



#### Web Programming

Lecture 7

Organizing Content with Lists and Tables

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#### **Objectives**

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

#### **Objectives (continued)**

- 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
  - > 1i 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 liststyle-type property
    - Possible values include decimal, lowerroman, upper-roman, lower-alpha, and upperalpha



## Create an Ordered List (continued)

Ordered list: code and display



#### 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 liststyle-type property

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## Create an Unordered List (continued)

Unordered list :code and display

```
Lakeland Reeds is also available for booking group special events,
67
                   including
    ul element
                                                                  Each 1 i element marks
68
                                                                  the content of a list item
    contains list
                     Weddings
                      Birthdays
    items in an
                      Family Reunions
     unordered
          list
73
                   <a href="weddings.pdf">Guidelines and reservation form for a special
74
                   event at Lakeland Reeds.</a> (PDF)
                </section>
```



#### **Create a Description List**

- <u>Description list</u>: 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 descriptiond
  - > A dt can have more than one dd



## Create a Description List (continued)

Description list: code and display

```
77
                      <h3>Questions?</h3>
                     Feel free to contact us with any queries about Lakeland Reeds, or about
79
                      planning your trip.
                                                                     At element marks the item in
80
                     <dl class="contact">
81
                         <dt>Proprietor</dt>
                                                                     an item-description pair
82
                         <dd>Phillip Blaine</dd>
      dl element
83
                         <dt>Email</dt>
     contains list
84
                         <dd>lrbb@example.com</dd>
                                                                     dd element marks the description
85
       items in a
                         <dt>Phone</dt>
                                                                     in an item-description pair
86
                         <dd>(218) 555-5253</dd>
   description list
                         <dt>Fax</dt>
88
                         <dd>(218) 555-0413</dd>
89
                     </dl>
                  </section>
```



#### Create a Nav Bar Using a List

- 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

```
<nav class="sitenavigation">
30
            <u1>
                                                                Each li element
               <a href="index.html">Home</a></
                                                               marks a nav bar link
   Nav bar
               <a href="aboutus.html">About Us</a>
links nested
               <a href="reserve.html">Reservations</a>
               <a href="events.html">Events</a>
 within a ul
               <a href="http://wxug.us/lhn14">Weather</a>
   element
               <a href="https://goo.gl/maps/bwf5R">Directions</a>
           37
38
         </nav>
```

```
text-align: center;
background-color: #B8944D;
nav.sitenavigation li replaces
nav.sitenavigation p selector
nav.sitenavigation p selector
display: inline-block;
```





#### **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:
  - <u>table</u> element: start and end of table
  - th element: content of a header cell
  - td element: content of a data cell
  - <u>tr element:</u> groups cells into rows



#### Insert a Table (continued)

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

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#### Insert a Table (continued)

#### Code for table

```
<section>
                                                     The thead element
                                                        60
        <h3>Rates</h3>
                                            The thody
                      marks the header rows
61
        May 1 - Sep. 15
                                                          $110
62
          <thead>
                                              element
                                                                            Eachtd
63
                                                          $125
             marks the
                                                                            element marks
64
                                                          $150
                Period
                                                                            the content of
                                             body rows
                                                        65
                Sun Room
                                                                           a data cell
                                                       Reed Room
                                               Each tr
67
                                                          Sep. 16 - Apr. 30
                Treehouse
                                                element
68
                                                          $100
             marks a single
                                                          $110
          </thead>
                                                          $150
                                               table row
  The entire contents of a
                        Each th element
  table are enclosed within
                        marks the content
                                          83
                                                     84
                                                  of a header cell
  a table element
                                          85
                                                </section>
```

```
a, article, body, div, dd, dl, dt, figcaption, figure, footer, header, hl,
    h2, h3, img, nav, ol, p, section, table, tbody, td, tfoot, th, thead, tr, ul {
        border: 0;
16
        padding: 0;
                                                                            Selectors added to rule for border, padding,
        margin: 0;
                                                                            and margin in the reset styles section
19
      /* main content tables */
160
161
      td, th {
                                                border property for td and th elements
162
         border: 1px solid black; -
                                                adds a line around each cell
163
         font-size: 1.3em;
164
165
      /* footer section */
```



#### **Insert a Table (continued)**

Table resulting from code



 Summary of HTML table structuring elements

element	content	description
table	entire table	start and end of table content
thead	group of rows	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 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



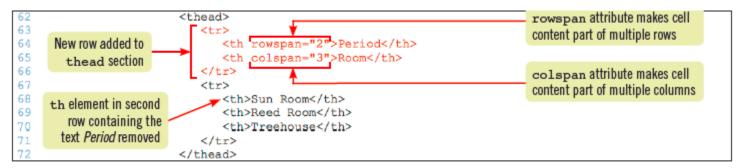
#### **Span Columns and Rows**

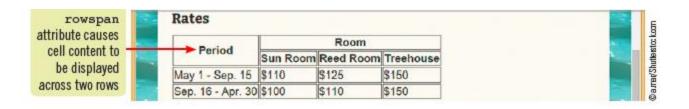
- A cell in a table can be formatted to be displayed across multiple rows or columns
  - colspan attribute: used to merge a cell across multiple columns
  - rowspan attribute: used to merge a cell across multiple rows
  - Both attributes are used in the opening th or td tag and receive a number value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



## Span Columns and Rows (continued)

colspan and rowspan: code and display





#### 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 <u>col</u> element applied to single column starting from left
  - Consecutive columns can be grouped by adding <u>span</u> attribute to <u>col</u> element and specifying number of columns as value
  - ▶ If <u>col</u> elements are included, they must cover all columns of the table

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## Format a Table with CSS (continued)

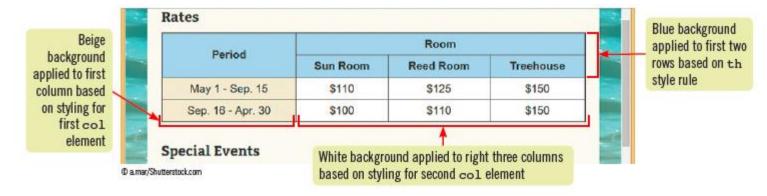
Code for styling table

```
col elements
                                                                                          Styles for second col
62
                         <colgroup>
                                                                                          element apply to 3 columns
        nested within
63
                             <col class="table-heading-column">
64
                             <col class="table-data-columns" span="3">
         colgroup
65
                         </colgroup>
       parent element
66
                         <thead>
      table
 29
         border-collapse: collapse;
 30
         border-spacing: 0;
 31
 32
         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
                                                                            Applies a background color to the first
       table {
 172
          width: 100%;
                                                                            col element, which encompasses the
 173
          border: 2px solid black;
                                                                            leftmost column of the table
 174
       th {
 176
          background-color: #aecdf4;
 177
 178
       .table-heading-column
                                                                            Applies a different background color
 179
          background-color: #fleace;
                                                                            to the second col element, which
 180
                                                                            encompasses the remaining 3 columns
 181
       .table-data-columns {
 182
          background-color: white;
```



## Format a Table with CSS (continued)

Table resulting from code





### 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

```
<h3>Ouestions?</h3>
110
    Outermost div
                      Feel free to contact us with any queries about Lakeland Reeds, or about
                      planning your trip.
     element serves
                      <div class="contact">
       the role of a
                         <div class="row">
115 table element
                            <div class="category">Proprietor</div>
                            <div>Phillip Blaine</div>
     div elements
                         <div class="row">
     nested within
                            <div class="category">Email</div>
    outermost div
                            <div>lrbb@example.com</div>
  element serve the
                         </div>
                         <div class="row">
 role of tr elements
                            <div class="category">Phone</div>
124
                            <div>(218) 555-5253</div>
125
                         </div>
                                                                               Most deeply nested div
126
                         <div class="row">
127
                            <div class="category">Fax</div>
                                                                                elements serve the role
                            <div>(218) 555-0413</div>
128
                                                                                of th or td elements
129
                         </div>
130
                      </div>
```



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

 CSS code for displaying contact information in table-like layout

```
/* main content CSS tables */
      .contact {
         margin: lem 0;
                                             Element with the table value for the display
         display: table;
                                             property serves the role of a table element
         font-size: 1.3em;
                                             Element with the table-row value for the display
      .row {
         display: table-row;
                                             property serves the role of a tr element
      .row div {
                                             Element with the table-cell value for the display
         display: table-cell;
         padding: 0.25em 0.5em;
                                             property serves the role of a th or td element
      .category {
199
         font-weight: bold;
      /* footer section */
```



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

 Contact information displayed in tablelike layout





#### **Summary**

- 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

#### **Summary (continued)**

- 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