



جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

Web Programming

Lecture 7

Organizing Content with Lists and Tables

By

Asst. Lect. Ali Al-khawaja

- Create an ordered list
- Create an unordered list
- Create a description list
- Create a nav bar using a list

- Insert a table
- Debug tables
- Span columns and rows
- Format a table with CSS
- Apply a table-like structure to other elements

Create an Ordered List

- Ordered list: a list in which items are numbered or lettered sequentially
 - ol element: used to create an ordered list
 - li element: used to create each list item
 - Contents of the list item contained between opening and closing `` tags.
 - All `li` elements for a list are nested within the opening and closing `ol` tags

Create an Ordered List (continued)

- Default marker for a list item determined by user agent
 - Usually Arabic numerals
 - Can be set using the CSS `list-style-type` property
 - Possible values include decimal, lower-roman, upper-roman, lower-alpha, and upper-alpha

Create an Ordered List (continued)

- Ordered list: code and display

```
52 <p>Our most sought-after weekends:</p>
53 <ol>
54   <li>Independence Day (Jul. 4)</li>
55   <li>Memorial Day (last Monday in May)</li>
56   <li>Labor Day (first Monday in Sep.)</li>
57 </ol>
58 </section>
```

ol element contains list items in an ordered list

Each li element marks the content of a list item



Create an Unordered List

- Unordered list: a list in which items have no specific order
 - ul element: used to create an unordered list
 - li element: used to create each list item
 - Structure is the same as an ordered list
- Default bullet is solid circle
 - Can be set using the CSS list-style-type property

Create an Unordered List (continued)

- Unordered list :code and display

```
66 <p>Lakeland Reeds is also available for booking group special events,  
67 including</p>  
68 <ul>  
69   <li>Weddings</li>  
70   <li>Birthdays</li>  
71   <li>Family Reunions</li>  
72 </ul>  
73 <p><a href="weddings.pdf">Guidelines and reservation form for a special  
74   event at Lakeland Reeds.</a> (PDF)</p>  
75 </section>
```

ul element contains list items in an unordered list

Each li element marks the content of a list item



Create a Description List

- Description list: uses two elements, also called an item-description pair: `dt` and `dd`
 - Originally intended for terms and their definitions
 - List defined using the `<dl>` tag
 - `<dt>` tag marks item being described;
`<dd>` tag indicates description
 - A `dt` can have more than one `dd`

Create a Description List (continued)

- Description list: code and display

```
76      <section>
77          <h3>Questions?</h3>
78          <p>Feel free to contact us with any queries about Lakeland Reeds, or about
79          planning your trip.</p>
80          <dl class="contact">
81              <dt>Proprietor</dt>
82              <dd>Phillip Blaine</dd>
83              <dt>Email</dt>
84              <dd>lrbb@example.com</dd>
85              <dt>Phone</dt>
86              <dd>(218) 555-5253</dd>
87              <dt>Fax</dt>
88              <dd>(218) 555-0413</dd>
89          </dl>
90      </section>
```

dl element contains list items in a description list

dt element marks the item in an item-description pair

dd element marks the description in an item-description pair



- Sometimes it is good to use a list element to mark up web page content that does not appear as a list
 - e.g., navigation bar
 - Fundamentally a list of related links
 - Marking navigation bar with `ul` and `li` elements provides semantic information for user agents

Create a Nav Bar Using a List (continued)

- Nav bar: code and display

```
29 <nav class="sitenavigation">
30   <ul>
31     <li><a href="index.html">Home</a></li>
      <li><a href="aboutus.html">About Us</a></li>
      <li><a href="reserve.html">Reservations</a></li>
      <li><a href="events.html">Events</a></li>
      <li><a href="http://wxug.us/1hn14">Weather</a></li>
      <li><a href="https://goo.gl/maps/bwf5R">Directions</a></li>
37   </ul>
38 </nav>
```

Nav bar links nested within a ul element

Each li element marks a nav bar link

```
72 text-align: center;
73 background-color: #B8944D;
74 }
75 nav.sitenavigation li {
76   margin: 0.3em 0.5em;
77   display: inline-block;
```

nav.sitenavigation li replaces nav.sitenavigation p selector

Nav bar appearance unchanged, but code now includes additional semantic meaning



Insert a Table

- HTML information can be organized as a table
 - Organizes data in rows and columns
 - Data items displayed in cells
- HTML elements used to create table:
 - table element: start and end of table
 - th element: content of a header cell
 - td element: content of a data cell
 - tr element: groups cells into rows

Insert a Table (continued)

- Semantic elements used to add information to a table
 - thead element: marks the header rows of a table
 - tbody element: marks the rows that make up the body of the table
 - tfoot element: marks footer rows of the table
- CSS border property used to set width and/or color of cell or table border

Insert a Table (continued)

● Code for table

```
59 <section>
60   <h3>Rates</h3>
61   <table>
62     <thead>
63       <tr>
64         <th>Period</th>
65         <th>Sun Room</th>
66         <th>Reed Room</th>
67         <th>Treehouse</th>
68       </tr>
69     </thead>
```

The entire contents of a table are enclosed within a table element

The tbody element marks the header rows

Each th element marks the content of a header cell

```
70   <tbody>
71     <tr>
72       <td>May 1 - Sep. 15</td>
73       <td>$110</td>
74       <td>$125</td>
75       <td>$150</td>
76     </tr>
77     <tr>
78       <td>Sep. 16 - Apr. 30</td>
79       <td>$100</td>
80       <td>$110</td>
81       <td>$150</td>
82     </tr>
83   </tbody>
84 </table>
85 </section>
```

The tbody element marks the body rows

Each tr element marks a single table row

Each td element marks the content of a data cell

```
14 a, article, body, div, dd, dl, dt, figcaption, figure, footer, header, h1,
15 h2, h3, img, nav, ol, p, section, table, tbody, td, tfoot, th, thead, tr, ul {
16   border: 0;
17   padding: 0;
18   margin: 0;
19 }
```

Selectors added to rule for border, padding, and margin in the reset styles section

```
160 /* main content tables */
161 td, th {
162   border: 1px solid black;
163   font-size: 1.3em;
164 }
165
166 /* footer section */
```

border property for td and th elements adds a line around each cell

Insert a Table (continued)

- Table resulting from code

| Period | Sun Room | Reed Room | Treehouse |
|-------------------|----------|-----------|-----------|
| May 1 - Sep. 15 | \$110 | \$125 | \$150 |
| Sep. 16 - Apr. 30 | \$100 | \$110 | \$150 |

- Summary of HTML table structuring elements

| element | content | description |
|---------|---------------|---|
| table | entire table | start and end of table content |
| thead | | group of one or more rows that contain column headers; when printed, this content is displayed at the top of each page |
| tbody | group of rows | group of one or more rows that contain the main body of the table |
| tfoot | | group of one or more rows that contain column footers; when printed, this content is displayed at the bottom of each page |
| tr | row | start and end of a row |
| th | cell | content of a table header cell |
| td | | content of a standard table cell |

Debug Tables

- It is important to debug tables
 - Too many cells can result in protruding cells
 - Too few cells can result in holes
 - Either way, the result is a structure that is not rectangular
 - View your table in a browser to help identify the problems
- Resist using a table for layout

Span Columns and Rows

- A cell in a table can be formatted to be displayed across multiple rows or columns
 - colspan attribute: used to merge a cell across multiple columns
 - rowspan attribute: used to merge a cell across multiple rows
 - Both attributes are used in the opening th or td tag and receive a number value specifying the number of rows/columns

Span Columns and Rows (continued)

- colspan and rowspan: code and display

```

62      <thead>
63      <tr>
64          <th rowspan="2">Period</th>
65          <th colspan="3">Room</th>
66      </tr>
67      <tr>
68          <th>Sun Room</th>
69          <th>Reed Room</th>
70          <th>Treehouse</th>
71      </tr>
72  </thead>
  
```

New row added to thead section

th element in second row containing the text *Period* removed

rowspan attribute makes cell content part of multiple rows

colspan attribute makes cell content part of multiple columns

rowspan attribute causes cell content to be displayed across two rows

| Period | Room | | |
|-------------------|----------|-----------|-----------|
| | Sun Room | Reed Room | Treehouse |
| May 1 - Sep. 15 | \$110 | \$125 | \$150 |
| Sep. 16 - Apr. 30 | \$100 | \$110 | \$150 |

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Format a Table with CSS

- CSS can be used to style many aspects of tables
 - Used to style font face, font and background colors, and borders around/between cells
 - Can style entire table, table section, individual row or cell
 - CSS `border-collapse` property can be used to merge adjacent borders into a single line

Format a Table with CSS (continued)

- colgroup and col elements: assign CSS style to column or group of columns
 - Each col element applied to single column starting from left
 - Consecutive columns can be grouped by adding span attribute to col element and specifying number of columns as value
 - If col elements are included, they must cover all columns of the table

Format a Table with CSS (continued)

- Code for styling table

```

61 <table>
62   <colgroup>
63     <col class="table-heading-column">
64     <col class="table-data-columns" span="3">
65   </colgroup>
66   <thead>

```

col elements nested within colgroup parent element

Styles for second col element apply to 3 columns

```

28 table {
29   border-collapse: collapse;
30   border-spacing: 0;
31 }
32
33 /* document-wide styles */

```

```

164 /* main content tables */
165 td, th {
166   border: 1px solid black;
167   padding: 0.4em;
168   font-size: 1.3em;
169   text-align: center;
170 }
171 table {
172   width: 100%;
173   border: 2px solid black;
174 }
175 th {
176   background-color: #aecdf4;
177 }
178 .table-heading-column {
179   background-color: #f1e233;
180 }
181 .table-data-columns {
182   background-color: white;
183 }

```

Applies a background color to the first col element, which encompasses the leftmost column of the table

Applies a different background color to the second col element, which encompasses the remaining 3 columns

Format a Table with CSS (continued)

- Table resulting from code

Beige background applied to first column based on styling for first col element

Blue background applied to first two rows based on th style rule

White background applied to right three columns based on styling for second col element

| Period | Room | | |
|-------------------|----------|-----------|-----------|
| | Sun Room | Reed Room | Treehouse |
| May 1 - Sep. 15 | \$110 | \$125 | \$150 |
| Sep. 16 - Apr. 30 | \$100 | \$110 | \$150 |

Special Events

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Apply a Table-Like Structure to Other Elements

- HTML tables should be used only for tabular data
- To make elements that don't belong in a table look like a grid, use block-level elements
 - Use `div` to create a structure that parallels that of a table
 - Use CSS to specify that the elements should be treated as components of a table

Apply a Table-Like Structure to Other Elements (continued)

- HTML code for displaying contact information in table-like layout

```
110      <h3>Questions?</h3>
111      <p>Feel free to contact us with any queries about Lakeland Reeds, or about
112      planning your trip.</p>
113      <div class="contact">
114        <div class="row">
115          <div class="category">Proprietor</div>
116          <div>Phillip Blaine</div>
117        </div>
118        <div class="row">
119          <div class="category">Email</div>
120          <div>lrbb@example.com</div>
121        </div>
122        <div class="row">
123          <div class="category">Phone</div>
124          <div>(218) 555-5253</div>
125        </div>
126        <div class="row">
127          <div class="category">Fax</div>
128          <div>(218) 555-0413</div>
129        </div>
130      </div>
```

Outmost div element serves the role of a table element

div elements nested within outmost div element serve the role of tr elements

Most deeply nested div elements serve the role of th or td elements

Apply a Table-Like Structure to Other Elements (continued)

- CSS code for displaying contact information in table-like layout

```
185  /* main content CSS tables */
186  .contact {
187      margin: 1em 0;
188      display: table;
189      font-size: 1.3em;
190  }
191  .row {
192      display: table-row;
193  }
194  .row div {
195      display: table-cell;
196      padding: 0.25em 0.5em;
197  }
198  .category {
199      font-weight: bold;
200  }
201
202  /* footer section */
```

Element with the `table` value for the `display` property serves the role of a `table` element

Element with the `table-row` value for the `display` property serves the role of a `tr` element

Element with the `table-cell` value for the `display` property serves the role of a `th` or `td` element

Apply a Table-Like Structure to Other Elements (continued)

- Contact information displayed in table-like layout



- Ordered lists, unordered lists, and description lists can be used to organize information in HTML pages
- Information that does not in and of itself constitute a list can be marked as a list to increase usability of web page
- List item markers, as well as other list properties, can be set using CSS

Summary (continued)

- HTML information can be organized as a table, in rows, columns, and cells
- Use `table`, `th`, `tr`, and `td` HTML elements to create a table
- Semantic elements can be used to add structural information to a table
- The `rowspan` and `colspan` attributes allow a single cell to span multiple rows or columns

- CSS can be used to apply styling to a table, including styling of fonts, colors, and borders
- The semantic elements `col` and `colgroup` can be used to apply CSS to specific column(s)
- A table-like structure can be applied to non-table elements using semantic elements, such as `div`, and CSS
- It is important to debug your tables