

# HTML5 & CSS

## 7<sup>th</sup> Edition

### Chapter 1

## Introduction to HTML, XHTML, and CSS



# Chapter Objectives

- Describe the Internet and its associated key terms
- Describe the World Wide Web and its associated key terms
- Describe the types and purposes of Web sites
- Discuss Web browsers and identify their purpose

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- Define Hypertext Markup Language (HTML) and HTML5 standards used for Web development
- Discuss the use of Cascading Style Sheets (CSS) in Web development
- Define the Document Object Model (DOM) and describe its relationship to HTML
- Define Extensible Hypertext Markup Language (XHTML) and describe its relationship to HTML

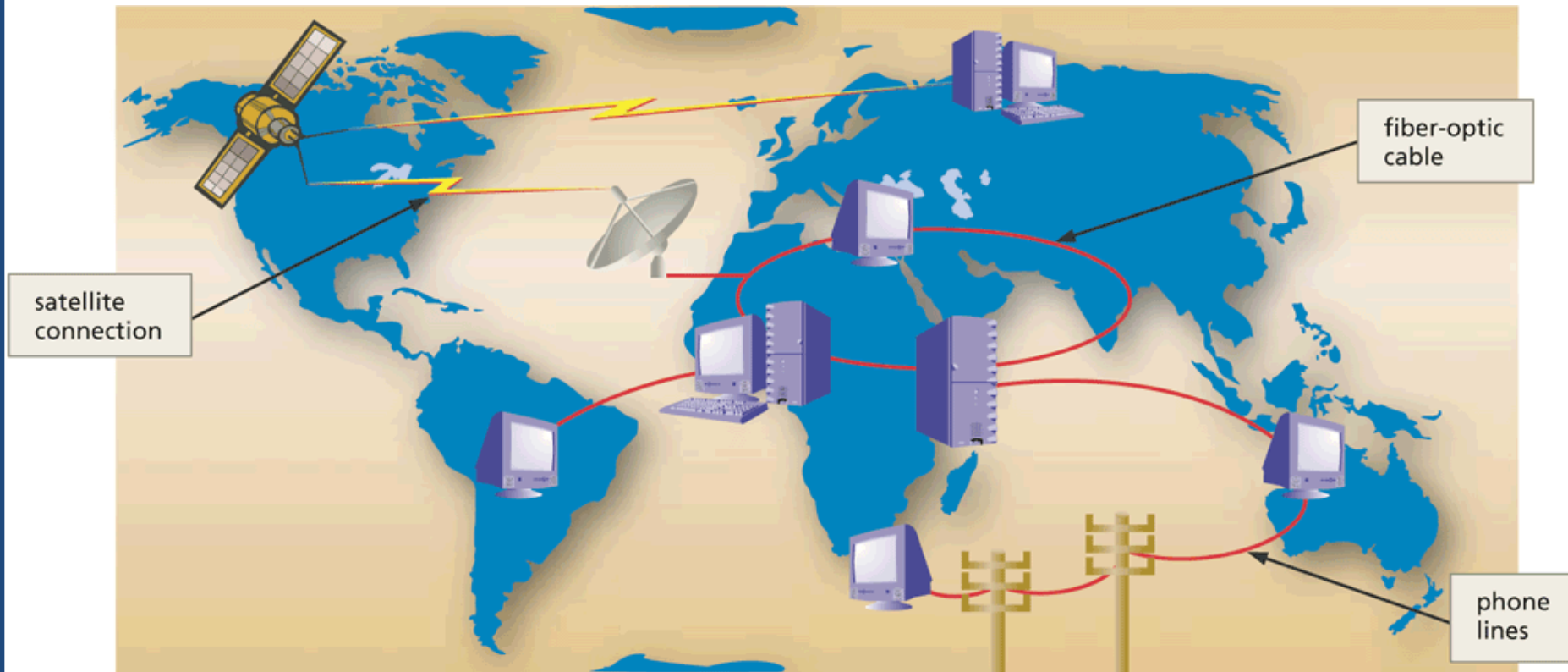
# Chapter Objectives

- Identify tools used to create HTML documents
- Describe the five phases of the Web development life cycle
- Describe the different methods of Web site design and the purpose of each Web site structure
- Discuss the importance of testing throughout the Web development life cycle
- Explain the importance of being an observant Web user

# What Is the Internet?

- The Internet is a worldwide collection of computers and computer networks that links billions of computers used by businesses, government, educational institutions, organizations, and individuals using modems, phone lines, television cables, satellite links, fiber-optic connections, and other communications devices and media
- A network is a collection of two or more computers that are connected to share resources and information
- The Internet backbone is a collection of high-speed data lines that connect major computer systems located around the world
- An Internet Service Provider (ISP) is a company that has a permanent connection to the Internet backbone

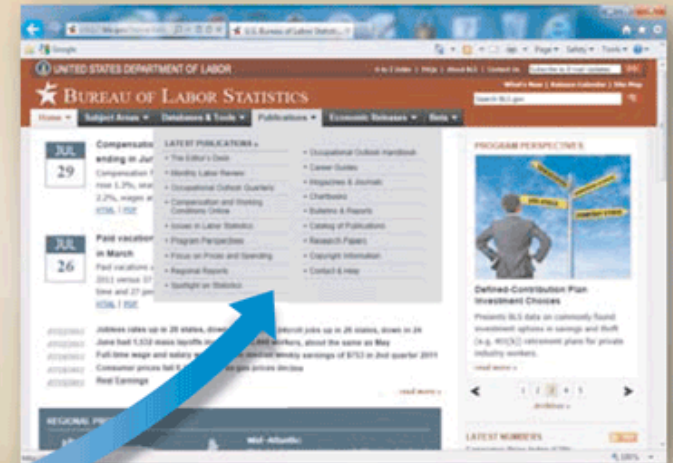
# What Is the Internet?



# What Is the World Wide Web?

- The World Wide Web, also called the Web, is the part of the Internet that supports multimedia and consists of a collection of linked documents
- Hypertext Transfer Protocol (HTTP) is a set of rules for exchanging text, graphics, sound, video, and other multimedia files
- Web pages are linked documents, or pages of information, on the Web
- A Web site is a related collection of Web pages that is created and maintained by an individual, company, educational institution, or other organization
- A home page is the first document users see when they access a Web site

# What Is the World Wide Web?





# Web Servers

- Web pages are stored on a Web server, or host, which is a computer that stores and sends (serves) requested Web pages and other files
- Publishing is copying Web pages and other files such as graphics and audios to a Web server

# Web Site Types and Purposes

**Table 1–1 Types of Web Sites**

Type	Users	Access	Applications
Internet	Anyone	Public	Used to share information such as personal information, product catalogs, course information with the public
intranet	Employees or members	Private	Used to share information such as forms, manuals, organization schedules with employees or members
extranet	Select business partners	Private	Used to share information such as inventory updates, product specifications, financial information with business partners and customers

# Web Site Types and Purposes

- An Internet site, also known as a Web site, is a site generally available to the public
- An intranet is a private network that uses Internet technologies to share company information among employees
- An extranet is a private network that uses Internet technologies to share business information with others
- Electronic commerce (e-commerce) is the buying and selling of goods and services on the Internet

# Web Site Types and Purposes



# Web Browsers

- A Web browser, also called a browser, is a program that interprets and displays Web pages and enables you to view and interact with a Web page
  - Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, and Apple Safari
- A Uniform Resource Locator (URL) is the address of a document or other file accessible on the Internet
  - <http://www.cengagebrain.com/shop/index.html>
- A hyperlink, also called a link, is an element used to connect one Web page to another Web page that's located on the same server or used to link Web pages located on a different Web server located anywhere in the world

# Web Browsers

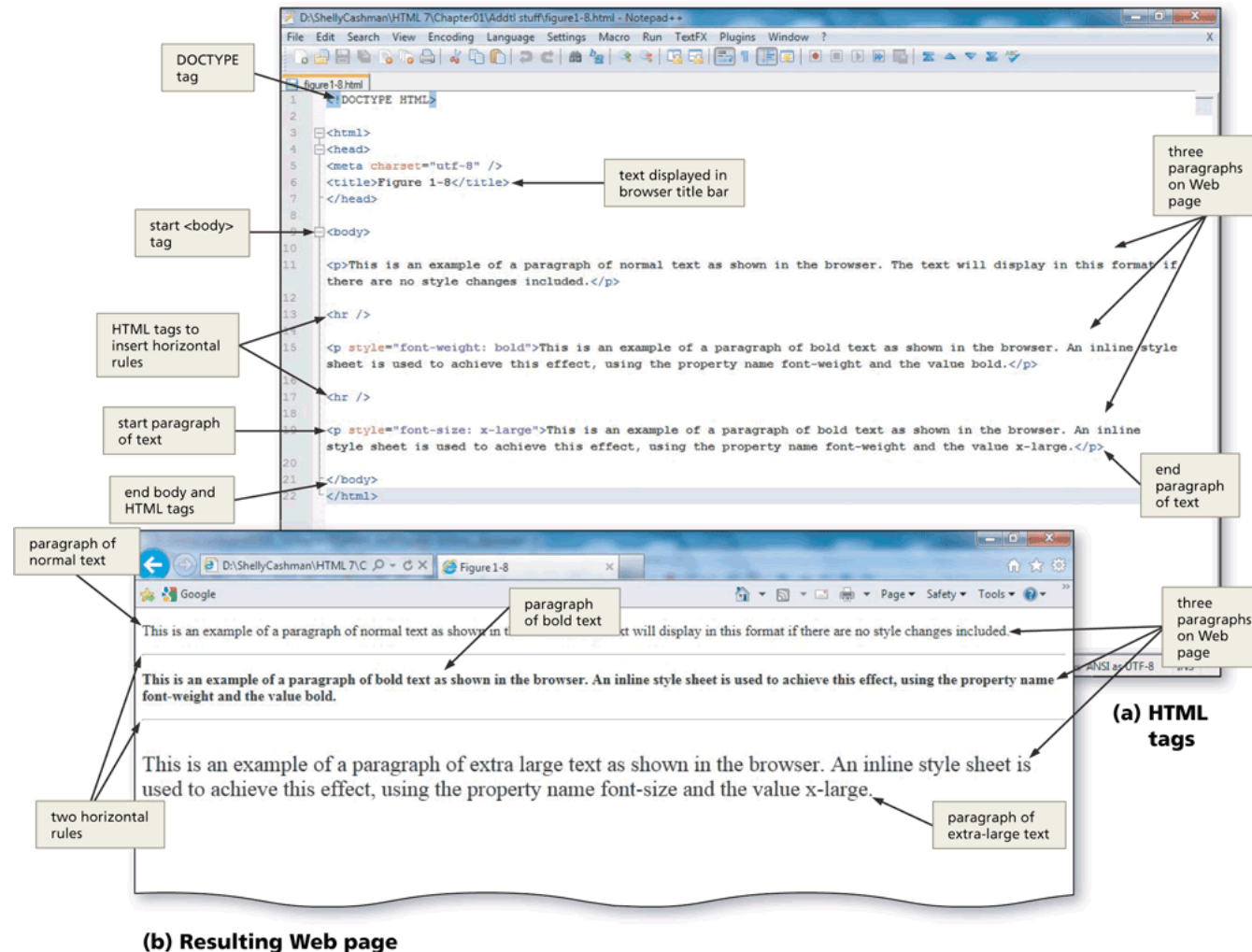


# What Is Hypertext Markup Language?

- Web pages are created using Hypertext Markup Language (HTML), which is an authoring language used to create documents for the World Wide Web
- HTML uses a set of special instructions called tags or markup to define the structure and layout of a Web document and specify how the page is displayed in a browser
- HTML is platform independent, meaning you can create, or code, an HTML file on one type of computer and then use a browser on another type of computer to view that file as a Web page



# What Is Hypertext Markup Language?





# HTML Elements

Table 1–2 HTML Elements

Element	Purpose	Code and Content
Title	Indicates title to appear on the title bar in the browser	<code>&lt;title&gt;This is the title text.&lt;/title&gt;</code>
Anchor	Creates a link to a Web page named default.html	<code>&lt;a href="default.html"&gt;This is text for a link.&lt;/a&gt;</code>
Line break	Inserts a line break before the next element (without a blank line); there is no content or closing tag; use space-/ as closing tag	<code>&lt;br /&gt;</code>

# Useful HTML Practices

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN" "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
2 <html xmlns="http://www.w3.org/1999/xhtml">
3   <head>
4     <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
5     <title>Figure 1-9</title>
6   </head>
7
8   <body>
9
10    <table>
11      <tr>
12        <th>Table Example</th>
13      </tr>
14
15      <tr>
16        <td>First data cell in table</td>
17        <td>Second data cell in table</td>
18        <td>Third data cell in table</td>
19      </tr>
20    </table>
21
22    <p>This text displays as a new paragraph. It has a blank line between it and the bulleted list above.</p>
23
24    <ul>
25      <li>Item one in a bulleted list</li>
26      <li>Item two in a bulleted list</li>
27      <li>Item three in a bulleted list</li>
28    </ul>
29
30  </body>
31 </html>
32
33
```

blank lines will not be displayed in browser

bullet list of information

code to insert table with two rows

# HTML Versions

- HTML has gone through several versions, each of which expands the capabilities of HTML
- The most recent version of HTML is HTML5, although most browsers still support HTML versions 4.01, 3.2, and 2.0

# Cascading Style Sheets

- Cascading Style Sheets (CSS) allow you to specify the style for an element within a single Web page or throughout an entire Web site

# Document Object Model (DOM)

- Document Object Model (DOM) describes a combination of HTML tags, CSS, and a scripting language such as JavaScript
- DOM allows a Web developer to add, delete, or change an element or attribute. Web pages enhanced with DOM can be more responsive to visitor interaction than basic HTML Web pages

# Extensible Hypertext Markup Language (XHTML)

- Extensible Markup Language (XML) is a markup language designed to transport and store data
- Extensible Hypertext Markup Language (XHTML) is a reformulation of HTML formatting so it conforms to XML structure and content rules

# Extensible Hypertext Markup Language (XHTML)

Table 1–3 XHTML Coding Practices

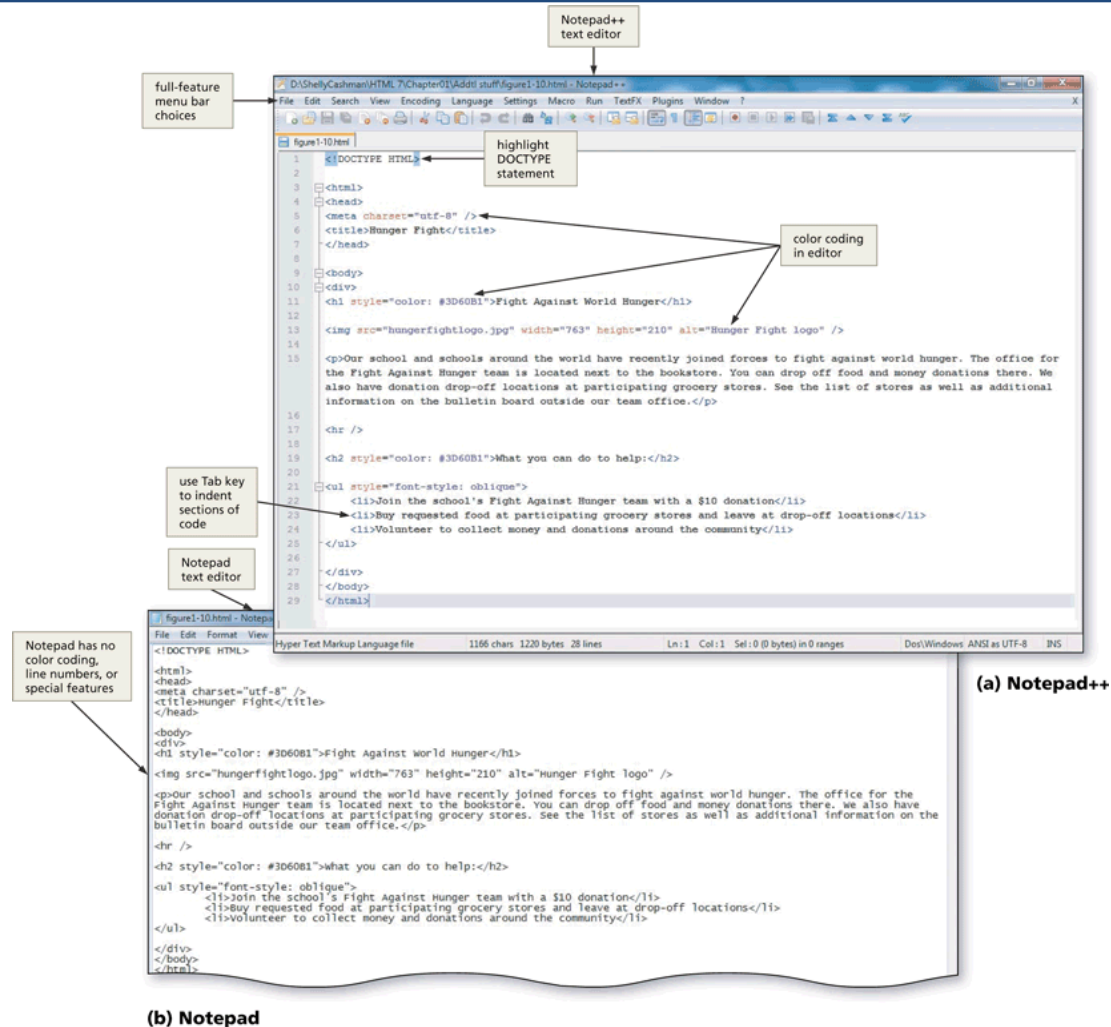
Practice	Invalid Example	Valid Example
All tags and attributes must be written in lowercase	<code>&lt;TABLE WIDTH="100%"&gt;</code>	<code>&lt;table width="100%"&gt;</code>
All attribute values must be enclosed by single or double quotation marks	<code>&lt;table width=100%&gt;</code>	<code>&lt;table width="100%"&gt;</code>
All tags must be closed, including tags such as <code>img</code> , <code>hr</code> , and <code>br</code> , which do not have end tags, but which must be closed as a matter of practice	<code>&lt;br&gt;</code> <code>&lt;hr&gt;</code> <code>&lt;p&gt;This is another paragraph</code>	<code>&lt;br /&gt;</code> <code>&lt;hr /&gt;</code> <code>&lt;p&gt;This is another paragraph&lt;/p&gt;</code>
All elements must be nested properly	<code>&lt;p&gt;&lt;strong&gt;This is a bold paragraph&lt;/p&gt;&lt;/strong&gt;</code>	<code>&lt;p&gt;&lt;strong&gt;This is a bold paragraph&lt;/strong&gt;&lt;/p&gt;</code>

# Tools for Creating HTML Documents

- A text editor is a program that allows a user to enter, change, save, and print text, such as HTML
- An HTML text editor is a program that provides basic text editing functions, as well as more advanced features such as color-coding for various HTML tags, menus to insert HTML tags, and spell checkers
- An HTML object editor, such as EiffelStudio object editor, provides the additional functionality of an outline editor that allows you to expand and collapse HTML objects and properties, edit parameters, and view graphics attached to the expanded objects
- A WYSIWYG editor is a program that provides a graphical user interface that allows a developer to preview the Web page during its development



# Tools for Creating HTML Documents



# Web Development Life Cycle

**Table 1–4 Web Development Phases and Questions**

Web Development Phase	Questions to Ask
Planning	<ul style="list-style-type: none"><li>• What is the purpose of this Web site?</li><li>• Who will use this Web site?</li><li>• What are the users' computing environments?</li><li>• Who owns and authors the information on the Web site?</li><li>• Who decides if/where the information goes on the Web site?</li></ul>
Analysis	<ul style="list-style-type: none"><li>• What tasks do the users need to perform?</li><li>• What information is useful to the users?</li><li>• What process considerations must be made?</li></ul>
Design and Development	<ul style="list-style-type: none"><li>• How many Web pages will be included in the Web site?</li><li>• How will the Web pages be organized?</li><li>• What type of Web site structure is appropriate for the content?</li><li>• How can I best present the content for ease of use?</li><li>• What file naming convention will be employed for this Web site?</li><li>• What folder structure will be used for the Web page files?</li><li>• How do I apply standards throughout the development process?</li><li>• What forms of multimedia contribute positively to the Web site?</li><li>• How can accessibility issues be addressed without limiting usability?</li><li>• Will there be an international audience?</li></ul>
Testing	<ul style="list-style-type: none"><li>• Do the Web pages pass the World Wide Web Consortium (W3C) validation process as HTML5 compliant?</li><li>• Is the Web site content correct?</li><li>• Does the Web site function correctly?</li><li>• Are users able to find the information they need to complete desired tasks?</li><li>• Is navigation clear and easy to use?</li></ul>
Implementation and Maintenance	<ul style="list-style-type: none"><li>• How is the Web site published?</li><li>• How can users be attracted to visit and revisit the Web site?</li><li>• How is the Web site updated?</li><li>• Who is responsible for content updates?</li><li>• Who is responsible for structure updates?</li><li>• How will users be notified about updates to the Web site?</li><li>• Will the Web site be monitored?</li></ul>

# Web Development Organizational Standards

Table 1–5 Web Page Organizational Standards

Element	Organizational Standard	Reason
Titles	Use simple titles that clearly explain the purpose of the page	Titles help users understand the purpose of the page; a good title explains the page in the search engine results lists
Headings	Use headings to separate main topics	Headings make a Web page easier to read; simple headlines clearly explain the purpose of the page
Horizontal Rules	Insert horizontal rules to separate main topics	Horizontal rules provide graphical elements to break up Web page content
Paragraphs	Use paragraphs to help divide large amounts of text	Paragraphs provide shorter, more readable sections of text
Lists	Utilize bulleted or numbered lists when appropriate	Lists provide organized, easy-to-read text that readers can scan
Page Length	Maintain suitable Web page lengths	Web users do not always scroll to view information on longer pages; appropriate page lengths increase the likelihood that users will view key information
Information	Emphasize the most important information by placing it at the top of a Web page	Web users are quick to peruse a page; placing critical information at the top of the page increases the likelihood that users will view key information
Other	Incorporate a contact e-mail address; include the date of the last modification	E-mail addresses and dates give users a way to contact a Web site developer with questions; the date last modified helps users determine the timeliness of the site information

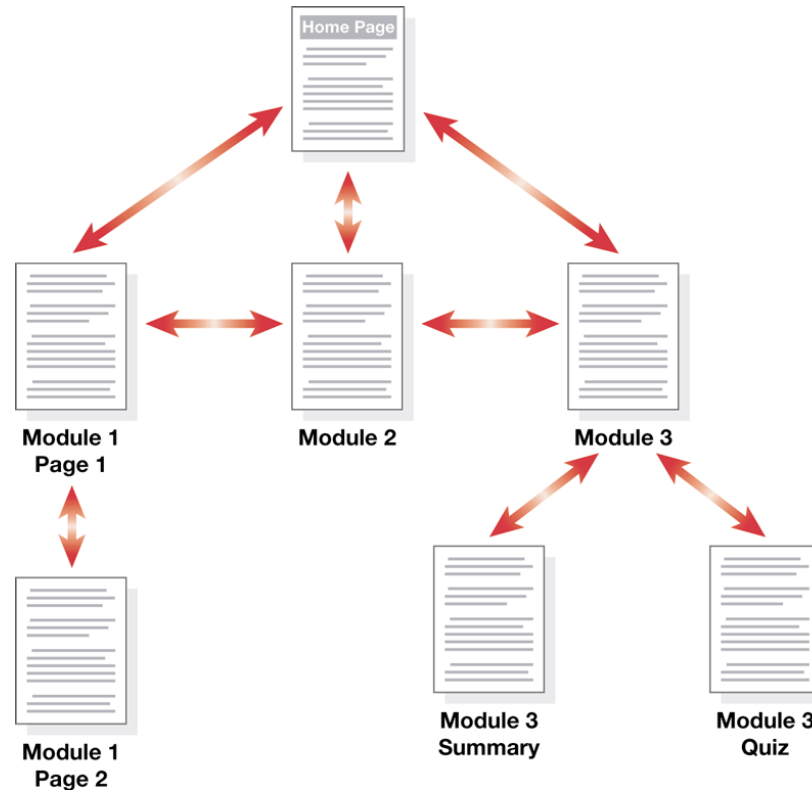
# Web Site Design and Development

- A linear Web site structure connects Web pages in a straight line



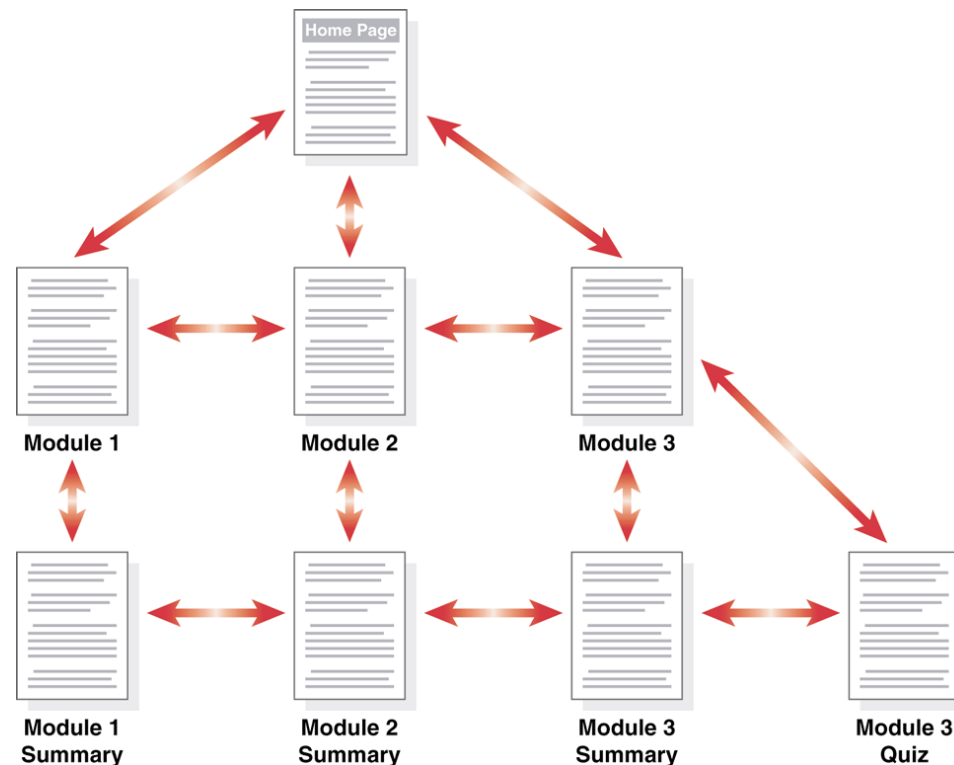
# Web Site Design and Development

- A hierarchical Web site structure connects Web pages in a treelike structure



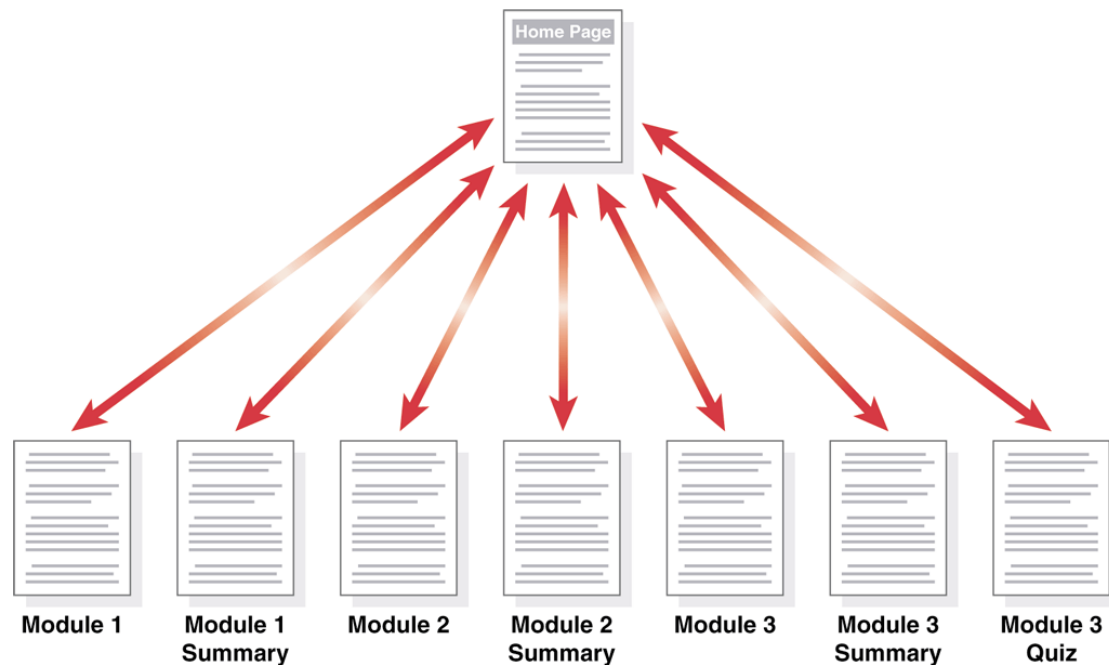
# Web Site Design and Development

- A webbed Web site structure has no set organization



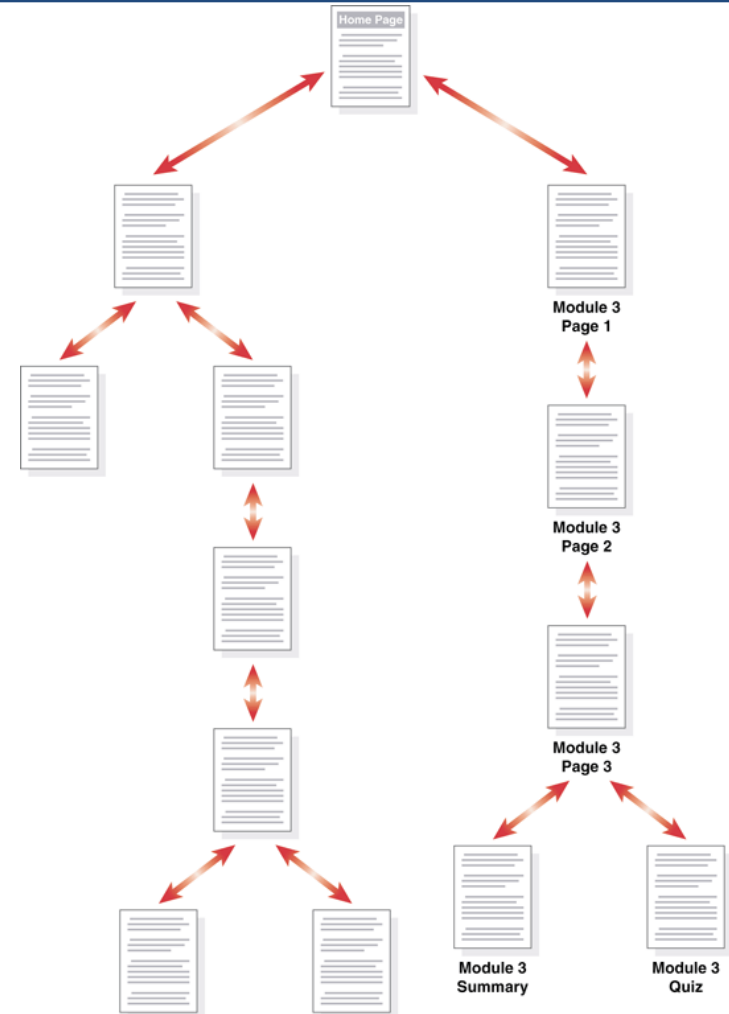
# Web Site Design and Development

- A broad Web site is one in which the home page is the main index page, and all other Web pages are linked individually to the home page



# Web Site Design and Development

- A deep Web site is one that has many levels of pages, requiring the user to click many times to reach a particular Web page





# Web Site Testing

- Usability is the measure of how well a product, such as a Web site, allows a user to accomplish his or her goals
- Usability testing is a method by which users of a Web site or other product are asked to perform certain tasks in an effort to measure the product's ease-of-use and the user's perception of the experience
- Compatibility testing is done to verify that the Web site works with a variety of browsers and browser versions
- Stress testing determines what happens on your Web site when greater numbers of users access the site

# Web Site Testing

## Web Site Usability Questionnaire

The purpose of this questionnaire is to gather information regarding the usability of our company Web site.

Name (not required): \_\_\_\_\_

Your relationship to the company (circle your choice): customer          employee          no relationship

How easy was it to use our Web site navigation to find the following information? (circle your choice)

<i>Contact information</i>	very easy	somewhat easy	moderately difficult	very difficult
<i>Store hours/locations</i>	very easy	somewhat easy	moderately difficult	very difficult
<i>Product information</i>	very easy	somewhat easy	moderately difficult	very difficult
<i>FAQs</i>	very easy	somewhat easy	moderately difficult	very difficult

How would you rate our Web site? (circle one)

<i>Browsing Experience</i>	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neither Agree nor Disagree</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
The Web pages loaded in an acceptable time frame	5	4	3	2	1
The Web site was visually appealing	5	4	3	2	1
The navigation was clear and made it easy to find information	5	4	3	2	1
The graphics were used to convey pertinent information	5	4	3	2	1
I found what I was looking for on this Web site	5	4	3	2	1
My experience with this Web site was successful	5	4	3	2	1

Please use the area below to give us additional feedback. Our company goal is to provide an appealing and enjoyable Web browsing experience. We therefore are interested to hear your comments about our Web site.

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# HTML

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## Chapter 1 Complete

