SIENAcollege
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Topic Notes: Tables in HTML

We have already seen that with the most basic HTML elements, we specify the content and give some rules about how it is to displayed. The browser necessarily has some flexibility in the specifics of the display layout. For example, in a paragraph element, we do not specify where (most of) the line breaks occur – it is up to the browser to determine where to wrap text. This will depend on the display size, window size, and many other factors.

But sometimes we want to give more hints about how to format. So we continue with one more of the most commonly-used HTML elements, the HTML table.

Similar to the way a list is made up of the list itself (the `<ol>` or `<ul>` element) and the list items that are contained therein (the `<li>` elements), a table includes rows and items within a row.

Basic Table Elements

The primary tags we are concerned about:

- The `<table>` ... `</table>` element defines the extent of the entire table.
- The `<tr>` ... `</tr>` element defines a row of the table.
- The `<th>` ... `</th>` element defines a header cell within a table row. Unless otherwise specified, its contents are displayed in bold and are centered.
- The `<td>` ... `</td>` element defines a regular (non-header) cell within a table row.

The `<table>` contains some number of `<tr>` elements, each of which contains some number of `<th>` or `<td>` elements.

HTML also has the capability to specify elements for a table's header, body, and footer:

- The `<thead>` ... `</thead>` element can be used to specify the table rows that form the table's header.
- The `<tfoot>` ... `</tfoot>` element can be used to specify the table rows that form the table's footer.
- The `<tbody>` ... `</tbody>` element can be used to specify the table rows that form the table's body.

If used, all table rows should be in one of these elements. Also, the table must specify the header, footer, then the body, in that order.

However, there are many cases where no header or footer is specified, but all table rows are still enclosed in a `<tbody>` ... `</tbody>` element.

An additional advantage of using the header, body, and footer elements for tables is in the cases where a large table might need to be split across multiple pages for printing a hard copy. The header and footer should be repeated on each page by the client generating the table for printing.

Table Element Attributes

We encountered a few tags with attributes in our discussion of basic HTML tags: the `<img>` tag's `src=` and `alt=` attributes, and the `<a>` tag's `href=` attribute.

We will consider a few of the most important table-related attributes that will give us the ability to create much more interesting tables.

Two of the most commonly-used attributes of the `<table>` tag:

- `border=` specifies the width, in pixels, of the border around the outside of the table.

  ```
  <table border="2">
  ```

  The default is 1. Specifying a 0 for the border results in a borderless table (but the table formatting remains).

- `width=` specifies the width of the entire table. If not specified, the table is drawn with whatever width is needed to display the table contents properly.

  The width can be specified in pixels

  ```
  <table width="500">
  ```

  or as a percentage of the width of the browser window

  ```
  <table width="60%">
  ```

  Specifying pixels can cause problems when displaying on devices with especially small or large displays.

  A common usage is to force the table to be drawn with a 100% or nearly 100% width.

We consider two attributes that affect the alignment of the contents of table cells. These can be applied to individual cells (`<th>` or `<td>` elements), to all cells within a table row (`<tr>`) element, or to all cells within the header (`<thead>` element), footer (`<tfoot>` element), or body (`<tbody>` element).

- The `align` attribute specifies the horizontal alignment, most commonly to one of `right`, `left`, and `center`. For example,

  ```
  <tr align="center">
  ```

  sets all cells within this row to have center alignment.

- The `valign` attribute specifies the vertical alignment. It can take on the values `top`, `middle`, `bottom`, or `baseline`. The difference between `bottom` and `baseline` is subtle – it really only comes into play when aligning content that uses different font sizes.

In addition to the alignment-related attributes, we will now look at two atributes that will allow specification of table cells that span more than one row or column. These can be specified on `<th>` or `<td>` elements.

- `colspan` specifies the number of columns a cell should span:

  ```
  <td colspan="2">This spans 2 columns</td>
  ```

- `rowspan` specifies the number of rows a cell should span:

  ```
  <td rowspan="2">This spans 2 rows</td>
  ```

Some Additional Table Elements

There are some additional table elements that less commonly used and not as well-supported by browsers. But we will consider them briefly for completeness.

The first two involve specifying attributes (like alignment) of table cells by column rather than by row.

- `<col>` specifies attributes for a single column.
- `<colgroup>` specifies attributes for a group of columns.

The `<col>` or `<colgroup>` elements are placed inside the table but before the table rows.

This specification

```
<table>
<col align="left">
<col align="right">
<tr><th>Class Year</th><th>Count</th></tr>
<tr><td>2012</td><td>8</td></tr>
<tr><td>2013</td><td>4</td></tr>
<tr><td>2014</td><td>0</td></tr>
<tr><td>2015</td><td>0</td></tr>
</table>
```

should result in the years in the first column being left-justified and the counts being right-justified.

Unfortunately, many browsers (including Firefox, Chrome, and Safari) do not support these tags, so we will avoid their use. Internet Explorer does.

More on the idea of browser support to come later.

The last table-related element we will consider is supported in our browsers: the `<caption>` ... `</caption>` element.

As you might guess, it specifies a caption for a table. It is specified immediately after the `<table>` tag. Browsers will normally display the caption centered above the table.

Tables of Tables

While most table cells contain just some small amount of text or perhaps a small graphic, there is no reason a table cell cannot contain something more complicated, perhaps even another table.

This “table in table” formatting can be a powerful tool to align content on a page.