Lesson 4: Hyperlinks

Objectives

By the end of this lesson, you will be able to:

- 2.1.4: Create HTML hyperlinks for text, images, local files and remote sites (internal and external links).
- 2.14.4: Manage existing sites (e.g., remove dead links and/or upgrade connectivity when necessary).
- 2.16.6: Identify the importance of online indexing and cataloging.

Pre-Assessment Questions

1. Which term describes the underlined, colored text on a Web page that a user can click to access another Web page?

   a. Fully qualified URL
   b. Anchor
   c. Hyperlink
   d. Partial URL

2. When are partial URLs used with hyperlinks?

   a. When using an external image as a link
   b. When linking to another location on the same site
   c. When linking to an external Web site
   d. When accessing a system file on the Web server

3. What is the term recommended by the W3C for a link to a resource? What is the other common term for such a link?

   _____

   _____

Introduction to Hyperlinks

NOTE: Remember that hyperlinks are embedded instructions within a Web file that call another file (or another location within the same file) when the link is accessed by clicking. This global set of linked documents across the Internet framework creates the World Wide Web. You may want to review markup language history, discussed earlier in this course.

The characteristic that makes the World Wide Web a "web" is the linking capability that connects Web pages to other files across the Internet. Hyperlinks are in fact more fundamental than the ability to include multimedia objects in your HTML documents. Even users with non-graphical browsers, such as Lynx, can select hyperlinks in Web pages to navigate and explore the Web. The critical element is the ability to move from page to page by clicking linked text or images.

A hypertext link is a word or phrase in an HTML document that is specially tagged as a link using the anchor element, <a>. By default, hyperlinks appear blue and underlined in the browser. You can use CSS to make hyperlinks appear in any color you like. An image or icon can also be enclosed in anchor tags and used as a link to another file. In both cases, clicking the link will take the user to the link's specified destination.

You can create links to external files as well as to points within the current file. On a long page, you can use links to jump between sections of the page; such a link is called an internal link.

CIW Online Resources – Movie Clips

Visit CIW Online at http://education.Certification-Partners.com/CIW to watch a movie clip about this topic.

Lesson 4: Hyperlinks

OBJECTIVE 2.1.4: HTML hyperlinks

The Anchor Element

Links are created with the anchor element, <a>. Anchor elements are container tags that encompass the text or image (or both) to be used as the link. The *href* attribute is used to specify the link's hypertext reference, or the target of the link. You can specify a fully qualified URL or a relative URL reference for any file, page or site.

NOTE: Note the difference between Uniform Resource Identifiers (URIs), Uniform Resource Locators (URLs), and Universal Resource Names (URNs). URIs are essentially a superset of URLs and URNs. The W3C has not taken a hard stance on which terms to use. They are used interchangeably.

The W3C considers URLs part of a Uniform Resource Identifier (URI). Sometimes URLs are called URIs when referring to Web addresses. Both are correct, but Web addresses are specifically locators, as opposed to the broader "identifier" term. The terms are used interchangeably. This course will use "URL" throughout.

The syntax for using the anchor element to create a link is as follows:

```
<a href="URL"> linked text or image (or both) </a>
```

Table 4-1 lists examples of values for the URL when referencing external links.

Table 4-1: URL options for external links

Type of Reference	Description	Examples
Fully qualified URL (also called absolute URL)	A URL (i.e., URI) that contains a full path to a resource, including the protocol indicator. Also known as a hard link.	*http://www.someserver.com/somepage.html* or *ftp://ftp.someserver.com/pub/somefile.ext* or *c:\intetpub\wwwroot\ccyp\syb\syb.html*
Partial URL (also called relative URL)	A URL that assumes the current document's path. All references are made from the document's current directory.	*syb.html* or *../css/stylesheet.css* or *pub/images/mybullet.gif*

As you read absolute and relative URLs, you must understand how browsers interpret them. Table 4-2 summarizes common URL paths. As you read this table, assume that all references are to the same page, index.html.

NOTE:
Be sure you understand the difference between UNIX paths and Windows paths. Windows path names use back slashes, whereas UNIX/Linux paths use forward slashes.

Table 4-2: URL paths

URL	Description
/mysite/index.html	The initial forward slash (/) instructs the browser to look for a directory named mysite that is off of the root directory. If you were to insert this reference into a page on your Windows system, your browser would interpret the first forward slash as C:\, and would look for the mysite/ directory, which would contain the index.html file. If this page were on a Web server, the link would refer to the Web server's root directory (e.g., /var/www/mysite/ in Linux/UNIX or C:\inetpub\wwwroot\ in Windows).
mysite/index.html	The absence of any initial characters instructs the browser to look for the mysite subdirectory. This subdirectory begins off of the same level as the current page. The index.html page resides inside of the mysite subdirectory.
../mysite/index.html	The initial two periods and forward slash (../) instruct the browser to look for a directory named mysite that begins one level higher than the page you are currently viewing.

Windows and UNIX/Linux systems use different naming conventions for their paths. Windows path names use back slashes, whereas UNIX/Linux paths use forward slashes. Also, Windows paths can use drive names (e.g., C:\), whereas Unix/Linux paths do not.

Specifying protocols

Hyperlinks do not have to point only to HTTP addresses. You can create hyperlinks for various protocols. Table 4-3 describes several protocols you can specify in a hyperlink URL.

Table 4-3: Protocols in hyperlink URL references

Protocol	Hyperlink HTML Example
HTTP	Visit the CIW<a/> site.
HTTPS (Secure HTTP)	Visit our secure CIW<a/> site.
FTP	Download the file from our FTP server.
E-mail	You can send e-mail to us at info@ciwcertified.com.

Problems when creating hyperlinks

Many Web developers commit the same common errors when writing HTML code to create hyperlinks on their Web pages. As you use the <a> element, make sure that you:

- **Use a closing anchor tag** — You must place the tag after the page text to be affected.
- **Place quotation marks around the value** — The value of the *href* attribute is the target of your link; for example:
  "*http://www.habitat.org*"
- **Include the closing bracket at the end of the opening <a> tag** — The following example is a common oversight:
  *<a href="http://www.habitat.org" Habitat *
  The tag should read as follows:
  * Habitat *

Table 4-4 lists some problems you might experience when creating links in HTML, with troubleshooting techniques that you can use to solve these problems.

Table 4-4: Troubleshooting HTML hyperlink problems

Problem	Solution
Text and images disappear	The <a> tag is not properly closed with , or you have not placed quotation marks around a value. Review your tags carefully.
All successive Web page text is a hyperlink	The <a> tag is not properly closed with in the correct location. Review your tags carefully.
Garbled code appears on screen	One or more <a> tags may be missing an opening or closing angle bracket (i.e., wicket). Review each <a> tag carefully.
Code will not validate due to a problem <a> tag	A closing tag may be missing or mistyped (such as <a/> instead of). Review your tags carefully.

Creating Local Hyperlinks

OBJECTIVE
2.1.4: HTML hyperlinks

A local hyperlink is a link you create from one file on your local system to another file on your local system. You create these types of links when you are developing your own pages and linking them to form a site. Your files can be uploaded to a Web server in the same directory structure you save on your system, so your file references can remain unchanged as long as your directory structure persists. Creating local hyperlinks involves determining the location of the file to which you want to link, relative to the location of the file from which you are linking.

NOTE:
Are hyperlinks interpreted differently among Web browsers? Open the files you create in this lesson in different browsers.

In the following lab, you will create local hypertext links in a document. Suppose you have been assigned to link your Web page to other pages on the site. You need to determine page text that will clearly identify hyperlinks so your users know where each link will take them. You also need to provide a link to a report in PDF format. You must supply page text for each hyperlink, as well as the HTML code that will create the hyperlink function that links the pages of your site to each other.

Lab 4-1: Creating local text hyperlinks in HTML

OBJECTIVE
2.1.4: HTML hyperlinks

In this lab, you will create local hyperlinks from the syb.html page to other pages that are stored on your hard drive.

In the first five steps, you will populate and verify the Habitat folders on your Desktop. In the rest of the lab, you will create links from syb.html to files in these directories.

NOTE:
In Step 1, make sure that you copy index.html and the index\ directory to the Habitat\ directory and not Habitat\CCYP\.

1. Navigate to the **C:\CIW\Site_Dev\Lab Files\Lesson04\Lab_4-1** folder. Copy the **index.html** file and the **index** directory to the **Habitat** folder on your system. This page and its associated directory re-create a prototype version of the Habitat for Humanity home page.

2. From the **Lab Files\Lesson04\Lab_4-1** folder, copy the **default.html** file and the **default** directory to the **Habitat\CCYP** subfolder. (Notice that you are copying to a different location than in Step 1.) This file and directory re-create a prototype Campus Chapters And Youth Programs page.

3. From the **Lab Files\Lesson04\Lab_4-1** folder, copy the **ccypintl.html** file and the **ccypintl** directory to the **Habitat\CCYP** subfolder (the same location as in Step 2). This file and directory re-create a prototype International Programs page.

4. From the **Lab Files\Lesson04\Lab_4-1** folder, copy the file **application.html** and the **application** directory to the **Habitat\CCYP** subfolder (the same location as in Steps 2 and 3). This file and directory re-create a prototype Summer Youth Blitz Application Form page.

5. Verify that your Desktop directories are now populated as follows:

   - **Habitat** should contain **index.html** and the **index** directory.
   - **Habitat\CCYP** should contain **application.html**, **ccypintl.html**, **default.html** and all associated directories for these files. It should also contain **syb.html** and the **Syb** directory from the previous lesson. If not, copy the syb.html and the Syb\ directory from the Lab_4-1 folder.

   Note: The directories you copied and verified in Steps 1 through 5 contain Web pages to which you will link in this lab. You will create links to these directories in the following steps.

6. Open **syb.html** in a text editor. Scroll to the bottom of the page, to the footer section.

NOTE:
As you create links, make sure that you use the proper syntax.

7. At the bottom of the page, find the text that reads *International Programs*. Surround this text with the opening and closing anchor tags to create a hyperlink to the ccypintl.html page:

```
<a href="ccypintl.html">International Programs</a>
```


Note: You do not need to specify a subfolder for this relative URL because ccypintl.html is in the same folder as syb.html.

8. Save the page, then open it in a browser. Scroll to the bottom of the page. The phrase International Programs should now be a hyperlink, indicated as blue underlined text, as shown in Figure 4-1.

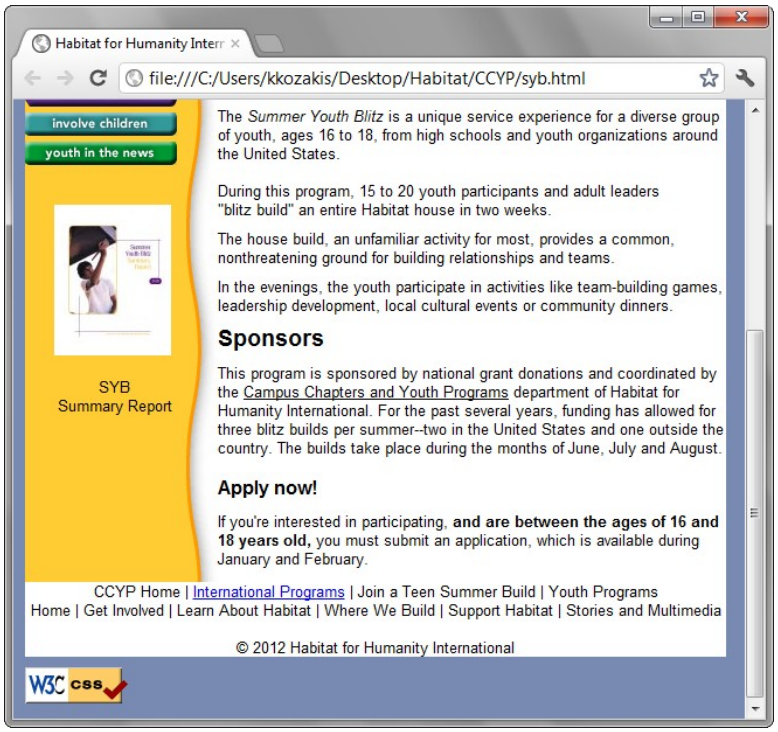

Figure 4-1: Page syb.html with hyperlink in footer section

9. Click your new link to verify that it is valid. The International Programs page should appear in your browser.

10. Validate your code at ***http://validator.w3.org***.

NOTE:
Make sure that you understand the relative URL found in Step 11. This URL is relative and points to a page on the same level (in the same directory) as the page you are currently editing.

11. Open **syb.html** in the text editor and again scroll to the bottom. Find the text that reads *CCYP Home*. Surround this text with the opening and closing anchor tags to create a hyperlink to the **default.html** page that resides in the same folder (i.e., on the same level) as syb.html:

```
<a href="default.html">CCYP Home</a>
```

Note: Understand that this code refers to a page on the same level (in the same directory) as the page you are currently editing.

12. Save the file. Test your code in a browser. You should see that the text CCYP Home at the bottom of the page is now a hyperlink.

13. Click the link to verify that it points to the correct page. You should see the Campus Chapters And Youth Programs home page appear in the browser.

NOTE:
The relative URL in Step 14 points the browser to one directory up from the current directory.

14. Open **syb.html** again in the text editor and again scroll to the footer. Find the text that reads *Home*. Create a link for this text pointing visitors to the **index.html** page that resides in the **Habitat** directory (one directory up from syb.html):


```
<a href="../index.html">Home</a>
```

Note: This code ".." refers to a page one directory up from the current directory. Remember that in Step 1, you copied this file and a directory to the Habitat\ folder, not to the Habitat\CCYP\ folder.

15. Save the file. Test your code in a browser, then validate it at ***http://validator.w3.org***. Resolve any code problems before continuing the lab.

16. In **syb.html**, find the text that reads …*You Must Submit An Application* (in the Apply Now! section). Create a hyperlink from the word ***Application*** to the file **application.html**, which resides in the same directory as syb.html.

17. Find the phrase *Join a Teen Summer Build*, and create a hyperlink from this phrase to the current page (syb.html). Save the file.

18. Check your work by viewing it in a browser then validating it. Resolve any problems.

19. Next, you will link to a PDF document. Verify that Adobe Reader is installed on your system by selecting **Start | All Programs** and looking for the Adobe Reader icon. If your system does not have Adobe Reader, go to ***www.adobe.com*** to download and install it. Adobe Reader is free software that allows you to view PDF files.

20. Verify that the file **AME_AnnualReport.pdf** is in the Habitat\CCYP\Syb\ subfolder. If it is not present, copy the PDF file from **C:\CIW\Site_Dev\Lab Files\Lesson04\Lab_4-1\Syb** to the **Habitat\CCYP\Syb** subfolder.

21. In **syb.html**, find the text that reads *SYB
Summary Report.* It is located at the end of the <nav> section. Create a link from this text to the PDF file.

22. Save the file, then refresh **syb.html** in the browser. Verify your relative link to the PDF. When you click the **SYB Summary Report** link, Adobe Reader should automatically launch and download the report file.

23. Browse all your local links to verify that they work.

24. You can change the default appearance of a hyperlink using CSS. In your editor, open the file **Habitat\CCYP\Syb\syb.css** (which is the style sheet for syb.html) and find the following entry:

```
/*
a
{
color: #093
}
*/
```

25. Notice that this CSS entry for hyperlinks is commented out. The entry instructs all hyperlinks to be displayed in green, rather than the default blue. Delete the comment notation **/* */**, then save and close the **syb.css** file.

26. Reload the **syb.html** page in the browser, and notice that the hyperlinks are now green instead of blue. All links on this page will now appear green, even if visitors click them.

27. Now, change all of your headings (e.g., <h2> and <h3>) to appear purple. Do this by opening the **Habitat\CCYP\Syb\syb.css** style sheet file and adding the following line to the end of the h2 and h3 styles:

```
color: purple;
```


Note: Be sure to include the semicolon (;) after the style to separate it from any other styles you add.

28. Save your changes to **syb.css** and to **syb.html**. Verify and validate your work. Resolve any problems. When you are finished, your page should resemble Figure 4-2.

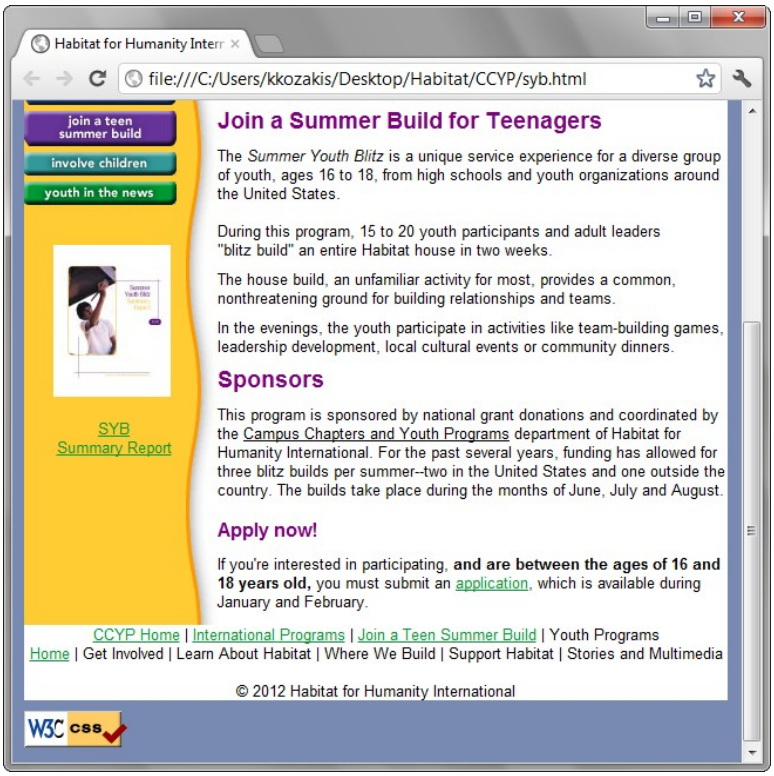

Figure 4-2: Page syb.html after adding local hyperlinks

In this lab, you created hyperlinks in a Web document.

Creating External Hyperlinks

An external hyperlink is a link you create from a file on your system to a separate file on the Internet. You add these types of links to your own pages to reference other Web sites' pages. Creating external hyperlinks involves determining the full URL, including the protocol indicator, for the Web page to which you want to link. Remember that you should not provide a link from your site to another site without first obtaining permission from that site's owner, because such a link may imply a business relationship or endorsement.

In the following lab, you will create external hyperlinks. Suppose your project manager has assigned you to work on the Summer Youth Blitz page for a sister site to Habitat. You need to link this page to the live *www.habitat.org* site. However, some of the links should remain local.

Lab 4-2: Creating external hyperlinks in HTML

In this lab, you will use the anchor element to link text from one file to another file on an external Web site.

OBJECTIVE
2.1.4: HTML hyperlinks

1. Open **syb.html** in a text editor. Scroll to the bottom of the page, to the footer section.

2. Your project manager has provided you with the information in the following table. Using this information, add the appropriate links from specified page text in the footer section of syb.html to the specified external pages on your system.

Page Text to Tag as Hyperlink	URL Value to Reference
Youth Programs	*http://www.habitat.org/youthprograms/*
Get Involved	*http://www.habitat.org/getinv/*
Learn About Habitat	*http://www.habitat.org/how/*
Where We Build	*http://www.habitat.org/intl/*
Support Habitat	*http://www.habitat.org/support/default.aspx*
Stories and Multimedia	*http://www.habitat.org/stories_multimedia/*

3. When you are finished adding all HTML anchor tags to the file, save **syb.html**. Then load the page in a browser. It should resemble Figure 4-3.

Figure 4-3: Page syb.html after adding remote hyperlinks

4. Validate your code at ***http://validator.w3.org***. Resolve any problems, then save and close **syb.html**.

5. Consider the names of the hyperlink text that you inserted. How might you change the names so that they are more descriptive? Search engines will rank a page higher if they see that hyperlinks have been given descriptive names.

In this lab, you created absolute links to an external site.

Using Images as Hyperlinks

NOTE:
It is recommended that you remove borders around image hyperlinks. The border often distracts visitors from the image. The best way to do this is to use a style sheet, adding:
img [
border:0px;
}

You are not limited to using text to provide a link to another file. You can create a hyperlink from a graphical image by surrounding the image tag with opening and closing anchor tags.

In the following lab, you will create hyperlinks from image files. Suppose your project manager has suggested that the images on your Web page serve no purpose other than to be aesthetically appealing. Although this role is acceptable for images, you consider a way to add functionality to the images on your Web page.

Lab 4-3: Using images as hyperlinks with HTML

OBJECTIVE
2.1.4: HTML hyperlinks

In this lab, you will create hyperlinks from several images on a Web page.

1. Open **syb.html** in a text editor.

2. Find the <img> tag for the **sybheaders_03.jpg** image. You can use the search feature in your text editor (e.g., select **Edit | Find** in Notepad).

3. Create a hyperlink from this image as follows:

```
<a href="http://www.habitat.org/how/factsheet.aspx"><img height="22"
src="syb/sybheaders_03.jpg" width="72" id="FAQs" alt="Click here to get facts
about Habitat."/></a>
```

Warning: Do not introduce any additional spaces or returns in this particular code. Otherwise, your page may not render as expected because the HTML code sometimes reflects spaces you introduce. Enter this code exactly as it appears with no returns.

4. Your project manager has provided you with the information in the following table. Using this information, create links to the indicated images.

Image File to Tag as Hyperlink	Image Label	URL Value to Reference
sybheaders_03.jpg	FAQs	*http://www.habitat.org/how/factsheet.aspx*
sybheaders_04.jpg	History	*http://www.habitat.org/how/historytext.aspx*
sybheaders_05.jpg	Newsroom	*http://www.habitat.org/newsroom/default.aspx*
sybheaders_06.jpg	Gift cards	*http://www.habitat.org/support/giftfromtheheart.aspx*
sybheaders_07.jpg	Photos	*http://www.habitat.org/photogallery/album.aspx*

Image File to Tag as Hyperlink	Image Label	URL Value to Reference
sybheaders_08.jpg	Apply!	*http://www.habitat.org/gv/how_to_apply.aspx*
Intlbutton1.gif *(This image is in a new location in the HTML file)*	International programs	*http://www.habitat.org/ivp*

5. When you are finished adding all HTML anchor tags to the file, save **syb.html**. Then load the page in a browser. Verify that the page renders as expected, and click your new links to test them.

6. Validate your code at ***http://validator.w3.org***. Resolve any problems, then save and close **syb.html**.

In this lab, you created hyperlinks from images to related Web site pages.

So far, you have created external links using full and partial URLs. In the next section, you will learn how to create an internal link to a different area within the same page.

OBJECTIVE
2.1.4: HTML hyperlinks

Creating Internal Links

On a long Web page, you may want to include links that target other areas within the same page so that users can easily find the information that interests them. An internal hyperlink provides this link from one point to another in a Web page.

Internal links require internal bookmarks, called anchors, to identify the point that the link will reference within the page. Creating an internal link requires two steps. You must first use the anchor element, <a>, with the *id* attribute to define an area as a target (the bookmark or anchor). Then, in another portion of the page, you create the link that points to the bookmark using the anchor element with the hypertext reference (*href*) attribute as you have already learned. The syntax for creating an internal link is as follows:

NOTE:
Internal links can be confusing. Make sure you understand the required HTML code and repeat the syntax several times.

```
<a id="targetArea1">
target anchor text or image (or both)
</a>

… other page content here …

<a href="#targetArea1"> text/images linking to targetArea1 </a>
```

The *id* attribute of the <a> element identifies an internal bookmark or anchor in the page. Note that for the *href* value, the # symbol is used. This symbol, called a hash, tells the browser to look for an anchor by this name within the current document. Without this hash, the browser will look for an external file by that name.

In this example, the <a id> tag appears above the <a href> tag in the code. These tags can appear in either order in a document — it simply depends on whether the target <a id> appears above or below the link to it <a href> on the rendered page.

CIW Online Resources – Online Exercise

Visit CIW Online at *http://education.Certification-Partners.com/CIW* to complete an interactive exercise that will reinforce what you have learned about this topic.

Exercise 4-1: Creating internal hyperlinks

OBJECTIVE
2.16.6: Online indexing and catalogs

Creating a glossary

A glossary provides a helpful navigation feature, especially if your site introduces concepts and terms to an audience that is unfamiliar with your practices. A glossary is one way to help index and catalog your site.

In the following lab, you will learn how internal hyperlinks are created. Suppose your project manager has asked you to help index and catalog the Web site. You know that a glossary is a useful way to do this. You can create a glossary using internal hyperlinks to index your site and provide helpful information to your site's visitors.

Lab 4-4: Using internal hyperlinks

In this lab, you will examine and use an HTML document that includes internal hyperlinks.

1. **Windows Explorer:** Copy the **internal.txt** file and the **internal** folder from the **C:\CIW\Site_Dev\Lab Files\Lesson04\Lab_4-4** folder to the Habitat folder on your Desktop.

   Note: Be sure to copy both the file and folder.

2. **Editor:** Open **internal.txt**.

3. **Editor:** Save this file as **internal.html**. Make sure that both internal.html and the internal\ directory are in the Habitat folder on your Desktop. The code in internal.html refers to files in the internal\ directory using relative paths.

NOTE:
You can modify this code to create glossary entries for the Habitat for Humanity site in **Optional Lab 4-1: Customizing a glossary**.

4. Examine the following code with your instructor:

```
<!DOCTYPE html>
<html>
<head>
<meta name="Keywords" content="CIW, Web Foundations Associate, Example"/>
<meta name="Description" content="For the CIW Web Foundations Associate
courses"/>
<meta charset="utf-8"/>
<link rel="stylesheet"  type="text/css" href="internal/internal.css"/>
<title>Habitat for Humanity International Glossary </title>
</head>
<body>

<h1><a id="TermTop">
Glossary of Terms
</a></h1>

<h3>
<a href="#First">A-D</a> |
<a href="#Second">E-H</a>|
<a href="#Third">I-K</a>|
<a href="#Fourth">L-O</a>|
```



```
<a href="#Fifth">P-T</a>|
<a href="#Sixth">U-Z</a>|
</h3>
<blockquote><p>Click the link for the group of letters representing the start
of the term you want to see defined.</p></blockquote>

<h3><a id="First">A-D</a></h3>

<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<h3><a id="Second">E-H</a></h3>

<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<h3><a id="Third">I-K</a></h3>

<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<h3><a id="Fourth">L-O</a></h3>

<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<h3><a id="Fifth">P-T</a></h3>

<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<h3><a id="Sixth">U-Z</a></h3>

<strong>Term:</strong> Definition of term.<br/>
```



```
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>
<strong>Term:</strong> Definition of term.<br/>

<br/>
<blockquote><a href="#TermTop"><img src="internal/returnup.gif" alt="Return to
the top"></a> Click on the image to the left, or <a href="#TermTop">here</a>,
to return to the top.</blockquote>

<hr/>

<p>
      <a href="http://validator.w3.org/check/referer"><img
          src="internal/valid-css.gif"
          alt="Valid HTML5 and CSS!" height="31" width="88" /></a>
    </p>

</body>
</html>
```

5. **Browser:** Load the file **internal.html**. Your page should resemble Figure 4-4.

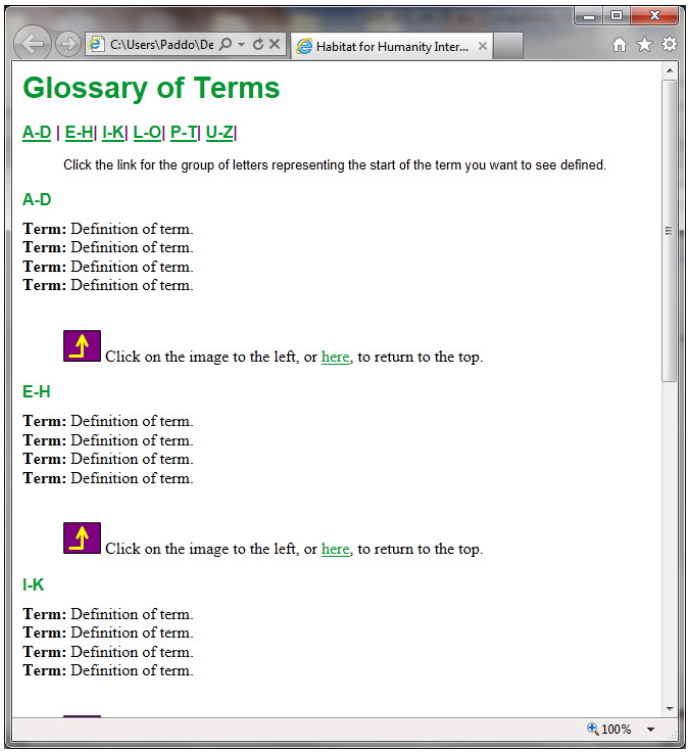

Figure 4-4: Demonstration glossary file for internal links

6. **Browser:** Click **U-Z**, the last link at the top of the page. You should see the section heading that matches the link you clicked. This section is near the end of the document, as shown in Figure 4-5.

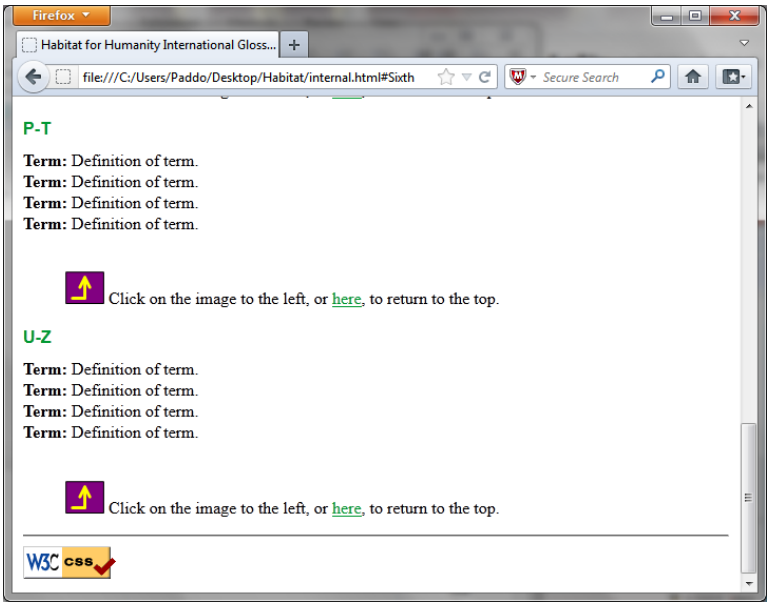

Figure 4-5: After accessing internal link

7. **Browser:** Click any of the arrow images to return to the top of the page.
8. Practice navigating through this page to make sure that all links work correctly.
9. Validate the code at ***http://validator.w3.org***. When you are finished, close your browser.

In this lab, you examined and used a glossary that demonstrates internal hyperlinks.

Accessing an external file's internal link

NOTE:
In this syntax example, ".ext" denotes the file name extension (e.g., .htm, .asp, etc.) of the preceding file name.

Suppose you want to link to a specific point in another page without first accessing the top of that page. To link to an internal anchor in another file, use the following syntax:

```
<a href="URL/filename.ext#AnchorID">link text or image</a>
```

You can start with a full or partial URL, but you must specify the file name, followed by the hash symbol, followed by the *id* of the internal anchor to which you want to direct the link.

Managing Hyperlinks

OBJECTIVE
2.14.4: Existing site management

link rot
The phenomenon in which hyperlinks on a Web site gradually become invalid as referenced Web page content, links and page locations change.

Periodically, you will need to check both the external and internal hyperlinks on your Web pages to verify that they still work. Links can become invalid for a variety of reasons, most commonly because a referenced page is moved or deleted, or because page content is changed and anchors are renamed or lost. This phenomenon is known as **link rot**.

In addition to annoying users, a bad hyperlink will cause a page to be ranked lower by a search engine such as Google, Yahoo! or Bing. To avoid this problem, you can use automated link-checking software to validate the hyperlinks on your pages. This type of software has the ability to report the state of all site links. Following are some common link-checking software tools:

- **W3C Link Checker** (*http://validator.w3.org/checklink*)
- **LinkChecker** (*http://wummel.github.io/linkchecker/*)
- **Link Alarm** (*www.linkalarm.com/*)

Consider that automatic link-checking software can identify invalid links for you, but you still must manually update your HTML code to delete or modify any invalid links. Even if you use automatic link-checking software, it is advisable to check your hyperlinks manually as well. Although a link may still be valid, the content of either the target page or the page with the link can change in ways such that a link is no longer relevant or appropriate.

Dead hyperlinks are a major factor in having an otherwise good page get ranked lowly by a search engine.

CIW Online Resources – Course Mastery

Visit CIW Online at *http://education.Certification-Partners.com/CIW* to take the Course Mastery review of this lesson or lesson segment.

SDA Lesson 4

Case Study

The Missing Link

Omar works on a Web development team that just posted a site. This site contains both internal and external hyperlinks. Only three days after the site was posted to the production server, Omar found that four external hyperlinks were already invalid. To solve this problem, he checked each link manually and edited the HTML code to validate each one.

After this experience, Omar wanted to manage the hyperlinks more closely and be notified of any problem links immediately. He obtained automatic link-checking software, which checks all site links periodically then sends an e-mail message reporting the status of every link. After installing this software, Omar was confident that his site's links would always remain valid.

* * *

As a class, consider this scenario and discuss the following points:

- After Omar installs automatic link-checking software, will his site links always remain valid? Why or why not?
- Why would it be important to occasionally check your hyperlinks manually?
- Why would it be important to use both external and internal links on your Web site?

Lesson Summary

Application project

This lesson taught you about internal, external and local hyperlinks in Web documents. Take some time to learn more about the attributes available to the <a> element. Visit the following sites to read about hyperlink options:

- W3C (*www.w3.org*)
- W3Schools (*www.w3schools.com*)

As you visit these sites, research the capabilities and limitations of HTML5 in relation to the <a> element. What styles can CSS provide the <a> element?

Skills review

In this lesson, you learned to create hyperlinks from text and images to other Web files and sites. You learned that you could use full or partial URLs in your links, and you learned to link to an internal anchor point within the current document or even in another document.

Now that you have completed this lesson, you should be able to:

- ✓ 2.1.4: Create HTML hyperlinks for text, images, local files and remote sites (internal and external links).
- ✓ 2.14.4: Manage existing sites (e.g., remove dead links and/or upgrade connectivity when necessary).
- ✓ 2.16.6: Identify the importance of online indexing and cataloging.

CIW Practice Exams

Visit CIW Online at *http://education.Certification-Partners.com/CIW* to take the Practice Exams assessment covering the objectives in this lesson.

SDA Objective 2.01 Review

SDA Objective 2.14 Review

SDA Objective 2.16 Review

Note that some objectives may be only partially covered in this lesson.

Lesson 4 Review

1. Name the two types of URL you can reference when creating hyperlinks to an external site or to another page on the same site.

2. Within an anchor element (<a>), the *href* attribute performs what function?

3. You are creating an image hyperlink. What HTML code links the image *zoomap.jpg* to the *map.htm* Web page?

4. You want to create a hyperlink that provides the end user with a pre-addressed blank e-mail message when he or she clicks the link. You want to pre-address the e-mail messages to *info@habitat.org*. The hyperlink text should read "*Please send e-mail to info@habitat.org*." What HTML code would create this hyperlink?

5. Describe the syntax used to link to an internal anchor in another file without first accessing the top of that page.