

HTML5 and CSS3

Introductory

Second Edition

Unit F

Inserting and Working with Links

Unit F

Objectives

- Understand links
- Create relative links
- Create absolute links
- Change CSS display type
- Style links with a pseudo-class

Unit F

Objectives (continued)

- Open links in new tabs
- Link within a document
- Aid navigational accessibility

Unit F

Understand Links

- Hyperlink also called link: links in and between text-only documents, known as the target document



<http://itu.edu>



[Click Me](#)

Jump to another location or file.

Hyperlink – text, icon, graphic in a document that links to other object.

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Understand Links

- World Wide web was built on hypertext and you can create links on any visible web page.



e Element

a element: encloses text that serves as a link

➤ Specified by using <a> tag pair

Example: A link to my lab.

```
<!DOCTYPE html>
<html>
<body>
<a href="http://dblab.itu.edu:82/mcastro/index.html">Check out my lab</a>
</body>
</html>
```

Check out my lab

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Understand Links (continued)

- href attribute: used to specify target document
- Possible values for href attribute:

value	description	example
filename	the filename of a web page or other document located in the same directory as the current page	history.html
path and filename	the path and filename of a web page in a different location on the same server	/docs/register.pdf
URL	scheme, server name, and, optionally, path for a resource located on another server	https://mail.google.com/mail/?shva=1#inbox
id value	named location within the current web document, preceded by a pound sign (#); can also be appended to a filename or URL	#section3

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Understand Links (continued)

- Structure of URL and common values of href attribute.



- Uniform Resource Locator (URL) also known as a web address: format for specifying how and where to find a resource on internet

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Class Activities

Can you create links to documents other than web pages?

Google

Yahoo!

Antenna House - PDF

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nav bar

nav bar: set of links for moving between pages in a website.

Tags: `<nav>` `</nav>`

Alternative: `<div id="nav">` `</div>`



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Class Activities

- Why it is important to include a navigation bar in a web page, and what elements should be included and/or left out of a navigation bar. For each element the students mention, they should explain how adding it to or removing it from a **nav** bar would enhance the usability of the website?

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Create Relative Links

- Relative link: path and filename needed to locate the target document from the current web page
 - The value of the `href` attribute only includes relative location information, not server name or scheme
 - Suitable for use in a nav bar
 - Use a class value for each `nav` element
 - Include link to current page

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Create Relative Links (continued)

- HTML code with relative links

```
27 <nav class="sitenaigation">
28   <p><a href="index.html">Home</a></p>
29   <p><a href="aboutus.html">About Us</a></p>
30   <p><a href="rooms.html">Rooms</a></p>
31   <p><a href="reserve.html">Reservations</a></p>
32   <p>Local Weather</p>
33   <p>Directions</p>
34 </nav>
35 <article>
36   <h2 id="main">Reserva
37   <p>We're happy to take reservations up to a year in advance by phone, fax, or
38   email.</p>
39   <p>Feel free to contact us with any queries about Lakeland Reeds, or about
40   planning your trip.</p>
41   <p><a href="weddings.pdf">Read about reserving Lakeland Reeds for a wedding
42   or other special event.</a> (PDF)</p>
43 </article>
```

href attribute value specifies target document of link

Link target can be a document in a format other than HTML

Opening and closing <a> tags added around text for each link

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Demo Relative Link

Current Page:

``

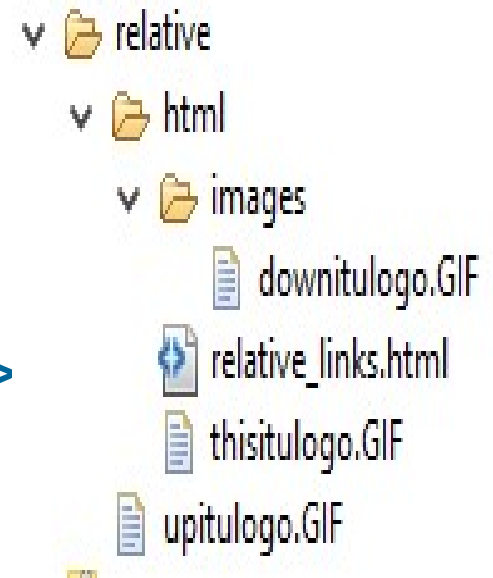
Images in the current folder

``

``

folder one level up from the current folder

http://dblab.itu.edu:82/mcastro/relative/html/relative_links.html



[Click Me](#)

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Class Activities

Suppose that you have a website that includes a home page, a contact page, and a picture gallery. The website includes 15 links between different pages in the site. All the documents for this website are located in the directory

C:\myfiles\WWW\mysite. You move the directory mysite including all the documents for your website to the directory

C:\myfiles\WWW\personal\mysite. How many links would you have to change if all the internal links are listed in the HTML code as relative links? Where would you make these changes?

Create Absolute Links

- Absolute link: full and complete address for the target document
 - Value for the `href` attribute is a complete URL of the target web page
 - Necessary when creating a link to another website, hosted on another server

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Create Absolute Links (continued)

- HTML code with absolute links

```
26 <nav class="sitenavigation">  
    <p><a href="index.html">Home</a></p>  
    <p><a href="aboutus.html">About Us</a></p>  
    <p><a href="rooms.html">Rooms</a></p>  
    <p><a href="reserve.html">Reservations</a></p>  
    <p><a href="http://wxug.us/1hn14">Local Weather</a></p>  
32 <p><a href="https://goo.gl/maps/bwf5R">Directions</a></p>  
33 </nav>
```

Absolute link contains the entire URL for the target document

Short links used in place of full URLs (your URLs may differ)

How do you recognize absolute?

absolute paths *always* include the domain name of the website, including **http://www.**,

How do you recognize relative?

absolute paths *always* include the domain name of the website, including `Click Me`

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mailto links demo

```
<!DOCTYPE html>
<html>
<body>

<p>
<b>Note:</b>Prime Target for havester. For security reasons, do not use it.<br>
Point of Contact:
<a href="mailto:mcastros@itu.edu" target="_top">Send eMail</a>
</p>

<p>
-----
</p>

<b>Note:</b>you can create a form where users can enter comments and contact information, and then submit it to you
without your email address being exposed on the web. .<br>
<form method='post'>
  NAME: <input type='text' name='name' id='name' /><br />

  Email: <input type='text' name='email' id='email' /><br />

  Website: <input type='text' name='website' id='website' /><br />

  Comment:<br />
  <textarea name='comment' id='comment'></textarea><br />

  <input type='hidden' name='articleid' id='articleid' value='<? echo $_GET["id"]; ?>' />

  <input type='submit' value='Submit' />
</form>

</body>
</html>
```

Note:Prime Target for havester. For security reasons, do not use it.
Point of Contact: [Send eMail](mailto:mcastros@itu.edu)

Note:you can create a form where users can enter comments and contact information, and then submit it to you without your email address being exposed on the web. .

NAME:

Email:

Website:

Comment:

Unit F

Critical Thinking

Suppose that you have a website that includes a home page, a contact page, and a picture gallery. The home page includes five links to other pages in the website and ten links to other websites. You now change the directory location of the home page. How many links in the home page will you have to change if all the links in the home page are absolute links? How many will you have to change if only the links to external websites are absolute links?

Change CSS display Type

- Nav bar is usually displayed horizontally or vertically
- Change each link to a block-level element to style it with
 - padding
 - border
 - margins

Unit F

Change CSS `display` Type (continued)

- Change an element's display type by using the `display` property
- Commonly used values for the `display` property

value	rendered as	line breaks before and after?	box model support
block	box occupying the full width of its parent element	yes	all properties
inline	content that does not expand to the full width of its parent	no	margin-left, margin-right
inline-block	box that does not expand to the full width of its parent	yes	all properties
none	document rendered as if element does not exist		

Unit F

Change CSS display Type (continued)

- Code with changes to nav bar layout

```
47 /* site navigation bar */
48 nav.sitenavigation {
49 /* width: 19%; */
50 /* padding: 3%; */
51 /* float: left; */
52 color: #34180F;
53 text-align: center;
54 }
55 nav.sitenavigation p {
56 display: inline-block;
57 margin: 0.5em;
58 }
59
60 /* main content */
61 article {
62 /* width: 69%; */
63 padding: 0 3% 1em;
64 background-color: ivory;
65 /* float: right; */
66 }
```

text-align property affects the alignment of child inline-block elements as well as text

display value for p elements within the site nav bar set to inline-block

Unneeded declarations commented out

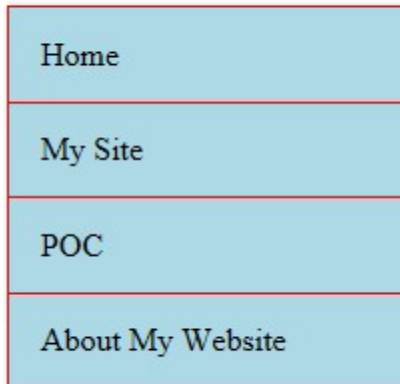
```
87 /* footer section */
88 footer {
89 padding: 0.6em;
90 background-color: #34180F;
91 color: ivory;
92 text-align: center;
93 /* clear: both; */
94 }
```


Unit F

Horizontal Demo <nav>

http://dblab.itu.edu:82/mcastro/html/navigation_vertical.html

REMOVE THE BULLETS (Vertical)



```
<ul>
  <li><a href="#home">Home</a></li>
  <li><a href="#news">My Site</a></li>
  <li><a href="#contact">POC</a></li>
  <li><a href="#about">About My Website</a></li>
</ul>
```

```
ul {
  list-style-type: none; /*remove bullet*/
  margin: 0; /*remove default browser margin*/
  padding: 0; /*remove default browser margin*/
  overflow: hidden;
  width: 200px;
  background-color: lightblue;
}

ul {
  border: 1px solid red;
}

li {
  border-bottom: 1px solid red;
}

li a {
  display: block;
  color: black;
  text-align: left;
  padding: 14px 16px;
  text-decoration: none;
}

li:last-child {
  border-bottom: none;
}

/* Change the link color when you hover over the button */
li a:hover {
  background-color: blue;
  color: white;
}
```

Unit F

Vertical Demo<nav>

http://dblab.itu.edu:82/mcastro/html/navigation_horizontal.html

REMOVE THE BULLETS (Horizontal)

Home	My Site	POC	About My Website
------	---------	-----	------------------

```
<ul>
  <li><a href="#home">Home</a></li>
  <li><a href="#news">My Site</a></li>
  <li><a href="#contact">POC</a></li>
  <li><a href="#about">About My Website</a></li>
</ul>
```

```
ul {
  list-style-type: none; /*remove bullet*/
  margin: 0; /*remove default browser margin*/
  padding: 0; /*remove default browser margin*/
  overflow: hidden;
  background-color: lightblue;
}

li {
  float: left; /*float to the left to make it horizontal*/
  border-right: 1px solid red;
}

li a {
  display: block;
  color: black;
  text-align: center;
  padding: 14px 16px;
  text-decoration: none;
}

/* Change the link color when you hover over the button */
li a:hover {
  background-color: blue;
  color: white;
}
```

Unit F

Commenting Out

SYNTAX: HTML Comment

```
<!-- My Comment Here */
```

SYNTAX: CSS Comment:

```
/* My Comment Here */
```

What are the situations
when commenting out might
be helpful?

Comment Out Some Uses

1. Pseudocode
2. Description
3. Debugging

```
ul {  
    list-style-type: none; /*remove bullet*/  
    margin: 0; /*remove default browser margin*/  
    padding: 0; /*remove default browser margin*/  
    overflow: hidden;  
    width: 200px;  
    background-color: lightblue;  
}
```

Unit F

Style Links with a Pseudo-Classes

- Pseudo-class: categorization of web page element based on relationship or condition at a given moment
 - Used to format links depending on the state they are in
 - Applies to any link in the specified state which is within the selected element(s)
- **Link states**: `link`, `active`, `hover`, and `visited`

Style Links with a Pseudo-Classes (continued)

- Rollover effect: mouse interaction occurring when the user's mouse pointer hovers over a link but does not click on it
- Code for a `:hover` style rule

```
56 nav.sitenavigation p {  
57     display: inline-block;  
58     margin: 0.5em;  
59 }  
60 nav.sitenavigation a:hover {  
61     color: ivory;  
62 }  
63  
64 /* main content */  
65 article {
```

Style rule for `:hover`
pseudo-class of links
in site nav bar

Style Multiple Link States

- Pseudo-class states for linked elements
 - `:link` and `:visited` used on all devices
 - `:hover` and `:focus` can be used interchangeably
 - `:hover`, `:focus`, `:active` generally not rendered with touchscreen interaction



Style Multiple Link States (continued)

- Pseudo-class states for linked elements

pseudo-class	provides styles for
<code>:link</code>	link that has not been visited, does not currently have the focus or the mouse pointer over it, and is not being clicked
<code>:visited</code>	link that has already been viewed
<code>:focus</code>	link that currently has the focus regardless of how it was selected, including via keyboard navigation
<code>:hover</code>	link that the mouse pointer is currently over
<code>:active</code>	link that is currently being clicked

Style Multiple Link States (continued)

- Code for pseudo-class styles

```
31 p {  
32     font-size: 1.4em;  
33     line-height: 1.6em;  
34 }  
35 a:link {  
36     color: black;  
37 }  
38 a:visited {  
39     color: #888;  
40 }  
41 a:active {  
42     position: relative;  
43     top: 1px;  
44     left: 1px;  
45 }  
46  
47 /* header section */
```

```
67 nav.sitenavigation p {  
68     display: inline-block;  
69     margin: 0.5em;  
70 }  
71 nav.sitenavigation a:link {  
72     text-decoration: none;  
73     color: #34180f;  
74 }  
75 nav.sitenavigation a:visited {  
76     color: #744f42;  
77 }  
78 nav.sitenavigation a:hover, nav.sitenavigation a:focus {  
79     color: ivory;  
80 }
```

Unit F

:hover pseudo-class

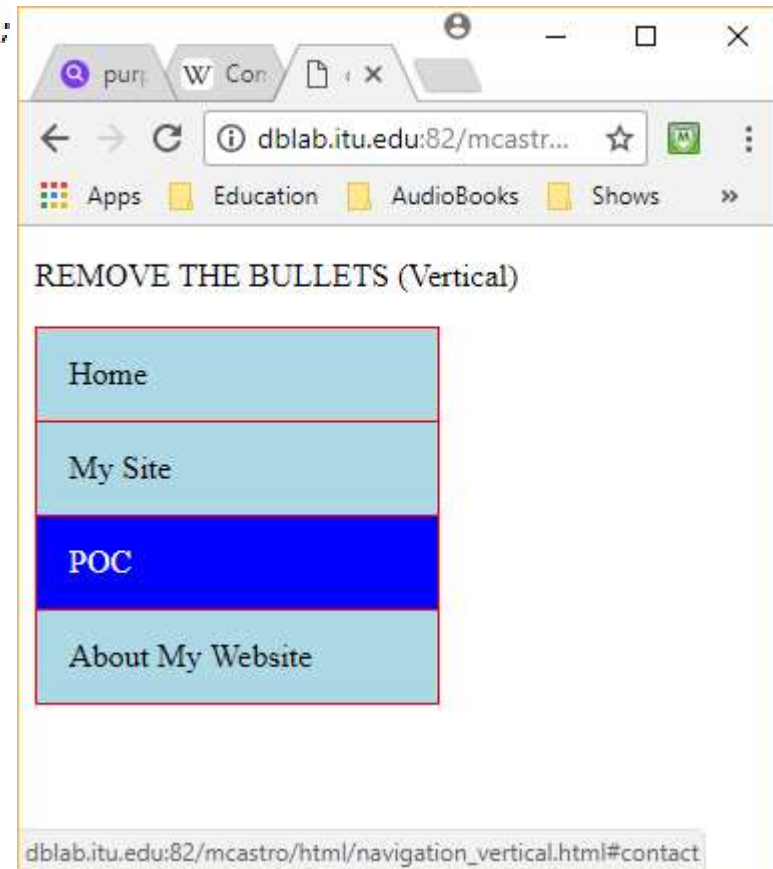
http://dblab.itu.edu:82/mcastro/html/navigation_vertical.html

```
/* Change the link color when you hover over the button */  
li a:hover {  
    background-color: blue;  
    color: white;  
}
```

Demo

Change color
to blue.

color, background-
color, and text-
shadow are
commonly



X Avoid changing the values of properties like height.

Unit F

Pseudo-class Active/Current Navigation Link

```
/* Change the link color when you hover over the button */  
li a:hover {  
    background-color: blue;  
    color: white;  
}
```

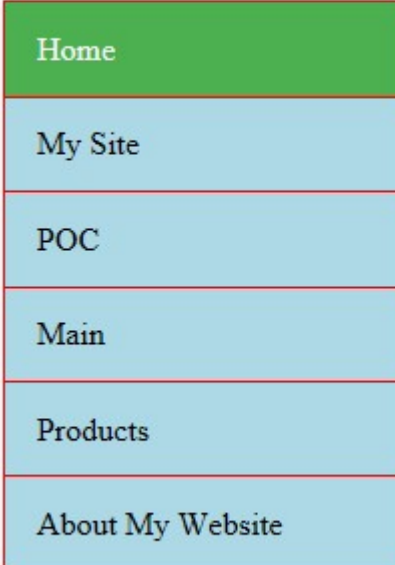
```
.makemeactive{  
    background-color: #4CAF50;  
    color: white;  
}
```

```
</style>  
</head>  
<body>
```

```
<p>REMOVE THE BULLETS (Vertical)</p>
```

```
<ul>  
    <li><a class="makemeactive" href="#home">Home</a></li>  
    <li><a href="#site">My Site</a></li>  
    <li><a href="#contact">POC</a></li>  
    <li><a href="#main">Main</a></li>  
    <li><a href="#main">Products</a></li>  
    <li><a href="#about">About My Website</a></li>  
</ul>
```

REMOVE THE BULLETS (Vertical)



Home
My Site
POC
Main
Products
About My Website

Unit F

Pseudo-class :visited

```
/* unvisited link */  
a:link {  
    color: red;  
}  
  
/* visited link */  
a:visited {  
    color: yellow;  
}
```

If the link is visited, it turns Green. It is just to let you know that you click on it already.

REMOVE THE BULLETS (Vertical)

Home
My Site
POC
Main
Products
About My Website

http://dblab.itu.edu:82/mcastro/html/navigation_vertical_v2.html

Unit F

Pseudo-element vs pseudo-classes



Unit F

What do you think?

Is the hover state applicable for touch screen devices? Why or why not? Have they seen the hover state applied to links on their mobile devices? What happened? How did it affect their browsing experience?

Open Links in New Tabs

- By default, target web page opens in the same window and tab as source page
 - Prevents opening too many windows
- To leave current page open while opening another page
 - Use target attribute of `a` element
 - Set value to `_blank`

Unit F

Open Links in New Tabs (continued)

- Common values of `target` property

value	description
<code>_blank</code>	Opens target document in a new tab
<code>_self</code>	Opens target document in same tab as source document (default value)

- Code including `target` attribute

```
26 <nav class="sitenavigation">
27   <p><a href="index.html">Home</a></p>
28   <p><a href="aboutus.html">About Us</a></p>
29   <p><a href="rooms.html">Rooms</a></p>
30   <p><a href="reserve.html">Reservations</a></p>
31   <p><a href="http://wxug.us/1hn14" target="_blank">Local Weather</a></p>
32   <p><a href="https://goo.gl/maps/bwf5R" target="_blank">Directions</a></p>
33 </nav>
```

target attribute value set to `_blank`
for both links to external sites

Unit F

_blank vs self Target

```
<!DOCTYPE html>
<html>
<body>

<p>Open link in tab (itself): <a href="http://www.itu.edu" target="_self">Open me in the same tab.</a></p>

<p>Open link in a new tab: <a href="http://www.itu.edu" target="_blank">Open me in a new tab.</a></p>

<p> opening a new window, not tab. With pure HTML you CAN NOT change this - every modern browser (= the user)
has complete control over this behavior because it has been misused a lot in the past.
</p>
</body>
</html>
```

Demo

http://dblab.itu.edu:82/mcastro/html/self_blank_demo.html

Unit F

Shorter Link



Unit F

Classroom Discussion

Have you experiences with links opening new web pages in the same window and tab, and in a new window or tab. Which way do they prefer? Do prefer on the situation in which they are following a link? What do they consider to be the disadvantages of opening target web pages in new windows or tabs?

Link Within a Document

- Create links to specific values within the current web page using hash links
 - Assign unique names to elements using the HTML `id` attribute
 - Reference within `href` attribute by preceding the `id` value with a pound sign (`#`)

Unit F

Link Within a Document (continued)

- Code with hash links

```
34 <article>
35   <h2>Rooms</h2>
36   <p>All rooms include down comforters, air conditioning, and DVD players, and
37   each can accommodate an additional twin fold-out bed.</p>
38   <nav class="pagenavigation">
39     <p><a href="#sun">Sun Room</a></p>
40     <p><a href="#reed">Reed Room</a></p>
41     <p><a href="#tree">Treehouse</a></p>
42     <p><a href="#garden">Garden Room</a></p>
43   </nav>
44   <h3 id="sun">Sun Room</h3>
45   <p>With windows on three sides, the sunlight in this second-floor room
46   supports a large selection of houseplants.</p>
47   <p>1 queen bed.</p>
48   <h3 id="reed">Reed Room</h3>
49   <p>This first-floor room looks out over the reeds on the edge of the lake and
50   the water beyond.</p>
51   <p>1 queen bed and 1 twin bed.</p>
52   <h3 id="tree">Treehouse</h3>
53   <p>A winding staircase takes you to your own private getaway at the top of
54   the house, with view of the surrounding trees and meadows and the lake.</p>
55   <p>1 queen bed.</p>
56   <h3 id="garden">Garden Room</h3>
57   <p>This room's French doors open onto our stone patio and flower garden.</p>
58   <p>1 queen bed and 2 twin beds.</p>
59 </article>
```

id values added to h3 elements as targets for hash links

New nav element created for navigating within the page

Class Activities

What situations we have to include links to elements in the same document would be useful?

[DEMO](http://dbllab.itu.edu:82/mcastro/html/navigation_horizontal_hashlinks.html)

http://dbllab.itu.edu:82/mcastro/html/navigation_horizontal_hashlinks.html

Aid Navigational Accessibility

- Nav bars can present accessibility challenges, especially for those using screen readers
- Possible solution: use a skip link
 - Allows user to skip nav bar
 - Positioned outside the visible area so visual users don't see it
 - Use `:focus` if you want it to be visible when it has the focus

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Aid Navigational Accessibility (continued)

- Code for skip link

```
22 <div class="container">
23   <p class="skipnavigation"><a href="#contentstart">Skip navigation</a></p>
24   <header>
25     <h1>Lakeland Reeds Bed & Breakfast</h1>
26   </header>
27   <nav class="sitenavigation">
28     <p><a href="index.html">Home</a></p>
29     <p><a href="aboutus.html">About Us</a></p>
30     <p><a href="rooms.html">Rooms</a></p>
31     <p><a href="reserve.html">Reservations</a></p>
32     <p><a href="http://wxug.us/lhnl4" target="_blank">Local Weather</a></p>
33     <p><a href="https://goo.gl/maps/bwf5R" target="_blank">Directions</a></p>
34   </nav>
35   <article>
36     <p id="contentstart">Lakeland Reeds is a rustic bed and breakfast on Twin
37       Lakes near rural Marble, Minnesota. Convenient to US 2 and 169, the fresh air
38       and quiet make for an ideal weekend escape from the rush of city life.</p>
39   </article>
```

id value added to element at start of main page content

Target of skip link is the element with the id value contentstart

- Hyperlinks provides links in and between documents
- Links are defined using the `a` element
 - `href` attribute specifies location of target document
- A navigation bar is a set of links for moving between web pages
- Absolute link: complete address of target document

Summary (continued)

- Relative link: path/filename information needed to locate target document
- Pseudo-class: categorization of web page elements based on temporary condition
 - Used to format link states: `:link`, `:visited`, `:focus`, `:hover`, and `:active`

Summary (continued)

- Target web page can be opened in different window or tab using target attribute of the `a` element
- Hash links are links to locations in the current web page
 - Assign `id` value to an element
 - Use `id` value preceded by `#` in `href` value

Summary (continued)

- Can create a link to any computer readable document
- To increase accessibility, provide users a way to skip or ignore the navigation bar