

# *Learner Guide*

## *Faculty of Information Technology*

### *Webtechnology 511*

*Year 1*

*Semester 1*



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# **FACULTY OF INFORMATION TECHNOLOGY**

## **LEARNER GUIDE**

**MODULES: K 96 H97 < BC @C; M5%8/1ST SEMESTER)**

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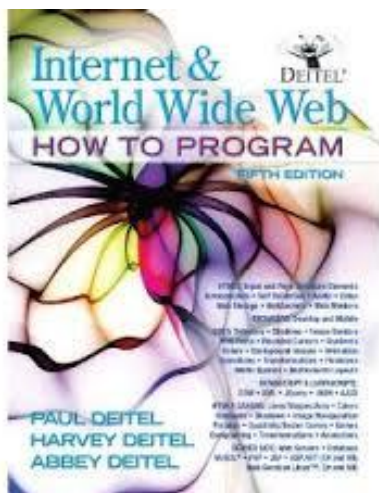
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### **Prescribed textbook:**

Carey, p. 2018: HTML, CSS3, AND Java Script. 6th Ed. Cengage Learning.  
ISBN: 9781305503922

### **Recommended textbook:**



Internet and World Wide Web (How to Program) 5th ed 2012  
PJ Deitel, MH Deitel  
9780273764021  
Pearson Education

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INTERACTIVE ICONS USED IN THIS LEARNER GUIDE



Learning Outcomes



Study



Read



Writing Activity



Think Point



Research



Glossary



Key Point



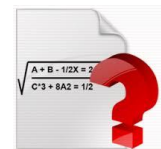
Review Questions



Case Study



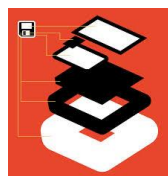
Bright Idea



Problem(s)



Multimedia Resource




References



Web Resource

## ONE | INTERNET AND WORLD WIDE WEB

	<b>LEARNING OUTCOMES</b>
<ol style="list-style-type: none"> <li>1. Define the Internet and the World Wide Web</li> <li>2. Start Web browser, navigate in the browser, and use the Media Bar</li> </ol>	

**Overview of the Internet**

The Internet, e-mail and web based applications have become a part of our everyday lives. Many people have computers, tablets and cellphones which they can use for entertainment, personal research, communication and sharing information with friends. Today, a large number of electronic devices use internet. Internet has also become a very useful tool doing business, allowing companies to use all possible options to promote and sell the products and services. Most companies now have e-mail addresses and Facebook pages for their customers.

**1.1 THE INTERNET**

The internet started as a tool for connecting individual government, university, and research lab computer networks together. The internet was initially intended to support military research by connecting various networks to the U.S. Department of Defence's ARPANET. Today, internet is used for communication, research, education, financial transaction, real time updates, online booking, job search, blogging and shopping. The roots of the internet are in government applications, but no single organization controls the Internet

**IDEA**

A computer network is a collection of computers connected to each other for the purpose of sharing resources.

**1.2 THE WORLD WIDE WEB**

The term WWW refers to the World Wide Web or simply the Web. The World Wide Web consists of all the public Web sites connected to the Internet worldwide, including the client devices (such as computers and cell phones) that access Web content.

The WWW is just one of many applications of the Internet and computer networks. The World Web is based on these technologies:

- **HTML** - Hypertext Markup Language
- **HTTP** - Hypertext Transfer Protocol



- **Web servers and Web browsers**

Researcher Tim Berners-Lee led the development of the original World Wide Web in the late 1980s and early 1990s. He helped build prototypes of the above Web technologies and coined the term "WWW." Web sites and Web browsing exploded in popularity during the mid-1990s.



#### WEB RESOURCE

[http://compnetworking.about.com/  
cs/worldwideweb/g/bldef\\_www.ht  
m](http://compnetworking.about.com/cs/worldwideweb/g/bldef_www.htm)

To access Web sites, an applications called **Web browser** (such as [Internet Explorer](#), [Mozilla Firefox](#), [Google Chrome](#), [Safari](#), and [Opera Mini](#)) is used. A **Web site** is a collection of **Web pages** that are **connected together by hyperlinks**. A **Web page** is a **document that's created in html** that shows up on the internet when you type in the web page's address. **With hyperlinks**, you

can **move from one page or web site to another**, this is also known as browsing or "surfing" the web. Because the information on the web changes constantly, there is always something new to see.

### 1.3 CONNECTING TO THE INTERNET

In order **to access or use web sites**, the **device** (PC, Cellphone or tablet) **must be connected to the internet**. **To connect to the internet**, you will need the following:

- **A personal computer** (or any other device) **with a web browser**. **Microsoft's Internet Explorer** is one of the most comprehensive web browsers available. Many web browsers can be downloaded from the internet at no cost.
- **Access to a host computer**—is to a computer connected to the Internet. The host computer might be maintained by your company or by a commercial Internet service provider (ISP).
- **A connection device**—This device can be a modem or network cable. It allows your computer to send and receive packets or connect to a network.



#### IDEA

To enhance your browsing experience, you can use additional equipment such as a printer, speakers, media players and so on

#### Internet host computers

You access the Internet by using an Internet service provider to connect to an Internet host computer. A service provider supplies you with an Internet account that includes a user name and password that you use to access the host computer. There are three major types of Internet access:

- **Corporate network**: If your company network is connected to the Internet, you can use the existing network cable to gain access. As a network user, you first

log on to your corporate network; then you can connect to the Internet. If you are connecting from a remote location, you first need a phone line and modem to dial in to your corporate network.

- **Community network or free net:** As part of the National Public Telecommuting Network (NPTN) organization, local communities provide Internet access at public facilities such as a libraries or community centers. In this situation, you might be given a user account to log on at a walk-up terminal.
- **Commercial Internet service provider (ISP):** You can purchase Internet connection time, an Internet account, and e-mail service from an ISP, such as EarthLink or AT&T WorldNet. The cost might include a one-time registration fee, a monthly fee, or charges based on how long you are connected. *Online service providers*, such America Online, not only give you access to the Internet, but also provide proprietary Web browsing software and content.

### 1.4 COMMUNICATION PROTOCOLS

In an effort to standardize data transmission, the Transmission Control Protocol/Internet Protocol was created. Today, we refer to this protocol as TCP/IP. More specifically, *Hypertext Markup Language (HTML)* is the standard programming language used to build documents for the Web; and *Hypertext Transfer Protocol (HTTP)* is the set of rules used to distribute hypertext documents on the Web. For most Web sites, you will need to use HTTP. There are two other protocols that you might run across:

- **HTTPS:** This is HTTP with a Secure Sockets Layer (SSL) security added on. HTTPS is a communication protocol for secure communication over a computer network. This protocol is used for online transactions and other activities that require accounts and privacy (e.g. Online shopping, Facebook, etc.) to protect information that is being transferred (username, password, credit card information, etc.).
- **File Transfer Protocol (FTP):** This is a protocol which is used to transfer files between computers running TCP/IP. Some FTP sites allow you to access them anonymously without supplying a user name and password.



#### THINK POINT

TCP/IP is one of the main protocols in networks. Do you agree? Why?

### 1.5 INTERNET ADDRESSES

In a network, each computer is represented by a number which is known as an Internet Protocol (IP) address. This is a numerical label assigned to each device participating in a computer network that uses Internet Protocol for communication. An IP address is a

collection of four sets of numbers (Also known as Octets) separated by periods. Each set can have a maximum of three digits. E.g. 127.0.0.1 and 220.98.234.9  
In most cases, the IP address is provided by your ISP. Every IP address is unique.



- **Host names**

An IP address is just numbers, which makes it hard to memorize for each device an individual uses, therefore people prefer to use words rather than numbers. The IP addresses are registered with the Internet Network Information Center (InterNIC) and given host names that are easier for people to remember. Host names are

company names, such as Microsoft, or easy to remember abbreviations. The *Domain Name Service (DNS)* is the method of matching host names with their unique IP addresses and vice versa.

- **Domain names**

Computer networks are divided into organizational units called *domains*. The domain name might be the same as the host name. In large networks, however, the domain name might be different. Domains can be divided into subdomains for organizational purposes. The fully qualified domain name combines the host and domain names in the following syntax: **Hostname.subdomain.domain**

- **Top-level domains**

The top-level domain name provides a hint as to the type of organization in which the Internet host computer resides. Outside the United States, the top-level domain contains a two-letter country code as well. For example, CA represents Canada, DE represents Germany, and KR represents South Korea. You can search for “Internet country codes” on the Web to view a complete listing. The following table lists the top-level domains.

Domain	Description
.com	Commercial businesses
.edu	Educational institutions
.gov	Governmental institutions
.mil	Military institutions
.net	Networks
.org	Organizations (usually non-profit)

- **User names and Internet addresses**

Each person who accesses the Internet has a unique user name and address. There are a variety of forms for user names. The form usually depends on how you are accessing the Internet. A common format is the user's first and last name separated by an underscore or period, as in Jane\_Doe or Jane.Doe. Another format might be the first initial followed by the last name, as in jdoe. If you obtain Internet access from an ISP, you are usually allowed to define your own user name; therefore, your user name might be a nickname or a combination of letters and numbers.

In corporate situations, user names are determined by company naming standards to guarantee unique names within the company domain. The combination of your user name and the host computer name creates your complete Internet address. Reading from right to left, the Internet address moves from general to specific. The syntax for an Internet address is:

Username@Hostname.subdomain.domain



Research

What are the uses of the internet in education?

For example, Jane Doe in the marketing department of Acme Corporation might have the following address:

Jane\_Doe@mktg.acme.com

When reading Internet addresses, the "@" symbol is pronounced as "at" and the periods are pronounced as "dot." The example address

is read as "Jane Doe at marketing dot Acme dot com." Internet addresses have become standard business card data.

### 1.6 UNIFORM RESOURCE LOCATORS (URL)

To identify a particular page or document on the Internet, you need an Internet address called a *Uniform Resource Locator*, or *URL*. A URL consists of three major components that provide the necessary information to find a specific document. These components are separated by a forward slash (/). For example, the URL for the page that contains downloadable files for Microsoft Internet Explorer might be as follows:

<http://www.microsoft.com/ie/downloads>

- *http://* is the protocol used.
- *www.microsoft.com/* is the server's host name and domain.
- *ie/downloads* is the directory path where the page is stored. The path might also include file names.

### 1.7 UNDERSTANDING E-MAIL

Short for electronic mail, e-mail or email is text messages that may contain files, images, or other attachments sent through a network to a specified individual or group of individuals. The first e-mail was sent by Ray Tomlinson in 1971. By 1996, more electronic mail was being sent than postal mail. Below is an example and breakdown of an Internet e-mail address.

When sending an email, the sender's computer uses SMTP protocol to send an email to the email server which passes the email to the receiver's email server. The sender's and receiver's email servers communicate using SMTP. An email will reside on the receiver's server until a request to download or get an email is sent by the receiver. An email is then sent to the receiver's computer using POP3 or IMAP4 protocol.

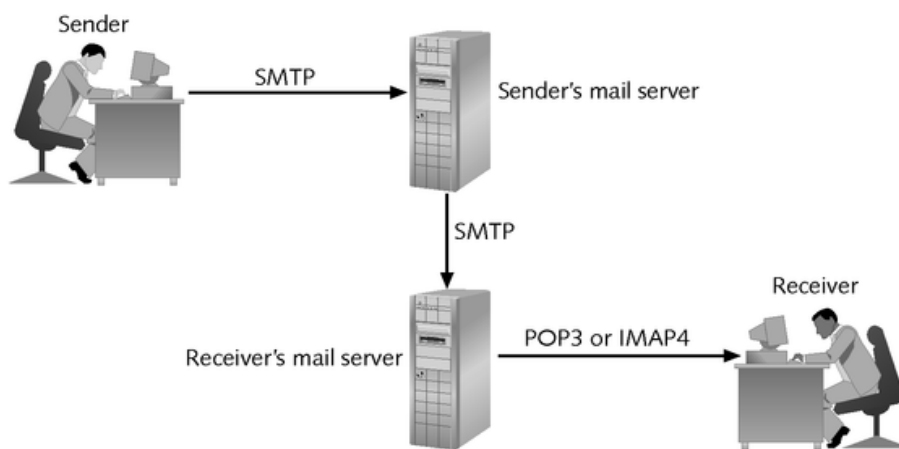


Exhibit 0-1: The SMTP protocol is used to send e-mail to a recipient's mail server and POP3 or IMAP4 protocol is used to download e-mail to the client



Read

<http://www.gcflearnfree.org/internet101/1>



## KEY TERMS USED IN THIS SECTION

**Connectivity Device:** One of several types of specialized devices that allows two or more networks or multiple parts of one network to connect and exchange data.

**E-mail :** messages distributed by electronic means from one computer user to one or more recipients via a network.

**Hypertext Markup Language:** a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Web pages

**Internet:** A complex WAN that connects LANs and clients around the globe.

**Internet Address:** is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the **Internet** Protocol for communication.

**Internet Service Provider:** an organization that provides services for accessing, using, or participating in the Internet.

**Network:** A group of computers and other devices (such as printers) that are connected by and can exchange data via some type of transmission media, such as a cable, a wire, or the atmosphere.

Post Office Protocol version 3(**POP3**): a standard mail protocol used to receive emails from a remote server to a local email client.

**Simple Mail Transfer Protocol(SMTP) :** It's a set of communication guidelines that allow software to transmit email over the Internet.

**Uniform Resource Locator (URL):** the generic term for all types of names and addresses that refer to objects on the World Wide Web.

**Web browser:** a software application for retrieving, presenting and traversing information resources on the World Wide Web.

**Web Server:** a program that, using the client/server model and the World Wide Web's Hypertext Transfer Protocol (HTTP), serves the files that form Web pages to Web users (whose computers contain HTTP clients that forward their requests).



## SECTION 1 REVIEW QUESTIONS



1.1 What is a network?

- ☒ A. A network is a collection of devices connected to each other for the purpose of sharing resources such as printers.
- B. A network is a collection of devices placed together in a room
- C. Network refers to the signal on a computer.
- D. A network is a device that connects computers together.

1.2 To connect to the internet, what are the three main things you must have?

- A. PC, Modem, Airtime
- ☒ B. PC, connection device, Access to host computer
- C. PC, Modem, Speakers
- D. Access to a PC, Access to a connection device, access to a mouse

1.3 TCP/IP stands for?

- A. Testing Connection Protocol/ Internet Protocol
- B. Transmission Control Policy/ Internet Process
- ☒ C. Transmission Control Protocol/Internet Protocol
- D. None of the above

1.4 To send an email to a recipient's mail server, which protocol is used?

- ☒ A. SMTP
- B. HTTP
- C. TCP/IP
- D. POP3

1.5 How can you describe DNS?

- A. A name of a pc part that is used to connect to a network.
- ☒ B. A method of matching host names with their unique IP addresses and vice versa.
- C. A name used to connect to the internet.
- D. A device that collects data from the internet.

1.6 A student wants to be able to access internet at home. A student already has a computer, what other things a student need to have in order to use internet?

- A. Wi-Fi and Monitor
- B. Connection device and Access to host computer
- C. Web address and data bundles



## ONE | REVIEW QUESTIONS

✓D. Internet access and Wi-Fi.

1.7 Anyone can connect to the internet if three main things required to connect to the internet are present, but what are the things that can be used to enhance browsing experience?

A. Printer, speakers, media player.

B. Projector, modem, cables.

C. Mouse, Browser, modem.

✓D. Host computer, PC, internet access.

1.8 There are many protocols used today. Which protocol is used to transfer files between computers running TCP/IP?

A. HTTPS

✓B. FTP

C. SSL

D. TCP/IP

1.9 These are some of the domains used today

A. .com, .virtual, .private

✓B. .com, .org, .edu

C. .comm, .web, .net

D. .com, .gov, .mall

1.10 An IP address is made up of four sets of number that are separated by periods. Those numbers are called:

✓A. Octets

B. Ids

C. Codes

D. sections





## LEARNING OUTCOMES

1. Define HTML
2. Differentiate between XML and HTML
3. Appreciate different coding approaches

## 2.1 INTRODUCING HTML

When Tim Berners-Lee first proposed HTML at the European Laboratory for Particle Physics (CERN) in 1989, he was looking for a way to manage and share large amounts of information among colleagues. He proposed a web of documents (at first he called it a mesh) connected by hypertext links (hyperlinks) and hosted by computers called hypertext servers (which are now known as web servers). As the idea developed, Berners-Lee named the mesh the World Wide Web. He created an application of the Standard Generalized Markup Language (SGML), a standard system for specifying document structure, and called it Hypertext Markup Language (HTML). HTML greatly reduces the complexity of SGML to enhance transmission over the internet.

When Berners-Lee created HTML, he adopted only the necessary elements of SGML for representing basic office documents, such as memos and reports. The first working draft of HTML included elements such as titles, headings, paragraphs and lists. HTML was intended for simple document structure, and not to handle the variety of information needs in use today. The document expression capabilities of HTML currently are pushed to the limit. HTML has been manipulated in thousands of ways to encompass the staggering breadth of information available on the Web.

### Hypertext and Hypermedia

The basic concept of the World Wide Web, and the most revolutionary idea envisioned by Berners-Lee, is the use of hypertext to link information on related topics over the Internet. *Hypertext* is a non-linear way of organizing information. When using a hypertext system, you can jump from one related topic to another, quickly find the information that interests you, and return to your starting point (home page) or move on to another related topic of interest. As a hypertext author, you determine which terms to create as hypertext links (hyperlinks) and where users will end up when they click a link.

On the Web, clickable hyperlinks, which can be text or images, can connect you to another Web page or allow you to open or download a file, such as a sound, image,

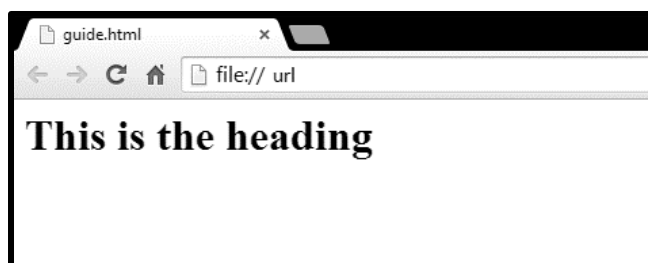
movie, or executable file. The early Internet consisted of only text and binary files, and when these new hypertext capabilities were introduced, they demanded a new term—*hypermedia*, the linking of different types of media on the World Wide Web.

## 2.2 HTML AS A MARKUP LANGUAGE

A *markup language* is a structured language that lets you identify common sections of a document, such as headings, paragraphs, and lists. An HTML file includes text and HTML markup elements that identify these sections. The HTML markup elements indicate how the document sections display in a browser. For example, the `<H1>` element tags in the following code indicate that the text is a first-level heading:

**`<H1>This is a first-level heading</H1>`** (*Headings will be covered in Topic 4*)

The browser interprets the HTML markup elements and displays the results, hiding the actual markup tags from the user. This will be the output for the above code:



HTML adopts many features of SGML, including the cross-platform compatibility that allows different computers to download and read the same file from the Web. Because HTML is cross-platform compatible, it does not matter whether you are working on a Windows PC, Macintosh, or UNIX computer. You can create HTML files and view them on any computer platform.



### Research

What are the advantages of using HTML5

HTML is not a What You See Is What You Get (WYSIWYG) layout tool. It was intended only to express logical document structure, not formatting characteristics. Although many current HTML editors let you work with a graphical interface, the underlying code they create still is basic HTML. Because HTML was not designed as a layout language, however, many editing programs create

spaghetti code or use HTML tricks to accomplish a certain effect. You cannot rely on the HTML editor's WYSIWYG view to test your Web pages. Because users can view the same HTML file through different browsers and on different machines, the only way to be sure of what your audience sees is to preview your HTML files through the browsers you anticipate your audience will use.

Despite its limitations, HTML is ideal for the Web because it is an open, non-proprietary, cross-platform compatible language. All of the markup tags are included

with every document and usually can be viewed through your browser. Once you are familiar with the HTML syntax, you will find that one of the best ways to learn new coding techniques is to find a Web page you like and view the source code.

### Separating style from structure

Style elements, such as `<FONT>`, were introduced by browser developers to help HTML authors bypass the design limitations of HTML. Designers and writers who are accustomed to working with today's full-featured word processing programs want the same ability to



#### THINK POINT

What are the advantages of separating style from structure?

manipulate and position objects precisely on a Web page as they have on the printed page. This is not what HTML was designed to do, however. HTML, like SGML, is intended to represent document structure, not style. Style information should be separate from the structural markup information.

This separation of style and structure has been accomplished by the W3C (World Wide Web

Consortium), which wrote a specification for a Web style language in 1996. The style language, named *Cascading Style Sheets (CSS)*, allows authors to create style rules for elements and express them externally in a document known as a *style sheet*. CSS rules are easy to create and very powerful. For example, assume that you want all of

your `<H1>` headings to appear green and centered everywhere on your Web site. CSS will be covered in Topic 8 (Style Sheets).



#### Multimedia Resource

<http://www.youtube.com/watch?v=CKIh1Iwe2rY>

This mixing of structure and style and the subsequent varied support of different style elements in different browsers threaten to undermine the entire foundation of the Web and

to render it useless as HTML becomes fractured by proprietary elements. But that changed, today most web browsers now support CSS, allowing web pages design today to have different designs and layouts.

### 2.3 XML AND XHTML

With the *Extensible Markup Language (XML)*, the W3C has a chance to start from scratch in defining a standard markup language, instead of playing catch-up, as it had to do with HTML. XML is also a subset of SGML. Unlike HTML, XML is a *meta-language*, not a language itself, but a language that lets you describe other languages. As a meta-language, XML allows you to create your own elements to meet your information needs, which significantly distinguishes it from the predefined elements of HTML. XML provides a format for describing structured data that can be shared by multiple applications across multiple platforms.

## Features of XML

Some of the features of XML that makes it a very useful language are:

- XML describes data: The power of data representation in XML comes from separating display and style from the structure of data. XML elements describe data and structure only and not presentation. Where HTML contains elements that describe a word as bold or italic, XML declares an element to be a book title, item price, or product measurement. Once the data are structured in XML, they can be displayed across a variety of media, such as a computer display, television screen, or handheld device, using an associated style sheet that contains the appropriate display information. Currently, Cascading Style Sheets is the only complete style language for XML, though the W3C is working on the *Extensible Style Language (XSL)*, which is derived from XML.
- XML allows better access to data: XML is valuable because it allows access to more meaningful searches for information, development of flexible applications, multiple views of data, and is based on a non-proprietary standard that supports the open nature of the Web. People as well as machines can read XML code. Some years from now, someone could open your XML file and understand what you meant by using <HEADLINE> and <PARAGRAPH> as markup elements. The cross-platform, independent nature of XML markup supports a variety of data applications migrating to the Web. XML lets you display data on many devices without changing the essential data descriptions.
- XML lends itself to customized information: XML is ideal for distributing complex, esoteric information among many users sharing the same types of knowledge. With the customized elements of XML, standards organizations for various industries and information types can enforce the use of markup constraints with all users. For example, chemists can have their own chemical markup language, and poets can have their own poetic markup language—ensuring that the content can be read and understood by anyone interested in their information type. Currently, XML still is under development. Many of the proposed features of XML, including XML linking and the Extensible Style Language, still are incomplete and supported differently by different vendors. Internet Explorer 5.0 is currently the only browser that supports XML, and its support is weak in some areas. Be careful with implementation of any XML project by testing your work thoroughly.



**WEB RESOURCE**

<http://www.xml.co.za>

The following table shows the difference between XML and HTML:

XML	HTML
User definable tags	Defined set of tags designed for web display
Content driven	Format driven
End tags required for well-formed documents	End tags not required
Quotes required around attributes values	Quotes not required
Slash required in empty tags	Slash not required

## 2.4 CODING APPROACHES

There are three types of coding approaches that you can use to develop Web pages. The following list explains these coding types:

- **Lowest common denominator coding:** although it may seem difficult to create pages that always display properly, it is not impossible. One way to create portable pages is to use a lowest common denominator approach. This approach provides the greatest acceptance across browsers because the authors choose to code their HTML using the next-to-last release of HTML. For example, when the browsers supporting HTML 5 in 2012 were released, many continued coding to the HTML 4.01 and XHTML standard, knowing that their HTML would render more consistently because the browsers understood all of the 4.01 specifications. This safer method of coding is widely supported among sites that are interested in the greatest accessibility. Maintaining coding specifications of a previous release of HTML does not mean that your site has to be visually uninteresting, although you may have to sacrifice using the latest enhancements.
- **Cutting-edge coding:** another strategy to adopt when designing your Web site is to stay at the cutting edge. Some designers insist that their users keep up with them by requiring the latest browser. This design strategy can result in visually exciting and interactive sites that keep pace with the latest technology. Often the user must not only have the latest browser version, but plug-in enhancements that render certain media types, such as Macromedia Flash animations. *Plug-ins* are helper applications that assist a browser in rendering a special effect. Without the plug-in, your user will not see the results of your work. Often when a new browser is released, these plug-ins are included for the most widely adopted enhancements. The risk these cutting-edge sites take is that many users may not be able to see the content as it was designed. Sites that use the latest enhancements also may require significant download times for the special effects to load on the user's computer. Sites that adopt the latest technologies must make sure that their user is up to the browser challenge. Otherwise, their information may go unread.
- **Browser-specific coding:** how many times have you visited a site that states "This site is best viewed with Internet Explorer 10"? This statement warns you that the



### THINK POINT

In your own opinion, which coding approach is more effective and advantageous? Why?

author has decided to forgo the challenge of coding for multiple browsers. The author may have wanted to use some unique enhancement for the site, or may have found that the site did not render properly in other browsers. This may seem the most expedient coding method to adopt. Consider the consequences, however. A site coded for only one browser may alienate a significant number of readers who immediately leave because they do not have the correct browser.

## 2.5 BUILDING A WEB SITE DEVELOPMENT TEAM

Although one person can maintain small Web sites, larger sites require a group of personnel filling a variety of roles. The line can be blurred between the roles, and of course, many aspects of site design require more than one head to solve a problem. The following roles are examples of the types of talent necessary to build a larger, well-conceived site.

- **Server administrators** - Get to know and appreciate the technical people that run your Web server. They take care of the sticky technical issues like firewalls, modem ports, internal security, file administration, and back-up procedures. Consult with them to determine your Web site's default filename and directory structure. They also can generate reports that will tell you how many visitors your site is attracting, where the visitors are coming from, and what pages they like best.
- **HTML coders** - These are the people responsible for creating the HTML code and troubleshooting the site. Most HTML coders now are using HTML editors to create code, but any self-respecting HTML coder knows how to open the HTML file in a text editor and code by hand. The coders also are responsible for testing and evaluating the site across different operating systems and Web browsers.
- **Designers** - Designers are the graphic artists responsible for the look of the site. They will use design software, such as Adobe PhotoShop, the industry standard graphic design program. Designers contribute to the page template design, navigation icons, color scheme, and logos. If your site uses photographic content, the designers will be called upon to prepare the photos for online display.
- **Writers and Information designers** - Writers prepare content for online display, which includes designing hypertext information and navigation paths. Additionally, writers should be responsible for creating a site style guide and typographic conventions. The writers are responsible for consistency, grammar, spelling, and tone. They also work closely with the designers to develop the page templates.
- **Software programmers** - Programmers write the programs you need to build interaction into your site. They may write a variety of applications, including Common Gateway Interface (CGI) scripts, Java scripts, and back-end applications that interact

with a database. Commerce sites will especially need the talents of a programming staff.

- Database administrators - The people who are responsible for maintaining the databases play an important role in commercial Web sites. They make sure that your data are accessible and safe.
- Marketing - The marketing department can generate content and provide exposure for the site.

**KEY TERMS USED IN THIS SECTION**

**CSS:** a style sheet language used for describing the look and formatting of a document written in a markup language.

**Uniform Resource Locator (URL):** refer to section 1

**Web page:** a hypertext document connected to the World Wide Web

**Web Site:** a location connected to the Internet that maintains one or more web pages.

**WYSIWYG:** denoting the representation of text on-screen in a form exactly corresponding to its appearance on a printout.

**XML:** a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.





## SECTION 2 REVIEW QUESTIONS

1.1 What does XML stand for?

- A. Extreme markup learning
- B. Extensible markup learning
- ✓ C. Extensible markup language
- D. None of the above

1.2 If web page styles are defined using CSS, which language is used to create the actual web page and link it with a style sheet file?

- A. XML
- B. PHP
- C. MySQL
- ✓ D. HTML

1.3 HTML coders can be described as?

- A. People who are responsible for creating HTML code and troubleshooting the site.
- ✓ B. People who are able to design a web site.
- C. Programmers that create different applications using different programming languages
- D. None of the above

1.4 What is an element?

- ✓ A. an individual component of an HTML document or web page
- B. Solid head absorber
- C. A paragraph
- D. A section with headings only

1.5 What is a difference between XML and HTML

- A. XML is easy, HTML is not
- ✓ B. XML is content driven, while HTML is format driven
- C. XML is similar to HTML
- D. XML has defined set of tags designed for web display and HTML uses user defined tags

1.6 What is hypertext?

- ✓ A. A non-linear way of organizing information
- B. A file created to sort files
- C. A language used to design web pages



D. A sequence in which files are stored and designed

1.7 Who created HTML?

- ☒ A. Tim Berners-Lee
- B. Bill Gate
- C. Steve Jobs
- D. Sam Sung

1.8 CSS stands for?

- A. Cascading Style Source
- ☒ B. Cascading style Sheet
- C. Cascading System Sheet
- D. Cascading Style Storage

1.9 HTML is cross-platform, what does that mean?

- A. HTML is using a cable to display 2 platforms
- ☒ B. HTML files can be created and viewed on any computer platform
- C. HTML is only used when using one platform
- D. HTML is a hybrid language

1.10 What does WYSIWYG stand for?

- A. Wizzy Wig
- ☒ B. What You See Is What You Get
- C. What You Say Is What You Get
- D. What You Sign Is What You Get



### Learning Outcomes

1. Show a detailed understanding of how to browse the Web
2. Show an ability on how to create an HTML document

## INTRODUCTION

You can explore the Web either by clicking hyperlinks or by using the address bar on your browser. You use the address bar for specifying the address of a Web page, which is called a Uniform Resource Locator, or URL.



### Research

How can you register a domain?

### 3.1 UNIFORM RESOURCE LOCATOR

To identify a particular page or document on the Internet you need an Internet address called a *Uniform Resource Locator*, or *URL*. A URL consists of three major components that provide the necessary information to find a specific document. These components are separated by a forward slash (/). For example, the URL for PC

Training and Business College Website might be as follows:

*http://www.pctbc.co.za* where:

- *http://* is a protocol used.
- *www.pctbc.co.za/* is the host name and domain of the server.
- *site/.....* is the directory path where the page is stored. The path might also include file names.
- include file names.



### THINK POINT

What is an advantage of using company name as part of your URL?

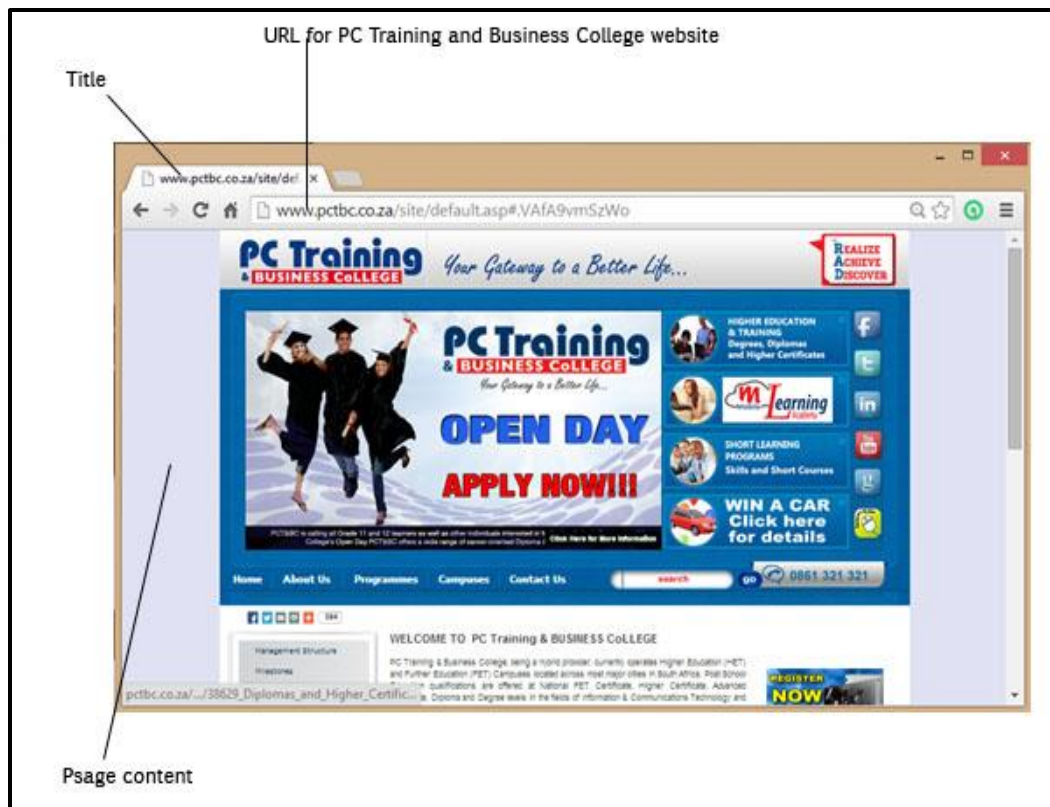


Exhibit 0-2: The home page of PC Training and Business College Web site

### Browsing the Web

Here's how	Here's why
Start the browser	Follow your instructor's directions.
In the Address box, edit the text to read <b>www.pctbc.co.za</b>	This is the URL of the pctbc Web site.
Press enter	The home page of the pctbc Web site appears.(As shown in Exhibit 0-2)
Move the pointer around the page	When you point to an underlined word, the pointer changes to a hand indicating that it is a hyperlink.
Click any hyperlink	To open a different page.

### 3.2 TAGS IN HTML

You can create Web pages by using *Hypertext Markup Language (HTML)*. HTML is a set of codes, or tags, inserted in a file intended for display on the World Wide Web. The codes tell the Web browser how to display a Web page's words and images for the user. An HTML document is a plain text file that contains HTML



### IDEA

When browsing web sites, to identify hyperlinks, simply hover or move the mouse over the underlined word(s). If the cursor changes to a hand, then that will be a hyperlink which will open a different web page.

code. The name of the file has the extension, .html. You can use a simple text editor, such as Notepad, to create an HTML document.

You can use HTML *tags* to create the structure of a Web page. Each tag consists of the tag name surrounded by angular brackets, as shown here:

<tag\_name> for example: <html>

Some tags, such as the TITLE tag, work in pairs with a starting tag and an ending tag. <TITLE> is the *starting* tag and has </TITLE> as the corresponding *ending* tag. The ending tag is identical to the starting tag except that it contains a forward slash (/) before the name of the tag. Tags that have a starting and a corresponding ending tag are called *containers*. Tags that don't appear in pairs are called *empty containers*. For example, <HR>, the HR tag, is an empty container that inserts a horizontal line on the page. With the HTML versions that keep on changing, the most recent HTML version comes with a set of tags which can be used and effective when using that HTML version.

### 3.3 SOURCE CODE OF A WEB PAGE

You can create a simple HTML document by using three basic tags —HTML, HEAD, and BODY. These tags together are called the *document structure elements* of an HTML document. Here's what they do:

```
1 <html>
2
3 </html>
```

- **HTML:** This tag indicates that the document contains HTML code. The syntax, or structure, for using this tag is:

<HTML> is the starting tag and </HTML> is the ending tag. Without these tags the browser will misinterpret the document as a text file. An HTML document is divided into two sections—head and body.

- **HEAD:** The head section of an HTML document starts with the <HEAD> tag and ends with the </HEAD> tag. You can specify the title of the page in this section by using the TITLE tag (title). The syntax for using the HEAD and TITLE tags is:

```
3 <head>
4     <title>PCTBC Web Page</title>
5 </head>
```

```

7  <body>
8
9  </body>

```

The TITLE tag marks the enclosed text as the title of the page. This title appears on the title bar of the browser as shown in **Error! Reference source not found.**

- BODY: The body section starts with the <BODY> tag and ends with the </BODY> tag. This section contains the text that appears in the browser window and also contains other tags in the HTML document. The syntax for using the BODY tag is:

### 3.4 CREATING A SIMPLE HTML DOCUMENT

To create a basic HTML document, you need the three document structure elements:

- HTML
- HEAD
- BODY

#### Creating and saving an HTML document

To create an HTML document that has a title, headings, paragraphs, and images, you can add several tags along with the document structure elements. An HTML document created in Notepad ++, or other simple text editors, is saved with the file extension .html

#### Creating an HTML document

Here's how	Here's why
Choose <b>Start, Programs, Notepad</b>	To open Notepad. You can use any text editor on your own, but you'll be using Notepad in this course.
Choose <b>Edit, Word Wrap</b>	To view the complete code without having to scroll horizontally.
Enter the following code:  <HTML>	This is the starting HTML tag that indicates the beginning of an HTML document.
Enter the following code:  </HTML>	This tag indicates the end of an HTML document.
Place the insertion point as shown	<pre> &lt;HTML&gt;  &lt;/HTML&gt; </pre>

	To prepare to add the starting HEAD tag.
Press Enter	To move the insertion point to the next line to add the ending HEAD tag.
Press enter	To move the insertion point to the next line to add the starting BODY tag.
Enter the following code: <BODY>	This is the starting BODY tag that indicates the beginning of the body section.
Press enter	To move the insertion point to the next line to add the ending BODY tag.
Enter the following code: </BODY>	This tag indicates the beginning of the body section.
Place the insertion point as shown	<div> <pre>&lt;HTML&gt; &lt;HEAD&gt;  &lt;/HEAD&gt; &lt;BODY&gt; &lt;/BODY&gt; &lt;/HTML&gt;</pre> </div> <p>To prepare to add the TITLE tags.</p>
Edit the code to read as shown	<div> <pre>&lt;HTML&gt; &lt;HEAD&gt; &lt;TITLE&gt;Outlander Spices&lt;/TITLE&gt; &lt;/HEAD&gt; &lt;BODY&gt; &lt;/BODY&gt; &lt;/HTML&gt;</pre> </div>
Choose <b>File, Save As...</b>	To display the Save As dialog box. You'll save the HTML document in the current unit folder.
In the File name box, enter <b>Mypage.html</b>	To specify the name of the document and add the .html extension to make it an HTML document.
Click <b>Save</b>	To save the document.
Choose <b>File, Exit</b>	To close Notepad.
In the browser, open Mypage	
Observe the page	The text that you entered between the TITLE tags appears on the title bar of the browser window.

### 3.5 ADDING BODY TEXT

You can add content to an HTML document by using the BODY tag (body). In the BODY tag you can include tags to add headings, paragraphs, lists, tables, and images to a Web page. For instance, to create a heading on a page, use the H1 tag (heading 1). This tag marks text that will appear as a heading.

#### Adding body text to an HTML document

Here's how	Here's why
Open the source code of the page	Choose View, Source.
Place the insertion point as shown	<div><pre>&lt;HTML&gt; &lt;HEAD&gt; &lt;TITLE&gt;Outlander Spices&lt;/TITLE&gt; &lt;/HEAD&gt; &lt;BODY&gt;  &lt;/BODY&gt; &lt;/HTML&gt;</pre></div> <p>To prepare to add text that will appear on the Web page in the browser.</p>
Press enter	To move the insertion point to the next line.
Enter the following code:	
Welcome to the Outlander Spices Web site.	
<b>This text will appear on the page.</b>	
Place the insertion point as shown	<div><pre>&lt;HTML&gt; &lt;HEAD&gt; &lt;TITLE&gt;Outlander Spices&lt;/TITLE&gt; &lt;/HEAD&gt; &lt;BODY&gt;  Welcome to the Outlander Spices Web site. &lt;/BODY&gt; &lt;/HTML&gt;</pre></div> <p>To prepare to add the H1 tags (heading 1) to create a heading on the page.</p>
Press enter	To prepare to add code on the next line in the source code.
Enter the following code:	The H1 tags (heading 1) mark text to create a heading on the page.
<H1>Outlander Spices</H1>	
Choose <b>File, Save</b>	To save the source code.
Close the source code	Choose File, Exit.
Choose <b>View, Refresh</b>	To refresh the contents of the page.
Observe the page	The text "Outlander Spices" that you enclosed within the H1 tags appears as



	a heading on the page and the rest of the text that you enclosed within the BODY tags appears on the page.
--	--



### **IDEA**

When saving an HTML document, you must include .html after the file name.



## KEY TERMS USED IN THIS SECTION

**Body:** HTML section that contains all the content to be displayed to user.

**Containers:** the area enclosed by the beginning and ending tags.

**Source Code:** any collection of computer instructions (possibly with comments) written using some human-readable computer language, usually as text.

**Uniform Resource Locator:** Refer to topic 1



## SECTION 3 REVIEW QUESTIONS

1.1 What are the three document elements that an HTML page must have?

- ☒ A. HTML, HEAD, BODY
- B. HEADING, PARAGRAPH, TITLE
- C. TITLE, DATE, COLORS
- D. HEAD PARAGRAPH, HYPERLINK

1.2 When creating a web site, the home page is saved as?

- A. Home.html
- ☒ B. Index.html
- C. Page1.html
- D. Homepage.html

1.3 The following tag is an example of an empty container.

- A. `<a></a>`
- B. `<p></p>`
- ☒ C. `<div></div>`
- D. `<img>`

1.4 In which section of an HTML document do you add text that will appear on

- ☒ A. Body
- B. head
- C. html
- D. none of the above

1.5 An HTML document is saved with the following extension.

- ☒ A. .html
- B. .css
- C. .php
- D. .exe

1.6 Navigating from one web page/site to another is known as?

- ☒ A. Web browsing
- B. Web scape
- C. Searching
- D. Site visiting

1.7 What do you call an application used to view web pages?

- A. Html viewer
- B. Html reader



- ☒ Web browser
- D. notepad

1.8 Which tag can you use to add title in your web page?

- A. <head>
- ☒ B. <title>
- C. <tittle>
- D. <label>


1.9 What makes the ending tag differ from starting tag?

- ☒ A. The ending tag contains a forward slash before the name of the tag.
- B. The ending tag is always written in capital letters
- C. Ending tag is shorter compared to starting tag
- D. They are similar

1.10 What are the three main elements that an HTML document must have?

- A. Head element, body element, title element
- ☒ B. Html element, head element, body element
- C. Html element, head element, paragraph element
- D. Only body element

## FOUR | HEADINGS AND PARAGRAPHS

	<b>Learning Outcomes</b>
<ol style="list-style-type: none"><li>1. Create headings and paragraphs on a Web page</li><li>2. Format the text on a Web page</li><li>3. Insert and format horizontal rulers on a Web page</li></ol>	

**INTRODUCTION**

Headings and paragraphs have long been used to improve the reading ease and appearance of all kinds of documents, such as newspapers, books, and reports. Headings inform the reader what the document is about. You use headings in Web pages to describe the contents of a page or a section of a page.

You use paragraphs to group information on a page that has a large amount of text. Using paragraphs increases the readability of the page and makes the information easily accessible.

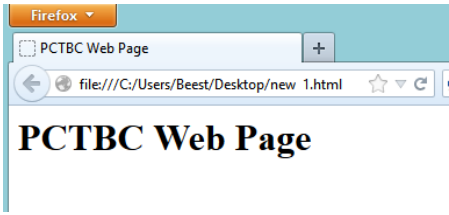
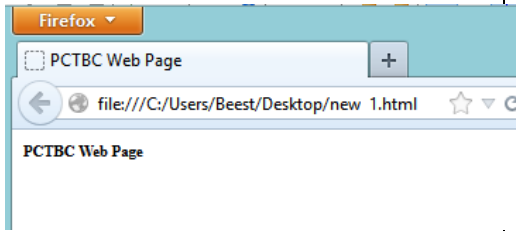
**KEY POINT**

Headings and paragraphs are used to increase readability of a web page.

**4.1 HEADINGS**

You use the *heading tag* to mark headings in a Web page. You can create up to six levels of headings; Heading 1 (H1) is the first level and Heading 6 (H6) is the last level. Each heading level appears in a different size. Text marked as Heading 1 appears bigger in size as compared to text marked as Heading 6. The syntax for marking text as Heading 1 is:

```
<h_level>some text</h_level>
```

Example	
<pre> 7  &lt;body&gt; 8    &lt;h1&gt;PCTBC Web Page&lt;/h1&gt; 9  &lt;/body&gt; </pre>	<pre> 7  &lt;body&gt; 8    &lt;h6&gt;PCTBC Web Page&lt;/h6&gt; 9  &lt;/body&gt; </pre>
	

The H1 tag is a container with `<H1>` as its starting tag and `</H1>` as its ending tag. You can mark text as any of the heading levels, such as Heading 2 (H2) or Heading 3 (H3), in a similar manner.

### Creating headings

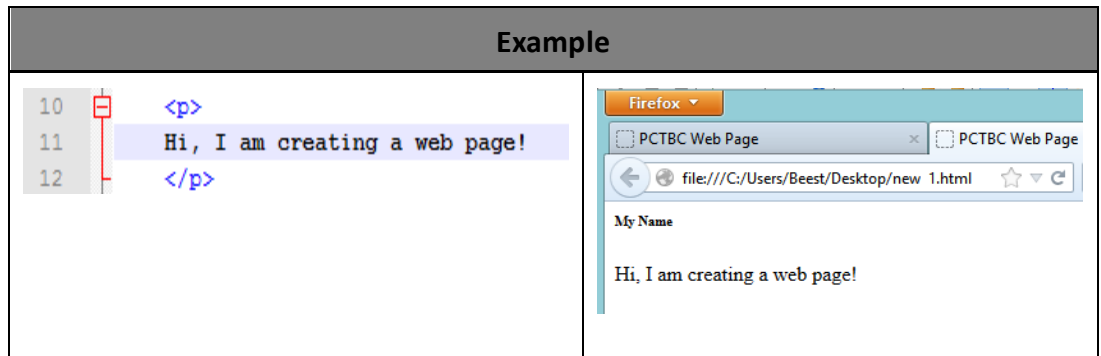
Here's how	Here's why
Open Notepad ++	To edit or create an HTML file
Add three main tags for a document	Because each and every page must have the main three sections.
Add your name as the heading	This will be the heading of your page.
Add the heading between the <code>&lt;body&gt;</code> tags.	<pre> 7  &lt;body&gt; 8    &lt;h6&gt;My Name&lt;/h6&gt; 9  &lt;/body&gt; </pre> <p>A heading must be between the <code>&lt;body&gt;</code> tags.</p>
Save your web page. Open your Web page using the web browser.	In order to preview your web page using the Web browser.

### 4.2 PARAGRAPHS

In a page that contains a large amount of text, you can separate text into different paragraphs by using the *P tag* (paragraph), which has the following syntax:

```
<P>Paragraph text</P>
```

`<P>` denotes the start and `</P>` indicates the end of a paragraph. The P tag leaves a blank line before the next text.



- **Line breaks**

To make some text appear on a new line you can use the *BR tag* (line break), which has the following syntax:

`<BR>`



The BR tag is an empty container. You can also use this tag to insert a blank line on a page. The BR tag moves text to the next line, while the P tag (paragraph) leaves one blank line between texts on the page as shown in Exhibit 0-3.

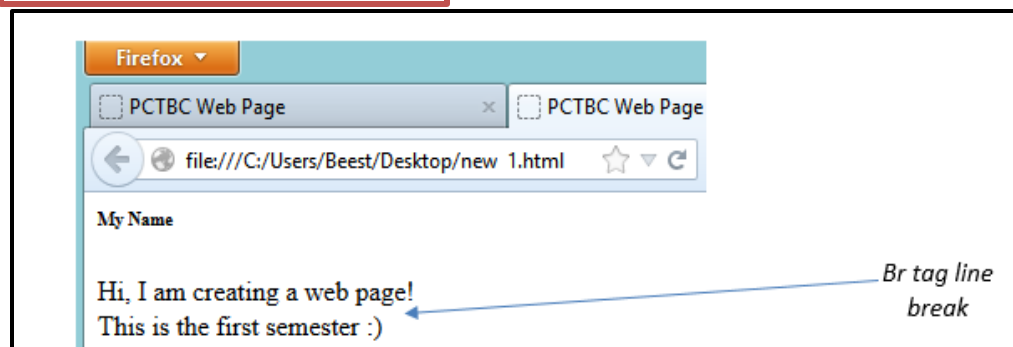


Exhibit 0-3: Use of the BR and P tags

### Creating paragraphs and inserting line breaks

Here's how	Here's why
Observe the page	The text on this page is continuous without any line breaks.
Open the source code	You'll create a paragraph on this page.
Place the insertion point as shown	<div style="border: 1px solid black; padding: 2px; display: inline-block;">           We have a large collection         </div> <p>To prepare to add the code to mark the text as a paragraph.</p>

Enter the following code: <P>	To mark the beginning of a paragraph.
Place the insertion point as shown	<div> <pre>&lt;P&gt; We have a large collection time. Our spices retain fre blending.   &lt;/BODY&gt;</pre> </div> To prepare to add the ending P tag.
Enter the following code: </P>	This is the ending P tag.
Update and close the source code	
Refresh the page	
Observe the page	The text that you specified between the P tags appears as a paragraph.
Open the source code	You'll insert a line break on this page.
Place the insertion point as shown	<div> <pre>  We deliver only the finest</pre> </div> To prepare to add the code to move text to the next line.
Enter the following code:  	This tag indicates that the text that follows it will appear on the next line.
Update and close the source code	
Refresh the page	
Observe the page	The text that follows the BR tag appears on the next line (as shown in Exhibit 0-3).

### 4.3 COMMENTS

In HTML a comment (or comments) is information a designer can add to the HTML source code for reference. Comments are not viewed by the user or displayed on the web browser, but only when viewing the HTML source code. HTML allows you to add comments within the code to help the reader better understand the code. To add a comment to the code for a page, use the following code:



<!-- comments-->

#### Adding comments

Here's how	Here's why
Open the source code	You'll add comments in this code.
Place the insertion point as shown	<div> <div>&lt;/HEAD&gt;</div> <div> </div> <div>&lt;BODY&gt;</div> </div>
Enter the following code:	
<!--Contents of the page-->	To add a comment in the code.
Update and close the source code	
Refresh and observe the page	The text enclosed within the comment tag does not appear on the page.

#### 4.4 CHARACTER ENTITIES



You might want to display certain characters like the copyright symbol (©), registered trademark symbol (®), or a blank space on your Web page. You cannot type these characters in the code because these are special characters that have a specific function in HTML. However, you can use *character entities* to insert these characters in your page. The following table displays the

character entities for some commonly used characters.

The ampersand (&) indicates the beginning and the semi-colon (;) indicates the end of a character entity.

Character Entity	HTML5 Entity	Intended Character	Description
&amp;	&AMP;	&	Ampersand
&copy	&COPY	©	Copyright
&gt;	&GT;	>	Greater than
&lt;	&LT;	<	Less than
&trade;	&TRADE;	™	Trademark symbol
&reg;	&REG;	®	Registration mark
&quot;	&QUOT;	"	Double quotes

## Using character entities

Here's how	Here's why
Open the source code	You'll add a character entity to this page.
Place the insertion point as shown	<pre>&lt;/P&gt;   &lt;/BODY&gt; &lt;/HTML&gt;</pre>
Enter the following code:	
&copy; Outlander Spices 1999-2000. All rights reserved.	To insert the copyright symbol (©) on the page. The ampersand (&) indicates to the browser that the text that follows is a character entity and the semi-colon (;) indicates the end of the character entity.
Update and close the source code	
Refresh the page	
Observe the page	<pre>© Outlander Spices 1999-2000. All rights reserved.</pre> <p>The copyright symbol (©) appears at the end of the page.</p>

### 4.5 FORMATTING TEXT

You can increase the readability of a page by changing the style, size, or color of the text.

#### Formatting body text

You can modify the appearance of a page by adding formatting tags to its source code. You format a page by specifying the color for the text, underlining or italicizing the text, or making it bold. Browsers determine a specific format and the text formatted by using these formatting tags might appear different on different browsers. The following table lists some of the formatting tags and their function.



### IDEA

An attribute must be placed inside angle brackets of a tag and after a tag name.

Tag	Function
<B> </B>	Makes the text enclosed within these tags bold.
<I> </I>	Italicizes the text enclosed within these tags.
<U> </U>	Underlines the text enclosed within these tags.

### Attributes

*Attributes* of a tag provide additional features to a tag. You specify attributes within the starting tag. The syntax for using an attribute is:

<Tag\_name attribute\_name=value>

In HTML, there are attributes which are known as global attributes. These attributes can be used on any HTML element/tag. The following table contains a list of mostly used global attributes and their description.

Attribute	Description
class	Specifies one or more class names for an element (refers to a class in style sheet).
Id	Specifies a unique id for an element.
style	Specifies an inline CSS style for an element.
title	Specifies extra information about an element.

As a web designer/developer, you must be able to use attributes and know the list of attributes that are applicable on each tag. The following table contains a list of the <body> tag attributes:

Attribute	Description
alink	Specifies the color of an active link in a document.
background	Specifies a background image for a document.
link	Specifies the color of unvisited links in a document.

#### 4.6 ALIGNMENT

You align a heading to enhance the appearance of a page and make it look different from the rest of the text on the page. CSS allows you to align any element anywhere within a Web page.

By default, all Web page content appears on the left on the page. You can use the ALIGN attribute with various tags to force text to appear in the center or on the right. This attribute will align headings or paragraphs. For example, you might want to align the heading to the center of the page. The syntax for using the ALIGN attribute to do this is:

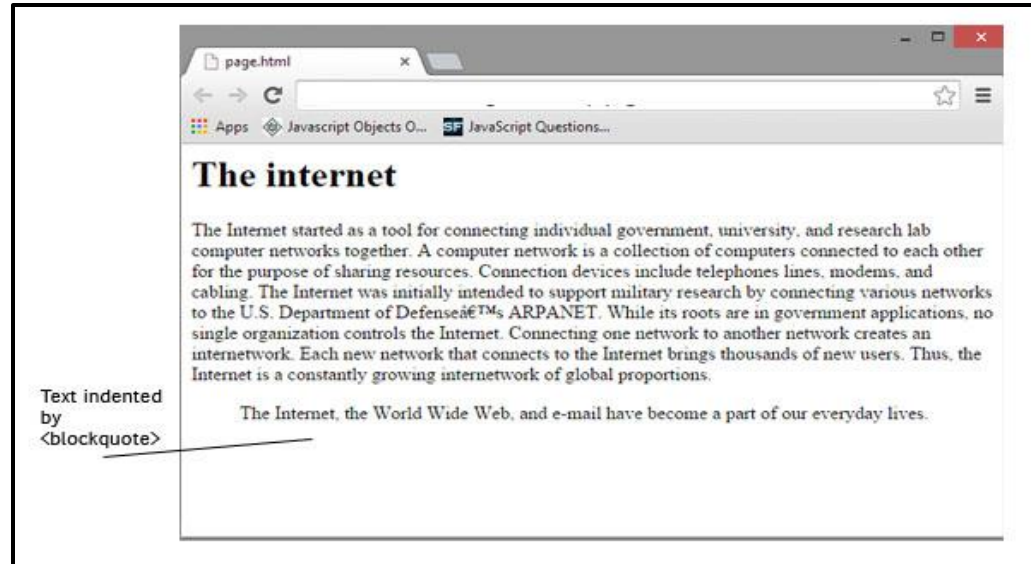
```
<H1 ALIGN=Center>PCTBC student Web Page</H1>
```

The ALIGN attribute used within the H1 tag centers the heading on the page. You can use this attribute within the P tag to align a paragraph.

- **Indenting text on a page**

You might want to indent the text on both left and right margins of a page to make some text stand out from the rest of the page. You do this by using the <blockquote> tag. This tag also supports the global attributes in HTML. The syntax for using the <blockquote> tag is:

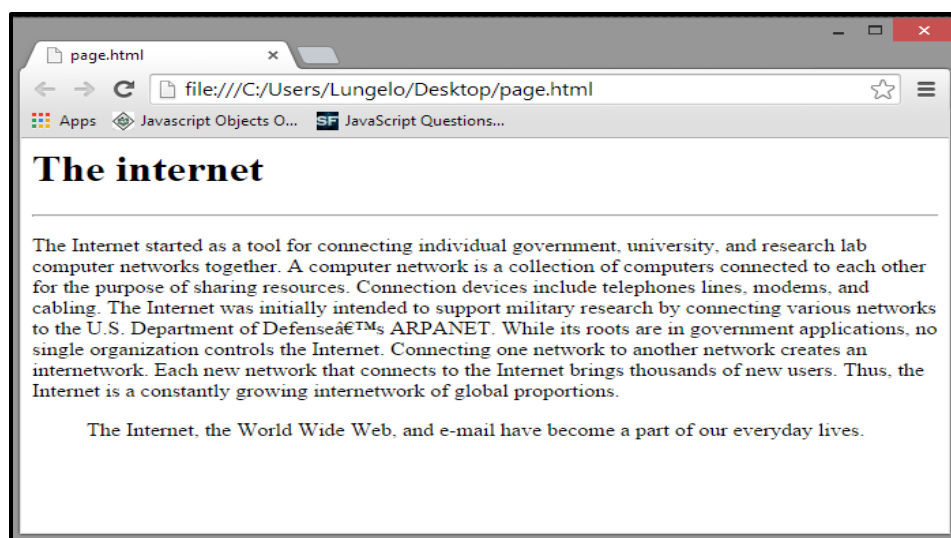
```
<blockquote> Desired text </blockquote>
```



*Exhibit 0-4: The page with the heading centered and text indented*

#### 4.7 USING HORIZONTAL RULERS

You can divide the text on a page into different sections by inserting a horizontal rule to increase the readability of the page. Inserting a horizontal rule creates a dividing line on a page as shown in



*Exhibit 0-5: A horizontal rule on The internet page*

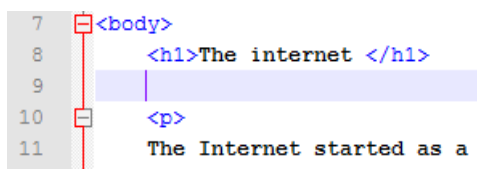
## Horizontal rule

A horizontal rule is a line that extends across the page. You insert a horizontal rule on a page by using the `<hr>` tag (horizontal rule). This tag also support global attribute. The following tag is used to insert horizontal rule on a web page:

`<HR>`

This is an empty container.

## Inserting a horizontal rule

Here's how	Here's why
Open the source code	You'll insert a horizontal rule on this page.
Place the insertion point as shown	 <p>To prepare to add the code to insert a horizontal rule on the page.</p>
Enter the following code: <code>&lt;HR&gt;</code>	To insert a horizontal rule on the page.
Update and close the source code	
Refresh the page	
Observe the page	A horizontal rule appears on the page.

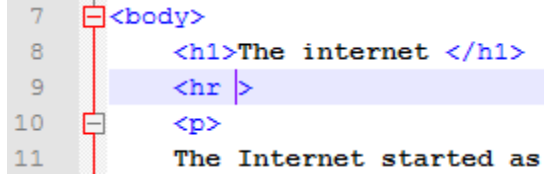
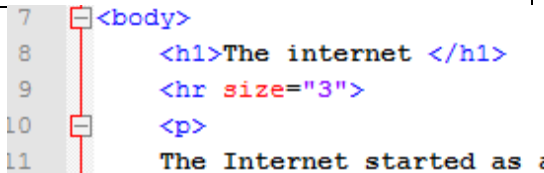
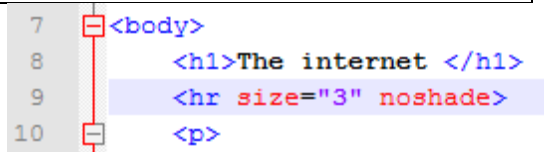
### Attributes of a horizontal rule

You can format a horizontal rule to make it wider, thicker, or appear in a different color by using several attributes of the HR tag. The following table lists the attributes of the HR tag.

Attribute	Description
WIDTH	Allows you to specify the length of the horizontal rule as a percentage of the width of the browser window. For example, you decrease the horizontal rule to 90% of the width of the browser window by using the following code: <code>&lt;HR WIDTH=90%&gt;</code>
COLOR	Allows you to specify the color of the horizontal rule. You make the horizontal rule appear blue by using the following code: <code>&lt;HR COLOR=Blue&gt;</code>
NOSHADE	Though the word NOSHADE implies no shading, this attribute functions in an opposite way. You make the horizontal rule appear shaded by using the following code: <code>&lt;HR NOSHADE&gt;</code>
ALIGN	Allows you to align the horizontal rule to the left, right, or center of a page. By default, the horizontal rule is aligned to the center of a page. You align the horizontal rule to the left of a page by using the following code: <code>&lt;HR ALIGN=Left&gt;</code>
SIZE	Allows you to specify the thickness of the horizontal rule. You set the thickness of the horizontal rule to 5 pixels by using the following code: <code>&lt;HR SIZE=5&gt;</code>

### Formatting a horizontal rule

Here's how	Here's why
Observe the horizontal rule	The horizontal rule extends across the page.

Open the source code	You'll add the code to change the thickness of the horizontal rule.
Place the insertion point as shown	 <p>To prepare to add the SIZE attribute to change the thickness of the horizontal rule.</p>
Edit the HR tag to read: <HR SIZE=5>	To change the thickness of the horizontal rule to 5 pixels.
Update and close the source code	
Refresh and observe the page	The horizontal rule appears thicker.
Open the source code	
Place the insertion point as shown	 <p>To prepare to add the NOSHADE attribute.</p>
Edit the HR tag to read: <HR SIZE=5 NOSHADE>	To make the horizontal rule appear shaded.
Update and close the source code	
Refresh and observe the page	The horizontal rule appears shaded.
Open the source code	
Place the insertion point as shown	 <p>To prepare to add the WIDTH and COLOR attributes.</p>
Edit the HR tag to read: <HR SIZE=5 NOSHADE WIDTH=90% COLOR=Blue>	To shorten the horizontal rule and make it appear blue.
Update and close the source code	
Refresh and observe the page	The horizontal rule appears shorter and blue.



## KEY TERMS USED IN THIS SECTION

**Attribute:** a modifier of an *HTML* element. *Attributes* provide additional information about an element.

**Horizontal Rule:** a line that goes across a webpage.

**Line Break:** a point at which text is split into two lines.

**Paragraph:** a distinct section of a piece of writing, usually dealing with a single theme and indicated by a new line, indentation, or numbering. In *HTML*, a paragraph is created using `<p>` tag.





## SECTION 4 REVIEW QUESTIONS

1.1 Why do we use headings and paragraphs in a web page?

- ☒ A. To increase readability of a web page
- B. To design a web page
- C. To have attractive web pages
- D. For web browser to understand web page content

1.2 The `<br>` is used to insert \_\_\_\_\_ in a web document.

- A. Big writing
- ☒ B. Line break
- C. horizontal
- D. bold reading

1.3 What are global attributes?

- ☒ A. Attributes that can be used on any html element
- B. Attributes that are used world wide
- C. Attributes that can be recognised world wide
- D. Well known attributes

1.4 Which attribute would you use to increase thickness of the horizontal line that appears on a web page?

- A. width
- B. height
- C. thickness
- ☒ D. size

1.5 This is an HTML5 entity for the “&” character.

- A. &AND;
- ☒ B. &AMP;
- C. &GT;
- D. %EMPER;

1.6 The `<hr>` tag is used to add \_\_\_\_\_ on a web page.

- ☒ A. Horizontal rule
- B. High resolution
- C. Horizontal rectangle
- D. None of the above

1.7 Which tag can one use to indent text in a web page?

- A. `<indent>`

## FOUR | REVIEW QUESTIONS



- B. <shift>
- ✓ C. <blockquote>
- D. <move>

1.8 This is an HTML5 entity for the ">" character.

- A. &LESS;
- B. &LT;
- C. &LTE;
- D. &>
- E. None ✓

1.9 What is the use of the line break tag?

- ✓ A. To make text appear on a new line
- B. To create a space between text in one line
- C. To break a line and add new image
- D. None of the above

1.10 This is the heading level with largest font size.

- ✓ A. H1
- B. H6
- C. H20
- D. Hlarge



### Learning Outcomes

1. Use Anchor tags to create a hyperlink on a page to move to another Web site
2. Use Anchor tags to create a hyperlink to move to a page within your Web site
3. Create a mailto link to send e-mail from a Web page.

## INTRODUCTION

A *Web site* is a collection of *Web pages* that can contain text, graphics, animation, sound, and a variety of interactive elements. Information on the Web is organized on many pages across many sites. You can access information on the Web easily if you can move quickly and effortlessly from one location to another. Hyperlinks allow you to navigate through the Web.



### KEY POINT

Hyperlinks are used to link two or more html documents/files in a web site.

## 5.1 HYPERLINKS

A hyperlink generally appears underlined on a page. When you point to a hyperlink, the pointer change to a hand and the address of the resource to which it links appears on the status bar of the browser. This address can be a URL of a Web site, the address of a page within your Web site, or any other resource, such as a graphic, sound, or movie file. Clicking the hyperlink displays the linked page in the browser. By default, a hyperlink will be underlined and blue in color when displayed on the Web browser.

### Observing hyperlinks

Here's how	Here's why
In the browser, open Facts	(From the current unit folder.) This page gives the list <hr> attributes and has a hyperlink.

Observe the underlined text	<p>The Internet, the World Wide Web, and e-mail :</p> <p><u>Study hr tag</u></p> <p>The underlined text indicates that it is a hyperlink.</p>
Point to the underlined text	<p>Find out more about the <u>whole spices</u> that we offer.</p> <p>The pointer changes to a hand. This indicates that the text is a hyperlink.</p>
Observe the status bar	The address of the linked page appears.
Click the hyperlink	The page Whole spices.html appears in the browser.



### IDEA

When creating a hyperlink, place the text that will be displayed between starting and

## 5.2 THE A TAG (ANCHOR)

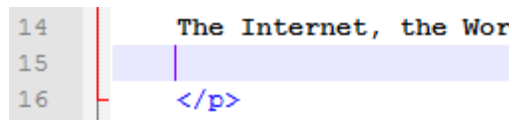
You use the `<a>` tag (anchor) along with one most important attribute to create a hyperlink. The text that you enclose within the tags appears as a hyperlink. You use the `href` attribute of the `<a>` tag to specify the page to which the hyperlink leads. For example, to link to the PC Training and Business College Web

site from your Web site/page, use the following code:

```
<a href="http://www.pctbc.co.za">Go To PCTBC</a>
```

The `href` attribute contains the URL of the destination Web site or Web page. The value assigned to the HREF attribute should be enclosed within quotation marks. The text "Go o PCTBC" is the hyperlink. Clicking the hyperlink displays the home page of the PC Training and Business College Web site.

### Adding a hyperlink to another Web site

Here's how	Here's why
In the browser, verify that Whole spices is open	
Open the source code	
Place the insertion point as shown	 <p>(After the last line in our paragraph.) To prepare to add the code to create a hyperlink to the pctbc Web Site.</p>

Enter the following code:  <A HREF="http://www.pctbc.co.za">Go to PCTBC</A> to search for more information on how to study.	To create a hyperlink to the PCTBC Web site. The HREF attribute contains the URL for this site.
Update and close the source code	
Refresh the page	
Scroll down to the end of the page	To see the hyperlink that you created.
Observe the page	The text "Go to PCTBC" that you enclosed within the A tag is the hyperlink.
Click <a href="#">Click here</a>	To open the home page of the PCTBC Web site.

You can add hyperlinks to pages within your Web site to allow users to navigate effortlessly through the site. You can also add hyperlinks to allow users to navigate to another point within the same page.

- **Linking to another page on your site**

A hyperlink that links one page to another page in your Web site is useful in situations when you cannot provide all the relevant information on one page. For example, on the PC Training and Business College Web site, the home page displays a welcome message and history about the institution but the user has the option of clicking any of the hyperlink for more (e.g. Management Structure, Staff portal, Programs, etc.) information about an institution. To create a hyperlink to the different Web page, use the following code:

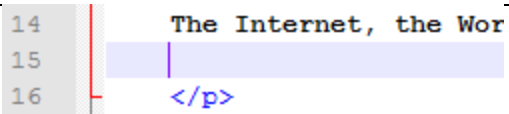
```
<a href="page_name.html">Click here</a>
```

*Where page\_name will be the name of the Web page you want to link to and Click Here will be the hyperlink.*

e.g. `<a href="home.html">Go to homepage</a>`

home.html is the file to which the link points. When you click the text "Click here," home.html appears in the browser. If you want to link to a file that is stored in a subdirectory, the value assigned to the HREF attribute will be the path of that file with respect to the current directory.

## Adding a hyperlink to another page on your site

Here's how	Here's why
Open the source code	
Place the insertion point as shown	 <p>To prepare to add the code to create a hyperlink to another page.</p>
Enter the following code: <pre>&lt;BR&gt;To    find    out    more,       &lt;A HREF="about.html"&gt; click here&lt;/A&gt;</pre>	To create a hyperlink to the page Locations.html.
Update and close the source code	
Refresh and observe the page	The text "click here" that you enclosed within the A tag appears in blue and is underlined indicating that it is a hyperlink.
Click the hyperlink	To open the Locations page.
Click <a href="#">Back</a>	To open the Facts.html page.

- **Link to a point within a page**

You can use the anchor tag to create a link to another point within a page. This can be useful when a page contains a large amount of information and you want to provide a quick way to move within the page.

To create a hyperlink to a point within a page, you use the *href* and *name* attributes. The *name* attribute is used to name the point to which you want to link. You then assign this name as the value to the *href* attribute. For example, the Home page contains the basic information about the Web site. However, to locate the description or any other information, you'll have to scroll extensively. To avoid this, you can create hyperlinks that link to these descriptions by using the *name* and *href* attributes of the `<a>` tag. The point in the document to which you want to link is the target address. To create a target address on the page, use the *name* attribute as shown in the following code:

```
<a name = "topic">Welcome to my page</a>
```

To create a hyperlink to this target, use the following code:

```
<a href = "#topic">Back to intro</a>
```

### 5.3 SENDING E-MAIL FROM A PAGE



Many Web sites allow users to send an e-mail message to them with questions or feedback about the Web site. Some offer the option to place an order for products via e-mail. HTML can be used to create hyperlinks that activate the e-mail application on the user's computer to send messages.

#### Mailto link

When you click a *mailto* link, an e-mail application is activated that allows you to send e-mail. You use the *href* attribute to specify a mailto address. To create a mailto link that allows users to send e-mail to [contactus@pctbc.co.za](mailto:contactus@pctbc.co.za), use the following code:

```
<a href="mailto:contactus@pctbc.co.za">Contact Us</a>
```

When users click the hyperlink "Contact Us," the e-mail application on their computer is activated allowing them to enter the message and send the e-mail.

#### Adding a mailto link

Here's how	Here's why
Open the source code	
Place the insertion point as shown	<pre> 16 17 18 if you have any questions, send us an </pre>
Enter the following code: <pre>&lt;A HREF="mailto:info@pctbc.co.za"&gt;email&lt;/A&gt;.</pre>	The HREF attribute of the A tag specifies a mailto address for the link.
Update and close the source code	
Refresh and observe the page	The mailto link appears on the page.
Point to the hyperlink	Notice that the status bar displays the e-mail address with the mailto attribute.
Click the mailto link	To open a new message window in your default e-mail application.
Observe the address in the message	This is the address that you specified in the mailto link.
Choose <b>File, Close</b>	To close the message window.

**KEY TERMS USED IN THIS SECTION**

**Anchor tag:** defines a hyperlink, which is used to link from one page to another.

**Hyperlink:** a link from a hypertext document to another location, activated by clicking on a highlighted word or image.

**Web Site:** a set of related *web* pages typically served from a single *web* domain.

**THINK POINT**

How can you create a hyperlink that will be opened on a new tab?





## SECTION 5 REVIEW QUESTIONS

1.1 Which attribute is used to specify a page that will be opened when a hyperlink is clicked

- ☒ A. href
- B. alt
- C. target
- D. src

1.2 Which attribute can you use to display a page in a new browser tab?

- A. new
- B. target
- C. destination
- D. final

1.3 What is a website?

- A. Collection of networks that are online
- ☒ B. Collection of web pages that are linked
- C. A place in which web pages are stored
- D. A collection of information and music

1.4 How do you create a hyperlink that will send an email?

- A. `<a href="mailto.com">link</a>`
- ☒ B. `<a href="mailto:user@mail.com">link</a>`
- C. `<a href="mail.com">link</a>`
- D. `<a href="send:mail.com">link</a>`

1.5 A website is a collection of linked web pages, how do you link two or more web pages?

- ☒ A. Use hyperlink
- B. Place them in one folder
- C. Create one web document
- D. None of the above

1.6 The following hyperlink will take a user to a point within a page.

- A. `<a href="userPoint.html">Link</a>`
- ☒ B. `<a href="http://www.users.com">Home</a>`
- C. `<a href="#top">Back Up</a>`
- D. None of the above



## FIVE | REVIEW QUESTIONS

1.7 When creating a hyperlink that sends an email, after *mailto:*, what should be added?

- A. File location
- ☒ B. Email address
- C. Protocol to use
- D. username

1.8 Images and text that must appear as hyperlink on a web page need to be placed between \_\_\_\_\_ and \_\_\_\_\_.

- ☒ A. Starting anchor tag and ending anchor tag
- B. Starting body tag and head tag
- C. Before html tag and after ending html tag
- D. None of The above

1.9 What will be the value of *href* if you want a link to lead to another web site

- ☒ A. The web site's URL
- B. The name of the web site
- C. The name the company owner
- D. The postal address of that company

1.10 Which attribute of the anchor tag can you use to create a point in web page?

- ☒ A. name
- B. point
- C. section
- D. style



## LEARNING OUTCOMES

1. Add images to a Web page and align text around images
2. Add background colors and images to a Web page

## 6.1 ADDING IMAGES

You use the `<img>` tag to add an image to a page. The *src attribute* specifies the path and filename of the image file. You can specify the *absolute path* or the *relative path* of an image file. A relative path is the path of an image file based on the location of the page in which you add the image. To add the image `img1.png` to a page, use the following code:

```

```

The value assigned to the SRC attribute is the relative path of the image file.

The following table shows a list of the `<img>` tag attributes:

Attribute	Value	Description
alt	text	Specifies an alternate text for an image
src	url	Specifies the url of an image
height	pixels	Specifies the height of an image
width	pixels	Specifies the width of an image

*Other attributes are not supported in HTML5*



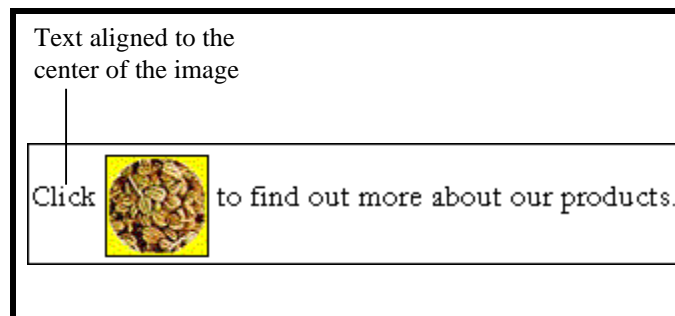
It is recommended that you use the *alt* attribute when adding an image.

## Adding an image to a Web page

Here's how	Here's why
In the browser, open About us	(From the current unit folder.) You'll add the logo of PC training logo to this page.
Open the source code of the page	
Place the insertion point as shown	<pre> 7  &lt;body&gt; 8    9  &lt;h1&gt;The internet &lt;/h1&gt; </pre>
Enter the following code: <pre> &lt;IMG      SRC="Logo.gif" alt="PCTBC" align="center"&gt; </pre>	To add the image Logo.gif to the page. The ALIGN attribute of the P tag aligns the image to the center of the page. The SRC attribute of the IMG tag specifies the path of the image file on the computer. The alt attribute represents alternative text which will be displayed if an image is not found.
Update and close the source code	
Refresh and observe the page	The logo appears on the page and is centred.

### 6.2 ALIGN TEXT AROUND IMAGES

When you add an image to a page, by default the text around the image appears at the bottom of the image. You can align the text around an image so that it appears at the top, bottom, or center of the image. Exhibit 0-6 displays text aligned to the center of an image.



*Exhibit 0-6: The text aligned to the center of an image*

To align the text around an image you use the *align* attribute of the `<img>` tag. Top, Middle, and Bottom are the possible values for the *align* attribute.

To align text to the top of the image `img1.png`, use the following code:

```

```

### 6.3 GRAPHICS AS HYPERLINKS

Graphics can also be used as hyperlinks. To make a graphic a hyperlink, use the `<a>` tag as you would use it for making text a hyperlink. To make `img1.png` a hyperlink to `images.html`, use the following code:

```
<a href="images.html"></a>
```

### Link Borders

When using an image as a hyperlink, a blue border is displayed around an image. By default, most web browsers will display a border around graphic links indicating the link color. To remove this border or want to make it bigger, you can use the *border* attribute in your `<img>` tag. The following code uses border attribute:

```
<a href="images.html"></a>
```

### Using a graphic as a hyperlink

Here's how	Here's why
Open the source code	You'll make a graphic a hyperlink.
Place the insertion point as shown	<pre> 7  &lt;body&gt; 8    &lt;img src="logo.gif" alt="PCTBC"&gt; </pre>
Place the insertion point as shown	<pre> 7  &lt;body&gt; 8 9    &lt;h1&gt;The internet &lt;/h1&gt; </pre>
Enter the following code: <A HREF="PCTBC.html">	To make the graphic logo.gif a hyperlink to the PCTBC.html page.
Add the ending A tag as shown	<pre> 7  &lt;body&gt; 8    &lt;a href="PCTBC.html"&gt; 9      &lt;img src="logo.gif" alt="PCTBC"&gt; 10   &lt;/a&gt; </pre>
Update and close the source code	
Refresh the page	
Point to the hyperlink image	The pointer changes to a hand indicating that the image Spice.gif is a hyperlink.
Click the image	To move to the PCTBC page.
Navigate back to the About us page	Click the Back button on the Standard toolbar.



### THINK POINT

If you were given a task to create a web page, how can you use images to produce a more attractive web page?

### 6.4 IMAGE FORMATS

Graphic images are available in a variety of formats and Web browsers can view most images. The most common graphic image file formats supported by Web browsers are Graphic Interlaced Format (GIF) and Joint Photographic Experts Group (JPEG).

## Graphic Interlaced Format (GIF)

Images in the Graphic Interlaced Format, or GIF, are most commonly used on the Web because all browsers support this image format. The advantage of using this format is that the size of a GIF file is small, which makes downloading it quick and easy. The disadvantage of using this format is that it only works well for displaying images with a small number of colors.

## Joint Photographic Experts Group (JPEG)

The Joint Photographic Experts Group, or JPEG, file format is best suited for photographic images. The advantage of using the JPEG file format is that they have smaller file sizes and look better when displaying images that have a lot of colors. Disadvantages of using this format are that all browsers do not support it, and pixels of the image are lost when downloaded, which results in a distorted image.

### 6.5 BACKGROUNDS

Proper use of background colors and images adds contrast to enhance the appearance of text and graphics on a page. They can be used to provide a distinct look to a Web site, which makes it easily identifiable to users.

- **BACKGROUND COLORS**

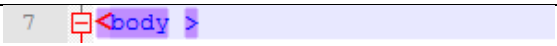
You add a background color to a page by using the *bgcolor* attribute of the <body> tag. To set the background color of a page to red, use the following code:

```
<body bgcolor="red">
```

The *bgcolor* is supported in HTML5 and the recommended way of adding background color is to use CSS:

```
<body style="background-color:red">
```

#### Adding a background color

Here's how	Here's why
In the browser, open Products	You'll add a background color to this page.
Open the source code	
Place the insertion point as shown	
Edit the code to read: <BODY BGCOLOR=Cornsilk>	
Update and close the source code	
Refresh and observe the page	The page now has cornsilk as its background color.

- **Color Values**

In CSS, colors are defined using hexadecimal (hex) notation for the combination of Red, Green, Blue color value (RGB). The lowest value that can be given to one of the

light sources is 0 (hex code: 00). The highest value is 255 (hex code: FF). Hexadecimal value for a color must have a minimum of 6 character and must always start with the pound (#) sign.

- **Background images**

You can give your Web site a distinct look by adding the same background image to all pages in your site. You add a background image to a page by using the *background* attribute of the <body> tag. To add the image Background.gif to the background of a page, use the following code:

```
<body background="Background.gif">
```

When both the background color and the background image are set for a page, only the background image appears on the page. If the background image is not found in the specified folder, the background color appears. The *background* attribute is not supported in HTML5 and the recommended method of using an image as a background is as follows:

```
<body style="background-image:url(Background.gif);">
```

#### Adding a background image

Here's how	Here's why
Open the source code	You'll add a background image to this page.
Edit the BODY tag to read: <BODY BGCOLOR=Cornsilk BACKGROUND="Back.gif">	To add a background image Back.gif to this page.
Update and close the source code	
Refresh and observe the page	The background image appears on the page.

- **Working with background images**

Background images that scroll with the text on a page compete with the main information on the page. You can *watermark* the background image so that it does not scroll with the text by fixing the background image. You use the *bgproperties* attribute of the <body> tag to fix a background image. To fix the background image Back.gif, use the following code:

```
<body background="Back.gif" bgproperties="fixed">
```

This attribute works only with Microsoft Internet Explorer. Since web pages must produce same output in different browsers, this property is not that useful. CSS *background-size* property can be used instead:

```
<body style="background-image:url(Back.gif); background-size: cover; ">
```

## Watermarking the background image

Here's how	Here's why
In the browser, verify that the page is open	
Scroll down to the end of the page	Notice that the background image also scrolls with the text.
Open the source code	You'll edit the code to fix the background image.
Edit the BODY tag to read: <BODY BGCOLOR=Cornsilk BACKGROUND="Back.gif" BGPROPERTIES=FIXED>	To watermark the background.
Update and close the source code	
Refresh the page	
Scroll up to the beginning of the page	Notice that now only the text scrolls and the background image remains fixed.



### THINK POINT

Most websites today try by all means to provide high resolution graphics. If you were to create a web page that uses images, which image format would you use? Why?



**KEY TERMS USED IN THIS SECTION**

**Graphical Interchange Format (GIF):** a lossless format for image files that supports both animated and static images.

**Joint Photographic Experts Group (JPEG):** a commonly used method of glossy compression for digital images, particularly for those images produced by digital photography.

**Image:** a representation of the external form of a person or thing in art.



## SECTION 6 REVIEW QUESTIONS

1.1 Which attribute is used to specify text that appears if an image is not available?

- A. alt
- B. lte
- C. text
- D. title

1.2 To add an image to a web page, the \_\_\_\_\_ tag is used.

- A. image
- B. file
- C. link
- D. img

1.3 This attribute is used to specify the url of an image.

- A. src
- B. href
- C. location
- D. http

1.4 How can you remove the border that appears around an image if an image is used as a hyperlink?

- A. By using the border attribute of the img tag
- B. By using the border attribute of the anchor tag
- C. You can simply create a table before adding an image
- D. You can use two images.\

1.5 How can you use an image as background of a web page using css?

- A. `<body style=background-image:url('image.jpg'); alt="My image">`
- B. `<body style="image:image1.jpg" alt="My image">`
- C. `<body background-image="image.jpg" alt="My image">`
- D. None of the above

1.6 This is a commonly used image format because all browsers support it.

- A. .pxr
- B. .jpg
- C. .bmp
- D. .gif



## SIX | REVIEW QUESTIONS

1.7 A web page becomes more attractive if it has colors and images. Which body attribute can you use to add background color on your web page?

- A. bgcolor
- B. background
- C. color
- D. wallpaper

1.8 The hexadecimal code for black is \_\_\_\_\_.


- A. #111111
- B. #FFFFFF
- C. #000000
- D. #F4F4F4

1.9 In colors, RGB stands for?

- A. Red, Green, Black
- B. Red, Green, Blue
- C. Red, Grey, Black
- D. Red, Gray, Black

1.10 The following property watermark a background image if used.

- A. bgproperty
- B. bgstable
- C. bglocation
- D. brwatermark

	<b>LEARNING OUTCOMES</b>
<ol style="list-style-type: none"> <li>1. Create a table, set the border and width of a table, add headings to a table</li> <li>2. Span cells across rows and columns, align a table and data in a cell, insert images and hyperlinks in a table, and add comments to the code of a page</li> <li>3. Create a nested table to organize the information on a page</li> </ol>	

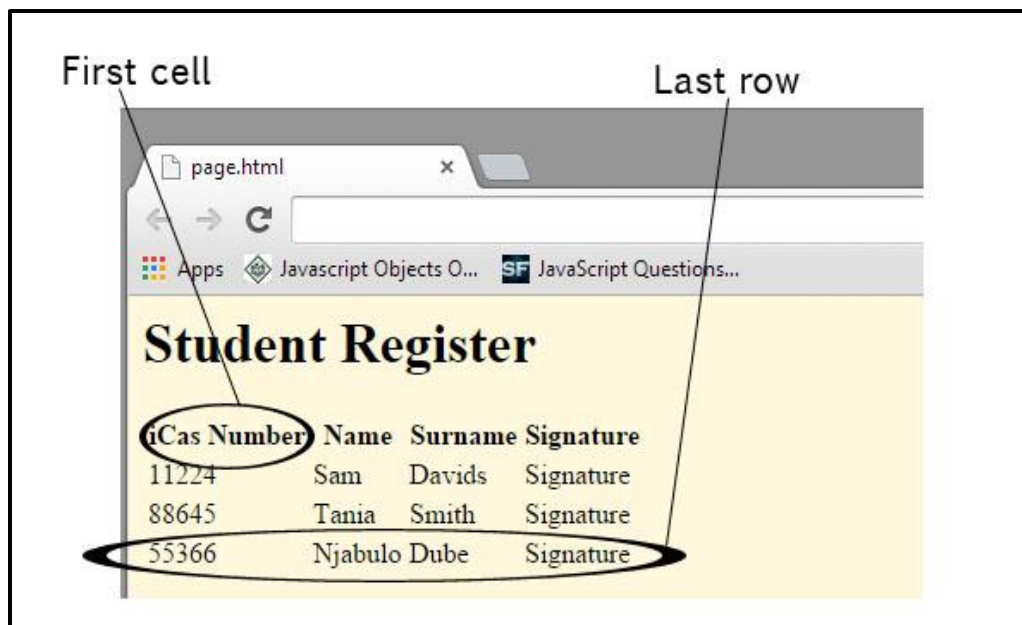
## INTRODUCTION

Presenting data in a table format is an effective way of organizing, displaying, and accessing complex information. For instance, a list of products and their prices is best depicted as a table.

### 7.1 TABLES

A table is composed of rows (from left to right) and columns (from top to bottom) with data contained in individual cells. A *cell* is an intersection of a row and a column. In HTML, you can create a table by using the tags shown below.

Tag	Description
<code>&lt;table&gt;&lt;/table&gt;</code>	These are the primary tags, which surround the rest of the text and code within a table.
<code>&lt;tr&gt;&lt;/tr&gt;</code>	Defines each row in a table.
<code>&lt;td&gt;&lt;/td&gt;</code>	Indicates the beginning and ending of a cell in a table.



Error! Reference source not found., using the code shown in Exhibit 0-7.

```

7 <body bgcolor="cornsilk">
8   <h1>Student Register</h1>
9   <table>
10  <tr>
11    <th>iCas Number</th><th>Name</th><th>Surname</th><th>Signature</th></tr>
12    <tr><td>11224</td><td>Sam</td><td>Dauids</td><td>Signature</td></tr>
13    <tr><td>88645</td><td>Tania</td><td>Smith</td><td>Signature</td></tr>
14    <tr><td>55366</td><td>Njabulo</td><td>Dube</td><td>Signature</td></tr>
15  </table>

```

Exhibit 0-7: The source code of the Student register page after creating a table

## 7.2 TABLE ATTRIBUTES

You use `<table>` attributes to format a table. You can add a border, change the width and height of a table, align a table, and align data within a table. You use table attributes with the `<table>`, `<td>`, and `<tr>` tags. The `<table>` attributes are also not supported in HTML5.

### BORDER attribute

A border around a table gives it a three-dimensional look. You set the border of a table by using the *border* attribute of the `<table>` tag. To set the border of a table, use the following code:

```
<table border>
```

By default, the width of the border is set to 1 pixel. You can increase the width of the border by setting different values to the



If a border is set to zero or not set at all, your table will be displayed with no border.

attribute. To set the width of the border to 2 pixels, use the following code:

```
<table border="2">
```

### WIDTH and HEIGHT attributes

By default, the width of a table depends on the length of the text. However, you can change the width by using the *width* attribute of the `<table>` tag.

You can specify the width in pixels or as a percentage value. If you specify the width in pixels, the size of the table remains fixed. When you specify the width as a percentage, the width of the table will vary based on the size of the browser window. To set the width of a table to 50% of the browser window's width, use the following code:

```
<table width="50%">
```

You can set the height of a table in a similar manner by using the *height* attribute of the `<table>` tag.

### Setting table properties

Here's how	Here's why
Observe the page	The table does not have a border. You'll add a border to this table.
Open the source code	
Edit the TABLE tag to read as shown	<pre>9 &lt;table border&gt; 10 &lt;tr&gt;</pre>
Update and close the source code	
Refresh and observe the page	The table now has a border. The name column is just wide enough to accommodate the text "Njabulo", which is the widest entry. By default, columns will be as wide as the largest text they contain.
Open the source code	
Edit the TABLE tag to read as shown	<pre>9 &lt;table border width="50%"&gt;</pre>
Update and close the source code	
Refresh and observe the page	The table now extends to 50% of the browser window's width.

### 7.3 TABLE HEADINGS

Table headings provide information about the data in the table. You can use the `<th>` tag to add headings in a table. The `<th>` tag defines the cell; you do not have to use the `<td>` tag.

For example:

```

9  <table border width="50%">
10 <tr>
11 <th>iCas Number</th><th>Name</th><th>Surname</th><th>Signature</th></tr>

```

The text enclosed within the `<th>` tag appears bold and centered. This helps to identify the text as a heading of a column.

iCas Number	Name	Surname	Signature
11224	Sam	Davids	Signature
88645	Tania	Smith	Signature
55366	Njabulo	Dube	Signature

*Exhibit 0-8: The use of the `<th>` tag to create a table heading*

### 7.4 SPANNING A CELL

Spanning cells across rows and columns allows you to display grouped information in a table. The `COLSPAN` or `ROWSPAN` attribute is used with the `<td>` tag to determine the number of columns or rows you want to span. To span a cell across three columns, use the following code:

```

9  <table border width="50%">
10 <tr>
11 <th colspan="4">Class register</th>
12 </tr>

```

You can also span a cell across two or more rows by using the `ROWSPAN` attribute.

Class register			
iCas Number	Name	Surname	Signature
11224	Sam	Davids	Signature
88645	Tania	Smith	Signature
55366	Njabulo	Dube	Signature

*Exhibit 0-9: The use of the `COLSPAN` attribute*



## THINK POINT

A class register for online students is required, How can you create a web page which will have a class register using tables?

### 7.5 ALIGNMENT OF A TABLE OR CELL


A table, or text within a table, can be positioned in a variety of ways by using the *align* attribute. You use this attribute with the `<table>`, `<tr>`, and `<td>` tags. To align the table to the right, or center of a page, use the *align* attribute with the `<table>` tag. Using the *align* attribute with the `<tr>` and `<td>` tags aligns text within the table. The *align* attribute is not supported in HTML5.

Class register			
iCas Number	Name	Surname	Signature
11224	Sam	Davids	Signature
88645	Tania	Smith	Signature
55366	Njabulo	Dube	Signature

Exhibit 0-10: The use of ALIGN attribute to align data within the cells (surname)

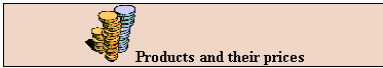
### 7.6 IMAGES AND LINKS WITHIN CELLS

Adding images to a table breaks the monotony of text and communicates the information clearly. You use the `<img>` tag to add images to a table, just as you would anywhere else in an HTML file. You can add hyperlinks within a table when you cannot provide all relevant information within the table. You use the `<a>` tag to add a hyperlink within a cell as you would add any hyperlink on a page.

 <b>Products and their prices</b>		
Product name	Net weight	Price
Green Cardamom	4 oz.	\$3.99
Chilies	4 oz.	\$4.45



## Inserting images and links within cells

Here's how	Here's why
Open the source code	You'll add an image of coins to the heading of the table.
Place the insertion point as shown	<pre>&lt;TABLE BORDER WIDTH=50%&gt; &lt;TR&gt;   &lt;TH COLSPAN=3&gt;Products &lt;/TR&gt;</pre> <p>(Before the word "Products") To prepare to add the IMG tag.</p>
Enter the following code: <code>&lt;IMG SRC= "../Images/Coins.gif"&gt;</code>	To add the image Coins.gif within the cell.
Update and close the source code	
Refresh the page and observe the table	 <p>The image appears within the table.</p>
Open the source code	You'll insert a link within a cell to make it easy to move to the page Our products.html.
Place the insertion point as shown	<pre>SRC= "../Images/Coins.gif"&gt;Products</pre> <p>(Before the word "Products") To prepare to mark the word "Products" as a hyperlink.</p>
Enter the following code: <code>&lt;A HREF="Our products.html"&gt;</code>	
Enter the closing A tag as shown	<code>&lt;A HREF="Our products.html"&gt;Products&lt;/A&gt;</code>
Update and close the source code	
Refresh and observe the page	The word "Products" in the first row is now a hyperlink (as shown in Exhibit 0-6).
Click the hyperlink	To move to the Our products page.
Move back to the Price list page	

### 7.7 NESTED TABLES

A table within a cell of another table is a *nested table*. You can use nested tables to organize information and set the layout of a page.

#### Nested tables

You use nested tables to add additional information within a table. They are used to display information that is useful but not necessary. To create a nested table, put the

code required for a table within a pair of <td> tags in another table. For example, you can display a calorie chart within a table for an apple pie recipe.

```
<TR>
  <TD><IMG SRC="../Images/Applepie.gif">
  <TABLE BORDER>
    <TR>
      <TD>Calories</TD>
      <TD>254 kcal</TD>
    </TR>
    <TR>
      <TD>Proteins</TD>
      <TD>2.4 g</TD>
    </TR>
  </TABLE>
</TD>
```

*Exhibit 0-11: The source code of the Applepie page with a nested table*

Exhibit 0-12: A cell of the table on the Applepie page containing another table

**KEY TERMS USED IN THIS SECTION**

**Cell:** a non-empty element and should always be closed. It is one grouping within a table. Cells are grouped horizontally (rows of cells) and vertically (columns of cells).

**Column:** a set of data values of a particular simple type, one for each row of the table. The columns provide the structure according to which the rows are composed.

**Row:** represents a single, implicitly structured data item in a table.

**Table:** a set of data elements (values) using a model of vertical columns (which are identified by their name) and horizontal rows, the cell being the unit where a row and column intersect.



## SECTION 7 REVIEW QUESTIONS

1.1 Which tags can one use to create a table?

- A. `<table><tr><td>`
- B. `<table><table><cell>`
- C. `<table><row><column>`
- D. None of the above

1.2 When creating a table, the border is set to zero by default. Is this statement true or false?

- A. True
- B. False
- C. Depends on HTML version
- D. Depends on table width

1.3 If you want a cell to span multiple columns, which attribute can be used?

- A. `rowspan`
- B. `colspan`
- C. `cellspan`
- D. `span`

1.4 A cell can span multiple rows and columns. How can you make a cell span multiple rows?

- A. By using `rowspan` attribute
- B. By using the `cellheight` attribute
- C. By using one cell per row
- D. By creating a new table

1.5 What is a nested table?

- A. A table that can have multiple rows and columns
- B. A cell in a table with an image
- C. A table that is within a cell of another table
- D. None of the above

1.6 A table can have headings. In HTML, which tag can be used to add table headings?

- A. `<heading>`
- B. `<h1>`
- C. `<th>`



D. <thead>

1.7 What is a difference between a cell and a table?

- A. A cell is where a row and a column intersect and a table is made up of rows and columns.
- B. A cell is bigger than a table.
- C. A table is smaller than a cell
- D. A cell is used to create a row.

1.8 Which tag can one use to create a cell within a table?


- A. <tr></tr>
- B. <td></td>
- C. <cell></cell>
- D. <tcell></tcell>

1.9 How can the content you align cell content to the center of the cell?

- A. Using the align attribute
- B. Using the center attribute
- C. Using the shiftCenter attribute
- D. Using the place attribute

1.10 What is likely to happen if the closing </table> is not added correctly or missing?

- A. Table content will be display in the upper section of a page
- B. A table will have a border which is red
- C. A table will be duplicated
- D. A table will have a background color.

	<p>LEARNING OUTCOMES</p>
<ol style="list-style-type: none"> <li>1. Create inline and embedded styles</li> <li>2. Create and use linked style sheets</li> <li>3. Use the cascading order of styles</li> </ol>	

## INTRODUCTION

Style sheets allow you to separate the content of a page from its design (separating structure from style). A *style sheet* is a set of rules that define the formatting of HTML tags on a page. Using style sheets, you can control how a Web site is rendered, including the margins, indents, and text backgrounds without changing the HTML code for any page. The most recent CSS version is CSS3. When using style sheets, styles define how to display HTML elements.

### 8.1 STYLE SHEETS

Style sheets not only provide a consistent design to pages in your Web site but also make pages faster to load and easier to read. You can use style sheets in three ways, depending on your design needs:

- Inline styles to the code for a Web page. This method allows you to change the format of a single tag on a page.
- Embed a style sheet in the code for a Web page. This method allows you embed the code for the style sheet within a Web page.
- Link a style sheet to a Web page. This method allows you to link your Web page to an external file that contains style definitions. You can link multiple pages to this file to maintain a consistent look for all pages.

#### CSS syntax

Before we continue with the ways in which we can use style sheet, we have to know the CSS syntax. A CSS rule consist of a selector and a declaration block:

##### Syntax:

```
selector{property: value; property: value;}
```

for example:

```
body{color:red; font-size:22pt;}
```

This will change the text color and size of a web page to specified values (red, 22)

When using the css syntax, you start with a selector. CSS selectors allow you to select and manipulate HTML elements.

There are three general types of selectors in css:

- **element selector**

The element selector selects elements based on the element name. This means when defining an element selector, an element/tag is used as a selector.

e.g. `a{color:green;}`

This will change any color of the text that is between `<a>` and `</a>`

A CSS style defined using an element selector will be applied automatically whenever an element/tag is used.

- **id selector**

The id selector uses the id attribute of an HTML tag to find the specific element. This means to apply a CSS style defined using an id selector, an id (which must be unique) of an element is used. To create an id selector, you start with a hash character followed by the id of an element.

e.g. `#mylink{text-decoration:none;}`

This will affect an element with an id "mylink" only. For example:

`<a id="mylink" href="page.html">Page1 </a>`

- **class selector**

The class selector finds elements with the specific class. To create a class selector, you have to start with a period(.) followed by the class name. for example:

`.fontChanger{font-size:20pt; color: green;}`

To apply CSS rule defined using a class selector, the class attribute must be used within an element. The *class* attribute can take more than one value. This means an element can have two or more classes. For example:

`<p class="fontChanger otherClass">paragraph text </p>`



When using css, you must know different css property and their possible values.

### Inline styles

*Inline styles* affect the individual occurrences of a tag. You can define several properties for a tag by using the *STYLE attribute*. Each property is identified by the property name, followed by a colon and the property value. To make text enclosed within an H2 tag green,

use the following code:

`<h2 style="color:Green">About us</H2>`

In the code, the COLOR property has the value Green.

If you use another H2 tag in the same page without specifying an inline style, the enclosed text will appear in the default H2 format. When using inline style, the selectors are not used, instead, the style attribute is used.



**IDEA**

Selectors are only used when using embedded or linked style sheet.

## 8.2 EMBEDDED STYLE

Embedded style sheets allow you to define styles for several tags in a page. This saves you the effort of typing the same style definition each time you use a tag and enforces consistency on the page.

You can define embedded styles by using the `<style>` tag between the `<head>` tags. Each style definition in an embedded style sheet consists of a tag name followed by a list of properties within curly braces. Each property is identified by the property name, followed by a colon and the property value and a semi-colon after each value. Unlike inline style, embedded style requires the use of CSS syntax. This means you have to also define selectors.

To create an embedded style that renders text enclosed within the `<h2>` tags as green and in the Verdana font, use the following code:

```
<HEAD>
<STYLE>
H2 {
COLOR: Green;
FONT-FAMILY: Verdana;
}
</STYLE>
</HEAD>
```

Now, whenever you use an H2 tag in the page the enclosed text will appear green and in Verdana.

- **Defining a class**

When you define an embedded style for a tag, you can no longer use the default style of the tag on your Web page. To be able to do so, you can define a class for the tag instead. A *class* allows you to apply several formatting styles for different occurrences of the same tag. A class definition starts with a period (.) followed by a name and the style definition.

To create a class that defines the color of text enclosed as blue, use the following code:



```
<style>
.Blue
{
COLOR:Blue;
}
</style>
```

You can now use this class with any tag such as, the H1 tag, the P tag, or the B tag to change the color of the text. You can assign the class to a tag by using the *class* attribute. To assign the Blue class to a <b> tag, use the following code:

```
<b class="Blue">
```

You can create a class for a particular tag by specifying the name of the tag with the class definition. For instance, to create a class named “Red” for the <h2> tag to set the color of text marked as heading 2 to Red, use the following code:

```
H2.Red
{
COLOR:Red;
}
```

Next, you assign the class “Red” to the <h2> tag that encloses the text that should appear red. To do this, enter the following code in the <h2> tag:

```
<h2 class="Red">
```



### THINK POINT

Write the property to:  
 Change background color  
 Change background image  
 Font color  
 Font used/type  
 Font size  
 Hyperlink font color

### 8.3 DIV and SPAN TAGS

The <div> tag is a formatting tag that you use to apply styles to blocks of text on a page. It can be used to apply styles to sections of a page, such as text enclosed within the <blockquote> tags. You can use both the *style* and the *class* attribute with this tag. To set a background color of a paragraph to light green, use the following code:

```
<div style="background: Lightgreen;">
<p>
Paragraph text
</p>
</div>
```

The <div> tag defines the style for the complete block and leaves space above and below each block, like the <p> tag.

### SPAN tag

The <span> tag is a formatting tag that allows you to set styles around text in page. It functions like any other text formatting tag, such as the <b> tag. You can use both *style* and *class* attributes with this tag. To set a background color to a part of text on a line, use the following code:

```
<span style="background: Lightgreen">
Desired text
</span>
```

## 8.4 LINKED STYLES

Linked style sheets are one of the most powerful ways to use styles on your Web pages. They provide the ability to create one style sheet that affects multiple pages. You can change the entire look of your site by modifying just a few lines of code in a single style sheet.

### Linked style sheets

A linked style sheet is an external file that contains only the style definitions as defined within the <style> tag in embedded style sheets. The external file has a .css extension. You can link all pages of your site to this file to maintain a consistent look of your site. For instance, set the <h2> tag to appear green in color in a style sheet and link all pages of your site to this file. All pages in the site that use the <h2> tag will display the enclosed text green.



Most web sites are styled using  
CSS, How can you create a  
navigation bar using html and  
CSS

### Creating a linked style sheet

A linked style sheet is an external file that contains only the style definitions as defined within the STYLE tags in the head section for embedded styles. This external file has a .css extension. The first line after the starting STYLE tag is not executed. It is advisable to add a comment as the first line after the starting STYLE tag so that you don't lose a part of the style definition.

### Linking a page to a style sheet

You can link a page to style sheet by using the <link> tag within the <head> tag of a page. To link a page to the style sheet, Linked-style.css, use the following code:

<link rel="stylesheet" href=" style.css">


The *rel attribute* specifies the relationship of the referenced file to the main document. In this case, the relationship is that the referenced file is a style sheet. The *href* attribute of the <link> tag is the same as the *href* attribute of the <a> tag that specifies the path and name of the style sheet. You can link to more than one style sheet by using more Link tags.



Exhibit 0-13: The student register page after linking it to the style sheet style.css

### Creating a style sheet and linking it to a page

Here's how	Here's why
Open Notepad	Choose Start, Programs, Accessories, Notepad.
Enter the code as shown	<pre> 1 body{ 2   color:red; 3 }</pre>
Choose <b>File, Save As...</b>	To open the Save As dialog box.
In the Look in list, select the current unit folder	To save the style sheet in that folder.
In the File name box, enter <b>style.css</b>	To specify the name of the style sheet. A style sheet should always be saved with a .css extension.
Click <b>Save</b>	To save the style sheet.
Choose <b>File, Exit</b>	To close Notepad.
In the browser, open Our team	The page does not have any background color and the heading "Our expansion project" appears black.
Open the source code	

Place the insertion point as shown	 <pre> 3 &lt;head&gt; 4 &lt;link rel="stylesheet" type="text/css" href="style.css"&gt; 5 &lt;/head&gt; </pre> <p>To prepare to add the LINK tag to link this page to the style sheet.</p>
Enter the following code:  <LINK REL="stylesheet" HREF="style.css">	To link this page to the style sheet, Linked-style, to format this page based on the styles specified in the style sheet.
Update and close the source code	
Refresh and observe the page	The page now has a background color. The color of the heading “Our expansion project” has changed to red, and the text that is enclosed within the P tags appears in a different font (as shown in Exhibit 0-13).



### THINK POINT

List any 4 pseudo-element selectors defined in CSS1 and CSS3. Include practical examples.

## 8.5 CASCADING STYLE SHEETS

To maintain consistency between pages in a Web site, it is useful to include more than one way of applying styles to a page. However, multiple style sheets can contain conflicting style information. In these situations, the browser decides which style to apply by using the cascading order of styles.

### Cascading order of styles

You can use linked, embedded, and inline styles in a

single page. If a linked styles sheet defines a H1 tag as blue, the embedded style sheet defines it as red, and the inline defines it as purple, the browser decides which style to apply by applying the cascading order of these styles. The *cascading order* states that if a page contains linked, embedded, and inline styles, the order of precedence of styles is:

- Inline styles
- Embedded styles
- Linked styles



### THINK POINT

Using CSS, which property can you use to create a 3 columns in a division? Give example



## KEY TERMS USED IN THIS SECTION

**Cascading order:** refers how browsers determine which style rules to follow when there are conflicting rules.

**Cascading Style Sheet:** a style sheet language used for describing the look and formatting of a document written in a markup language.

**Class Selector:** is a name preceded by a full stop (".")

**Division:** a container unit that encapsulates other page elements and divides the *HTML* document into sections.

**ID Selector:** a name preceded by a hash character ("#").

**Inline Style sheet:** A specific style inclusion method, in which style information is directly attached to the HTML elements they affect.

**Property:** define what aspect of the selector will be changed or styled.

**Selector:** the part of a CSS rule set that actually selects the content you want to style.



## SECTION 8 REVIEW QUESTIONS

1.1 What does CSS stand for?

- A. Cascading style sheet
- B. Capable System Storage
- C. Cable Storage System
- D. None of the above

1.2 There are three ways in which you can use CSS.

- A. Inline style, Single styles, page styles
- B. Inline styles, Linked style sheet, Embedded style sheet
- C. Dynamic style sheet, Creative style sheet, layout style sheet
- D. Inline style, Cascading style, Online styles

1.3 Which pseudo class can be used to define a style for a visited hyperlink?

- A. A visited
- B. Link-style
- C. Link-visited
- D. a:visited

1.4 To specify a child selector, which symbol is used?

- A. Less than
- B. Equal to
- C. Greater than
- D. Not equal to

1.5 Which element is going to be affected if the following selector is used:

`E[attr]`

- A. Selects all E elements that have the given attribute *attr*
- B. This is invalid
- C. It will select all elements in a document
- D. None of the above

1.6 The following CSS3 pseudo element select will select the first line of an element.

- A. `<first_line`
- B. `:first_line`
- C. `::first-line`
- D. `>first_line`



## EIGHT | REVIEW QUESTIONS

1.7 How can you link a web page with a CSS file?

- A. `<link rel="stylesheet" href="file.css" />`
- B. `<link rel="css" href="file.css" />`
- C. `<link type="stylesheet" href="file.css" />`
- D. `<a href="file.css">`

1.8 An element was styled using linked, embedded and inline style sheet. Which style is most likely to be displayed?


- A. All styles will be displayed
- B. Inline style
- C. Embedded style sheet
- D. Linked style sheet

1.9 Which pseudo element can one use to define that will appear if a user places a mouse over an element?

- A. `:over`
- B. `:hover`
- C. `:mouseover`
- D. `:top`

1.10 Which formatting tag can one use to apply styles to blocks of text on a page?

- A. `<div></div>`
- B. `<span></span>`
- C. `<p></p>`
- D. `<style></style>`

	<p><b>LEARNING OUTCOMES</b></p>
	<ol style="list-style-type: none"> <li>1. Use forms to communicate with users</li> <li>2. Add text boxes, text area fields, list boxes, radio buttons and check boxes to a form</li> <li>3. Add submit and reset buttons</li> </ol>

## INTRODUCTION

In general, if you want to collect vital information about someone or something, the form is used. What if you want to create a Web page which will collect data from the user? You can collect data from the users of your Web site by using forms. For instance, you can ask users to fill out forms to specify which products they want to order. You can also use forms to collect feedback about your site.

### 9.1 FORMS

You use `<form>` tags to create a form. This tag encloses the code for all the fields in a form, such as text boxes, text area, check boxes, radio buttons, and other buttons. The data of a form is stored and processed in a database on a Web server. You process the data by assigning the value POST or GET to the METHOD attribute. POST is used when you want to store the data of the form in the database and GET is used to retrieve data from the database. You use the *ACTION attribute* of the FORM tag to specify the URL of a program that processes this data.



**IDEA**

When creating a form, input elements must be placed between `<form>` and `</form>`

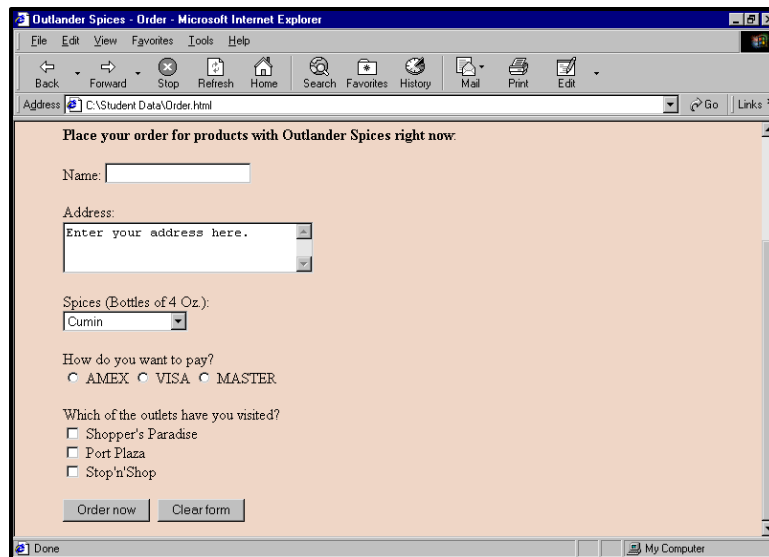
#### Creating forms

A form can contain many fields, such as text boxes, text area fields, radio buttons, and check boxes (see Exhibit 0-14). You use the `<input>` tag within the FORM tag to create fields and other elements in a form. This is an empty container. The *TYPE attribute* of the INPUT tag allows you to specify the type of the field that you want to add to a page.

For example, to add a text box, you would use the following code within the FORM tag:

```
<INPUT TYPE="text">
```





*Exhibit O-14: A form on a page*

The syntax for creating a form is as follows:

`<form>`

Input element

`</form>`

The following table lists some of the tags which can be used to create a form

Tag	Description
<code>&lt;form&gt;</code>	Defines an HTML form for user input
<code>&lt;input&gt;</code>	Defines an input control
<code>&lt;textarea&gt;</code>	Defines a multiline input control (text area)
<code>&lt;label&gt;</code>	Defines a label for an <code>&lt;input&gt;</code> element
<code>&lt;select&gt;</code>	Defines a drop-down list
<code>&lt;option&gt;</code>	Defines an option in a drop-down list
<code>&lt;button&gt;</code>	Defines a clickable button

The following table lists the values and functions that you can assign to the TYPE attribute.

Value	Description
Button	Defines a clickable button (mostly used with a JavaScript to activate a script)
Checkbox	Defines a checkbox
Color	Defines a color picker

Date	Defines a date control (year, month and day (no time))
Email	Defines a field for an e-mail address
Text	Default. Defines a single-line text field (default width is 20 characters)
submit	Defines a submit button
Reset	Defines a reset button (resets all form values to default values)
Radio	Defines a radio button
Password	Defines a password field (characters are masked)
Value	Description
Text	Specifies that the field is a text box.
Password	Specifies that the field is a text box in which the text is encrypted.
Checkbox	Specifies that the field is a check box.
Radio	Specifies that the field is a radio button.
Submit	Creates a button to submit the data in a form to a database on the Web server.
Reset	Creates a button that deletes all the data entered in a form.
Button	Creates a button that does not have a preset function. It can be assigned a specific function by using a programming language, such as JavaScript.
Hidden	Indicates that the field will not appear on the page, but the content of the field is submitted to the Web server.
Image	Displays the image specified by the SRC attribute of the INPUT tag. When you click this image, the data of the form is submitted.

To obtain information from users in the form of text or numbers, you use fields, such as text boxes and text area. You can allow users to select from a given list of items by using fields such as list boxes, radio buttons, and check boxes.

## 9.2 TEXT BOXES

In a form, you can use a text box to obtain information, such as user name, telephone number, or e-mail address. To create a text box, you assign the value “text” to the TYPE attribute of an INPUT tag.

The following table lists the attributes that you can use with the INPUT tag when the value assigned to the TYPE attribute is “text.”

Attribute	Description
SIZE	Specifies the width of a text box in characters.
MAXLENGTH	Specifies the maximum number of characters that can be entered in a text box.
NAME	Assigns a name to a text box.
VALUE	Specifies a default value that appears in a text box.

### Text area fields

To allow users to enter a large amount of information, such as addresses or feedback, you can add a text area field to a form. To create a text area field, you use the *TEXTAREA* tag. You can display text in the text area field by specifying it between the TEXTAREA tags. For instance, to display the text “Enter your address here” within a text area field, you would use the following code:

```
Address:<TEXTAREA>Enter your address here</TEXTAREA>
```

The *ROWS* and *COLS* attributes of this tag specify the number of rows and columns of text that users can see. Scroll bars appear in the field if a user enters more text than can fit in the area.

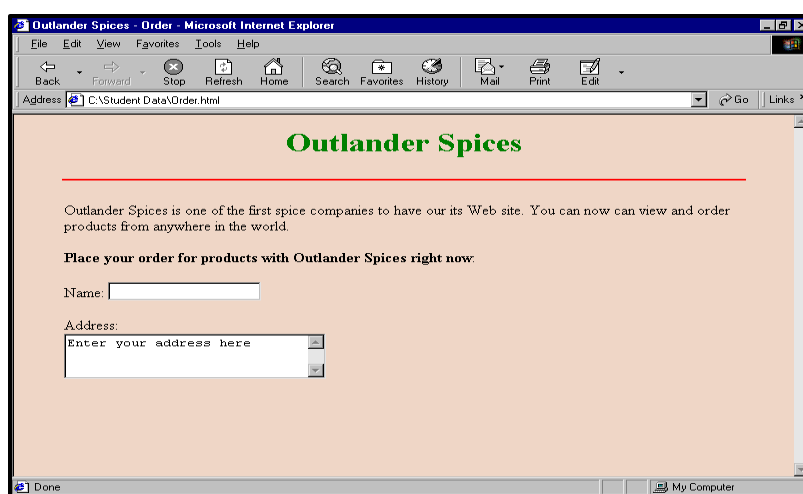


Exhibit 0-15: The Order page with a text box and a text area

### Adding a text area

Here's how	Here's why
Open the source code	
Place the insertion point as shown	<code>&lt;!-- Text area --&gt;</code>
Enter the code	
<pre>&lt;BR&gt;Address: &lt;BR&gt;&lt;TEXTAREA  ROWS=3 COLS=30&gt;Enter your address       here&lt;/TEXTAREA&gt;</pre>	The TEXTAREA tag is used to create a multiple line text box. The ROWS and COLS attributes specify the number of rows and columns of text that users can see on a page in the text area field. Here, the number of rows is 3 and the number of columns is 30.
Update and close the source code	
Refresh and observe the page	A text area with the label "Address:" appears on the page. It contains the text that you entered within the TEXTAREA tag (see Exhibit 0-15).
In the text area, enter your address	If the address exceeds the specified number of rows, the scroll bars of the text area are activated.

### 9.3 LIST BOXES

User information is easier to collect if you provide the user with several options. You can do this by using a list box. For instance, you can add a list box that contains the list of products of the company in a form used to order products.

To add a list box, you use the SELECT and OPTION tags. *SELECT tags* enclose the items of the list. You specify each item of the list by using an *OPTION tag*. The *NAME attribute* of the SELECT tag assigns a name to the list box.

To create a list box called "Spices" that contains Anise, Basil, and Cumin, you would use the following code:

```
<SELECT NAME="Spices">
<OPTION>Cumin
<OPTION>Black Cardamom
<OPTION>Green Cardamom
</SELECT>
```

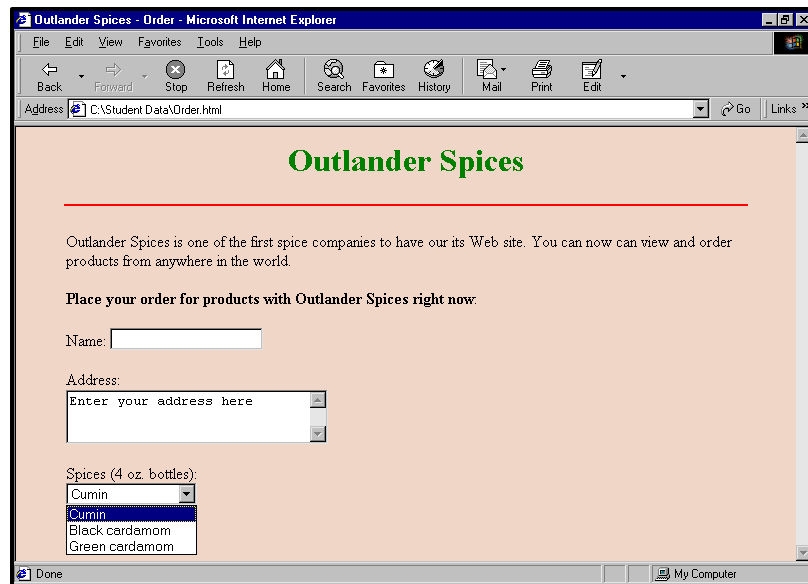


Exhibit 0-16: The Order page with the list box dropped down

### Multiple option list boxes

You might want users to be able to select more than one of the items in a list box. Users can select multiple items from a list box if they want to buy more than one product. You use the *MULTIPLE attribute* of the SELECT tag to create a multiple option list box. Users can then use the control or shift keys, depending on the position of items, to select multiple items from the list box.

Here's how	Here's why
Open the source code	
Edit the SELECT tag to read <SELECT NAME="Spices" MULTIPLE>	The MULTIPLE attribute indicates that users can select more than one item from the list box.
Update and close the source code	
Refresh and observe the page	The list appears and displays all the items. Users can now order more than one item.
From the list, select <b>Cumin</b>	
Press c and select <b>Green cardamom</b>	"Cumin" and "Green cardamom" are selected.



### Problem

A company wants a website which will allow staff member to log in by presenting their username and password, design a Login form using HTML and CSS

## 9.4 RADIO BUTTONS

You can create radio buttons to allow users to select only one of several options. Each radio button is a part of a group. This makes it easier for users to view all the available options. For instance, while ordering products, users can choose to pay by using only one type of card. These options can be part of the payment group.

To create a group of radio buttons, you give several INPUT tags of the radio type the same value for the *NAME attribute*. You can assign a value to a radio button by using the *VALUE attribute*. For instance, to provide the options “AMEX” and “VISA” as radio buttons, you would use the following code:

```
<INPUT TYPE="radio" NAME="Payment" VALUE="Amex">AMEX
<INPUT TYPE="radio" NAME="Payment" VALUE="Visa">VISA
```

The value “Payment” assigned to the NAME attribute of both of the INPUT tags indicates that the radio buttons belong to the same group. Users can select only one of these options. Only the selected value is sent to the database.

How do you want to pay?  
☐ AMEX ☒ VISA ☐ MASTER

Exhibit 0-17: The radio buttons on the Order page

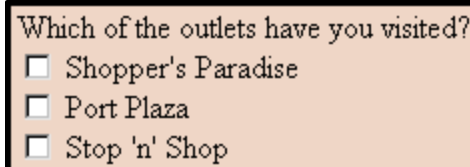
Here's how	Here's why
Open the source code	
Create two radio buttons as shown by the code:	<pre>&lt;INPUT TYPE="radio" NAME="Card" VALUE="Visa"&gt;VISA &lt;INPUT TYPE="radio" NAME="Card" VALUE="Master"&gt;MASTER</pre> <p>The value “Card” assigned to the NAME attribute of the INPUT tags of all the radio buttons indicates that they belong to the same group.</p>
Update and close the source code	
Refresh and observe the page	Three radio buttons appear on the page (see <b>Error! Not a valid bookmark self-reference.</b> ).
Select <b>VISA</b>	
Select <b>AMEX</b>	VISA is now deselected. Users can select only one radio button from a specific group.

## 9.5 CHECK BOXES

You can use check boxes if you want users to select more than one option from a given set of options. This is similar to creating radio buttons, but users can select more than one option.

The following table lists the attributes that you can use with the INPUT tag when the value assigned to the TYPE attribute is “checkbox.”

Attribute	Description
NAME	Specifies the name of the group of the check box.
VALUE	Specifies the value that is sent to the database when the check box is checked.
CHECKED	Indicates that the check box is checked by default.



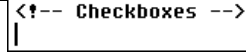
Which of the outlets have you visited?

☐ Shopper's Paradise

☐ Port Plaza

☐ Stop 'n' Shop

Exhibit 0-18: The check boxes on the Order page

Here's how	Here's why
Open the source code	You'll add check boxes to the page so that the users can select the Outlander Spices' outlets that they have visited.
Place the insertion point as shown	
Enter the code	The value “checkbox” assigned to the TYPE attribute indicates that the field is a check box. Check boxes are grouped based on the value assigned to the NAME attribute of the INPUT tags of all the check boxes. Here, “Outlets” is the name of the group of check boxes. The VALUE attribute specifies that the value “Outlet1” will be submitted to the database if this check box is checked.
Enter the code <P>Which of our outlets have you visited?   <INPUT TYPE=“checkbox” NAME=“Outlets” VALUE=“Outlet1”> Shopper's Paradise	

Update and close the source code	
Refresh and observe the page	A check box appears under the text “Which of our outlets in Seattle have you visited?” “Shopper’s Paradise” is the label of this check box.
Check <b>Shopper’s Paradise</b>	
Open the source code	
Create two check boxes as shown	<pre>&lt;BR&gt; &lt;INPUT TYPE="checkbox" NAME="outlets" VALUE="outlet2"&gt; Port Plaza &lt;BR&gt; &lt;INPUT TYPE="checkbox" NAME="outlets" VALUE="outlet3"&gt; Stop 'n' Shop</pre> <p>The value assigned to the NAME attribute of the INPUT tags indicates that these check boxes belong to the “Outlets” group.</p>
Update and close the source code	
Refresh and observe the page	Three check boxes appear on the page (see Exhibit 0-18).
Check <b>Shopper’s Paradise</b>	
Check <b>Port Plaza</b>	Two options are checked. Users can select more than one option from a group of check boxes.

## 9.6 CREATING BUTTONS

You use the *submit button* to allow users to submit the data that they enter in a form. If you want users to reenter the data, you use the *reset button* to delete entries in all the fields of a form. This is easier than deleting data from each field individually.

### Submit buttons

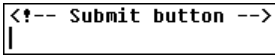
To create a submit button on a page, you assign the value “submit” to the TYPE attribute of an INPUT tag. By default, the submit button has the label “Submit Query.” You can change this by using the VALUE attribute of the tag. For instance, to create a submit button with the label “Order now,” use the following code:

```
<INPUT TYPE="submit" VALUE="Order now">
```

When a user clicks the submit button, the data of the form is sent to a database on the server where it is processed based on the method (POST or GET) specified by the METHOD attribute of the FORM tag. The program that processes the data is specified by the ACTION attribute of the FORM tag.



### Creating a submit button

Here's how	Here's why
Open the source code	You'll create a button to allow users to order products.
Place the insertion point as shown	 <p>Scroll down.</p>
Enter the code   <INPUT TYPE="submit">	The value "submit" assigned to the TYPE attribute creates a submit button. When users click this button, the data of the form is sent to a database.
Update and close the source code	
Refresh and observe the page	A button with the label "Submit Query" appears on the page. This is the default label of a submit button.
Open the source code	
Edit the INPUT tag to read  <INPUT       TYPE="submit" VALUE="Order now">	To change the label of the submit button.
Update and close the source code	
Refresh and observe the page	The button now has the label "Order now."
Open the source code	You'll specify the action to be taken when the submit button is clicked.
Edit the FORM tag to read  <FORM ACTION="Thanks.html" METHOD="POST">	The ACTION attribute specifies the URL of a program that processes the data of a form on a Web server. In this case, the ACTION attribute has the value "Thanks.html" indicating that this page will appear when the users click the submit button. This is because the form is not linked to any database. The METHOD attribute indicates the method of submitting the data to the database. The value "POST" assigned to this attribute indicates that the data of the form will be stored in a database.
Update and close the source code	

Refresh the page	
Click <b>Order now</b>	The page “Thanks.html” appears in the browser.
Click <b>Back</b>	To return to the Order page.



### IDEA

To neatly align your form, you can use a table.

### Reset buttons

You can use a reset button to clear all entries in a form and allow users to reenter data. To create a reset button, you assign the value “reset” to the TYPE attribute of the INPUT tag. By default, the reset button has the label “Clear.” You can change this by using the

VALUE attribute.



*Exhibit 0-19: The submit and reset buttons on the Order page*

Here's how	Here's why
Open the source code	
Place the insertion point as shown	<code>&lt;!-- Reset button --&gt;</code>
Enter the code  <code>&lt;INPUT TYPE="reset" VALUE="Clear form"&gt;</code>	The value “reset” assigned to the TYPE attribute creates a reset button. When users click the reset button, all the field entries in the form are deleted.
Update and close the source code	
Refresh and observe the page	Another button with the label “Clear form” appears on the page (see Exhibit 0-19).
Enter values in all the fields of the form	
Click <b>Clear form</b>	The data in all the fields of the form is reset to the original status.

**KEY TERMS USED IN THIS SECTION**

**Check box:** An element used when you want to let the visitor select one or more options from a set of alternatives.

**Form:** allows a user to enter data that is sent to a server for processing. Forms can resemble paper or database forms because web users fill out the forms using checkboxes, radio buttons, or text fields.

**Radio Button:** a graphical control element that allows the user to choose only one of a predefined set of options

**Text area:** A text field that can span several lines.




## SECTION 9 REVIEW QUESTIONS

- 1.1. How can you collect feedback from visitors of your web site?
- A. By using fast mail
  - B. By using forms
  - C. By visiting each and every web site visitor/user
  - D. None of the above
- 1.2 Form data is processed by an application/script. How do you tell a form which application to send data to?
- A. Using the action attribute of the form tag
  - B. Using the method attribute of the form tag
  - C. Using hyperlink
  - D. By using images and CSS
- 1.3 Which input control in a form that allows a user to select only one option?
- A. Check box
  - B. Text box
  - C. Text area
  - D. Radio button
- 1.4 To create a clickable button, the \_\_\_\_\_ tag can be used.
- A. <button>
  - B. <link>
  - C. <click>
  - D. <onclick>
- 1.5 To create a button that will reset a form, the following code can be used:
- A. <reset></reset>
  - B. <input type="reset" value="Refresh" />
  - C. <input type="refresh" value="reset" />
  - D. None of the above
- 1.6 A drop down can be created using which tags?
- A. <select> and <option>
  - B. <dropdown> and <list>
  - C. <list> and <items>
  - D. <options> and <list>



## NINE | REVIEW QUESTIONS

- 1.7 How can you create a radio button which will restrict a user from selecting more than one option?
- A. Assign same value to the name attribute for a group of radio buttons
  - B. By creating single radio button with multiple values
  - C. By using CSS
  - D. Using tables and CSS
- 1.8 A form can be reseted. This can be done by creating a \_\_\_\_\_ button.
- A. clear
  - B. refresh
  - C. reset
  - D. new
- 1.9 When the type attribute of an input tag is equal to *hidden*. What will be created.
- A. An element with a value that will not be used.
  - B. A field that will not appear on the page but the content will be
    - a. submitted to the web server
  - C. An input element with no data
  - D. A hidden box
- 1.10 To specify the width of a text box, the \_\_\_\_\_ attribute is used.
- A. width
  - B. size
  - C. length
  - D. columns

	<b>LEARNING OUTCOMES</b>
<ol style="list-style-type: none"> <li>1. Create frames to display more than one page in the same browser window</li> <li>2. Use hyperlinks within a frame</li> <li>3. Modify frame properties and frame page properties and create a navigation bar</li> </ol>	

## INTRODUCTION

Users can lose interest in browsing a site that has navigational problems. Frames can make it easier to navigate a site. A *frame* is used to display more than one page in the same browser window, making it easier for users to access information. A frame within a frame is a nested frame. You can use nested frames to set the layout of a page.

### 10.1 UNDERSTANDING FRAMES

You can divide a page into two or more parts by using frames. You use the FRAMESET tag with the FRAME tag to create a page with frames. The FRAMESET tag specifies the number of frames on a page. This tag is a container and encloses the FRAME tags.

The following table explains the attributes of the FRAMESET tag.

Attribute	Description
COLS	Creates vertical frames on a page. The values assigned to this attribute allow you to specify the width of each frame based on the browser window. For instance, to create two frames, one occupying 35% of the width of the browser window and the other frame occupying the remaining 65%, you would use the following code:  <FRAMESET COLS="35%,65%">
ROWS	Creates horizontal frames on a page. The values assigned to this attribute allow you to specify the height of each frame based on the browser window.

In the HTML document of a frames page, the `FRAMESET` tag replaces the `BODY` tag because this page contains only the structure of the frames in the page and not any content. You define each frame in a frames page by using the `FRAME` tag. The `SRC` attribute of the `FRAME` tag specifies the page that appears in a frame.

For instance, you can create frames that divide the browser window into two parts: a list of products on the left and the description of a particular product on the right (see Exhibit 0-20). This way the user can see the product list and the description of a product at the same time.

If you want to display a message to users who view the frames page in non-frame supporting browsers, you use the *NOFRAMES* tag. To display the message on the page, you use the `BODY` tag within the `NOFRAMES` tag. For instance, to display the message “This page contains frames” in a non-frame supporting browser, you would use the following code:

```
<NOFRAMES>
<BODY>
This page contains frames
</BODY>
</NOFRAMES>
```

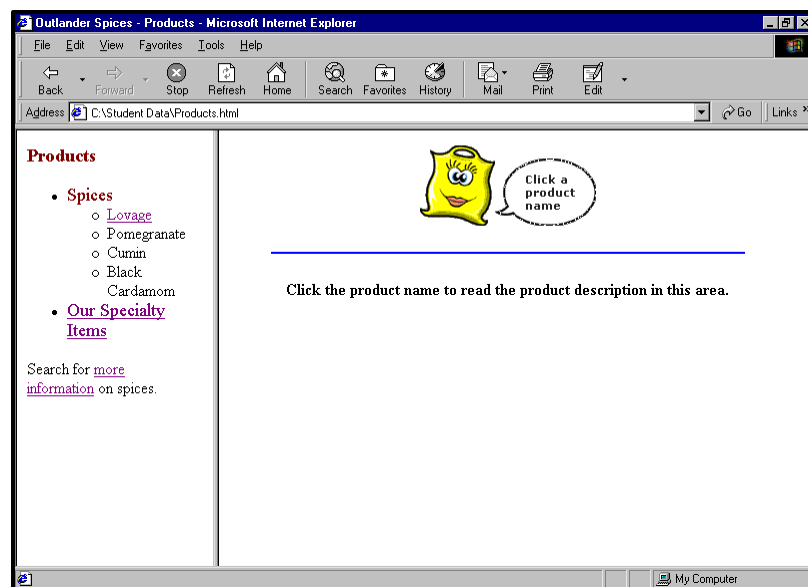


Exhibit 0-20: A frames page with two frames

```
<FRAMESET COLS="25,75">
  <FRAME SRC="Product list.html">
  <FRAME SRC="Content.html">
</FRAMESET>
```

Exhibit 0-21: The source code to create frames on the Products page

### Creating frames

Here's how	Here's why
Open the source code	To open a blank page. You'll create frames on this page.
Open the source code	
Observe the code	There are no BODY tags because in a frames page document the FRAMESET tag replaces the BODY tag.
Place the insertion point as shown	<div> <div>&lt;/HEAD&gt;</div> <div> </div> <div>&lt;/HTML&gt;</div> </div>
Enter the code shown in Exhibit 0-21	To create frames on the page. The COLS attribute of the FRAMESET tag indicates that the page will have two frames occupying 25% and 75% of the width of the browser window respectively. The SRC attribute of the first FRAME tag specifies that the page "Product list.html" will appear in the left frame. The SRC attribute of the second FRAME tag specifies that the page "Content.html" will appear in the right frame.
Update and close the source code	
Refresh and observe the page	The page is divided into two frames. The left frame displays the product list and the right frame displays the Content page.



#### Research

How can you style a frame using CSS?

### 10.2 NESTED FRAMES

You use nested frames to create both horizontal and vertical frames on the same frames page. To create a nested frame, put the code for defining frames within a pair of FRAMESET tags. For instance, to create a horizontal frame and two vertical frames on the same frames page, you

would use the following code:

```
<FRAMESET ROWS="20%,80%">
<FRAME SRC="Banner.html">
<FRAMESET COLS="35%,65%">
<FRAME SRC="Product list.html">
<FRAME SRC="Content.html">
```



</FRAMESET>  
</FRAMESET>

The first set of FRAMESET tags indicates that the frames page is divided into two horizontal frames. The first frame displays the Banner page. The second frame is divided into two vertical frames by using the second set of FRAMESET tags. These frames display the Product list and Content pages in the left and right frames.

### Creating a nested frames page

Here's how	Here's why
Open the source code	
Place the insertion point as shown	<div> <div> </div> <div>&lt;FRAMESET COLS="25,75"&gt;</div> </div> <p>To prepare to add another FRAMESET tag.</p>
Enter the code <FRAMESET ROWS="35,65">	The ROWS attribute of the FRAMESET tag indicates that the page is divided into two horizontal frames. The values assigned to the ROWS attribute indicate that the first frame occupies 35% of the height of the browser window and the second frame occupies 65%. A FRAMESET tag enclosing another FRAMESET tag set creates a nested frames page.
Press enter	
Enter the code <FRAME SRC="Logo.html">	The SRC attribute of the FRAME tag specifies that the page "Logo.html" will appear in the new frame.
Place the insertion point as shown	<div> <div> </div> <div>&lt;/FRAMESET&gt;</div> <div>&lt;/HTML&gt;</div> </div>
Enter the ending FRAMESET tag as shown	<div> <div>&lt;/FRAMESET&gt;</div> <div>&lt;/FRAMESET&gt;</div> <div>&lt;/HTML&gt;</div> </div>
Update and close the source code	
Refresh and observe the page	The page is now divided into three frames with the Logo page in the top frame, the Product list page in the left frame, and the Content page in the right frame.

## 10.3 LINKING FRAMES

You link frames by creating hyperlinks on pages within frames. By default, the target page of a hyperlink always appears in the same frame as the hyperlink. To display the target page in a separate frame, you can specify the name of that frame in the *TARGET attribute*

of the A tag (anchor). You can specify the name of a frame by using the *NAME* attribute of the FRAME tag.

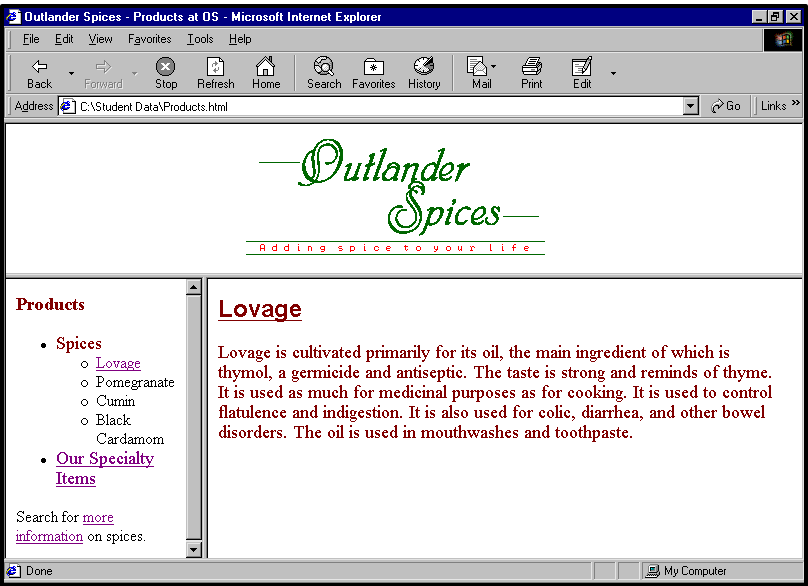


Exhibit 0-22: The Products page

Creating a nested frames page

Here's how	Here's why
In the left frame, click <b>Lovage</b>	The Lovage page appears in the same frame.
Click <b>Back</b>	To move back to the Product list page.
Open the source code	
Place the insertion point as shown	<code>&lt;FRAME SRC="Content.html" &gt;</code>
Edit the FRAME tag to read <code>&lt;FRAME SRC="Content.html" NAME="main"&gt;</code>	To assign the name "main" to the right frame.
Update and close the source code	
Right-click in the left frame	
Choose <b>View Source</b>	To view the source code of the Product list page.
Place the insertion point as shown	<code>&lt;UL&gt; &lt;LI&gt;&lt;A HREF="Lovage.html"&gt; &lt;LI&gt;Pomegranate</code>
Edit the A tag to read  <code>&lt;A        HREF="Lovage.html TARGET="main"&gt;</code>	This ensures that when a user clicks this hyperlink the target page appears in the right frame, which is named "main."

Update and close the source code	
Update and close the source code	
In the left frame, click <b>Lovage</b>	The Lovage page now appears in the right frame (see Exhibit 0-22).

#### 10.4 SPECIAL TARGET NAMES

You can use special target names to display a linked page in various ways by using the TARGET attribute of the A tag (anchor) to refer to the pre-defined frame names. For instance, to display the target of a hyperlink that links to an external site in another browser window, specify *\_blank* as the value in the TARGET attribute. By default, the TARGET attribute is always set to *\_self*, indicating that the target page will appear in the same frame as that of the hyperlink.

The following table lists some of the special target names and their functions.

Target name	Description
_top	Displays the target page in the same browser window.
_blank	Displays the target page in a new browser window.
_self	Displays the target page in the same frame.
_parent	Displays the target page in the current frameset. This works only with nested frames.

#### Using special target names with hyperlinks

Here's how	Here's why
Open the source code of the page in the left frame	Right-click in the left frame and choose View Source. You'll use a special target name to display the target page in a new browser window.
Place the insertion point as shown	
Edit the A tag to read  <A HREF="http://www.msn.com" TARGET="_blank">	To display the target page in a new browser window. The underscore ( ) indicates that the value assigned to the TARGET attribute is a special target name.
Update and close the source code	
Refresh the page	
In the left frame, click <b>more information</b>	The home page of the MSN Web site appears in a new browser window.

## 10.5 MODIFYING FRAMES

There are many properties you can change to control how a page with frames (frames page) and frames within that page appear.

### Frame properties

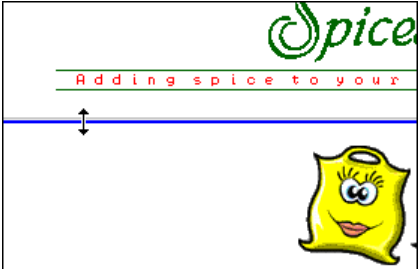
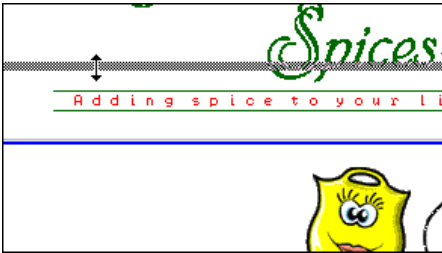
You can change several properties for each frame within a frames page. These properties include the size of the frame, its margins, and whether the frame is resizable and has scroll bars. To change a property of a frame, you specify an attribute in the FRAME tag of that frame.

The following table explains the attributes that modify the properties of a frame.

Attribute	Description
MARGINWIDTH	Specifies the left and right margins of a frame. This value is measured in pixels. By default, the margins are set by the browser.
MARGINHEIGHT	Specifies the top and bottom margins of a frame. This value is measured in pixels. By default, the margins are set by the browser.
SCROLLING	Allows you to control the scroll bars of a frame. The values that you can assign to this attribute are YES, NO, and AUTO. The value "YES" indicates that the frame will always have scroll bars. The value "NO" indicates that scroll bars will not appear even if the content of the page in the frame does not fit the visible area of the frame. The value "AUTO" indicates that scroll bars will appear if required (this is the default).
NORESIZE	Allows you to specify that the frame cannot be resized. By default, users can resize a frame by dragging its border.

### Modifying frame properties

Here's how	Here's why
Observe the page	The left frame has scroll bars. You'll remove the scroll bars because the content of the page fits the visible area of the frame.
Open the source code	
Place the insertion point as shown	<code>&lt;FRAME SRC="Product list.html"&gt;</code>
Edit the FRAME tag to read	To remove the scroll bars from this frame.

<FRAME SRC="Product list.html" SCROLLING=NO>	
Update and close the source code	
Refresh and observe the page	The left frame now does not have scroll bars.
Point to the border between the frames	 <p>The pointer changes to a two-headed arrow. This means that you can now drag to resize the frames.</p>
Drag the border as shown	 <p>The logo is not fully visible.</p>
Open the source code	You'll make it so that users cannot resize the top frame.
Place the insertion point as shown	<code>&lt;FRAME SRC="Logo.html"&gt;</code>
Edit the FRAME tag to read:  <FRAME SRC="Logo.html" NORESIZE>	To ensure that users cannot resize the frame.
Update and close the source code	
Refresh the page	
Point to the border between the frames	The pointer does not change to a two-headed arrow. This indicates that the frame is no longer resizable.

## 10.6 FRAMES PAGE PROPERTIES

You can set the properties of the frames page as a whole. These properties include modifying the border color of all frames and whether there are borders showing between the frames. To set a property of the frames page, you use an attribute in the FRAMESET tag.

The following table explains the attributes that modify the properties of the frames page.

Attribute	Description
BORDERCOLOR	Specifies the border color of all frames in the frames page.
FRAMEBORDER	Indicates whether the borders between frames will appear. The possible values are YES and NO, with YES being the default.



Exhibit 0-23: The Products page after removing the borders between two frames

### Modifying frames page properties

Here's how	Here's why
Observe the page	The borders of the frames appear gray, which is the default. You'll change the color of the borders to blue.
Open the source code	
Edit the first FRAMESET tag to read	To change the border color of all frames enclosed within this FRAMESET tag to blue.

<FRAMESET ROWS="35,65" BORDERCOLOR=Blue>	
Update and close the source code	
Refresh the page	The borders of all the frames appear blue.
Open the source code	You'll remove the border between the left and right frames.
Edit the second FRAMESET tag to read  <FRAMESET COLS="25,75" FRAMEBORDER=NO>	To remove the borders between the frames enclosed within this FRAMESET tag.
Update and close the source code	
Refresh and observe the page	The border between the frames is no longer visible (see Exhibit 0-23). Though the border does not appear, the page is still divided into three frames.

### 10.7 NAVIGATION BAR

You can make it easier for users to navigate your site by using a navigation bar. A *navigation bar* is a page that contains hyperlinks to several pages of a site and appears in a frame on each page. To create a navigation bar, you create a page with hyperlinks to several pages and display this page in a frame on each page of your site.

#### Creating a navigation bar

Here's how	Here's why
Open the source code	You'll create another frame on the page that will contain a navigation bar.
Edit the first FRAMESET tag to read  <FRAMESET ROWS="35,50,15" BORDERCOLOR=Blue>	To change the number of horizontal frames on the page to three.
Place the insertion point as shown	<div>&lt;/FRAMESET&gt;</div> <div> </div> <div>&lt;/FRAMESET&gt;</div> <p>To prepare to add the frame for the navigation bar.</p>

Enter the code  <FRAME SRC="Navigate.html">	To add a frame that contains the Navigate page. This page has hyperlinks to several pages of the site.
Update and close the source code	
Refresh and observe the page	A new frame appears at the bottom of the page. This frame contains hyperlinks to other pages in the site. Notice that the contents of the left frame are not fully visible.
Open the source code	To add scroll bars to the left frame.
Select <b>SCROLLING=NO</b> as shown	<FRAME SRC="Product list.html" <b>SCROLLING=NO</b> >
Delete the code	
Update and close the source code	
Refresh and observe the page	Scroll bars appear in the left frame.
In the navigation bar, click <b>About us</b>	To view the About us page.



### IDEA

When creating a frameset, you cannot use *cols* and *rows* attributes in one frameset tag.



**KEY TERMS USED IN THIS SECTION**

**Cols:** specifies the size of, and the number of columns in a <frameset>.

**Frame:** html element that allows author to present documents in multiple views, which may be independent windows or subwindows.

**Navigation bar:** a section of a website or online page intended to aid visitors in travelling through the online document.



## SECTION 10 REVIEW QUESTIONS

1.1 How can you display multiple pages on one window?

- A. By using lines
- B. By using frames
- C. You can create hyperlinks to those pages
- D. None of the above

1.2 To create a frameset with multiple rows, which attribute is used?

- A. rows
- B. Cols
- C. cells
- D. patterns

1.3 Which input control in a form that allows a user to select only one option?

- A. Check box
- B. Text box
- C. Text area
- D. Radio button

1.4 To create a clickable button, the \_\_\_\_\_ tag can be used.

- A. <button>
- B. <link>
- C. <click>
- D. <onclick>

1.5 To create a button that will reset a form, the following code can be used:

- A. <reset></reset>
- B. <input type="reset" value="Refresh" />
- C. <input type="refresh" value="reset" />
- D. None of the above

1.6 A drop down can be created using which tags?

- A. <select> and <option>
- B. <dropdown> and <list>
- C. <list> and <items>
- D. <options> and <list>

1.7 How can you create a radio button which will restrict a user from selecting more than one option?



## TEN | REVIEW QUESTIONS

- A. Assign same value to the name attribute for a group of radio buttons
  - B. By creating single radio button with multiple values
  - C. By using CSS
  - D. Using tables and CSS
- 1.8 A form can be reseted. This can be done by creating a \_\_\_\_\_ button.
- A. clear
  - B. refresh
  - C. reset
  - D. new
- 1.9 When the type attribute of an input tag is equal to *hidden*. What will be created.
- A. An element with a value that will not be used.
  - B. A field that will not appear on the page but the content will be submitted to the web server
  - C. submitted to the web server
  - D. An input element with no data
- 1.10 To specify the width of a text box, the \_\_\_\_\_ attribute is used.
- A. width
  - B. size
  - C. length
  - D. columns



## Glossary of terms HTML

### Alt text

Text description of a graphic that appears before the graphic is loaded into the browser. After an image has been downloaded on the browser, the alt text may briefly appear over the graphic as you rollover the mouse over the graphic.

### Anchor <a>

The anchor tag is used to define a hypertext link.

### Angle brackets

less than (<) and greater than (>) symbols used to surround an element to create a tag.

### Attribute

A property of an HTML element used to provide additional instructions to a given HTML tag. The attribute is specified in the start of HTML tag.

### Broken links

Broken links are those links that do not work because the destination has been deleted or the path has been changed.

### Browser

A program used to access and display HTML documents. Common examples: Internet Explorer, Netscape, and Mozilla Firefox.

### CGI (Common Gateway Interface)

A programming standard that defines how programs communicate with each other and with the web server. Generally, a CGI-complaint program is called a script.

### Clickable map

Another name for an imagemap.

### Closing tag

An HTML instruction that tells the browser to turn off a specific feature of an opening tag.

### Comments

Information added to the code for future reference. The information may include a brief explanation for what a complex code does. Comments are ignored by the browsers and they are visible in the source code. HTML comments start with <!-- and end with -->.

### Deprecated element

An element that will be obsolete in the future is referred to as *deprecated*. The element can be used today, however, it needs to be removed sometime in the future to avoid a situation where newer browsers would ignore that element.

### Document content



Parts (such as text and graphics) of a web document that you want the user to see.

**Document Type Definition (DTD)**

A specification for a mark-up language.

**Domain name**

The alphabetic name for a computer host mapped to a computer's numeric IP (Internet Protocol) address.

**Elements**

An element in HTML refers to a *tag* (such as <head>, <body>, and <p>) or *element of structure* of a document (such as body, title, and paragraph).

**Entities**

Entities are those characters that do not appear on the keyboard (i.e., ™ ©, ®, etc.) or characters that have special meaning in HTML (i.e., <, >, &, etc.).

**Form**

A mechanism that enables a user to supply input to the web page author.

**Footer text**

The text that is not specifically related to the content of the webpage and that appears on every webpage is referred to as *footer text*. The most notable example of footer text is the copyright statements at the bottom of webpages.

**Frames**

HTML supports frames to divide a web page into independent and scrollable sections. Having two frames on a web page is like loading three separate pages in the browser. A common use for frames is to place the navigation on the left, and content on the right.

**Frames** (used at the top of a web page to specify HTML version)

A *frames* document type definition indicates that the document uses frames and it also supports deprecated elements. This is the most flexible document type definition.

**FTP**

FTP stands for *File Transfer Protocol*. FTP is a robust method for transferring files between computers using TCP/IP. TCP stands for Transmission Control Protocol and IP stands for Internet Protocol. TCP is responsible for transporting data and IP is responsible for making sure data goes to the correct address.

**GIF (Graphics Interchange Format)**

A file format (commonly used for web pages) used for storing image files.

**Hotspot**

A defined area on an image that acts as a hyperlink.

**HTML (Hypertext Markup Language)**

A web scripting language used for creating web page documents.

**HTML converter**



A software that converts text to HTML code.

**HTML editor**

A software that inserts HTML code as you work to create an HTML file.

**Hypermedia**

Hypertext that may include multimedia like text, images, sound, and video.

**Imagemap**

A graphic that has clickable areas (or hotspots) defined to allow a user to move to another URL.

**Inline**

Elements those that are supported directly by HTML are known as *inline*. Also, another characteristic of inline element is that their output can be seen or heard without the user taking any additional action (such as clicking, and installing of a plug-in) because the output is directly placed on the webpage. Inline elements include, for instance, animated graphics, graphics, and sound.

**JPEG or JPG (Joint Photographic Experts Group)**

A common cross-platform image format that is used on the web.

**Line break**

Line break simply refers to stop of the current line and continuation to the next line. In HTML documents, the `<br>` tag is used to end a line.

**Link**

A hypertext link used to connect one document with another document or file.

**Mirror site**

A mirror site is a copy of a publicly available website.

**Nesting/nested tags**

Nesting occurs when you place tags within other tags. Anytime you create an HTML document, you will end-up using nested tags. For example, the `<title>`, and `<body>`, tags are nested inside the root `<html>` tag. The `<body>` tag is likely to also nest inside of itself other tags.

**Navigating**

The act of observing the content of web for some purpose.

**Obsoleted element**

An element that won't necessarily work in the future versions of browsers. Any obsolete element that you may be using in your website should be removed; otherwise, newer browsers would ignore that element.

**Opening tag**

An HTML instruction that tells the browser to turn on the feature and apply it to the document content that follows.

**Out-of-line**

Out-of-line refers to those elements that require the user to take some additional action to see or hear the output of the element. The additional



action could consist of clicking or installing of a plug-in. Examples of out-of-line elements include video, 3-D models, animations, etc.

**Pixel**

A collection of dots that make up a monitor's display. On color monitors, a pixel contains three dots: red, green, and blue. On monochrome monitors, a pixel contains only one dot.

**Robot**

A software that automatically explores the web.

**Server**

A software application that serves requests initiated by client programs.

**Strict** (used at the top of a web page to specify HTML version)

The *strict* version indicates that the web document does not use frames or any deprecated elements. If a web document is based on a *strict* definition, it must have clean HTML (meaning all opened tags must be closed, attribute values surrounded by double quotation marks, etc.).

**Style sheet**

A style sheet includes styling syntax (rules) that dictates how your web page will look. Style sheets are very useful as they help web developers create uniform (or consistent) presentation of web pages.

**Syntax**

Syntax basically refers to the rules a computer language uses to perform a task. Without syntax, a computer language would not be functional or useful at all. HTML syntax dictates what and how a web page will display.

**Syntax error**

A syntax error basically refers to a situation in which the rules (or a rule) of the computer language are (is) broken. In HTML, depending on the syntax error you produce, the web page may look completely different than what you had intended.

**Tags**

The HTML code that controls the appearance of an HTML document's content.

**Transitional** (used at the top of a web page to specify HTML version)

A document defined as *transitional* may include deprecated elements and all the new HTML elements. However, the document cannot contain frames.

**Uploading**

Think of uploading as just opposite of downloading. While uploading simply means moving/sending files to the server, downloading means getting/receiving files from the server.

**World Wide Web Consortium (W3C)**

An organization consisting of representatives from member companies and responsible for making rules for the World Wide Web.