Table Structure (Lecture)

**Table Structure**

Now that you have an understanding of the basic building blocks required to build a table and arrange data, it's time to talk about some additional elements that help us organize the data and structure the table in a way that makes it more accessible and sensible to the users. The elements we will dicusss in this lecture include

* <caption> Table Caption
* <thead>Table Head
* <tbody>Table Body
* <tfoot> Table Footer

Table Caption

The **<caption>** element provides a caption or title that describes the contents of table. This helps users identify the subject matter the table pertains to and what information on that subject they can expect to find in the table. The opening **<caption>** tag must come immediately after the opening **<table>** tag, and it must be closed at the end of the text you wish to have displayed using the **</caption>** closing tag. (*see the example in below*) By default, the caption is positioned at the top of a table.  
  
Let's use our example code from the Table Basics and apply the **<caption>** element:

<table>  
<caption>Quotes by Fictional Characters</caption>  
  <tr>  
   <th>Name</th>  
    <th>Universe</th>  
    <th>Saying</th>  
  </tr>  
  <tr>  
    <td>Picard</td>  
    <td>Star Trek</td>  
    <td>Make it So.</td>  
  </tr>  
  <tr>  
    <td>The Doctor</td>  
    <td>Doctor Who</td>  
    <td>Have a Jelly Baby?</td>  
  </tr>  
  <tr>  
    <td>River Tam</td>  
    <td>Firefly</td>  
    <td>I can kill you with my brain</td>  
  </tr>  
</table>

Table Head, Body, & Foot

Using structural elements, the content within tables can be broken up into sections, similar to the way your basic html page is broken up. These structural sections include a **head**, a**body**, and a **footer**. The **<thead>** *(table head)*, **<tbody>** *(table body)*, and **<tfoot>** *(table foot)* tags allow you to structure your table in an organized matter and increase the ease with which the information in the table can be understood by the user.  
  
The table head element, written **<thead>**, wraps the heading row or rows of a table to denote the head section of the table where the header information is displayed. The table head should be placed at the top of a table, after any**<caption>** element and before any **<tbody>** element as shown below:

<table>  
<caption>Quotes by Fictional Characters</caption>  
**<thead>**  
  <tr>  
   <th>Name</th>  
    <th>Universe</th>  
    <th>Saying</th>  
  </tr>  
**</thead>**

Notice the **<thead>** indicates, in our example, that the first row is **the header of the table** and therefore contains***no data***, it is simply the titles of columns. This could be more than one row. In fact, **<thead>** can wrap as many rows as necessary. I simply used a single row to make the example easy to understand.

It's important to remember that when you are using **<thead>**, there must be no **<tr>** *(table row element)*that is a direct child of **<table>***(table element)*. Also, please note that **<th> *(table header elements)*** aren't limited the**<thead>**section. They are named *table header elements* simply because they indicate *header information* not because they are tied to the head section.

Table Body

The table body element, written **<tbody>**, is used to group the body content in an HTML table much the way that the **<body>** element defines the main body content in your basic html page. The primary difference is that rather than defining generic content this element defines a group of data rows within the given table.  
  
There are a number of advantages to using this element. In browsers that support it, this element can be used to enable scrolling of the table body (the main data in most cases) independently of the header and footer. Also, this element provides additional semantic information for devices such as printers.What this means in practical terms is that when printing a large table that spans multiple pages, by using this element in conjunction with the table header and table footer elements the result will be that the header and footer are printed at the top and bottom of each page respectively.  
  
When writing your code, the table body element must come after **<table>** *(the table element)*. If your table has a**caption** and a **table head** section then the opening **<tbody>** tag must also follow the **<caption>**, and **<thead>**opening and closing tags. An example of this can be seen in the code below.  
  
**<table>**  
**<caption>**Quotes by Famous Fictional Characters**</caption>**  
**<thead>**  
  <tr>  
    <th>Name</th>  
    <th>Universe</th>  
    <th>Saying</th>  
  </tr>  
  **</thead>**  
**<tbody>**  
  <tr>  
    <td>Picard</td>  
    <td>Star Trek</td>  
    <td>Make it So.</td>  
  </tr>  
  <tr>  
    <td>The Doctor</td>  
    <td>Doctor Who</td>  
    <td>Have a Jelly Baby?</td>  
  </tr>  
  <tr>  
    <td>River Tam</td>  
    <td>Firefly</td>  
    <td>I can kill you with my brain</td>  
  </tr>  
**</tbody>**  
</table>

Table Footer

The table footer element, written **<tfoot>**, shares a some similarities with the table header element in that it denotes a section that is ancillary information and not actual data. This element wraps the row or rows of a table to denote the footer section of the table where the additional information is displayed.

In the past, **<tfoot>**  had to follow **<thead>**, but **HTML5** rules say that these two elements may now occur in any order. The only restriction is that they are never permitted to be parent elements of one another.

So ideally we have **<thead>** which contains header information that helps the user make sense of the data contained in the **<tbody>** element. Then we have the **<tbody>** that contains the primary data within a table. Now it's easy think that since the **<tfoot>** element contains footer information that is must come right before the end of the table just before the closing </table> tag, but this is not necessarily the case. What is unique about <tfoot> is that is can be declared in either of the following places:

* As a child of a **<table>** element, after any **<caption>**, and **<thead>** elements and before any **<tbody>** and**<tr>** elements, but only if there are no other **<tfoot>** elements that are children of the **<table>** element.
* As a child of a **<table>** element, after any **<caption>**,  **<thead>**, **<tbody>** and **<tr>** elements, but only if there are no other **<tfoot>** elements that are children of the <table> element.

It can even be used repeat the header. This is a useful feature when dealing with extremely tall or long tables and in situations where it may be easier / more user-friendly to see the column titles at the bottom of the table rather than the top

Let's look at our basic table from earlier now with all of the structural elements that we have been discussing in place:  
  
**<table>**  
**<caption>**Quotes by Fictional Characters**</caption>**  
**<thead>**  
  **<tr>**  
   **<th>**Name**</th>**  
    **<th>**Universe**</th>**  
   **<th>**Saying**</th>**  
  **</tr>**  
**</thead>**  
**<tfoot>**  
 **<tr>**  
   **<th>**Name**</th>**  
    **<th>**Universe**</th>**  
    **<th>**Saying**</th>**  
  **</tr>**  
**</tfoot>**

**<tbody>**  
  **<tr>**  
    **<td>**Picard**</td>**  
    **<td>**Star Trek**</td>**  
    **<td>**Make it So.**</td>**  
  **</tr>**  
  **<tr>**  
    **<td>**The Doctor**</td>**  
    **<td>**Doctor Who**</td>**  
    **<td>**Have a Jelly Baby?**</td>**  
  **</tr>**  
  **<tr>**  
    **<td>**River Tam**</td>**  
    **<td>**Firefly**</td>**  
   **<td>**I can kill you with my brain**</td>**  
  **</tr>**

**<tbody>**  
**</table>**