

CPIS 358: INTERNET APPLICATIONS & WEB PROGRAMMING

CREATE

BEAUTIFUL

WEBSITES

GO>

CHAPTER 2-PART 1: INTRODUCTION TO HTML5

TEXTBOOK

2

- You can read Chapter 2 page 69-->107

AGENDA

3

- Introduction
- Writing and Editing HTML5
- HTML5 Tags
- html, head, body, meta Elements
- Headings
- Linking
- Images
- Tables
- Lists
- Forms
- Internal Linking

OBJECTIVES

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- At the end of this chapter, the student should be able to:
 - ▣ Know the semantic of each tag elements
 - ▣ Use HTML5 markups to create web pages
 - Add images to web pages
 - Create and use hyperlinks to help users navigate web pages
 - Create tables with rows and columns of data
 - Create and use forms to get user input

INTRODUCTION...

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- HTML (HyperText Markup Language)
 - ▣ Markup Language used for displaying text and documents across different platforms and machines
 - ▣ Legacy technology. On January 26, 2000, the W3C announced that HTML 4 has been reformulated into XHTML 1.0
- XHTML (eXtensible HyperText Markup Language) is HTML 4 written as an XML application
- XML (Xtensible Markup Language) edited by W3C in February 1998
 - ▣ A meta-language that can be used to describe and generate other language markup
 - ▣ A subset or child of (SGML) "Standard Genralized Markup Language" the mother of all languages

INTRODUCTION...

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SGML – Standard Generalized Markup Language

HTML 4

XML

HTML 5

XHTML 1

XSL

MathML

XHTML 2

2000-New
Language

2009-Not updated

	2012	2013	2014	2015	2016
HTML 5.0	Candidate Rec	Call for Review	Recommendation		
HTML 5.1	1st Working Draft		Last Call	Candidate Rec	Recommendation
HTML 5.2 ^[29]				1st Working Draft	

INTRODUCTION

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- There are two primary parts to XHTML:
 - ▣ HTML
 - ▣ XML
- XHTML2 combines the flexibility of HTML4 with the extensibility of XML
 - ▣ 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 (CSS)
- HTML5
 - ▣ is also a potential candidate for cross-platform mobile applications

XHTML and HTML Editors

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□ XHTML and HTML5 Documents

▣ Can be edited by

- Notepad

- Notepad++ (recommended)

 - Free download

 - http://sourceforge.net/project/showfiles.php?group_id=95717&package_id=102072

- Dreamweaver (test version)

 - Downloadable from <http://www.adobe.com/fr/downloads/>
(inscription)

▣ Are stored on web server

Main Structure of HTML5 document

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L1: `<!DOCTYPE....>`

L2:

L3: `<!--... -->`

L4: `<html>`

.....

L5: `</html>`

- In HTML, text is marked up with elements delimited by tags that are names contained in pairs of angle brackets
 - ▣ Some elements may contain attributes that provide additional information about the element (L1, L4)
 - ▣ Every HTML document contains a start `<html>` tag and an end `</html>` tag
 - ▣ Comments in HTML always begin with `<!--` and end with `-->` (L3)
 - The browser ignores all text inside a comment
 - ▣ We should include blank lines (L2) to make our documents easier to read
 - The browser ignores them

DOCTYPE Declaration

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- **L1: <!DOCTYPE....>**
- DOCTYPE also named DTD, defines the type of HTML document
 - ▣ Mandatory
- DOCTYPE informs the browser which vocabulary, grammar rules and well-formed rules that must be used for the HTML document
 - ▣ **<!DOCTYPE html>**

<html> Element

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- HTML markup contains
 - ▣ Text, images, animations, audios and videos that represents the content of a document
 - ▣ Elements that specify a document's structure and meaning
 - html element is one the most important elements in HTML5 document
- L4: <html...> ... </html> is mandatory
 - ▣ The root element of the HTML5 document
 - ▣ The container for all other HTML elements (except for the [<!DOCTYPE>](#) tag)
 - ▣ Must contain the child element <head> and <body>

```
...  
<html>  
  <head>  
    ...  
  </head>  
  <body>  
    ...  
  </body>  
</html>
```

```
<html >  
    <head>....</head>  
    <body>...</body>  
</html>
```

<head> Element...

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- Every HTML document contains a head element which generally is not rendered in the display window
- Head element contains
 - ▣ A Title element that names a web page <title>...</title> (**Mandatory**)
 - 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
 - ▣ CSS files declaration and call
 - ▣ JavaScript files declaration and Links

<head> Element...

```
<html >  
  <head>....</head>  
  <body>...</body>  
</html>
```

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- Head element contains
 - ▣ A Meta Element that contains the page description , the keywords associated to the page, the author name and the copyright notices, the character set used in the page etc...
 - ▣ A meta Element has 3 important attributes:
 - Charset attribute determines how to convert data into byte
 - Name attribute identify the type of meta element
 - Content attribute provides the information search engines use to catalog pages

Character set

Example : ASCII, ISO-8859, UTF-8 (the most popular encoding scheme for the web), etc

```
<meta charset="utf-8">
```

Name=keywords

The content attributes provides search engines with a list of words that describe the page

```
<meta name="keywords"  
content="HTML,CSS,XML,JavaScript">
```

name=Description

The content attributes provides a description of a site. Search engines use this description to catalog your site and sometimes display this information as a part of the search results

```
<meta name="description"  
content="Free Web tutorials">
```

```
<html >  
    <head>....</head>  
    <body>...</body>  
</html>
```

<head> Element

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L1: <!DOCTYPE html>

L2:

L3:<!-- MyFirstExample.html -->

L4:<!-- Head-->

L5: <html>

L6:<head>

L7:<meta charset="UTF-8">

L8:<title> Welcome </title>

L9: <meta name="description" content="Free Web tutorials">

L10: <meta name="keywords" content="HTML,CSS,XML,JavaScript">

L11: <meta name="author" content="Norchen Ben Ayed">

L12: </head>

....

L13: </html>

```
<html ... >  
    <head>....</head>  
    <body>...</body>  
</html>
```

<body> Element

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- Every HTML document contains a body element:
 - ▣ Contains the document's content, which may include text and tags
 - ▣ Example
 - All text placed between the <p> and </p> tags forms one paragraph

Main Structure of HTML document- Summary

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L1: <!DOCTYPE html>

L2:

L3: <!-- MyFirstExample.html -->

L4: <!-- Head-->

L5: <html>

L6: <head>

L7: <meta charset="UTF-8">

L8: <title> Welcome </title>

L9: <meta name="description" content="Free Web tutorials">

L10: <meta name="keywords" content="HTML,CSS,XML,JavaScript">

L11: <meta name="author" content="Norchen Ben Ayed">

L12: </head>

L13: <body>

L14: <p> Welcome to HTML5 </p>

L15: </body>

L16: </html>

- HTML 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 (=)

My First Example

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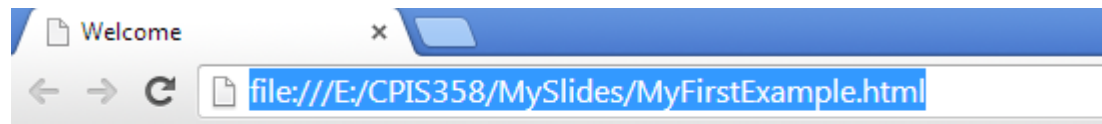
```
1 <!DOCTYPE html>
2
3 <!--MyFirstExample.html -->
4 <!--Head-->
5 <html>
6   <head>
7     <meta charset="UTF-8">
8     <title> Welcome </title>
9     <meta name="description" content="Free Web tutorials">
10    <meta name="keywords" content="HTML,CSS,XML,JavaScript">
11    <meta name="author" content="Norchen Ben Ayed">
12  </head>
13  <body>
14    <p> Welcome to HTML5 </p>
15  </body>
16 </html>
17
```

HTML comments, not interpreted by the browser

Creates a head element

Creates a title element, which contains the text Welcome

Creates a p element within the body, which displays welcome text



Welcome to HTML5

Good Programming Practice 1

Assign filenames to scripts that describe their functionality. This practice can help you to identify scripts faster. It also helps people who want to link to a page, by giving them an easy-to-remember name. For example, if you are writing an HTML script that contains product information, you might want to call it `products.html`.

Good Programming Practice 2

Place comments throughout your markup. Comments help other programmers understand the markup, assist in debugging and list useful information that you do not want the browser to render. Comments also help you understand your own markup when you revisit a document to modify or update it in the future

Good Programming Practice 3

Indenting nested elements emphasizes a document's structure and promotes readability

Good Programming Practice 4

Use a consistent title-naming convention for all pages on a site. For example, if a site is named “Bailey’s Website,” then the title of the contact page might be “Bailey’s Website - Contact.” This practice can help users better understand the website’s structure

Good Programming Practice 5

Although HTML5 element and attribute names are case insensitive (you can use uppercase or lowercase letters), it's a good practice to use only lowercase letters

Common Programming Error 1

Not enclosing attribute values in either single or double quotes is a syntax error. However, some web browsers may still render the element correctly

Common Programming Error 2

HTML 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 HTML 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

`<head><title>hello</head></title>` Error

`<head><title>hello</title></head>` Right

HTML validation

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- An HTML document is well-formed if it respects the syntax rules
 - ▣ Conform to doctype specification
- Validation Advantage
 - ▣ To be sure that you can display the page in all browsers
 - ▣ To prove your technical skills by defining a high-quality of code that respects the highest standards
- Well-known validator :
 - ▣ W3C Validator (validator.w3.org)
 - ▣ Validome Validator (www.validome.org)

```
<html ... >  
    <head>....</head>  
    <body>...</body>  
</html>
```

Headings

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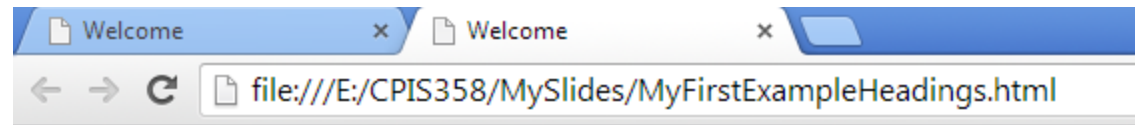
- Some text in an HTML5 document may be more important than other text
- HTML5 provides six headings (h1 through h6) for specifying the relative importance of information
 - ▣ Heading element h1 is considered the most significant heading and is rendered in the largest font
 - ▣ Each successive heading element (i.e., h2, h3, etc.) is rendered in a progressively smaller font

Heading Example

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```
change.log | MyFirstExample.html | MyFirstExampleHeadings.html
1  <!DOCTYPE html>
2
3  <!--MyFirstExample.html -->
4  <!--Head-->
5  <html>
6  <head>
13 <body>
14
15     <h1> Level 1 Heading </h1>
16     <h2> Level 2 Heading </h2>
17     <h3> Level 3 Heading </h3>
18     <h4> Level 4 Heading </h4>
19     <h5> Level 5 Heading </h5>
20     <h6> Level 6 Heading </h6>
21
22 </body>
23 </html>
24
```

Creates six headings, each with decreasing significance



Level 1 Heading

Level 2 Heading

Level 3 Heading

Level 4 Heading

Level 5 Heading

Level 6 Heading

Look-and-Feel Observation 1

Placing a heading at the top of every HTML page helps viewers understand the purpose of each page

Use larger headings to emphasize more important sections of a web page

```
<html ... >  
    <head>....</head>  
    <body>...</body>  
</html>
```

Linking

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- A hyperlink references or links to other resources, such as HTML5 documents and images
- Web browsers typically underline text hyperlinks and color them blue by default

```
<html ... >
    <head>....</head>
    <body>...</body>
</html>
```

Linking...

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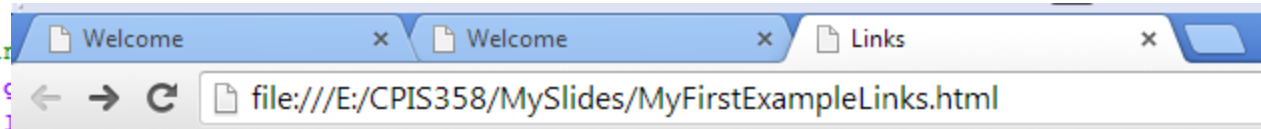
- Users can insert links with the `a` (anchor) element
 - ▣ The `href` attribute specifies the resource (e.g., page, file, e-mail address) being linked
 - ` Google `
 - ▣ Anchors can link to an e-mail address using a `mailto:` URL
 - ` Dr. Norchen `
 - When a user clicks this type of anchored link, most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

Linking Example 1

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```
1 <!DOCTYPE html>
2
3 <!--MyFirstExample.html -->
4 <!--Head-->
5 <html>
6   <head>
7     <meta charset="UTF-8">
8     <title> Links </title>
9   </head>
10  <body>
11
12    <h1> Here are my favourite sites: </h1>
13    <p> <strong> Click a name to visit that site. </strong></p>
14
15    <!--create 2 text hyperlinks-->
16    <p> <a href="http://www.google.com">Google</a>
17    <p> <a href="http://www.linkedin.com">LinkedIn</a>
18
19  </body>
20 </html>
21
```

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



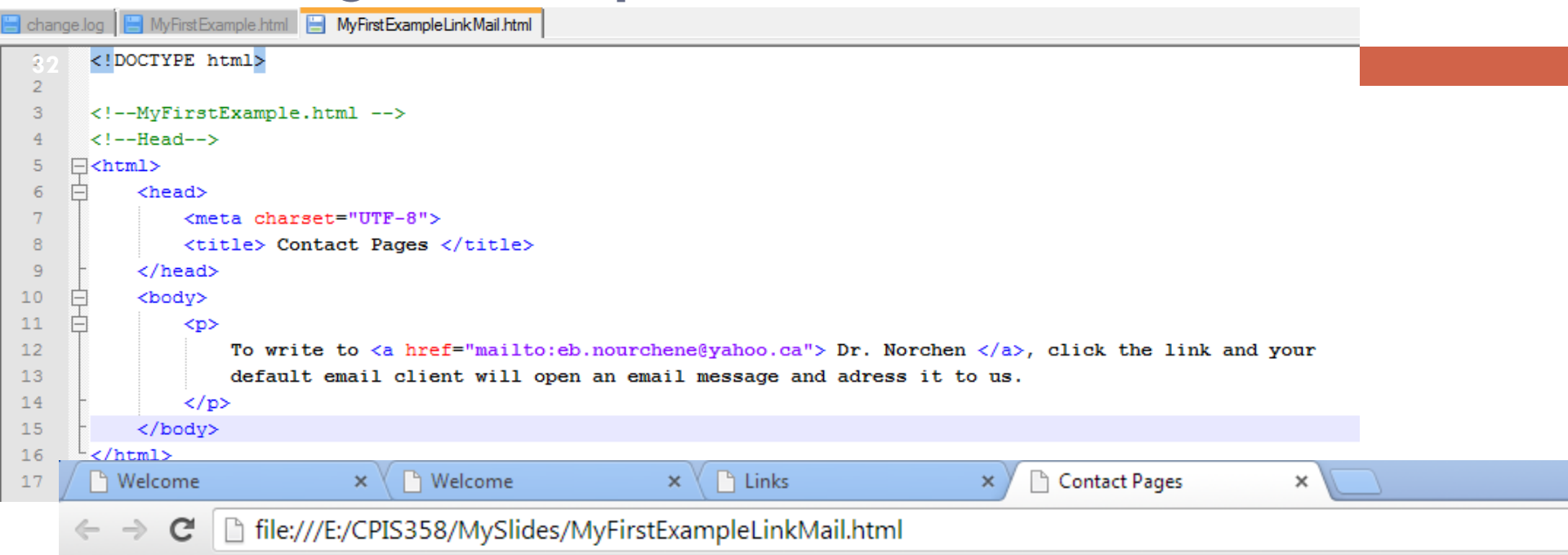
Here are my favourite sites:

Click a name to visit that site.

[Google](http://www.google.com)

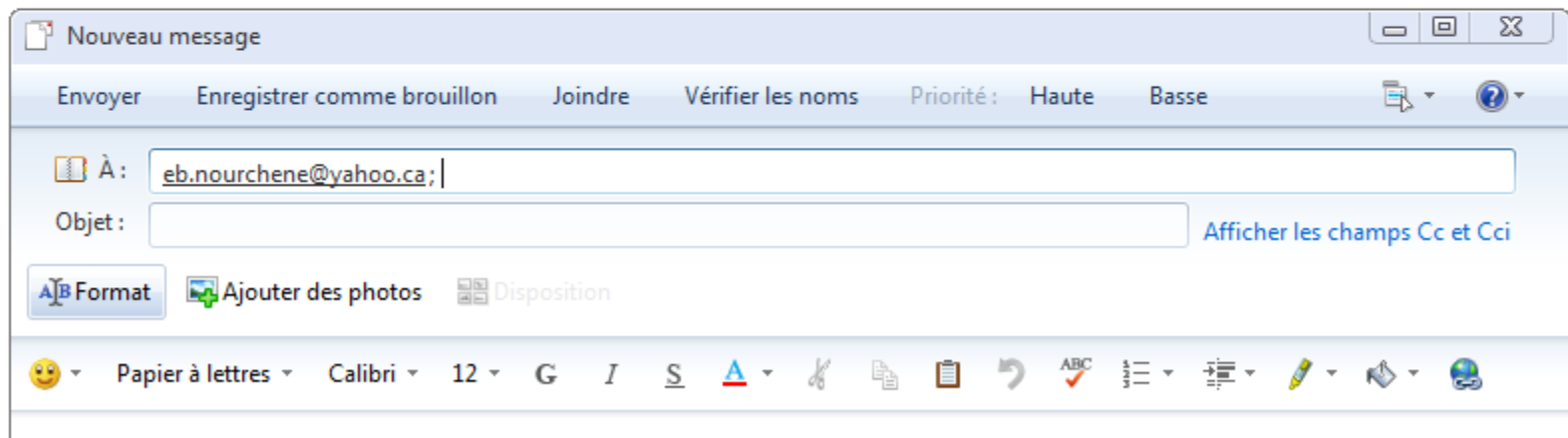
[LinkedIn](http://www.linkedin.com)

Linking Example 2



```
32 <!DOCTYPE html>
2
3 <!--MyFirstExample.html -->
4 <!--Head-->
5 <html>
6 <head>
7 <meta charset="UTF-8">
8 <title> Contact Pages </title>
9 </head>
10 <body>
11 <p>
12 To write to <a href="mailto:eb.nourchene@yahoo.ca"> Dr. Norchen </a>, click the link and your
13 default email client will open an email message and adress it to us.
14 </p>
15 </body>
16 </html>
```

To write to [Dr. Norchen](mailto:eb.nourchene@yahoo.ca), click the link and your default email client will open an email message and adress it to us.



Images

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- 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
 - ▣ If omitted, the browser uses the image's actual width and height
 - ▣ Images are measured in pixels

Good Programming Practice 6

Always include the width and the height of an image inside the `` tag. When the browser loads the HTML file, it will know immediately from these attributes how much screen space to provide for the image and will lay out the page properly, even before it downloads the image

Performance Tip 1

Including the width and height attributes in an `` tag can result in the browser's loading and rendering pages faster

Common Programming Error 7

Entering new dimensions for an image that change its inherent width-to-height ratio distorts the appearance of the image. For example, if your image is 200 pixels wide and 100 pixels high, you should ensure that any new dimensions have a 2:1 width-to-height ratio

Images Example

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change.log new 2 picture.html

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.6: picture.html -->
4 <!-- Including images in HTML5 files. -->
5 <html>
6 <head>
7   <meta charset = "utf-8">
8   <title>Images</title>
9 </head>
10
11 <body>
12 <p>
13   <img src = "cpphtp.png" width = "92" height = "120"
14     alt = "C++ How to Program book cover">
15   <img src = "jhtp.png" width = "92" height = "120"
16     alt = "Java How to Program book cover">
17 </p>
18 </body>
19 </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

F:\CPIS358\examples\ch02\ch02\picture.f
Lionel Richie and...
Images

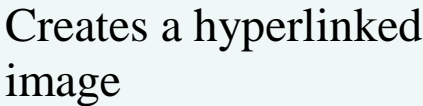
C++ HOW TO PROGRAM
Java How to Program book cover

Using Images as Hyperlinks

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- Create an image hyperlink by nesting an `img` element in an anchor element

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Special Characters and Horizontal Rules

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- HTML provides special characters or entity references (in the form `&code;`) for representing characters that cannot be rendered otherwise such as
 - ▣ ©, fraction, registered trademark ®, ™ ™ Trademark, horizontal ellipsis (...), quote “, apostrophe ‘
 - ▣ Symbols that cause syntax errors (less-than <, greater than >) in the markup
- The code can be:
 - ▣ Word abbreviations
 - ▣ Numbers
 - Decimal
 - Hexadecimal
- Example: & character represented by:
 - ▣ &
 - ▣ & (decimal)
 - ▣ & (hexadecimal)

[Send an email to Deitel & Associates, Inc..](#)

All information on this site is © Deitel & Associates, Inc. 2012.

~~You may download 3.14×10^2 characters worth of information from this site.~~ The first item in the series is x_1 .

Note: $< \frac{1}{4}$ of the information presented here is updated daily.

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

Inserts the special characters © and &

Makes the 2 superscript

Makes the 1 subscript

Creates a strikethrough effect

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

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change.log new 2 picture.htm

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.9: cont
4 <!-- Inserting spec
5 <html>
6 <head>
7   <meta charset = "utf-8">
8   <title>Contact Page</title>
9 </head>
10
11 <body>
12 <p>
13   <a href = "mailto:deitel@deitel.com">Send an email to
14   Deitel & Associates, Inc.</a>.
15 </p>
16
17 <hr> <!-- inserts a horizontal rule -->
18
19 <!-- special characters are entered -->
20 <!-- using the form &code; -->
21 <p>All information on this site is <strong>&copy;
22   Deitel & Associates, Inc. 2012.</strong> </p>
23
24 <!-- to strike through text use <del> element -->
25 <!-- to subscript text use <sub> element -->
26 <!-- to superscript text use <sup> element -->
27 <!-- these elements are nested inside other elements -->
28 <p><del>You may download 3.14 x 10<sup>2</sup>
29   characters worth of information from this site.</del>
30   The first item in the series is x<sub>1</sub></p>
31 <p>Note: <math>< \frac{1}{4}</math> of the information
32   presented here is updated daily.</p>
33 </body>
34 </html>
```

Lists...

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- 2 types of List
 - ▣ Unordred list `ul`
 - ▣ Ordred list `ol`

- Unordered list element `li`
 - ▣ 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

Unordered list containing hyperlinks

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The screenshot shows a code editor with the following HTML code:

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.10: links2.html -->
4 <!-- Unordered list containing hyperlinks. -->
5 <html>
6 <head>
7   <meta charset = "utf-8">
8   <title>Links</title>
9 </head>
10
11 <body>
12   <h1>Here are my favorite sites</h1>
13   <p><strong>Click on a name to go to that page</strong></p>
14
15   <!-- create an unordered list -->
16   <ul>
17     <!-- the list contains four list items -->
18     <li><a href = "http://www.wikipedia.org">Wikipedia</a></li>
19     <li><a href = "http://www.Google.com">Google</a></li>
20   </ul>
21 </body>
22 </html>
```

Callouts explain the code:

- Creates an unordered list**: Points to the `` tag on line 16.
- Makes hyperlinked elements into individual list items**: Points to the `` tags on lines 18 and 19.

The rendered output shows the text "Here are my favorite sites" followed by a strong prompt "Click on a name to go to that page" and an unordered list of two items: "Wikipedia" and "Google", both as hyperlinks.

Here are my favorite sites

Click on a name to go to that page

- [Wikipedia](http://www.wikipedia.org)
- [Google](http://www.Google.com)

Lists

- The ordered list element `01` creates a list in which each item begins with a number
- Lists may be nested to represent hierarchical data relationships

Nested and ordered lists...

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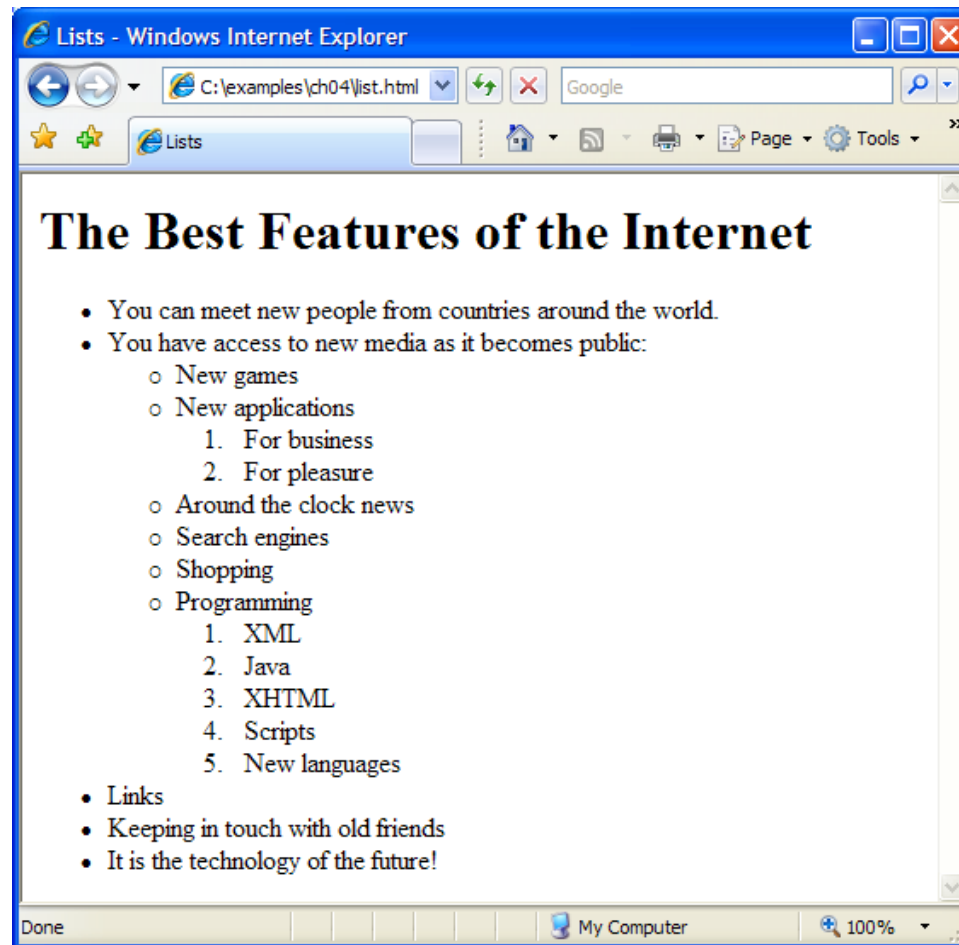
change.log MyFirstExample.html MyFirstExampleLinkMail.html list.html links2.html

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 2.11: list.html -->
4 <!-- Nested lists and ordered lists. -->
5 <html>
6   <head>
10
11   <body>
12     <h1>The Best Features of the Internet</h1>
13
14     <!-- create an unordered list -->
15     <ul>
16       <li>You can meet new people from countries
17       <li>You have access to new media as it beco
49
50       <li>Links</li>
51       <li>Keeping in touch with old friends</li>
52       <li>It's the technology of the future!</li>
53     </ul> <!-- ends the unordered list of line 15
54   </body>
```

```
<ul>
  <li>New games</li>
  <li>New applications
    <!-- nested ordered list -->
    <ol>
      <li>For business</li>
      <li>For pleasure</li>
    </ol>
  </li> <!-- ends line 27 new applications li-->
  <li>Around the clock news</li>
  <li>Search engines</li>
  <li>Shopping</li>
  <li>Programming
    <!-- another nested ordered list -->
    <ol>
      <li>XML</li>
      <li>Java</li>
      <li>HTML5</li>
      <li>JavaScript</li>
      <li>New languages</li>
    </ol>
  </li>
</ul>
</li>
```

Nested and ordered lists

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Tables...

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□ table element

- ▣ Organizes data into rows and columns

- ▣ Attribute summary

 - summarizes the table's contents

 - Is one of the many HTML5 features that make web pages more accessible to users with some disabilities

 - Such as speech devices use this attribute 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

Tables...

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- 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

A screenshot of a web browser window titled 'A simple HTML5 table'. The address bar shows the file path: `file:///E:/CPIS358/examples/ch02/ch02/table1.html`. The browser displays a table with the following content:

Fruit	Price
Apple	\$0.25
Orange	\$0.50
Banana	\$1.00
Pineapple	\$2.00
Total	\$3.75

Annotations on the left side of the browser window point to specific parts of the table:

- Table caption**: Points to the text 'Table of Fruits (1st column) and Their Prices (2nd column)'.
- Table header**: Points to the first row of the table (Fruit, Price).
- Table body**: Points to the rows containing the fruit names and prices (Apple, Orange, Banana, Pineapple).
- Table footer**: Points to the 'Total' row.
- Table border**: Points to the border of the table.

Tables

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

Table Example 1...

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```
11 <body>
12 <!-- the <table> tag opens a table -->
13 <table border = "1" >
14
15 <!-- the <caption> tag summarizes the table's -->
16 <!-- contents (this helps visually impaired people) -->
17 <caption><strong>Table of Fruits (1st column) and
18   Their Prices (2nd column)</strong></caption>
19
20 <!-- the <thead> section appears first in the table -->
21 <!-- it formats the table header area -->
22 <thead>
23 <tr><!-- <tr> inserts a table row -->
24   <th>Fruit</th><!-- insert a heading cell -->
25   <th>Price</th>
26 </tr>
27 </thead>
28
29 <!-- the <tfoot> section appears last in the table -->
30 <!-- it formats the table footer -->
31 <tfoot>
32 <tr>
33   <th>Total</th>
34   <th>$3.75</th>
35 </tr>
36 </tfoot>
37
```

Begins a new HTML table

- The border attribute specifies that the browser should place borders around the table and the table's cells
- Legacy attribute should be avoid. CSS chapter

Sets the text above the table

Creates a head element

Makes a new table row

Creates a table heading cell in the new table row

Creates the next cell in the row

Creates a foot section

Creates table header cells at the bottom of the table

Table Example 1

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```
38  <!-- all table content is enclosed -->
39  <!-- within the <tbody> -->
40  <tbody>
41    <tr>
42      <td>Apple</td> <!-- insert a data cell -->
43      <td>$0.25</td>
44    </tr>
45    <tr>
46      <td>Orange</td>
47      <td>$0.50</td>
48    </tr>
49    <tr>
50      <td>Banana</td>
51      <td>$1.00</td>
52    </tr>
53    <tr>
54      <td>Pineapple</td>
55      <td>$2.00</td>
56    </tr>
57  </tbody>
58 </table>
59 </body>
60 </html>
```

Creates a body section

Inserts a cell in the
body of the table

Ends the table

Tables...

52

- 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

Table Example: Spanning Rows and Columns

A more complex sample table


	Camelid comparison Approximate as of 6/2011			
	# of humps	Indigenous region	Spits?	Produces wool?
Camels (bactrian)	2	Africa/Asia	Yes	Yes
Llamas	1	Andes Mountains	Yes	Yes


Table Example 2...

53

```
new 2 | table1.html | table2.html
1      <!DOCTYPE html>
2
3      <!-- Fig. 2.13: table2.html -->
4      <!-- Complex HTML5 table. -->
5
6      <html>
7      <head>
8          <meta charset = "utf-8">
9          <title>Tables</title>
10     </head>
11
12     <body>
13         <h1>Table Example: Spanning Rows and Columns</h1>
14
15         <table border = "1">
16             <caption>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.png" width = "205"
25                         height = "167" alt = "Picture of a one-hump ca
26                     </th>
27                 </tr>
```

Table Example: Spanning Rows and Columns

A more complex sample table

	Camelid comparison Approximate as of 6/2011			
	# of humps	Indigenous region	Spits?	Produces wool?
Camels (bactrian)	2	Africa/Asia	Yes	Yes
Llamas	1	Andes Mountains	Yes	Yes

Makes the header cell span 2 rows

Table Example 2

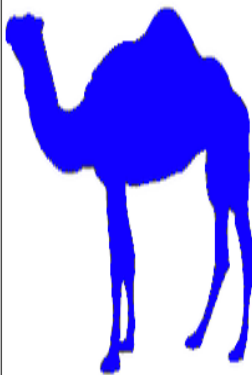
54

```
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

Table Example: Spanning Rows and Columns

A more complex sample table

	Camelid comparison Approximate as of 6/2011			
	# of humps	Indigenous region	Spits?	Produces wool?
	Camels (bactrian)	2	Africa/Asia	Yes
	Llamas	1	Andes Mountains	Yes

Forms...

55

- HTML 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

Forms...

56

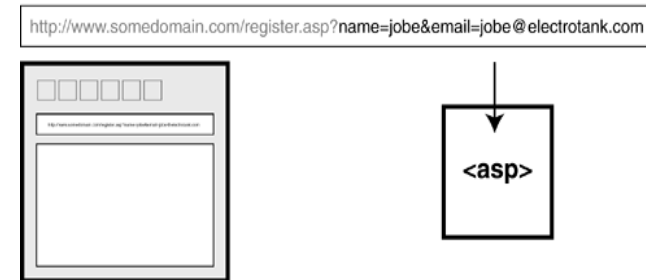
- A form begins with the `form` element
 - ▣ The form Element has different attributes
 - Method
 - Action

Forms...

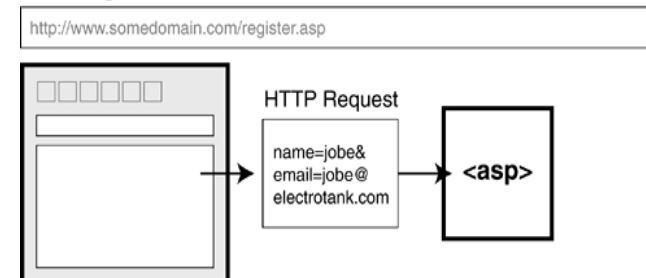
57

- The Method attribute specifies how the form's data is sent to the web server. The form-data can be sent as URL variables (with method="get") or as HTTP post transaction (with method="post")
 - Method="post" Appends form-data inside the body of the HTTP request (data is not shown in URL)
 - Has no size limitations
 - Form submissions with POST cannot be bookmarked
 - Method="get" appends the form data directly to the end of the URL of the script in name/value pairs
 - The length of a URL is limited (about 3000 characters)
 - Never use GET to send sensitive data! (will be visible in the URL)
 - Useful for form submissions where a user want to bookmark the result
 - GET is better for non-secure data, like query strings in Google

Using GET



Using POST



Forms...

58

- The `action` attribute of the form element specifies the URL of a script on the web server that will be invoked to process the form's data

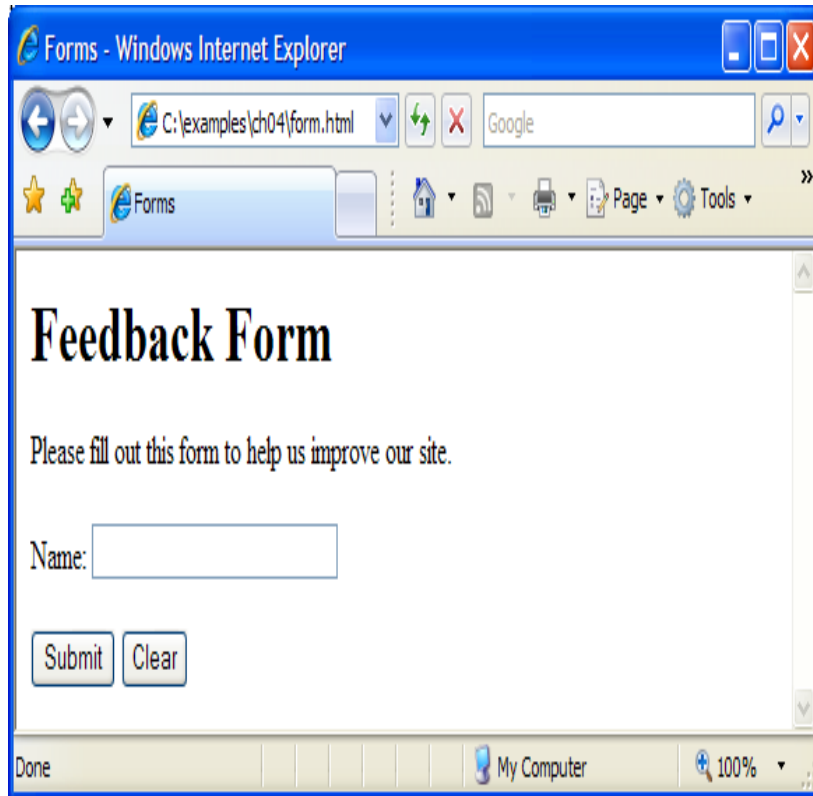
Forms...

59

- 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

Forms Example 1...

60



□ Elements:

- ▣ Headings: h1

- ▣ Text: p

- ▣ Form

 - Label

 - Input Elements

 - Text input

 - Submit input

 - Reset input

 - Hidden inputs

Forms Example1...

61

```
1  <!DOCTYPE html>
2
3  <!-- Fig. 2.14: form.html -->
4  <!-- Form with a text field and hidden fields. -->
5  <html>
6  <head>
7      <meta charset = "utf-8">
8      <title>Forms</title>
9  </head>
10
11 <body>
12     <h1>Feedback Form</h1>
13
14     <p>Please fill out this form to help
15         us improve our site.</p>
16
17     <!-- this tag starts the form, gives the -->
18     <!-- method of sending information and the -->
19     <!-- location of the form-processing script -->
20     <form method = "post" action = "http://www.deitel.com">
21         <!-- hidden inputs contain non-visual -->
22         <!-- information that will also be submitted -->
23         <input type = "hidden" name = "recipient" value = "deitel@deitel.com">
24         <input type = "hidden" name = "subject" value = "Feedback Form">
25         <input type = "hidden" name = "redirect" value = "main.html">
26
27     <!-- <input type = "text"> inserts a text field -->
```

Appends form data to the browser request

Since we haven't introduced server-side programming, We set this attribute to the URL of the Textbook's authors

Creates hidden inputs not visible to the user

Forms Example 1

62

```
new 2 | table1.html | table2.html | form.html |
26
27      <!-- <input type = "text"> inserts a text field -->
28      <p><label>Name:
29          <input name = "name" type = "text" size = "25"
30              maxlength = "30">
31      </label></p>
32
33      <p>
34          <!-- input types "submit" and "reset" insert -->
35          <!-- buttons for submitting and clearing the -->
36          <!-- form's contents, respectively -->
37          <input type = "submit" value = "Submit">
38          <input type = "reset" value = "Clear">
39      </p>
40  </form>
41 </body>
42 </html>
43
```

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

Ends the HTML form

Inserts a reset button with "Clear" written on it

Look-and-Feel Observation 2

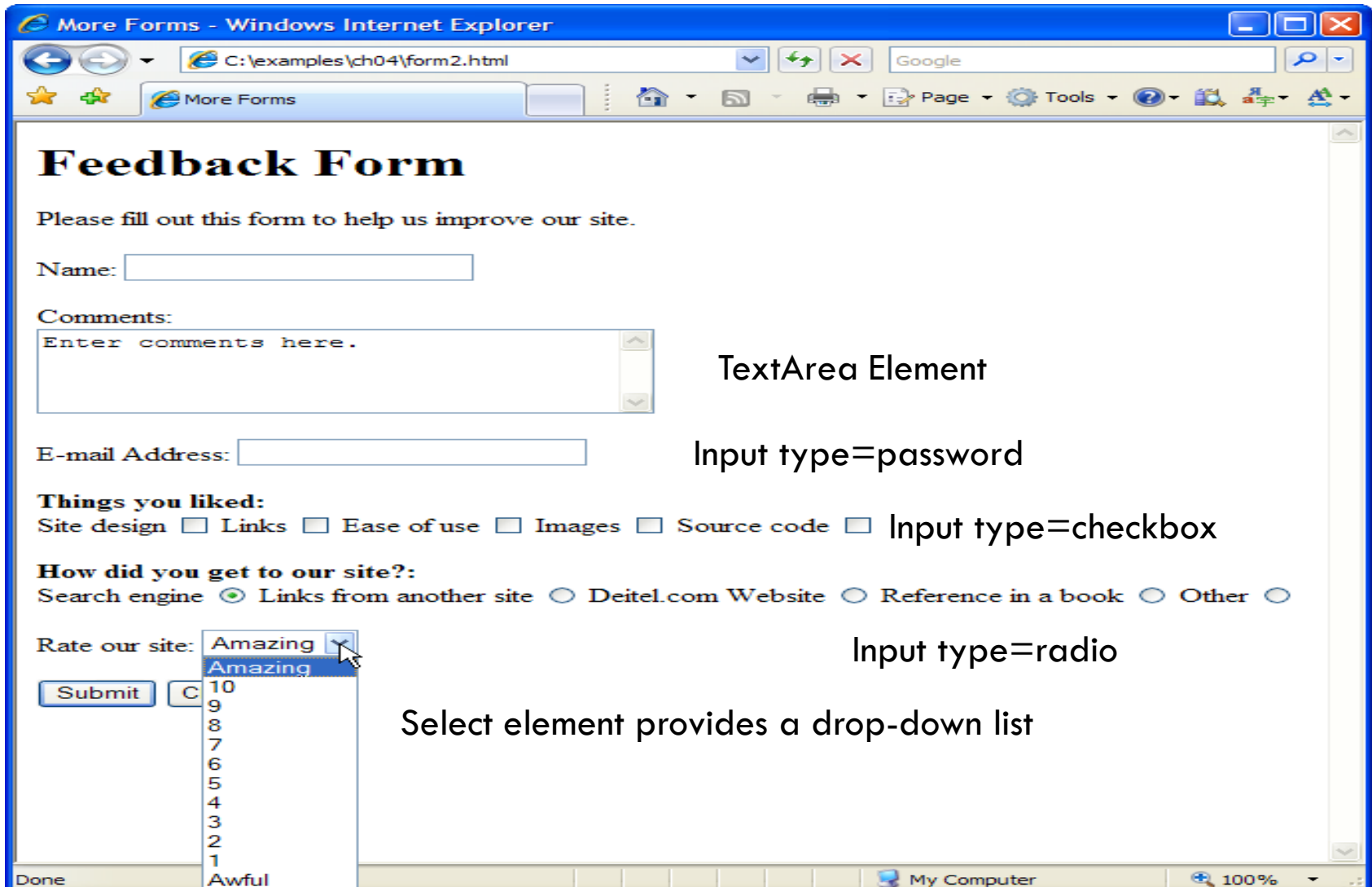
Include a *label* element for each form element to help users determine the purpose of each form element

Good Programming Practice 8

Place hidden input elements at the beginning of a form, immediately after the opening `<form>` tag. This placement allows document authors to locate hidden input elements quickly

Forms Example 2

65



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 "Feedback Form" with the following elements:

- Name:** A text input field.
- Comments:** A text area with the placeholder text "Enter comments here.".
- E-mail Address:** A text input field.
- Things you liked:** A row of checkboxes for "Site design", "Links", "Ease of use", "Images", "Source code", and "Input type=checkbox".
- How did you get to our site?:** A row of radio buttons for "Search engine", "Links from another site", "Deitel.com Website", "Reference in a book", and "Other".
- Rate our site:** A select element with a drop-down list showing options from "Amazing" to "Awful".
- Submit:** A button.

Annotations on the right side of the form identify specific elements:

- TextArea Element** points to the "Comments" text area.
- Input type=password** points to the "E-mail Address" text input field.
- Input type=checkbox** points to the "Input type=checkbox" checkbox.
- Input type=radio** points to the "Links from another site" radio button.
- Select element provides a drop-down list** points to the "Rate our site" select element.

Forms...

66

- 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

Forms...

67

- 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

Forms Example2...

68

```
22 <p><label>Name:
23     <input name = "name" type = "text" size = "25">
24 </label></p>
25
26 <!-- <textarea> creates a multiline textbox -->
27 <p><label>Comments:<br>
28     <textarea name = "comments"
29         rows = "4" cols = "36">Enter comments here.</textarea>
30 </label></p>
31
32 <!-- <input type = "password"> inserts a -->
33 <!-- textbox whose display is masked with -->
34 <!-- asterisk characters -->
35 <p><label>E-mail Address:
36     <input name = "email" type = "password" size = "25">
37 </label></p>
38
39 <p>
40     <strong>Things you liked:</strong><br>
41     <label>Site design <input name = "thingsliked" type = "checkbox" value = "Design"></label>
42     <label>Links <input name = "thingsliked" type = "checkbox" value = "Links"></label>
43     <label>Ease of use <input name = "thingsliked" type = "checkbox" value = "Ease"></label>
44     <label>Images <input name = "thingsliked" type = "checkbox" value = "Images"></label>
45     <label>Source code <input name = "thingsliked" type = "checkbox" value = "Code"></label>
46 </p>
47
48 <!-- <input type = "radio"> creates a radio -->
```

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

Forms Example2

69

```
49 <p>
50   <strong>How did you get to our site?:</strong><br>
51   <label>Search engine <input name = "howtosite" type = "radio" value = "search engine" checked></label>
52   <label>Links from another site <input name = "howtosite" type = "radio" value = "link"></label>
53   <label>Deitel.com Web site <input name = "howtosite" type = "radio" value = "deitel.com"></label>
54   <label>Reference in a book <input name = "howtosite" type = "radio" value = "book"></label>
55   <label>Other <input name = "howtosite" type = "radio" value = "other"></label>
56 </p>
57 <p>
58   <label>Rate our site:
59     <!-- the <select> tag presents a drop-down list with choices indicated by the <option> tags -->
60     <select name = "rating">
61       <option selected>Amazing</option>
62       <option>10</option>
63       <option>9</option>
64       <option>8</option>
65       <option>7</option>
66       <option>6</option>
67       <option>5</option>
68       <option>4</option>
69       <option>3</option>
70       <option>2</option>
71       <option>1</option>
72       <option>Awful</option>
73     </select>
74   </label>
75 </p>
```

Initially sets this radio button as selected

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

Create a drop-down list named "rating"

Sets "Amazing" as the initially selected option

Hyper Text Markup Language file

Common Programming Error 3

When your form has several checkboxes with the same name, you must make sure that they have different values, or the scripts running on the web server will not be able to distinguish them

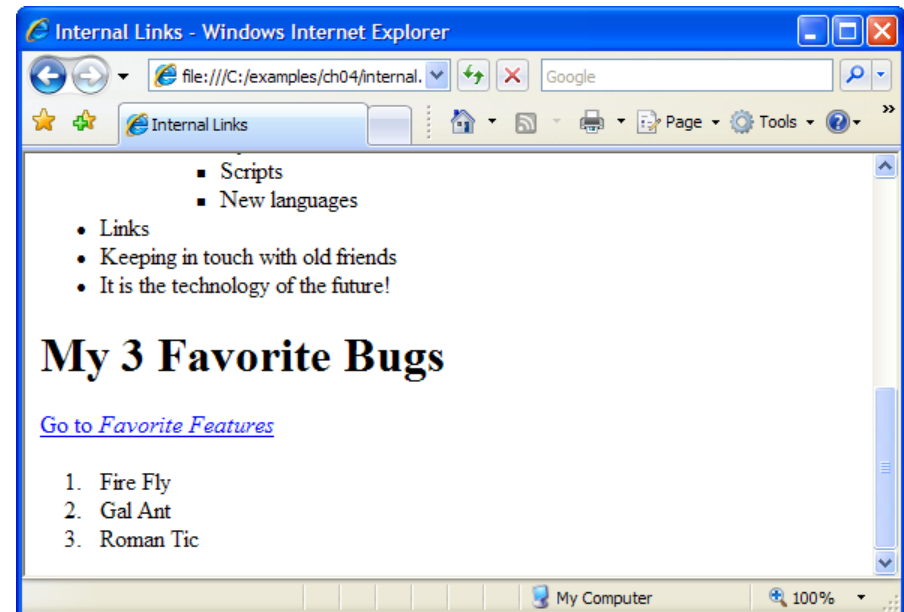
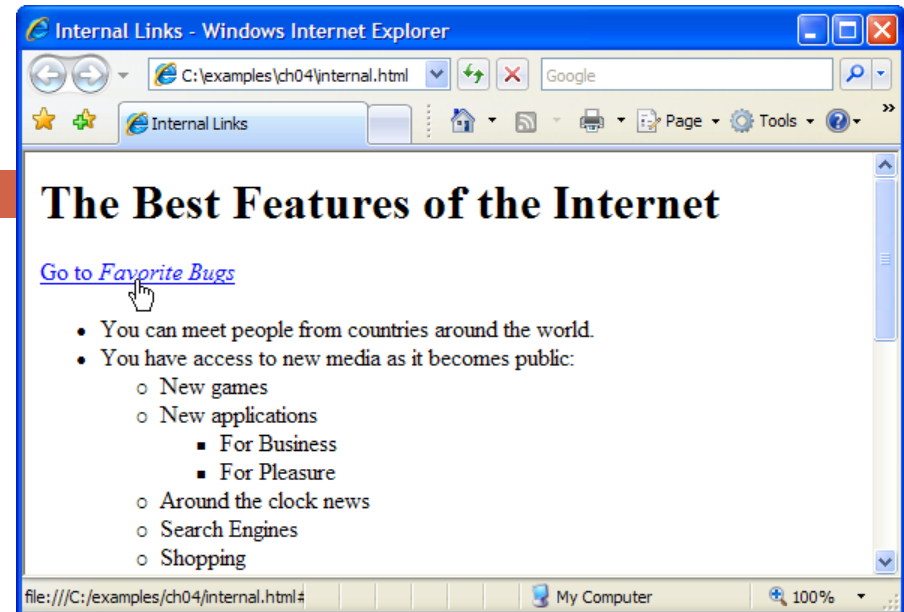
Common Programming Error 4

Not setting the name attributes of the radio buttons in a form to the same name is a logic error because it lets the user select all of them at the same time

Internal Linking

72

- Earlier in the chapter, we discussed how to hyperlink one web page to another
- 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`



Internal Linking

73

```
new 2 | table1.html | table2.html | fom.html | fom2.html | internal.html
4      <!-- Internal Linking -->
5      <html>
6      <head>
10
11      <body>
12          <!-- id attribute creates an internal hyperlink destination -->
13          <h1 id = "features">The Best Features of the Internet</h1>
14
15          <!-- an internal link's address is "#id" -->
16          <p><a href = "#bugs">Go to <em>Favorite Bugs</em></a></p>
17
18          <ul>
50
51          <!-- id attribute creates an internal hyperlink destination -->
52          <h1 id = "bugs">My 3 Favorite Bugs</h1>
53          <p>
54              <!-- internal hyperlink to features -->
55              <a href = "#features">Go to <em>Favorite Features</em></a>
56          </p>
57          <ol>
62      </body>
```

Sets the id attribute for the h1 element

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

Sets the id attribute for this h1 element

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

Look-and-Feel Observation 3

Internal hyperlinks are useful in HTML documents that contain large amounts of information. Internal links to different parts of the page make it easier for users to navigate the page—they do not have to scroll to find the section they want

Remarks

75

- Some HTML elements are called void elements
 - ▣ A void element contains only attributes and does not mark up text : text is not placed between start and end tag
 - `<img...../>`

References

76

- TextBook
- Wikipedia

