posted on Blackboard and announced in class. Exercise 4 is worth 10 points.