

## 4

# Introduction to XHTML



# OBJECTIVES

In this chapter you will learn:

- To understand important components of XHTML documents.
- To use XHTML to create web pages.
- To add images to web pages.
- To create and use hyperlinks to navigate web pages.
- To mark up lists of information.
- To create tables with rows and columns of data and control table formatting.
- To create and use forms to get user input.
- To make web pages accessible to search engines using `<meta>` tags.



# Outline

- 4.1 Introduction
- 4.2 Editing XHTML
- 4.3 First XHTML Example
- 4.4 W3C XHTML Validation Service
- 4.5 Headings
- 4.6 Linking
- 4.7 Images
- 4.8 Special Characters and Horizontal Rules
- 4.9 Lists
- 4.10 Tables
- 4.11 Forms
- 4.12 Internal Linking
- 4.13 meta Elements
- 4.14 Wrap-Up
- 4.15 Web Resources



## 4.1 Introduction

- **XHTML (Extensible HyperText Markup Language)**
  - markup language for creating web pages
- **Based on HTML (HyperText Markup Language)**
  - legacy technology of the World Wide Web Consortium (W3C)
- **XHTML 1.0**
  - Allows only a document's content and structure to appear in a valid XHTML document, and not its formatting
  - Formatting is specified with Cascading Style Sheets



## 4.2 Editing XHTML

- **A machine that runs a specialized piece of software called a web server stores XHTML documents**



## 4.3 First XHTML Example

- In XHTML, text is marked up with elements delimited by tags that are names contained in pairs of angle brackets
  - Every XHTML document contains a start `<html>` tag and an end `</html>` tag
- Some elements may contain attributes that provide additional information about the element
- Comments in XHTML always begin with `<!--` and end with `-->`. The browser ignores all text inside a comment



## 4.3 First XHTML Example (Cont.)

- **Every XHTML document contains a head element which generally contains:**
  - A title
  - A body element
- **head element**
  - generally is not rendered in the display window



## 4.3 First XHTML Example (Cont.)

- **The title element:**
  - Names a web page
  - Usually appears in the colored bar (called the title bar) at the top of the browser window
  - Is the text identifying a page when users add your page to their list of **Favorites** or **Bookmarks**
- **The body element:**
  - Contains the document's content, which may include text and tags





## 4.3 First XHTML Example (Cont.)

- All text placed between the `<p>` and `</p>` tags forms one paragraph

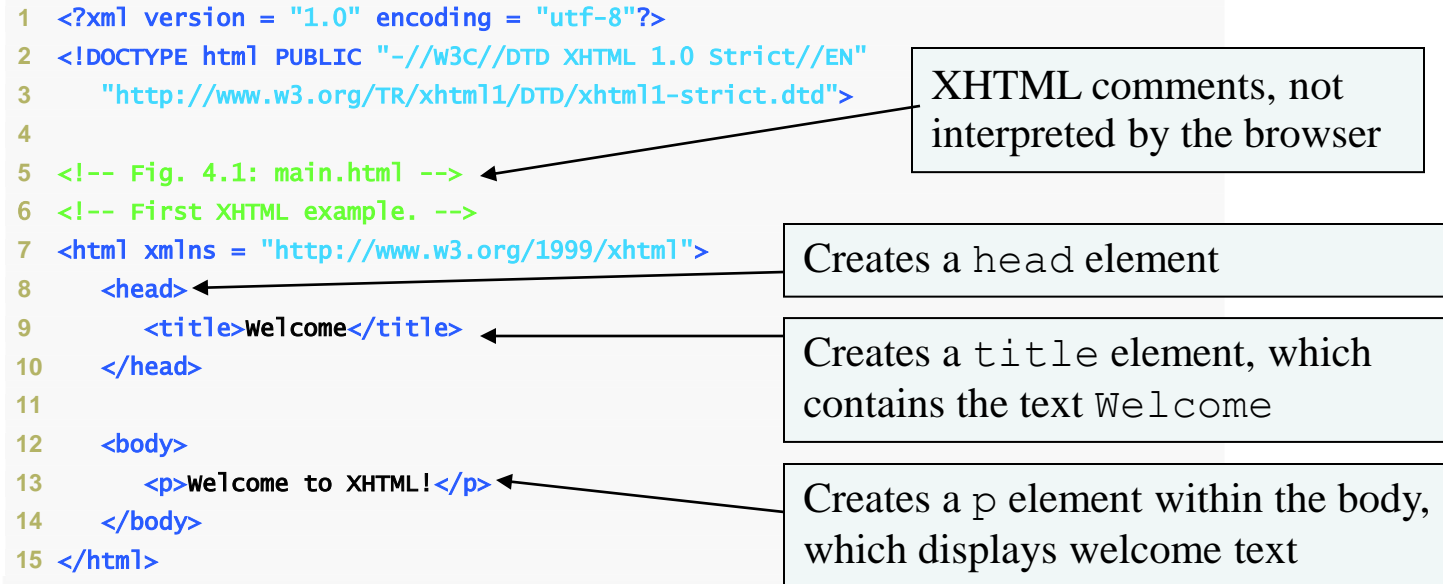


## 4.3 First XHTML Example (Cont.)

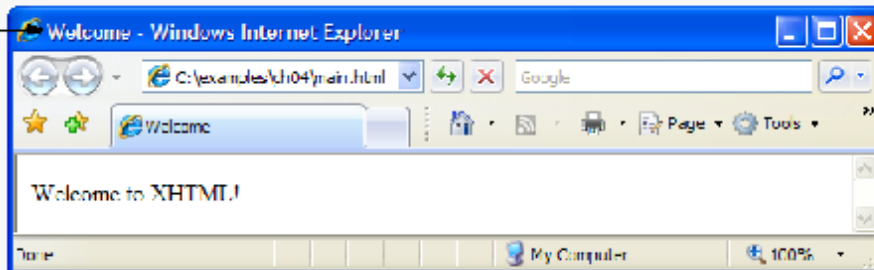
- **XHTML documents delimit an element with start and end tags**
  - A start tag consists of the element name in angle brackets (e.g., `<html>`)
  - An end tag consists of the element name preceded by a forward slash (/) in angle brackets (e.g., `</html>`)
- **Many start tags have attributes that provide additional information about an element**
  - Each attribute has a name and a value separated by an equals sign (=)



## Fig. 4.1 | First XHTML example.



Title bar shows contents of title element



## Common Programming Error 4.3

---

**XHTML does not permit tags to overlap—a nested element's end tag must appear in the document before the enclosing element's end tag. For example, the nested XHTML tags `<head><title>hello</head></title>` cause a syntax error, because the enclosing head element's ending `</head>` tag appears before the nested title element's ending `</title>` tag.**



## 4.4 W3C XHTML Validation Service

- **XHTML documents that are syntactically correct are guaranteed to render properly**
- **XHTML documents that contain syntax errors may not display properly**
- **Validation services (e.g., `validator.w3.org`) ensure that an XHTML document is syntactically correct**



## 4.5 Headings

- **XHTML provides six headings (h1 through h6) for specifying the relative importance of information**
  - **Heading element h1 is considered the most significant heading and is rendered in the largest font**
  - **Each successive heading element (i.e., h2, h3, etc.) is rendered in a progressively smaller font**



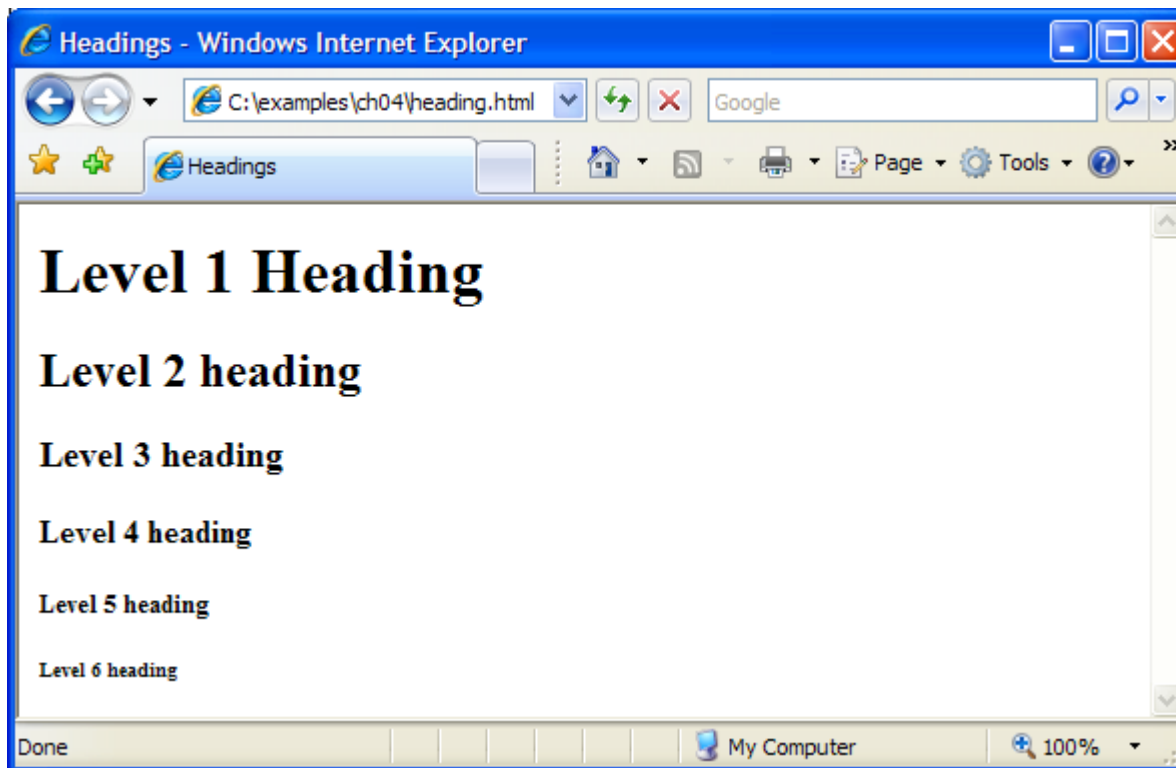
```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.2: heading.html -->
6 <!-- Heading elements h1 through h6. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Headings</title>
10  </head>
11
12  <body>
13    <h1>Level 1 Heading</h1>
14    <h2>Level 2 heading</h2>
15    <h3>Level 3 heading</h3>
16    <h4>Level 4 heading</h4>
17    <h5>Level 5 heading</h5>
18    <h6>Level 6 heading</h6>
19  </body>
20 </html>

```

Creates six headings, each with decreasing significance

**Fig. 4.2**  
Heading elements h1 through h6.



## 4.6 Linking

- **A hyperlink references or links to other resources, such as XHTML documents and images**
- **Web browsers typically underline text hyperlinks and color them blue by default**





## 4.6 Linking (Cont.)

- **Users can insert links with the `a` (anchor) element.**
  - **The `href` attribute specifies the resource (e.g., page, file, e-mail address) being linked**
  - **Anchors can link to an e-mail address using a `mailto:` URL**
    - **When a user clicks this type of anchored link, most browsers launch the default e-mail program (e.g., Outlook Express) to initiate an e-mail message addressed to the linked address**



## 4.6 Linking (Cont.)

- The **strong** element typically causes the browser to render text in a bold font



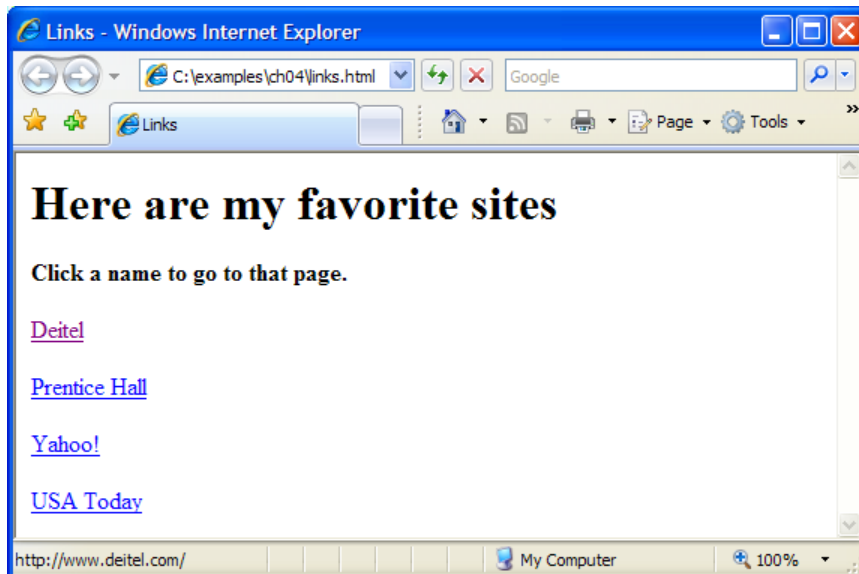
## 4.3 | Linking to other web pages.

Creates anchor elements that link to the URL specified in the href attribute

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.3: links.html -->
6 <!-- Linking to other web pages. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Links</title>
10  </head>
11
12  <body>
13    <h1>Here are my favorite sites</h1>
14    <p><strong>Click a name to go to that page.</strong></p>
15
16    <!-- Create four text hyperlinks -->
17    <p><a href = "http://www.deitel.com">Deitel</a></p>
18    <p><a href = "http://www.prenhall.com">Prentice Hall</a></p>
19    <p><a href = "http://www.yahoo.com">Yahoo!</a></p>
20    <p><a href = "http://www.usatoday.com">USA Today</a></p>
21  </body>
22 </html>

```

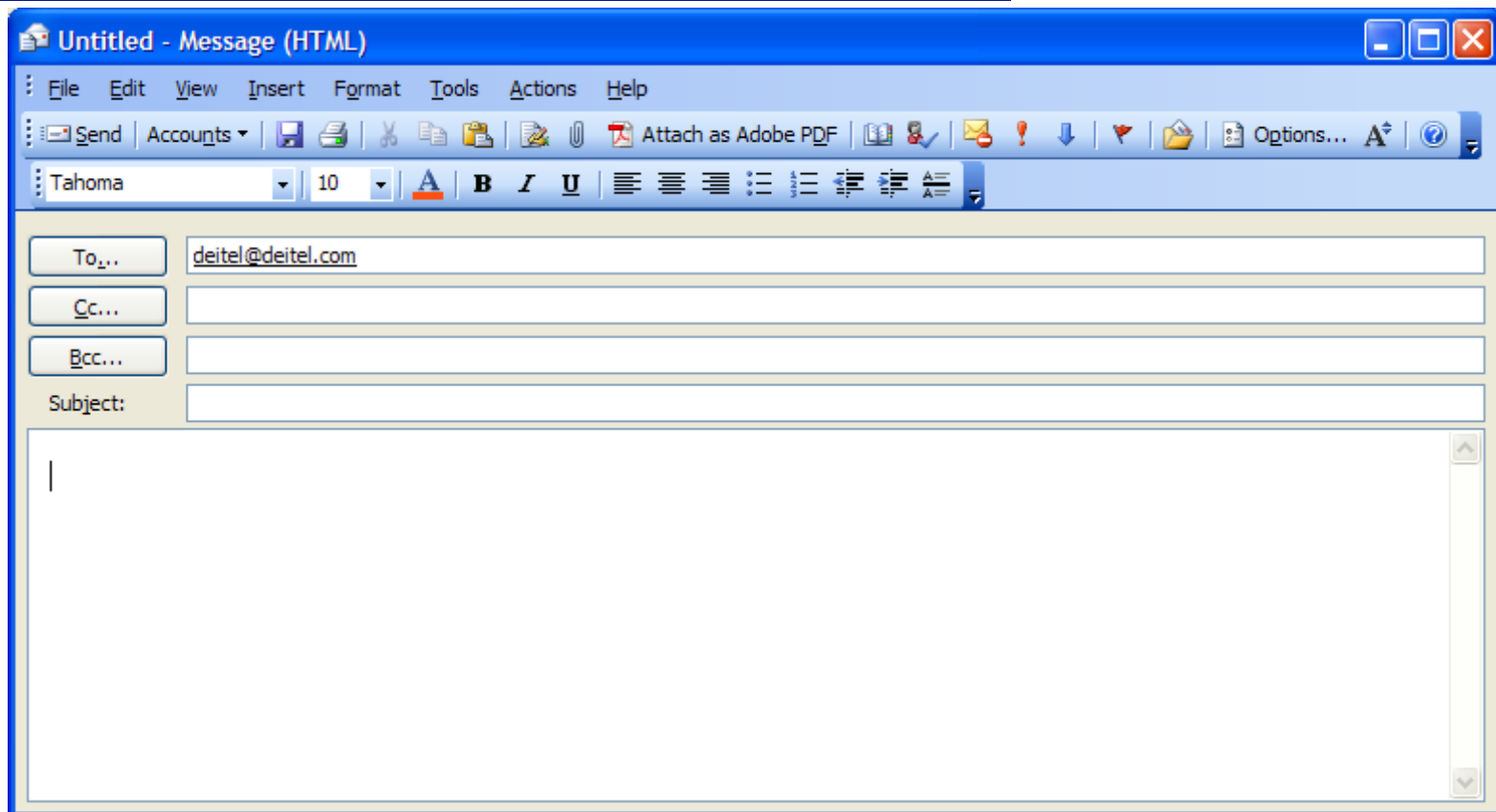
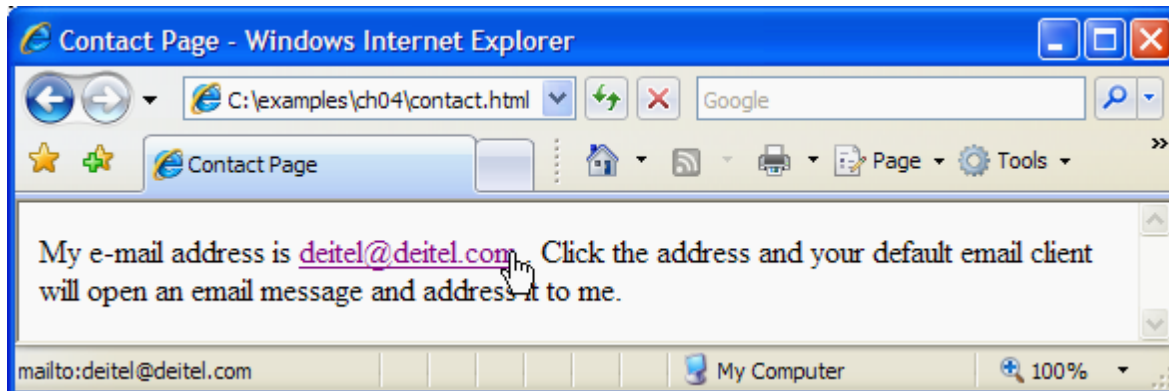


## Fig. 4.4 | Linking to an e-mail address (Part 1 of 2).

```
1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.4: contact.html -->
6 <!-- Linking to an e-mail address. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Contact Page</title>
10  </head>
11
12  <body>
13    <p>
14      My email address is
15      <a href = "mailto:deitel@deitel.com">
16        deitel@deitel.com
17      </a>
18      . Click the address and your default email client
19      will open an e-mail message and address it to me.
20    </p>
21  </body>
22 </html>
```

Hyperlink that creates a message to the address [deitel@deitel.com](mailto:deitel@deitel.com) with the computer's default e-mail program





**Fig. 4.4** | Linking to an e-mail address (Part 2 of 2).

## 4.7 Images

- The `img` element's `src` attribute specifies an image's location
- Every `img` element must have an `alt` attribute, which contains text that is displayed if the client cannot render the image
  - The `alt` attribute makes web pages more accessible to users with disabilities, especially vision impairments
  - `width` and `height` are optional attributes but recommended
    - If omitted, the browser uses the image's actual width and height
    - Images are measured in pixels



## 4.7 Images (Cont.)

- **Some XHTML elements are empty elements that contain only attributes and do not mark up text**
- **Empty elements (e.g., `img`) must be terminated, either by using the forward slash character (/) inside the closing right angle bracket or by explicitly writing an end tag**



## 4.5 | Images in XHTML files.

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.5: picture.html -->
6 <!-- Images in XHTML files. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Images</title>
10  </head>
11
12  <body>
13    <p>
14      <img src = "cpphtp6.jpg" width = "92" height = "120"
15        alt = "C++ How to Program book cover" />
16      <img src = "jhtp.jpg" width = "92" height = "120"
17        alt = "Java How to Program book cover" />
18    </p>
19  </body>
20 </html>

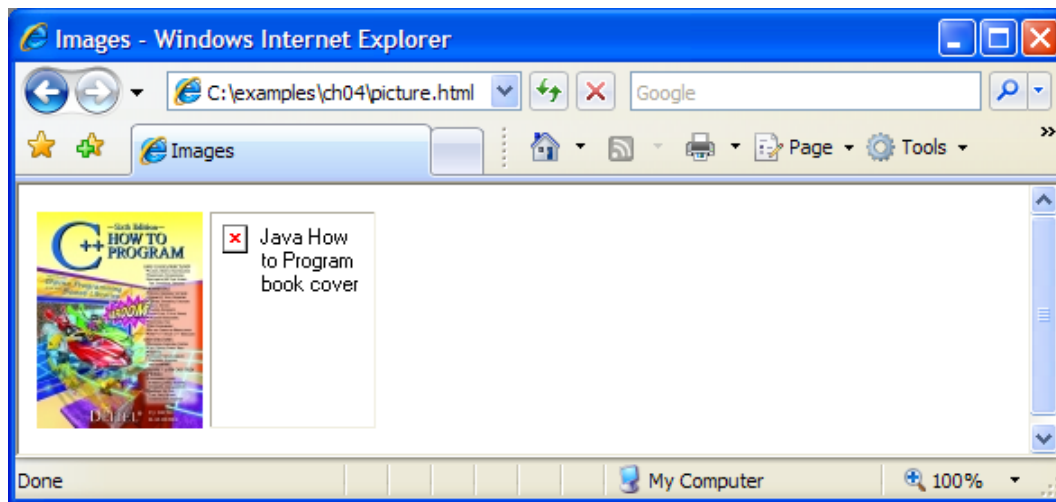
```

Specifies the image file's location

Specifies the image's width

Specifies the image's height

Specifies text to display if the image is unavailable





## Fig. 4.6 | Images as link anchors (Part 1 of 2).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.6: nav.html -->
6 <!-- Images as link anchors. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Navigation Bar</title>
10  </head>
11
12  <body>
13    <p>
14      <a href = "links.html">
15        <img src = "buttons/links.jpg" width = "65"
16          height = "50" alt = "Links Page" />
17      </a>
18
19      <a href = "list.html">
20        <img src = "buttons/list.jpg" width = "65"
21          height = "50" alt = "List Example Page" />
22      </a>
23
24      <a href = "contact.html">
25        <img src = "buttons/contact.jpg" width = "65"
26          height = "50" alt = "Contact Page" />
27      </a>
28

```

Creates a hyperlinked  
image

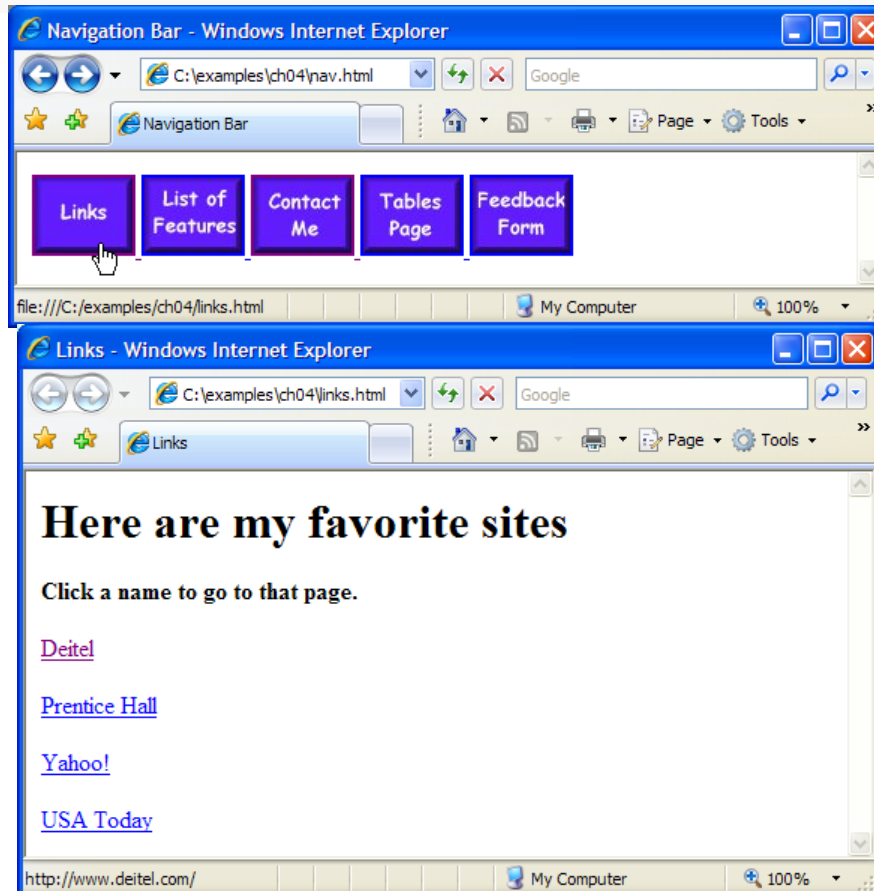


```

29 <a href = "table1.html">
30     <img src = "buttons/table.jpg" width = "65"
31         height = "50" alt = "Table Page" />
32 </a>
33
34 <a href = "form.html">
35     <img src = "buttons/form.jpg" width = "65"
36         height = "50" alt = "Feedback Form" />
37 </a>
38 </p>
39 </body>
40 </html>

```

**Fig. 4.6** |  
Images as link  
anchors (Part 1  
of 2).



## 4.8 Special Characters and Horizontal Rules

- **XHTML provides special characters or entity references (in the form `&code ;`) for representing characters that cannot be rendered otherwise**
- **The code can be:**
  - **Word abbreviations**
  - **Numbers**
    - **Decimal**
    - **Hexadecimal**
- **Example: & character represented by:**
  - **&amp;**
  - **&#38 (decimal)**
  - **&#x26 (hexadecimal)**



## 4.8 Special Characters and Horizontal Rules (Cont.)

- **Most browsers render a horizontal rule, indicated by the `<hr />` tag, as a horizontal line**
- **The `hr` element also inserts a line break above and below the horizontal line**



## Fig. 4.7 | Inserting special characters (Part 1 of 2).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.7: contact2.html -->
6 <!-- Inserting special characters. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Contact Page</title>
10  </head>
11
12  <body>
13    <p>
14      Click
15      <a href = "mailto:deitel@deitel.com">here</a>
16      to open an email message addressed to
17      deitel@deitel.com.
18    </p>
19
20    <hr /> <!-- inserts a horizontal rule -->
21
22    <!-- special characters are entered -->
23    <!-- using the form &code; -->
24    <p>All information on this site is <strong>&copy;
25      Deitel &amp; Associates, Inc. 2007.</strong></p>
26

```

Inserts a horizontal rule,  
with a line break before  
and after

Inserts the special  
characters © and &



27 Creates a strikethrough effect

28

29

30

31

32

33

34

35

36

37

These tags are nested inside other tags -->

`<p><del>You may download 3.14 x 10<sup>2</sup>`

`characters worth of information from this site.</del>`

`Only <sub>one</sub> download per hour is permitted.</p>`

`<p><em>Note: &lt; &frac14; of the information`

`presented here is updated daily.</em></p>`

`</body>`

`</html>`

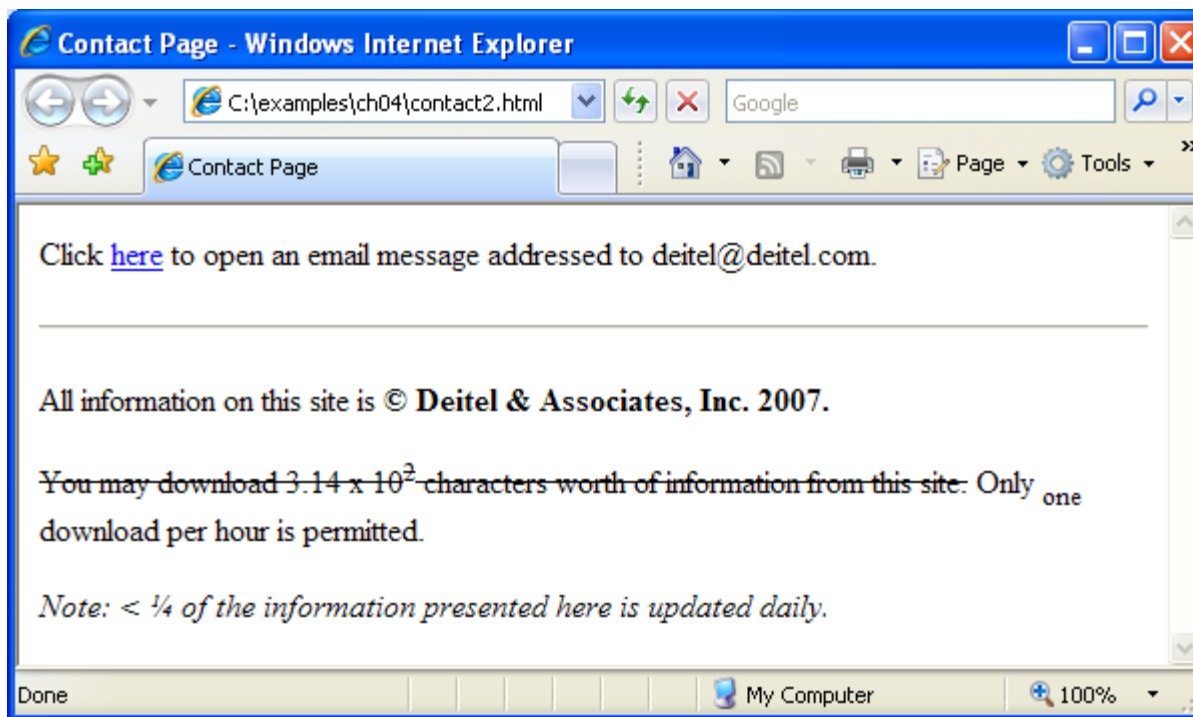
Makes the 1 subscript

Makes the 2 superscript

Emphasizes text

Inserts the special symbols < and  $\frac{1}{4}$

**Fig. 4.7 | Inserting special characters**  
(Part 2 of 2).



## 4.9 Lists

- **Unordered list element `<ul>`**
  - creates a list in which each item in the list begins with a bullet symbol (called a disc)
  - Each entry is an `<li>` (list item) element. Most web browsers render these elements with a line break and a bullet symbol at the beginning of the line

## Fig. 4.8 | Unordered list containing hyperlinks (Part 1 of 2).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.8: links2.html -->
6 <!-- Unordered list containing hyperlinks. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Links</title>
10  </head>
11
12  <body>
13    <h1>Here are my favorite sites</h1>
14    <p><strong>Click on a name to go to that page.</strong></p>
15
16    <!-- create an unordered list -->
17    <ul>
18      <!-- add four list items -->
19      <li><a href = "http://www.deitel.com">Deitel</a></li>
20      <li><a href = "http://www.w3.org">W3C</a></li>
21      <li><a href = "http://www.yahoo.com">Yahoo!</a></li>
22      <li><a href = "http://www.cnn.com">CNN</a></li>
23    </ul>
24  </body>
25 </html>

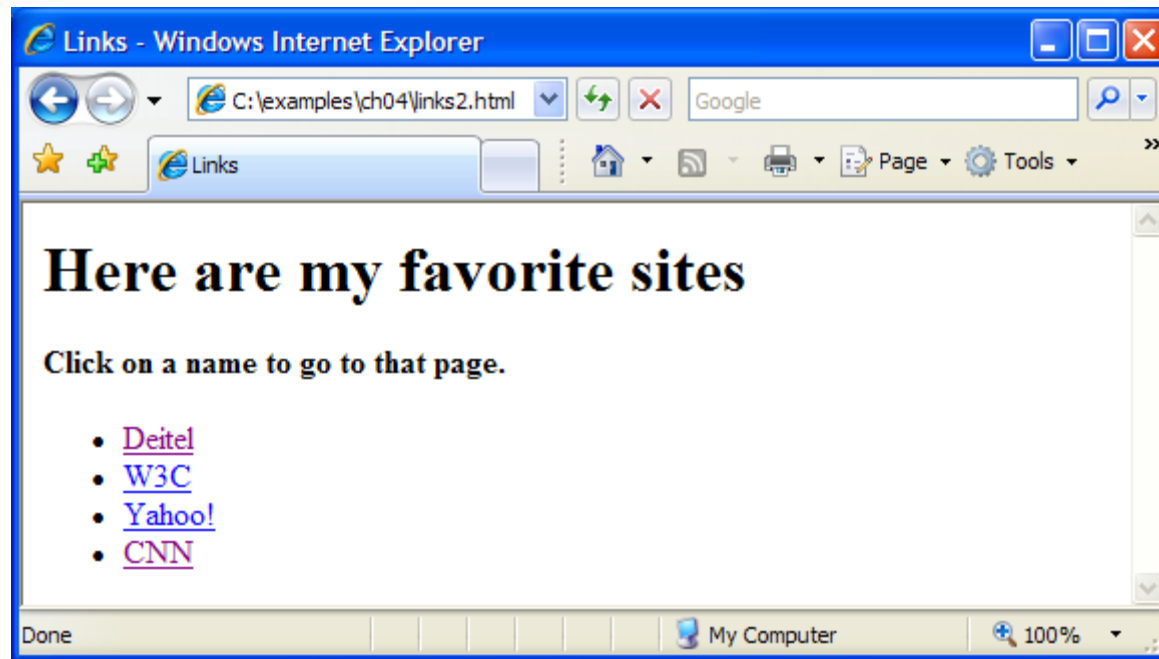
```

Creates an unordered list

Makes hyperlinked elements into individual list items







**Fig. 4.8** | Unordered list containing hyperlinks (Part 2 of 2).

## 4.9 Lists (Cont.)

- The ordered list element `o1` creates a list in which each item begins with a number
- Lists may be nested to represent hierarchical data relationships

## Fig. 4.9 | Nested and ordered lists (Part 1 of 3).

```

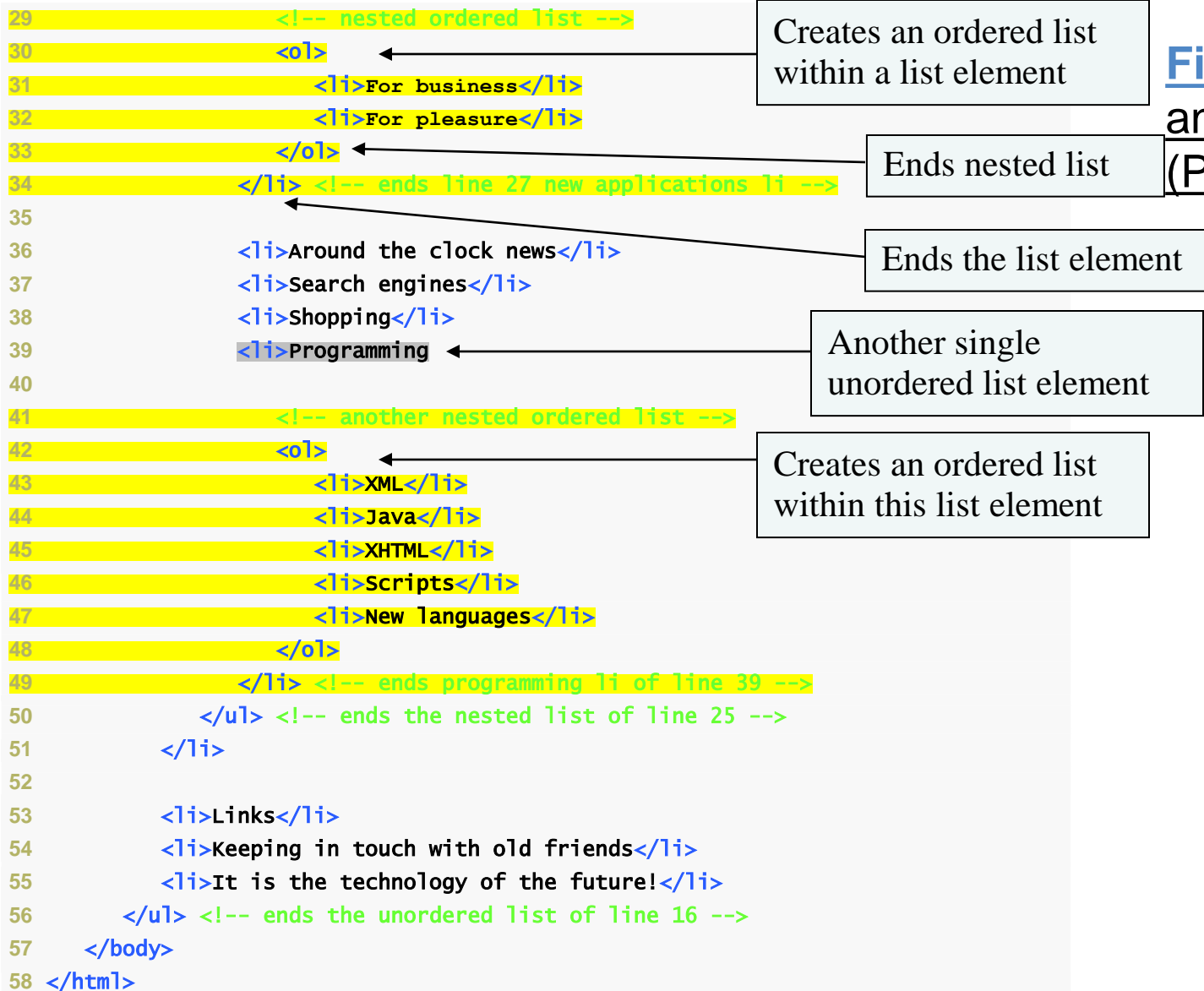
1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.9: list.html -->
6 <!-- Nested and ordered lists. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Lists</title>
10  </head>
11
12  <body>
13    <h1>The Best Features of the Internet</h1>
14
15    <!-- create an unordered list -->
16    <ul>
17      <li>You can meet new people from countries around
18        the world.</li>
19      <li>
20        You have access to new media as it becomes public:
21
22        <!-- this starts a nested list, which uses a -->
23        <!-- modified bullet. The list ends when you -->
24        <!-- close the <ul> tag. -->
25        <ul>
26          <li>New games</li>
27          <li>New applications
28

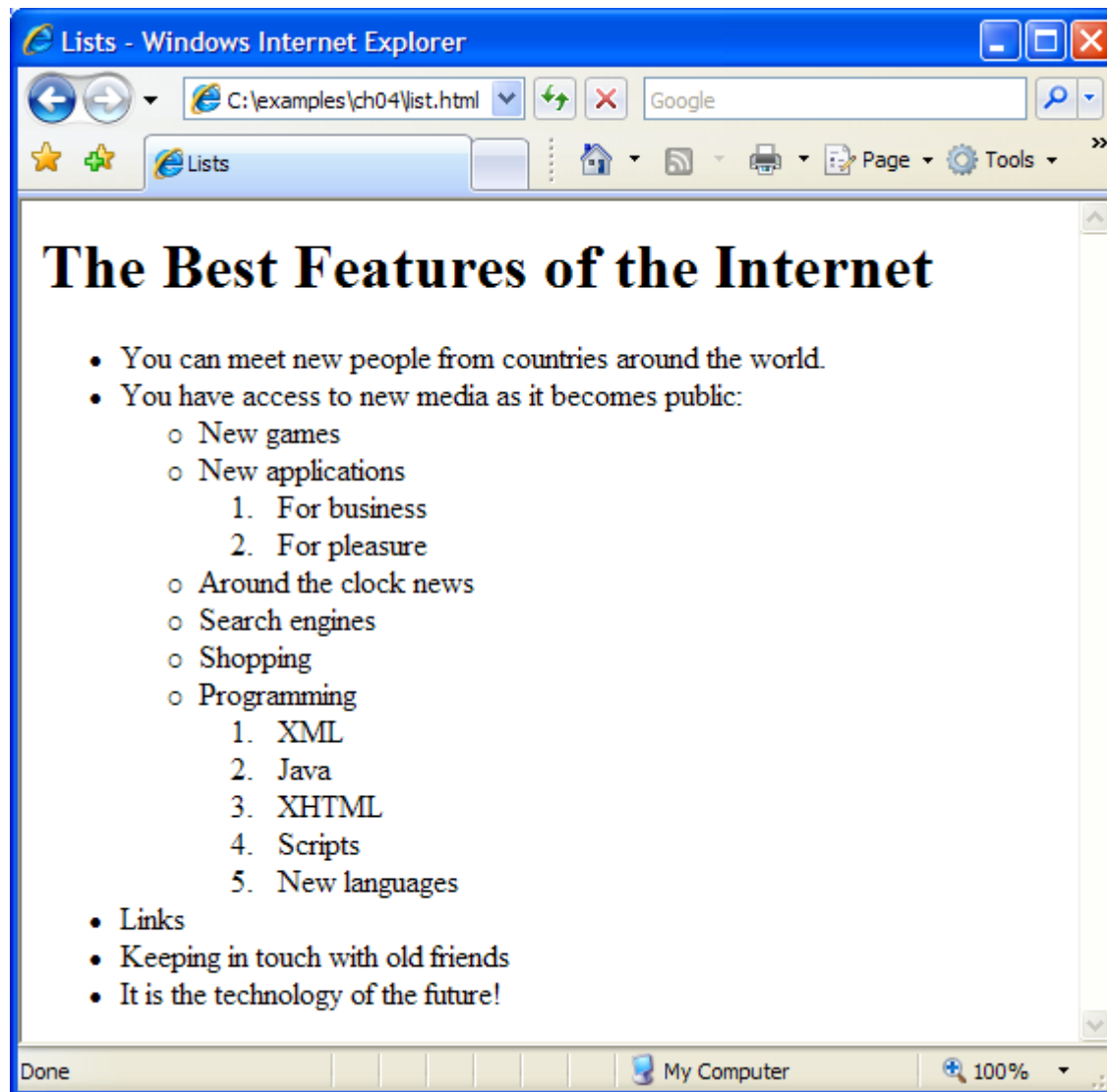
```

A single list element



**Fig. 4.9 | Nested and ordered lists (Part 2 of 3).**





**Fig. 4.9** | Nested and ordered lists (Part 3 of 3).

## 4.10 Tables

- **table element**

- defines an XHTML table
- Attribute **summary** summarizes the table's contents and is used by speech devices to make the table more accessible to users with visual impairments
- Element **caption** describes the table's content
  - The text inside the **<caption>** tag is rendered above the table in most browsers



## 4.10 Tables (Cont.)

- **A table can be split into three distinct sections:**
  - **Head (`thead` element)**
    - Table titles
    - Column headers
  - **Body (`tbody` element)**
    - Primary table data
  - **Foot (`tfoot` element)**
    - Calculation results
    - Footnotes
    - Above body section in the code, but displays at the bottom in the page



## 4.10 Tables (Cont.)

- **Element `tr`**
  - **Defines individual table rows**
  - **Element `th`**
    - **Defines a header cell**
  - **Element `td`**
    - **Contains table data elements**





## 4.10 | Creating a basic table (Part 1 of 3).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.10: table1.html -->
6 <!-- Creating a basic table. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>A simple XHTML table</title>
10  </head>
11
12  <body>
13
14    <!-- the <table> tag opens a table -->
15    <table border = "1" width = "40%"
16      summary = "This table provides information about
17        the price of fruit">
18
19      <!-- the <caption> tag summarizes the table's -->
20      <!-- contents (this helps the visually impaired) -->
21      <caption><strong>Price of Fruit</strong></caption>
22
23      <!-- the <thead> section appears first in the table -->
24      <!-- it formats the table header area -->
25      <thead>
26        <tr> <!-- <tr> inserts a table row -->
27          <th>Fruit</th> <!-- insert a heading cell -->
28          <th>Price</th>
29        </tr>
30      </thead>
31

```

Begins a new XHTML table

Sets the table's border to be one pixel wide

Sets the table's width to 40% of the screen

Describes the table's contents in the summary attribute

Sets the text above the table

Creates a head element

Creates a table heading cell in the new table row

Makes a new table row

Creates the next cell in the row



## 4.10 | Creating a basic table (Part 2 of 3).

```

32      <!-- the <tfoot> section appears last in the table -->
33      <!-- it formats the table footer -->
34      <tfoot>
35      <tr>
36          <th>Total</th>
37          <th>$3.75</th>
38      </tr>
39  </tfoot>
40
41      <!-- all table content is enclosed -->
42      <!-- within the <tbody> -->
43      <tbody>
44      <tr>
45          <td>Apple</td> <!-- insert a data cell -->
46          <td>$0.25</td>
47      </tr>
48      <tr>
49          <td>Orange</td>
50          <td>$0.50</td>
51      </tr>
52      <tr>
53          <td>Banana</td>
54          <td>$1.00</td>
55      </tr>
56      <tr>
57          <td>Pineapple</td>
58          <td>$2.00</td>
59      </tr>
60  </tbody>
61 </table>
62
63 </body>
64 </html>

```

Creates a foot section

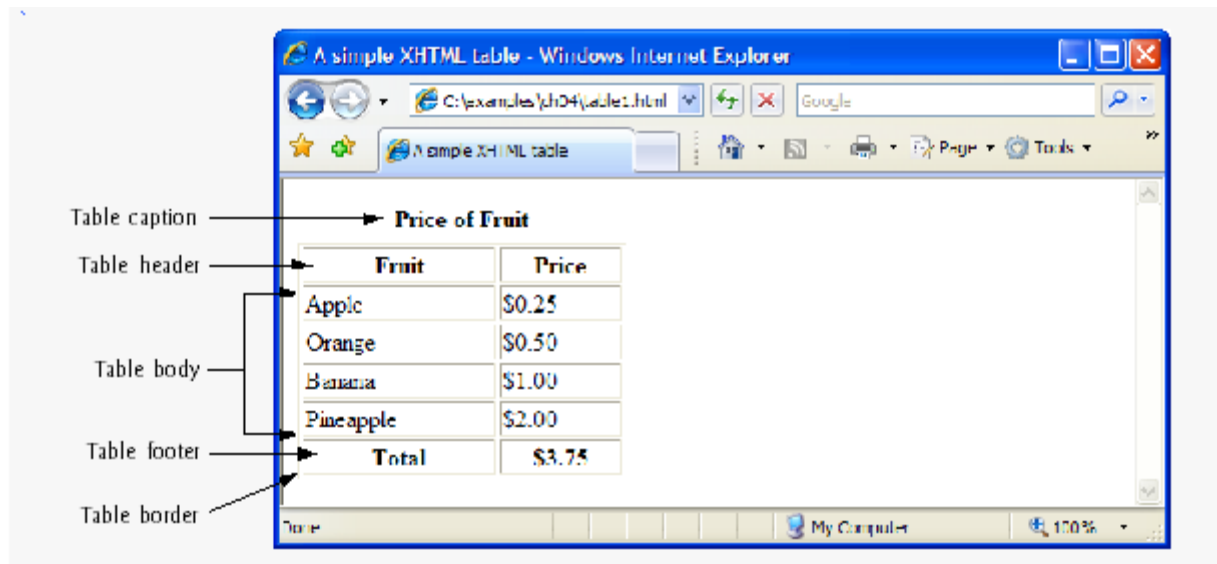
Creates table header cells at the bottom of the table

Creates a body section

Inserts a cell in the body of the table

Ends the table





#### 4.10 | Creating a basic table (Part 3 of 3).



## 4.10 Tables (Cont.)

- **You can merge data cells with the `rowspan` and `colspan` attributes**
  - **The values of these attributes specify the number of rows or columns occupied by the cell**
  - **Can be placed inside any data cell or table header cell**



## 4.11 | Complex XHTML table (Part 1 of 3).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.11: table2.html -->
6 <!-- Complex XHTML table. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Tables</title>
10  </head>
11
12  <body>
13    <h1>Table Example Page</h1>
14
15    <table border = "1">
16      <caption>Here is a more complex sample table.</caption>
17
18      <thead>
19        <!-- rowspans and colspans merge the specified -->
20        <!-- number of cells vertically or horizontally -->
21        <tr>
22          <!-- merge two rows -->
23          <th rowspan = "2">
24            <img src = "camel.gif" width = "205"
25              height = "167" alt = "Picture of a camel" />
26          </th>
27

```

Makes the header cell  
span 2 rows



```

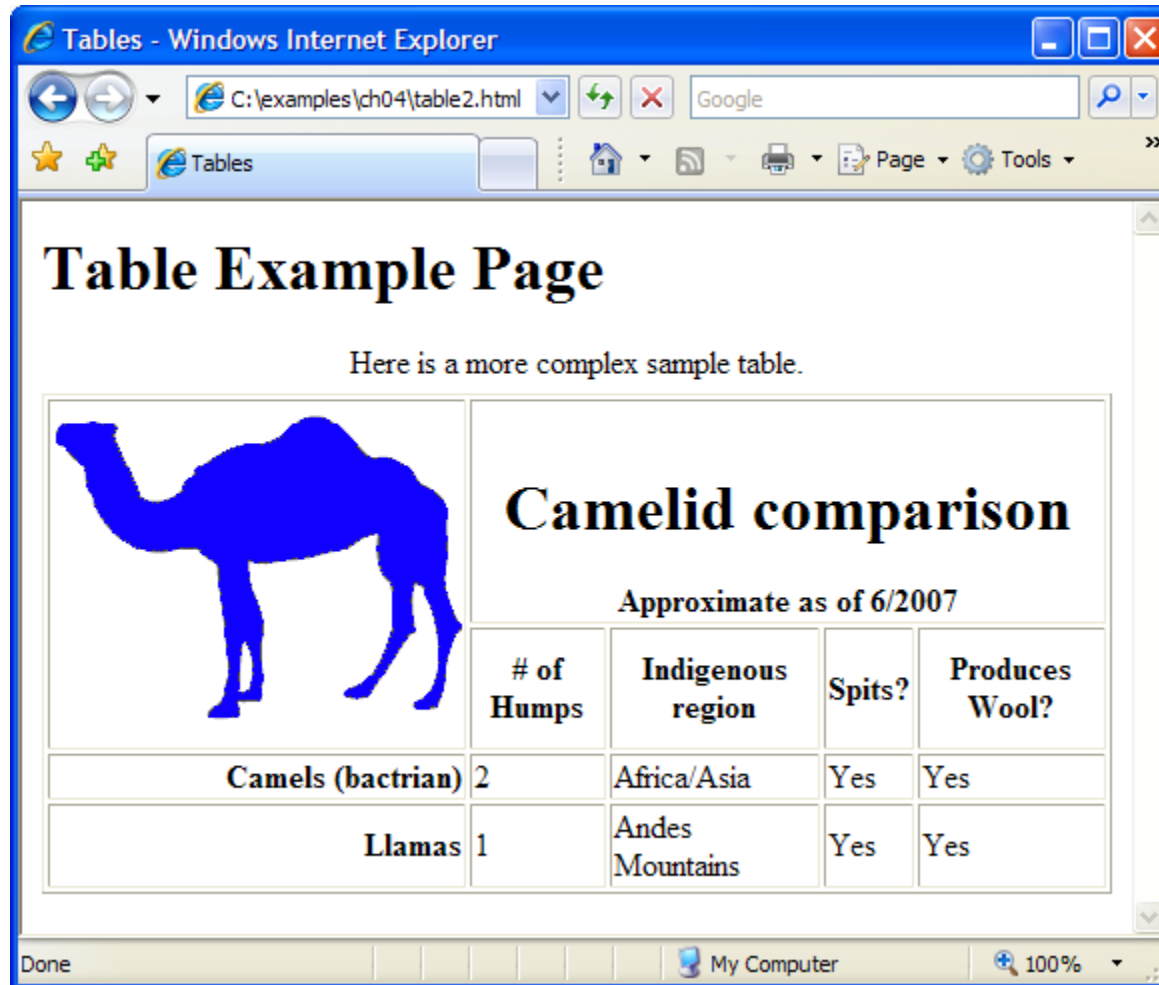
28      <!-- merge four columns -->
29      <th colspan = "4">
30      <h1>Camelid comparison</h1>
31      <p>Approximate as of 6/2007</p>
32      </th>
33  </tr>
34  <tr>
35      <th># of Humps</th>
36      <th>Indigenous region</th>
37      <th>Spits?</th>
38      <th>Produces Wool?</th>
39  </tr>
40 </thead>
41 <tbody>
42 <tr>
43     <th>Camels (bactrian)</th>
44     <td>2</td>
45     <td>Africa/Asia</td>
46     <td>Yes</td>
47     <td>Yes</td>
48 </tr>
49 <tr>
50     <th>Llamas</th>
51     <td>1</td>
52     <td>Andes Mountains</td>
53     <td>Yes</td>
54     <td>Yes</td>
55 </tr>
56 </tbody>
57 </table>
58 </body>
59 </html>

```

Makes the header cell span 4 columns

## 4.11 | Complex XHTML table (Part 2 of 3).





#### 4.11 | Complex XHTML table (Part 3 of 3).



## 4.11 Forms

- **XHTML provides forms for collecting information from users**
- **Forms contain visual components, such as buttons, that users interact with**
- **Forms may also contain nonvisual components, called hidden inputs, which are used to store any data that needs to be sent to the server, but is not entered by the user**





## 4.11 Forms (Cont.)

- **A form begins with the `form` element**
  - **Attribute `method` specifies how the form's data is sent to the web server**
  - **The `action` attribute of the form element specifies the script to which the form data will be sent**



## 4.11 Forms (Cont.)

- The **input** element provides data to the script that processes the form
  - The **text** input inserts a text box into the form, which allows the user to input data
  - The **label** element provides users with information about the input element's purpose
  - The **size** attribute specifies the number of characters visible in the input element
  - Optional attribute **maxlength** limits the number of characters input into a text box
  - The **submit** input submits the data entered in the form to the web server for processing
    - Most web browsers create a button that submits the form data when clicked
  - The **reset** input allows a user to reset all form elements to their default values



**Fig. 4.12 | Form with hidden fields and a text box (Part 1 of 2).**

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.12: form.html -->
6 <!-- Form with hidden fields and a text box. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Forms</title>
10  </head>
11
12  <body>
13    <h1>Feedback Form</h1>
14
15    <p>Please fill out this form to help
16      us improve our site.</p>
17
18    <!-- this tag starts the form, gives the -->
19    <!-- method of sending information and the -->
20    <!-- location of form script -->
21    <form method = "post" action = "">
22      <p>
23        <!-- hidden inputs contain non-visual -->
24        <!-- information -->
25        <input type = "hidden" name = "recipient"
26          value = "deitel@deitel.com" />
27        <input type = "hidden" name = "subject"
28          value = "Feedback Form" />
29        <input type = "hidden" name = "redirect"
30          value = "main.html" />
31      </p>

```

Appends form data to the browser request

No URL is used to process this form's data

Creates hidden inputs not visible to the user



```

32      <!-- <input type = "text"> inserts a text box -->
33
34      <p><label>Name:
35          <input name = "name" type = "text" size = "25"
36              maxlength = "30" />
37      </label></p>
38
39      <p>
40          <!-- input types "submit" and "reset" insert -->
41          <!-- buttons for submitting and clearing the -->
42          <!-- form's contents -->
43          <input type = "submit" value = "Submit" />
44          <input type = "reset" value = "Clear" />
45      </p>
46  </form>
47 </body>
48 </html>

```

Creates a label for the text field

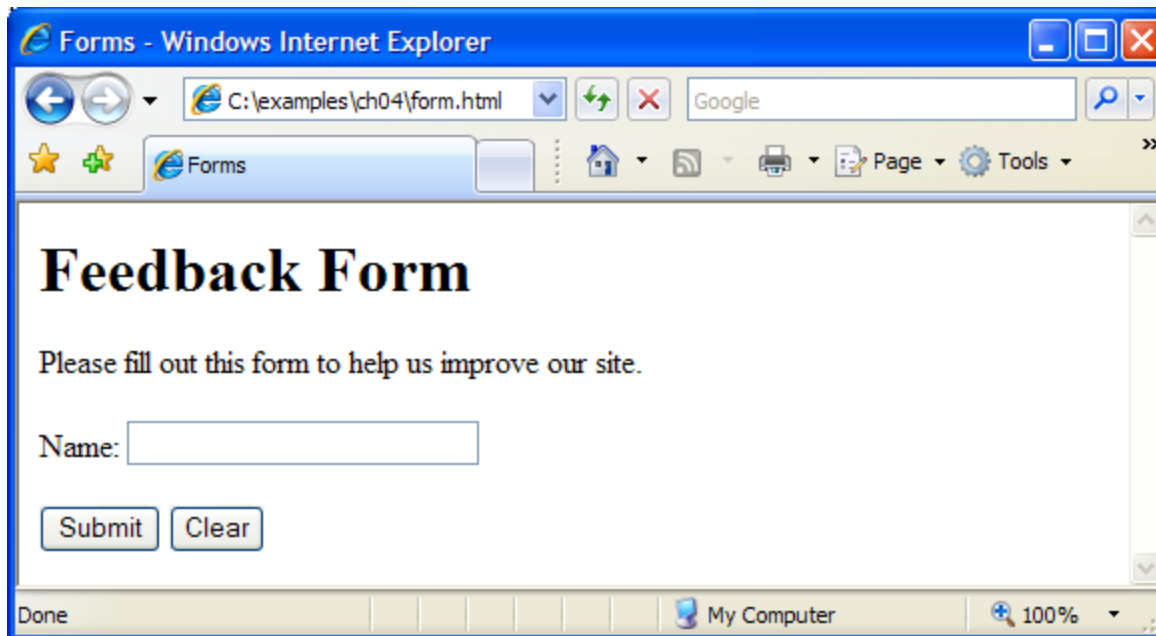
Inserts a text box called "name" with 25 characters visible and a 30 character limit

Inserts a submit button with "Submit" written on it

Inserts a reset button with "Clear" written on it

Ends the XHTML form

**Fig. 4.12** | Form with hidden fields and a text box (Part 2 of 2).



## 4.11 Forms (Cont.)

- The **textarea** element inserts a multiline text box, called a text area, into a form
  - The number of rows in the text area is specified with the **rows** attribute
  - The number of columns (i.e., characters per line) is specified with the **cols** attribute
- The **password** input inserts a password box into a form
  - Allows users to enter sensitive information, such as credit card numbers and passwords, by “masking” the information input with another character, usually asterisks
  - The actual value input is sent to the web server, not the asterisks that mask the input



## 4.11 Forms (Cont.)

- **The checkbox input allows the user to make a selection**
  - When the checkbox is selected, a check mark appears in the checkbox. Otherwise, the checkbox is empty
  - Checkboxes can be used individually and in groups. Checkboxes that are part of the same group have the same name
- **A radio button is similar in function and use to a checkbox, except that only one radio button in a group can be selected at any time**
  - All radio buttons in a group have the same name attribute but different value attributes.
- **The select input provides a drop-down list of items**
  - The name attribute identifies the drop-down list
  - The option element adds items to the drop-down list



## 4.11 Forms (Cont.)

- The **br** element causes most browsers to render a line break
- Any markup or text following a **br** element is rendered on the next line



**Fig. 4.13 | Form  
using a variety of  
components  
(Part 1 of 5).**

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.13: form2.html -->
6 <!-- Form using a variety of components. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>More Forms</title>
10  </head>
11
12  <body>
13    <h1>Feedback Form</h1>
14    <p>Please fill out this form to help
15      us improve our site.</p>
16
17    <form method = "post" action = "">
18      <p>
19        <input type = "hidden" name = "recipient"
20          value = "deitel@deitel.com" />
21        <input type = "hidden" name = "subject"
22          value = "Feedback Form" />
23        <input type = "hidden" name = "redirect"
24          value = "main.html" />
25      </p>
26
27      <p><label>Name:
28        <input name = "name" type = "text" size = "25" />
29      </label></p>
30

```





```

31      <!-- <textarea> creates a multiline textbox -->
32      <p><label>Comments:<br />
33          <textarea name = "comments"
34              rows = "4" cols = "36">Enter comments here.</textarea>
35      </label></p>
36
37      <!-- <input type = "password"> inserts
38      <!-- textbox whose display is masked
39      <!-- asterisk characters -->
40      <p><label>E-mail Address:
41          <input name = "email" type = "password" size = "25" />
42      </label></p>
43
44      <p>
45          <strong>Things you liked:</strong><br />
46
47          <label>Site design
48              <input name = "thingsliked" type = "checkbox"
49                  value = "Design" /></label>
50          <label>Links
51              <input name = "thingsliked" type = "checkbox"
52                  value = "Links" /></label>
53          <label>Ease of use
54              <input name = "thingsliked" type = "checkbox"
55                  value = "Ease" /></label>
56          <label>Images
57              <input name = "thingsliked" type = "checkbox"
58                  value = "Images" /></label>
59          <label>Source code
60              <input name = "thingsliked" type = "checkbox"
61                  value = "Code" /></label>
62      </p>

```

Inserts a text area with 4 rows and 36 columns, whose initial text is "Enter comments here."

Inserts an input field that displays entered text as asterisks (or another character)

Inserts several checkboxes with different labels

**Fig. 4.13 | Form**  
using a variety of  
components  
(Part 2 of 5).



```

63 <!-- <input type = "radio" /> creates a radio -->
64 <!-- button. The difference between radio butt
65 <!-- and checkboxes is that only one radio butt
66 <!-- in a group can be selected. -->
67
68 <p>
69   <strong>How did you get to our site?:</strong><br />
70
71   <label>Search engine
72     <input name = "howtosite" type = "radio"
73       value = "search engine" checked = "checked" /></label>
74   <label>Links from another site
75     <input name = "howtosite" type = "radio"
76       value = "link" /></label>
77   <label>Deitel.com website
78     <input name = "howtosite" type = "radio"
79       value = "deitel.com" /></label>
80   <label>Reference in a book
81     <input name = "howtosite" type = "radio"
82       value = "book" /></label>
83   <label>Other
84     <input name = "howtosite" type = "radio"
85       value = "other" /></label>
86 </p>
87
88 <p>
89   <label>Rate our site:
90

```

Initially sets this radio button as selected

**Fig. 4.13 | Form using a variety of components (Part 3 of 5).**

Inserts a group of radio buttons, only one of which can be selected



## 4.13 | Form g a variety of components (Part 4 of 5).

Create a drop-down list named  
“rating”

Sets “Amazing” as the initially  
selected option

```

91      <!-- the <select> tag presents a drop-down -->
92      <!-- list with choices indicated by the -->
93      <!-- <option> tags -->
94      <select name = "rating">
95          <option selected = "selected">Amazing</option>
96          <option>10</option>
97          <option>9</option>
98          <option>8</option>
99          <option>7</option>
100         <option>6</option>
101         <option>5</option>
102         <option>4</option>
103         <option>3</option>
104         <option>2</option>
105         <option>1</option>
106         <option>Awful</option>
107     </select>
108 </label>
109 </p>
110
111 <p>
112     <input type = "submit" value = "Submit" />
113     <input type = "reset" value = "Clear" />
114 </p>
115 </form>
116 </body>
117 </html>

```



The screenshot shows a Windows Internet Explorer window titled 'More Forms - Windows Internet Explorer'. The address bar displays 'C:\examples\ch04\form2.html'. The page content includes a title 'Feedback Form', a request to fill out the form, and several input fields: a text box for 'Name', a text area for 'Comments' with the placeholder 'Enter comments here.', and a text box for 'E-mail Address'. Below these are two sections: 'Things you liked:' with checkboxes for 'Site design', 'Links', 'Ease of use', 'Images', and 'Source code'; and 'How did you get to our site?:' with radio buttons for 'Search engine', 'Links from another site', 'Deitel.com Website', 'Reference in a book', and 'Other'. A 'Rate our site:' section features a dropdown menu currently showing 'Amazing' and a list of numbers from 10 down to 1. A 'Submit' button is located to the left of the dropdown. The status bar at the bottom shows 'Done', 'My Computer', and '100%' zoom.

More Forms - Windows Internet Explorer

C:\examples\ch04\form2.html

Google

More Forms

## Feedback Form

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

Name:

Comments:

E-mail Address:

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

**How did you get to our site?:**  
Search engine ☒ Links from another site ☐ Deitel.com Website ☐ Reference in a book ☐ Other ☐

Rate our site:    
   
9  
8  
7  
6  
5  
4  
3  
2  
1  
Awful

Done My Computer 100%

**Fig. 4.13** | Form using a variety of components (Part 5 of 5).

## 4.12 Internal Linking

- The **a** tag can be used to link to another section of the same document by specifying the element's **id** as the link's **href**.
- To link internally to an element with its **id** attribute set, use the syntax *#id*.



```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.14: internal.html -->
6 <!-- Internal hyperlinks to make pages more navigable. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Internal Links</title>
10  </head>
11
12  <body>
13    <!-- id attribute creates an internal hyperlink destination -->
14    <h1 id = "features">The Best Features of the Internet</h1>
15
16    <!-- an internal link's address is "#id" -->
17    <p><a href = "#bugs">Go to <em>Favorite Bugs</em></a></p>
18
19    <ul>
20      <li>You can meet people from countries
21        around the world.</li>
22      <li>You have access to new media as it becomes public:
23        <ul>
24          <li>New games</li>
25          <li>New applications
26            <ul>
27              <li>For Business</li>
28              <li>For Pleasure</li>
29            </ul>
30          </li>
31
```

Sets the `id` attribute for the `h1` element

Creates a link to the element in this document with `id = bugs`

**Fig. 4.14** Internal hyperlinks to make pages more navigable (Part 1 of 3).



**Fig. 4.14** |  
Internal  
hyperlinks to  
make pages more  
navigable (Part 2  
of 3).

```

32      <li>Around the clock news</li>
33      <li>Search Engines</li>
34      <li>Shopping</li>
35      <li>Programming
36          <ul>
37              <li>XHTML</li>
38              <li>Java</li>
39              <li>Dynamic HTML</li>
40              <li>Scripts</li>
41              <li>New languages</li>
42          </ul>
43      </li>
44  </ul>
45  </li>
46
47  <li>Links</li>
48  <li>Keeping in touch with old friends</li>
49  <li>It is the technology of the future!</li>
50 </ul>
51
52  <!-- id attribute creates an internal hyperlink destination -->
53  <h1 id = "bugs">My 3 Favorite Bugs</h1>
54  <p>
55      <!-- internal hyperlink to features -->
56      <a href = "#features">Go to <em>Favorite Features</em></a>
57  </p>
58  <ol>
59      <li>Fire Fly</li>
60      <li>Gal Ant</li>
61      <li>Roman Tic</li>
62  </ol>
63 </body>
64 </html>

```

Sets the id attribute for this  
h1 element

Creates a link to the element in this  
document with id = features





**Fig. 4.14** | Internal hyperlinks to make pages more navigable (Part 3 of 3).





## 4.13 meta Elements

- **One way that search engines catalog pages is by reading the meta element's contents.**
  - **The name attribute identifies the type of meta element**
  - **The content attribute**
    - **Of a keywords meta element: provides search engines with a list of words that describe a page, which are compared with words in search requests**
    - **Of a description meta element: provides a three- to four-line description of a site in sentence form, used by search engines to catalog your site. This text is sometimes displayed as part of the search result**



```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.15: meta.html -->
6 <!-- meta elements provide keywords and a description of a page. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>welcome</title>
10
11     <!-- <meta> tags provide search engines with -->
12     <!-- information used to catalog a site -->
13     <meta name = "keywords" content = "web page, design,
14       XHTML, tutorial, personal, help, index, form,
15       contact, feedback, list, links, deitel" />
16     <meta name = "description" content = "This website will
17       help you learn the basics of XHTML and web page design
18       through the use of interactive examples and
19       instruction." />
20   </head>
21   <body>
22     <h1>welcome to our website!</h1>
23
24     <p>We have designed this site to teach about the wonders
25     of <strong><em>XHTML</em></strong>. <em>XHTML</em> is
26     better equipped than <em>HTML</em> to represent complex
27     data on the Internet. <em>XHTML</em> takes advantage of
28     XML's strict syntax to ensure well-formedness. Soon you
29     will know about many of the great features of
30     <em>XHTML.</em></p>
31
32     <p>Have Fun with the Site!</p>
33   </body>
34 </html>

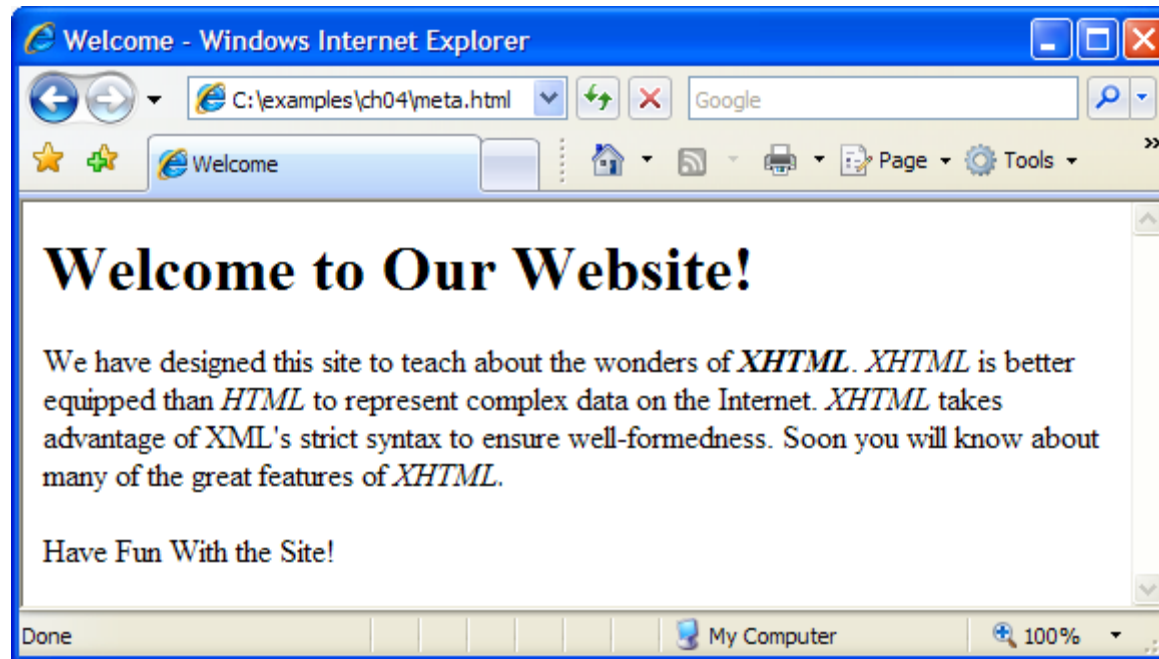
```

## Fig. 4.15 | meta elements provide keywords and a description of a page (Part 1 of 2).

Provides keywords describing the page for a search engine

Provides the site's description in sentence form for a search engine





**Fig. 4.15** | meta elements provide keywords and a description of a page (Part 2 of 2).



## Software Engineering Observation 4.1

---

**meta elements are not visible to users and must be placed inside the head section of your XHTML document. If meta elements are not placed in this section, they will not be read by search engines.**

