Introduction to XHTML: Part 2

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2.7  Creating and Using Image Maps
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2.9  frameset Element
2.10 Nested framesets
2.11 Web Resources
Objectives

• In this lesson, you will learn:
  – To be able to create tables with rows and columns of data.
  – To be able to control table formatting.
  – To be able to create and use forms.
  – To be able to create and use image maps to aid in Web-page navigation.
  – To be able to make Web pages accessible to search engines using meta elements.
  – To be able to use the frameset element to display multiple Web pages in a single browser window.
2.1 Introduction

• Tables
  – Present information

• Forms
  – Collect information from visitor

• Internal linking and image maps
  – Enhance Web page navigation

• Frames
  – Display multiple documents in the browser
2.2 Basic XHTML Tables

- Organize data into rows and columns
- **table** element
  - Attribute **border**
    - Specifies the table’s border width in pixels
  - Attribute **summary**
    - Describes the table’s contents
  - Attribute **caption**
    - Describes the table’s content and helps text-based browsers interpret table data
  - Head section (header cell, defined with a **thead** element)
    - Contains header information such as column names
    - **tr** element (defines an individual table row)
    - **th** element (defines the columns in the head section)
  - Foot section (defined with a **tfoot** element)
  - Table body (defined with a **tbody** element)
  - Data cells (defined with **td element**)
<?xml version = "1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">

<!-- Fig. 5.1: table1.html -->
<!-- Creating a basic table -->

<html xmlns = "http://www.w3.org/1999/xhtml">
  <head>
    <title>A simple XHTML table</title>
  </head>
  <body>
    <!-- the <table> tag opens a table -->
    <table border = "1" width = "40%"
      summary = "This table provides information about the price of fruit">
      <!-- the <caption> tag summarizes the table's contents (this helps the visually impaired) -->
      <caption><strong>Price of Fruit</strong></caption>
    </table>
  </body>
</html>
```
<!-- the <thead> is the first section of a table -->
<thead>
  <tr>
    <th>Fruit</th>
    <th>Price</th>
  </tr>
</thead>

<!-- the <tfoot> is the last section of a table -->
<tfoot>
  <tr>
    <th>Total</th>
    <th>$3.75</th>
  </tr>
</tfoot>

<!-- all table content is enclosed -->
<tbody>
  <tr>
    <td>Apple</td>
    <td>$0.25</td>
  </tr>
</tbody>
```
<table>
<thead>
<tr>
<th>Fruit</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>$0.50</td>
</tr>
<tr>
<td>Banana</td>
<td>$1.00</td>
</tr>
<tr>
<td>Pineapple</td>
<td>$2.00</td>
</tr>
</tbody>
</table>
## Price of Fruit

<table>
<thead>
<tr>
<th>Fruit</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>$0.25</td>
</tr>
<tr>
<td>Orange</td>
<td>$0.50</td>
</tr>
<tr>
<td>Banana</td>
<td>$1.00</td>
</tr>
<tr>
<td>Pineapple</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

**Total** $3.75
2.3 Intermediate XHTML Tables and Formatting

• **Element colgroup**
  – Groups and formats columns

• **Element col**
  – **Attribute align**
    • Determines the alignment of text in the column
  – **Attribute span**
    • Determines how many columns the col element formats
    • **rowspan** and **colspan**
      – Specify the number of rows or columns occupied by a cell
  – **valign**
    • Aligns data vertically
    • One of the four values: “top”, “middle”, “bottom”, “baseline”
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Internet and WWW How to Program - Tables</title>
  </head>
  <body>
    <h1>Table Example Page</h1>
    <table border="1">
      <caption>Here is a more complex sample table.</caption>
      <!-- <colgroup> and <col> tags are used to -->
      <!-- format entire columns -->
      <colgroup>
        <!-- <colgroup> -->
    </body>
</html>
<!-- span attribute determines how many columns -->
<!-- the <col> tag affects -->
<col align = "right" span = "1" />
</colgroup>
<thead>
<!-- rowspans and colspans merge the specified -->
<!-- number of cells vertically or horizontally -->
<tr>
<!-- merge two rows -->
<th rowspan = "2">
    <img src = "camel.gif" width = "205"
        height = "167" alt = "Picture of a camel" />
</th>
<!-- merge four columns -->
<th colspan = "4" valign = "top">
    <h1>Camelid comparison</h1><br />
    Approximate as of 9/2002
</th>
</tr>
</thead>
<table>
<thead>
<tr>
<th># of Humps</th>
<th>Indigenous region</th>
<th>Spits?</th>
<th>Produces Wool?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Camels (bactrian)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Africa/Asia</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Llamas</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1</td>
<td>Andes Mountains</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

</thead>
Table Example Page

Here is a more complex sample table.

Camelid comparison

Approximate as of 9/2002

<table>
<thead>
<tr>
<th></th>
<th># of Humps</th>
<th>Indigenous region</th>
<th>Spits?</th>
<th>Produces Wool?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camels (bactrian)</td>
<td>2</td>
<td>Africa/Asia</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Llamas</td>
<td>1</td>
<td>Andes Mountains</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2.4 Basic XHTML Forms

- **Element form**
  - **Attribute method**
    - Specifies how the form’s data is sent to Web server
    - `method = “post”`
      - Appends form data to the browser request
    - `method = “get”`
      - Appends form data directly to the end of the URL
  - **Attribute action**
    - Specifies the URL of a script on the Web server
  - **input**
    - Specifies data to provide to the script that processes the form
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Internet and WWW How to Program - Forms</title>
</head>
<body>
  <h1>Feedback Form</h1>
  <p>Please fill out this form to help us improve our site.</p>
  <form method="post" action="/cgi-bin/formmail">
  <!-- this tag starts the form, gives the method of sending information and the location of form scripts -->
  </form>
</body>
</html>
<! -- hidden inputs contain non-visual -->
<!-- information -->
<input type ="hidden" name ="recipient"
value ="deitel@deitel.com" />
<input type ="hidden" name ="subject"
value ="Feedback Form" />
<input type ="hidden" name ="redirect"
value ="main.html" />

<! -- <input type = "text"> inserts a text box -->
<p><label> Name: 
<input name ="name" type ="text" size = "25"
maxlength = "30" />
</label></p>

<! -- input types "submit" and "reset" insert -->
<! -- buttons for submitting and clearing the -->
<! -- form's contents -->
<input type ="submit" value =
"Submit Your Entries" />
<input type ="reset" value =
"Clear Your Entries" />
Feedback Form

Please fill out this form to help us improve our site.

Name: 

Submit Your Entries  Clear Your Entries
2.5 More Complex XHTML Forms

- **Element `textarea`**
  - Inserts a multiline text box (text area)
  - Attribute `rows`
    - Specifies the number of rows
  - Attribute `cols`
    - Specifies the number columns
  - Input "password"
    - Inserts a password box with the specified `size`

- **Element `checkbox`**
  - Enable users to select from a set of options

- **Element `select`**
  - Provides a drop-down list of items

- **Element `option`**
  - Adds items to the drop-down list
  - Attribute `selected`
    - Specifies which item initially is displayed as the selected item
<?xml version = "1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
<!-- Fig. 5.4: form2.html -->
<!-- Form Design Example 2 -->
<html xmlns = "http://www.w3.org/1999/xhtml">
<head>
<title>Internet and WWW How to Program - Forms</title>
</head>
<body>
<h1>Feedback Form</h1>
<p>Please fill out this form to help us improve our site.</p>
<form method = "post" action = "/cgi-bin/formmail"
<p>
  <input type="hidden" name="recipient" value="deitel@deitel.com" />
  <input type="hidden" name="subject" value="Feedback Form" />
  <input type="hidden" name="redirect" value="main.html" />
</p>

<p><label>Name:<input name="name" type="text" size="25" /></label></p>

<p><label>Comments:<textarea name="comments" rows="4" cols="36">
Enter your comments here.</textarea></label></p>
<!-- <input type = "password"> inserts a -->
<!-- textbox whose display is masked with -->
<!-- asterisk characters -->
<p><label>E-mail Address:
   <input name = "email" type = "password" size = "25" />
</label></p>

<p>
   <strong>Things you liked:</strong><br />
   <label>Site design
      <input name = "thingsliked" type = "checkbox" value = "Design" />
   </label>

   <label>Links
      <input name = "thingsliked" type = "checkbox" value = "Links" />
   </label>

   <label>Ease of use
      <input name = "thingsliked" type = "checkbox" value = "Ease" />
   </label>

   <label>Images
      <input name = "thingsliked" type = "checkbox" value = "Images" />
   </label>
</p>
<label>Source code
<input name="thingsliked" type="checkbox"
    value="Code" /></label>
</p>
<p>
<input type="submit" value="Submit Your Entries" />
<input type="reset" value="Clear Your Entries" />
</p>
</form>
</body>
</html>
Feedback Form

Please fill out this form to help us improve our site.

Name: ________________________________

Comments:
Enter your comments here.

E-mail Address: ____________________________

Things you liked:
Site design □ Links □ Ease of use □ Images □ Source code □

Submit Your Entries  Clear Your Entries

Feedback Form

Please fill out this form to help us improve our site.

Name: Archie Tlic

Comments:
Great site!

E-mail Address: ____________________________

Things you liked:
Site design □ Links □ Ease of use □ Images □ Source code □

Submit Your Entries  Clear Your Entries
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Internet and WWW How to Program - Forms</title>
</head>
<body>
<h1>Feedback Form</h1>
<p>Please fill out this form to help us improve our site.</p>
<form method="post" action="/cgi-bin/formmail">
<p>
<input type="hidden" name="recipient" value="deitel@deitel.com"/>
<input type="hidden" name="subject"/>
</p>
</form>
</body>
</html>
<input type="hidden" name="redirect" value="main.html" />

<p><label>Name:</label>
    <input name="name" type="text" size="25" />
</label></p>

<p><label>Comments:<br />
    <textarea name="comments" rows="4"
        cols="36"></textarea>
</label></p>

<p><label>E-mail Address:<br />
    <input name="email" type="password"
        size="25" /></label></p>

<p><strong>Things you liked:</strong><br />
    <label>Site design
        <input name="thingsliked" type="checkbox" value="Design"
        /></label>
</p>
<label>Links</label>
<input name="thingsliked" type="checkbox" value="Links" />

<label>Ease of use</label>
<input name="thingsliked" type="checkbox" value="Ease" />

<label>Images</label>
<input name="thingsliked" type="checkbox" value="Images" />

<label>Source code</label>
<input name="thingsliked" type="checkbox" value="Code" />

<!-- <input type = "radio" /> creates a radio button. The difference between radio buttons and checkboxes is that only one radio button in a group can be selected. -->
<p>How did you get to our site?:</p>
<br />
<label>Search engine</label>
<input name="howtosite" type="radio" value="search engine" checked="checked" />

<label>Links from another site</label>
<input name="howtosite" type="radio" value="link" />

<label>Deitel.com Web site</label>
<input name="howtosite" type="radio" value="deitel.com" />

<label>Reference in a book</label>
<input name="howtosite" type="radio" value="book" />

<label>Other</label>
<input name="howtosite" type="radio" value="other" />

</p>
<p>
    <label> Rate our site: 
        <!-- the <select> tag presents a drop-down -->
        <!-- list with choices indicated by the -->
        <!-- <option> tags -->
        <select name="rating">
            <option selected="selected">Amazing</option>
            <option>10</option>
            <option>9</option>
            <option>8</option>
            <option>7</option>
            <option>6</option>
            <option>5</option>
            <option>4</option>
            <option>3</option>
            <option>2</option>
            <option>1</option>
            <option>Awful</option>
        </select>
    </label>
</p>
<p><input type="submit" value="Submit Your Entries" /></p>
<p><input type="reset" value="Clear Your Entries" /></p>
</form>
2.6 Internal Linking

- Enables the user to jump between locations in the same document
<?xml version="1.0"?>
<!DOCTYPE html PUBLIC "//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">

<!-- Fig. 5.6: links.html -->
<!-- Internal Linking -->

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Internet and WWW How to Program - List</title>
  </head>
  <body>
    <ul>
      <li>You can meet people from countries around the world.</li>
      <li>You have access to new media as it becomes public:</li>
    </ul>
  </body>
</html>
<ul>
  <li>New games</li>
  <li>New applications</li>
    <ul>
      <li>For Business</li>
      <li>For Pleasure</li>
    </ul>
  <li>Around the clock news</li>
  <li>Search Engines</li>
  <li>Shopping</li>
  <li>Programming</li>
    <ul>
      <li>XHTML</li>
      <li>Java</li>
      <li>Dynamic HTML</li>
      <li>Scripts</li>
        <li>New languages</li>
    </ul>
  <li>Links</li>
</ul>
<li> Keeping in touch with old friends</li>

<li> It is the technology of the future!</li>

</ul>

<!-- id attribute creates an internal hyperlink destination -->

<h1 id = "bugs">My 3 Favorite Bugs</h1>

<p>
</p>

<!-- internal hyperlink to features -->

<a href = "#features">Go to Favorite Features</a>

</p>

<ol>
  <li> Fire Fly</li>
  <li> Gal Ant</li>
  <li> Roman Tic</li>
</ol>

</body>

</html>
The Best Features of the Internet

Go to Favorite Bugs

- You can meet people from countries around the world
- You have access to new media as it becomes public:
  - New games
  - New applications
    - For Business
    - For Pleasure
  - Around the clock news
  - Search Engines
  - Shopping
  - Programming
    - XHTML
    - Java
    - Dynamic HTML

- Links
- Keeping in touch with old friends
- It is the technology of the future

My 3 Favorite Bugs

Go to Favorite Features

1. Fire Fly
2. Gal Ant
3. Roman Tic
2.7 Creating and Using Image Maps

- Designate certain areas of an image (called hotspots) as links
  - Element **map**
    - Attribute **id**
      - Identifies the image map
  - Element **area**
    - Defines hotspot
    - Attribute **shape** and **coords**
      - Specify the hotspot’s shape and coordinates
        - Rectangular (shape = “rect”)
        - Polygon (shape = “poly”)
        - Circle (shape = “circle”)
<?xml version="1.0" ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<!-- Fig. 5.7: picture.html   -->
<!-- Creating and Using Image Maps -->

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>
      Internet and WWW How to Program - Image Map
    </title>
  </head>
  <body>
    <p>
      <!-- the <map> tag defines an image map -->
      <map id="picture">
        <!-- shape = "rect" indicates a rectangular -->
        <!-- area, with coordinates for the upper-left -->
        <!-- and lower-right corners -->
      </map>
    </p>
  </body>
</html>
<area href = "form.html" shape = "rect"
    coords = "2,123,54,143"
    alt = "Go to the feedback form" />
<area href = "contact.html" shape = "rect"
    coords = "126,122,198,143"
    alt = "Go to the contact page" />
<area href = "main.html" shape = "rect"
    coords = "3,7,61,25"
    alt = "Go to the homepage" />
<area href = "links.html" shape = "rect"
    coords = "168,5,197,25"
    alt = "Go to the links page" />

<!-- value "poly" creates a hotspot in the shape -->
<!-- of a polygon, defined by coords -->
<area shape = "poly" alt = "E-mail the Deitels"
    coords = "162,25,154,39,158,54,169,51,183,39,161,26"
    href = "mailto:deitel@deitel.com" />

<!-- shape = "circle" indicates a circular -->
<!-- area with the given center and radius -->
<area href = "mailto:deitel@deitel.com"
    shape = "circle" coords = "100,36,33"
    alt = "E-mail the Deitels" />
</map>
<img src="deitel.gif" width="200" height="144"
     alt="Deitel logo" usemap="#picture"/>
</body>
</html>
5.8 meta Elements

- Specify information about a document
  - Attribute name
    - Identifies the type of meta element
    - “keywords” (name = “keywords”)
      - Provides search engines with a list of words that describe a page
    - “description” (name = “description”)
      - Provides a description of a site
  - Attribute content
    - Provides the information search engine use to catalog pages
Welcome to Our Web Site!

We have designed this site to teach about the wonders of XHTML. XHTML is better equipped than HTML to represent complex data on the Internet. XHTML takes advantage of XML's strict syntax to ensure well-formedness. Soon you will know about many of the great new features of XHTML.

Have Fun With the Site!
2.9 frameset Element

- Allow browser display more than one document simultaneously
  - Element **frameset**
    - Attribute **cols**
      - Specifies the frameset’s column layout
    - Attribute **rows**
      - Specifies the number of rows and the size of each row
  - Element **frame**
    - Specifies the documents that will be loaded
    - Attribute **src**
      - Specifies URL of the page to display
<?xml version="1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">

<!-- Fig. 5.9: index.html -->
<!-- XHTML Frames I -->

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
    <title>Internet and WWW How to Program - Main</title>
    <meta name="keywords" content="Webpage, design, XHTML, tutorial, personal, help, index, form, contact, feedback, list, links, frame, deitel" />
    <meta name="description" content="This Web site will help you learn the basics of XHTML and Web page design through the use of interactive examples and instruction." />
</head>

<!-- the <frameset> tag sets the frame dimensions -->
<frameset cols="110,*">

</body>
</html>
<html>
  <frameset>
    <frame name = "leftframe" src = "nav.html"/>
    <frame name = "main" src = "main.html"/>
  </frameset>
  <noframes>
    <body>
      <p>This page uses frames, but your browser does not support them.</p>
      <p>Please, <a href = "nav.html">follow this link to browse our site without frames</a>.</p>
    </body>
  </noframes>
</html>
Welcome to Our Web Site!

We have designed this site to teach about the wonders of XHTML. XHTML is better equipped than HTML to represent complex data on the Internet. XHTML takes advantage of XML's strict syntax to ensure well-formedness. So on you will know about many of the great new features of XHTML.

Have Fun With the Site!
<?xml version = "1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<!-- Fig. 5.10: nav.html -->
<!-- Using images as link anchors -->

<html xmlns = "http://www.w3.org/1999/xhtml">
    <head>
        <title>Internet and WWW How to Program - Navigation Bar</title>
    </head>
    <body>
        <p>
            <a href = "links.html" target = "main">
                <img src = "buttons/links.jpg" width = "65" height = "50" alt = "Links Page" />
            </a><br />

            <a href = "list.html" target = "main">
                <img src = "buttons/list.jpg" width = "65" height = "50" alt = "List Example Page" />
            </a>
        </p>
    </body>
</html>
</a><br />

<a href = "contact.html" target = "main">
  <img src = "buttons/contact.jpg" width = "65"
       height = "50" alt = "Contact Page" />
</a><br />

<a href = "header.html" target = "main">
  <img src = "buttons/header.jpg" width = "65"
       height = "50" alt = "Header Page" />
</a><br />

<a href = "table1.html" target = "main">
  <img src = "buttons/table.jpg" width = "65"
       height = "50" alt = "Table Page" />
</a><br />

<a href = "form.html" target = "main">
  <img src = "buttons/form.jpg" width = "65"
       height = "50" alt = "Feedback Form" />
</a><br />
</p>

</body>

</html>
2.10 Nested framesets

- framesets within framesets
<?xml version="1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">

<!-- Fig. 5.11: index2.html -->
<!-- XHTML Frames II -->

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Internet and WWW How to Program - Main</title>
    <meta name="keywords" content="Webpage, design, XHTML, tutorial, personal, help, index, form, contact, feedback, list, links, frame, deitel" />
    <meta name="description" content="This Web site will help you learn the basics of XHTML and Web page design through the use of interactive examples and instruction." />

  </head>

  <frameset cols="110,*">
    <frame name="leftframe" src="nav.html" />
  </frameset>
</html>
<!-- nested framesets are used to change the -->
<!-- formatting and layout of the frameset -->
<frameset rows = "175,*" "175,*" "175,*" "175,*">
  <frame name = "picture" src = "picture.html" />
  <frame name = "main" src = "main.html" />
</frameset>

<noframes>
  <body>
    <p>This page uses frames, but your browser does not support them.</p>
    <p>Please, <a href = "nav.html">follow this link to browse our site without frames</a>.</p>
  </body>
</noframes>

</frameset>
Welcome to Our Web Site!

We have designed this site to teach about the wonders of **XHTML**. **XHTML** is better equipped than **HTML** to represent complex data on the Internet. **XHTML** takes advantage of **XML**’s strict syntax to ensure well-formedness. Soon you will know about many of the great new features of **XHTML**.

Have Fun With the Site!
2.11 Web Resources

- www.vbxml.com/xhtml/articles/xhtml_tables
- www.webreference.com/xml/reference/xhtml.html