

Web Development & Design Foundations with HTML5 8th Edition

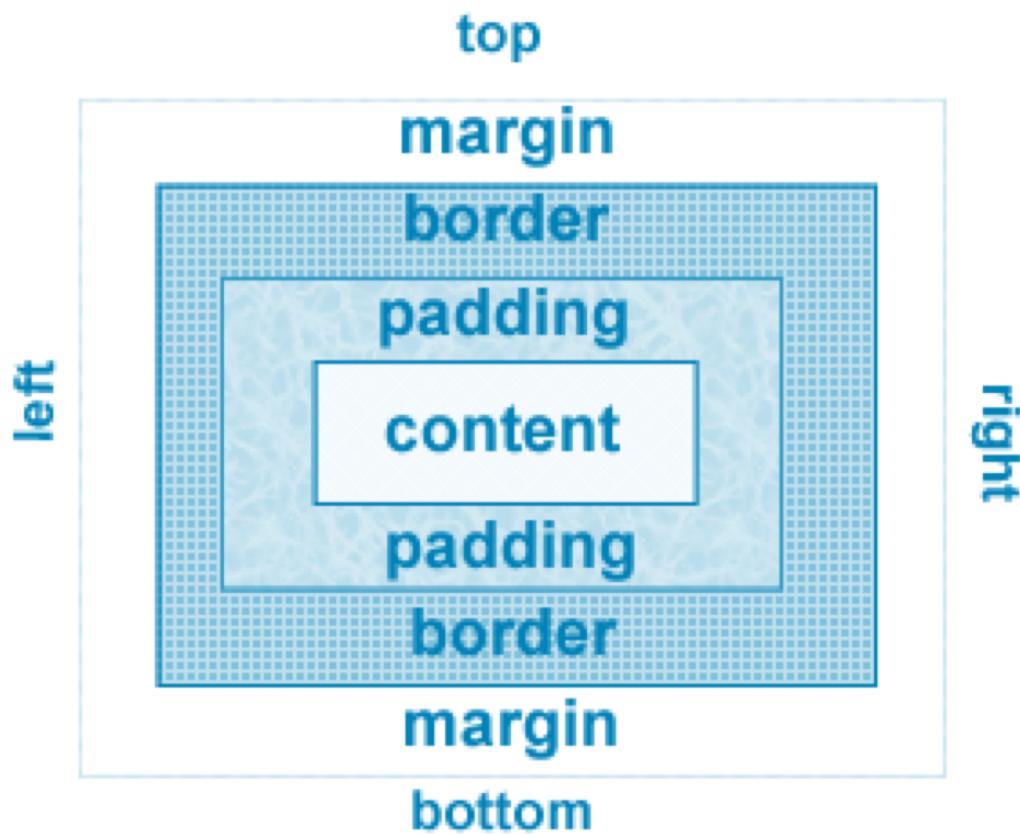
CHAPTER 6 KEY CONCEPTS

Learning Outcomes

In this chapter, you will learn how to ...

- Describe and apply the CSS Box Model
- Configure margin with CSS
- Configure float with CSS
- Configure fixed, relative, and absolute positioning with CSS
- Create two-column page layouts using CSS
- Configure navigation in unordered lists and style with CSS
- Add interactivity to hyperlinks with CSS pseudo-classes
- Configure web pages with HTML5 structural elements, including section, article, and aside

The Box Model



Content

- Text & web page elements in the container

Padding

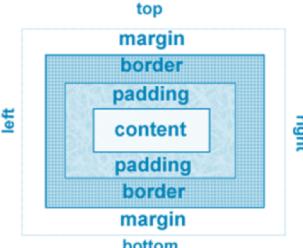
- Area between the content and the border

Border

- Between the padding and the margin

Margin

- Determines the empty space between the element and adjacent elements



Configure Margin with CSS

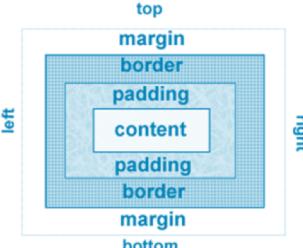
- The margin property
- Related properties:
 - margin-top, margin-right, margin-left, margin-bottom
- Configures empty space between the element and adjacent elements
- Syntax examples

```
h1 { margin: 0; }
```

```
h1 { margin: 20px 10px; }
```

```
h1 { margin: 10px 30px 20px; }
```

```
h1 { margin: 20px 30px 0 30px; }
```



Configure Padding with CSS

- The padding property
- Related properties:
 - padding-top, padding-right, padding-left, padding-bottom
 - Configures empty space between the content of the HTML element (such as text) and the border
- Syntax examples

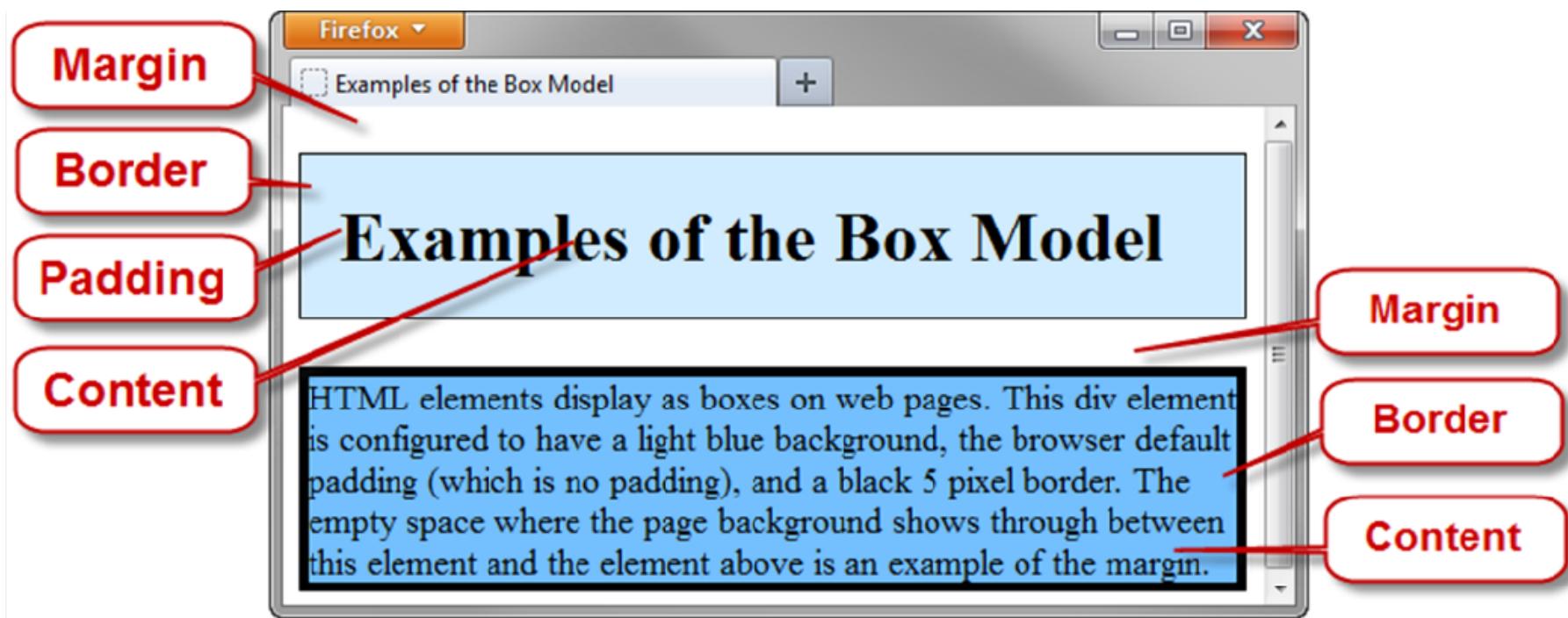
```
h1 { padding: 0; }
```

```
h1 { padding : 20px 10px; }
```

```
h1 { padding : 10px 30px 20px; }
```

```
h1 { padding : 20px 30px 0 30px; }
```

Box model in Action



The CSS box-sizing Property

Default value for width or height is the value for ONLY the content (not including border and padding).

The box-sizing property is used to selector to direct the browser to calculate the width and height of an element to include the value for content, padding, and border.

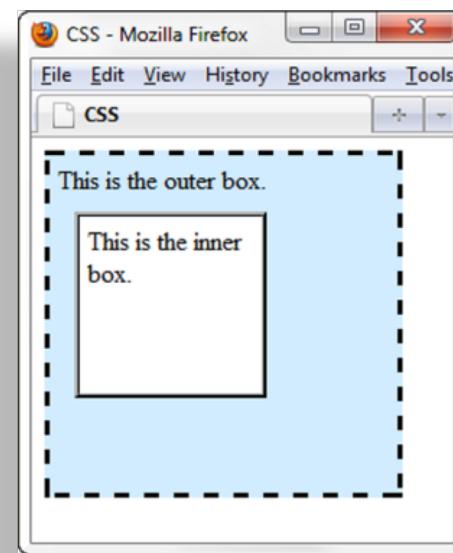
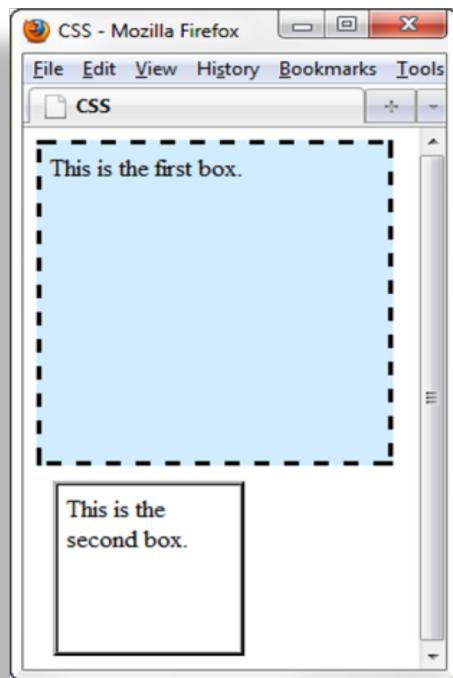
Use the universal selector (*) to apply this to all the element on the page

Example:

```
* { box-sizing: border-box; }
```

Normal Flow

Browser display of elements in the order they are coded in the web page document



CSS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

CSS

Wildflowers

The heading and paragraph follow normal flow. The Yellow Lady Slipper pictured on the right is a wildflower. It grows in wooded areas and blooms in June each year. The Yellow Lady Slipper is a member of the orchid family.



```
h1 { background-color:#cccccc;  
     padding:5px;  
     color: #000000;  
}  
  
p { font-family:Arial,sans-serif;  
}  
  
#yls {float:right;  
      margin: 0 0 5px 5px;  
      border: 1px solid #000000;  
}
```

float Property

Elements that seem to "float" on the right or left side of either the browser window or another element are often configured using the float property.

The h2 text is displayed in normal flow.



clear Property

Useful to “clear” or terminate a float

Values are left, right, and both



clear: left;
was applied to the h2.
Now the h2 text
displays AFTER the
floated image.

overflow Property

The background does not extend as far as you'd expect.



Intended to configure the display of elements on a Web page.

However, it is useful to “clear” or terminate a float before the end of a container element

Values are auto, hidden, and scroll



overflow: auto;
was applied to the div
that contains the image
and paragraph.

Now the background
extends and the h2 text
displays AFTER the
floated image.

Checkpoint

1. List the components of the box model from innermost to outermost.
2. Describe the purpose of the CSS float property.
3. Which two CSS properties can be used to clear a float?

CSS display Property

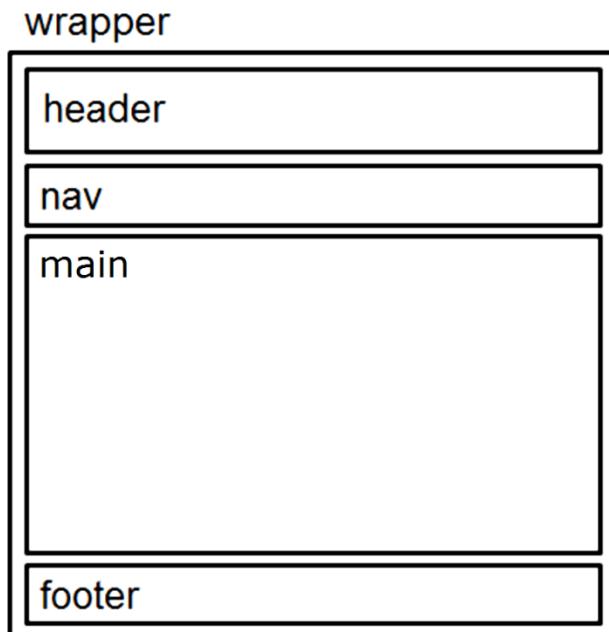
Configures how and if an element is displayed

- **display: none;**
 - The element will not be displayed.
- **display: block;**
 - The element is rendered as a block element – even if it is actually an inline element, such as a hyperlink.
- **display: inline;**
 - The element will be rendered as an inline element – even if it is actually a block element – such as a .
- **display: inline-block;**
 - The element will display as an inline display element adjacent to other inline display elements but also can be configured with properties of block display elements including width and height.

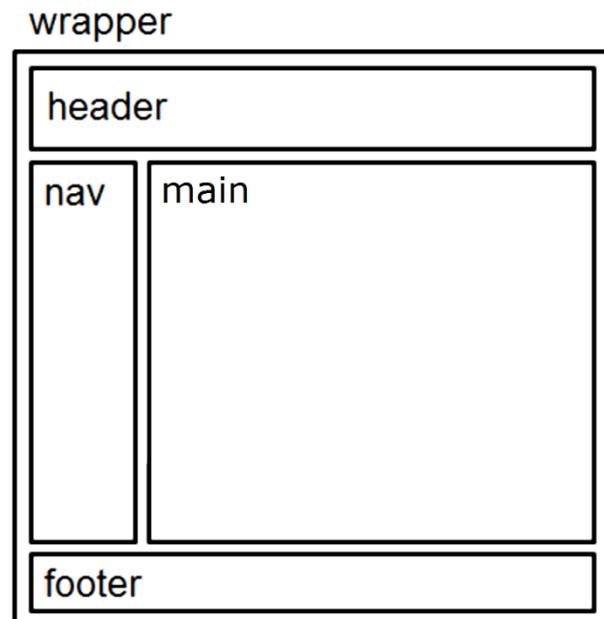
Page Layout

Single Column -> Two Column

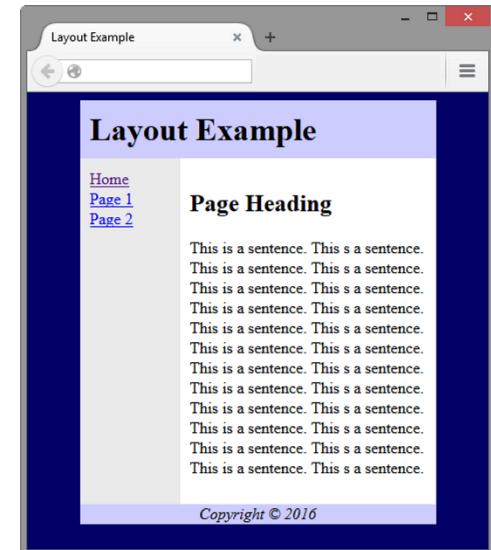
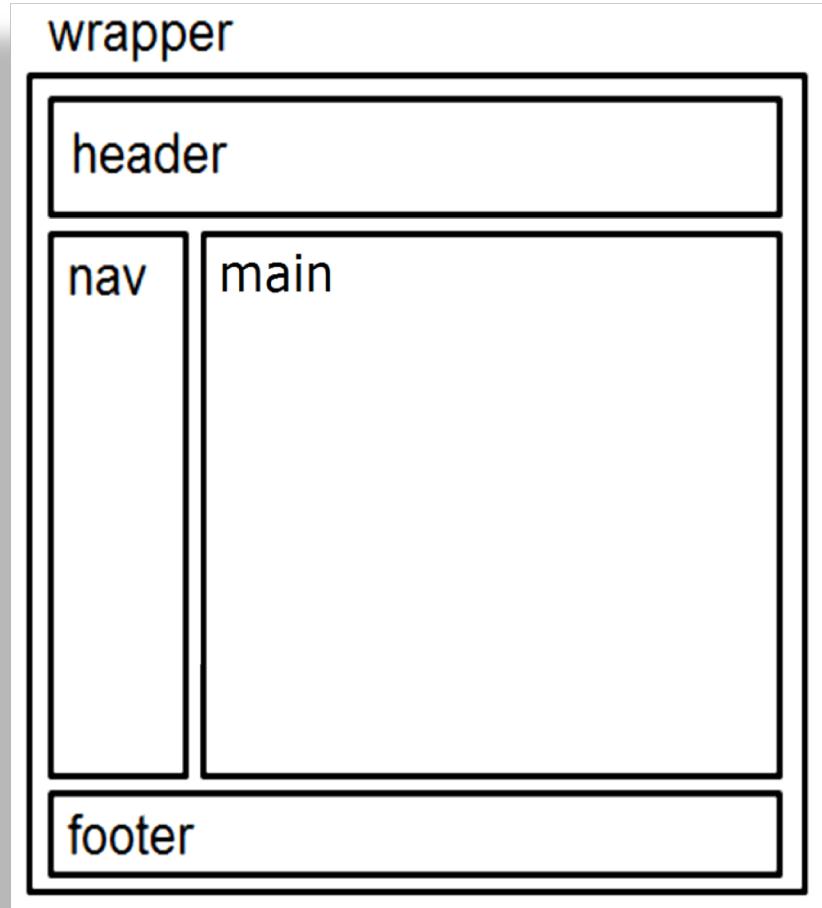
Single Column
Wireframe



Two Column
Wireframe



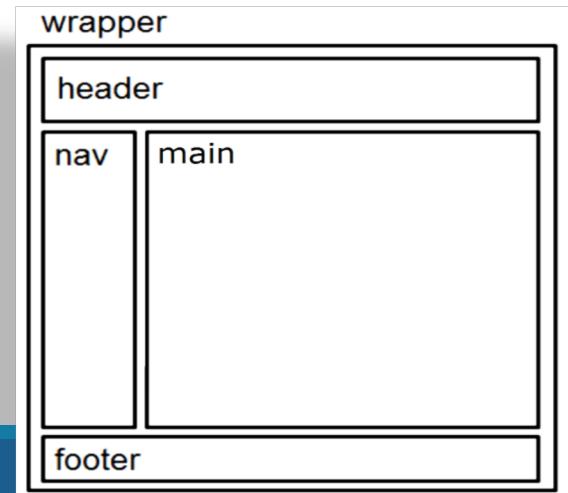
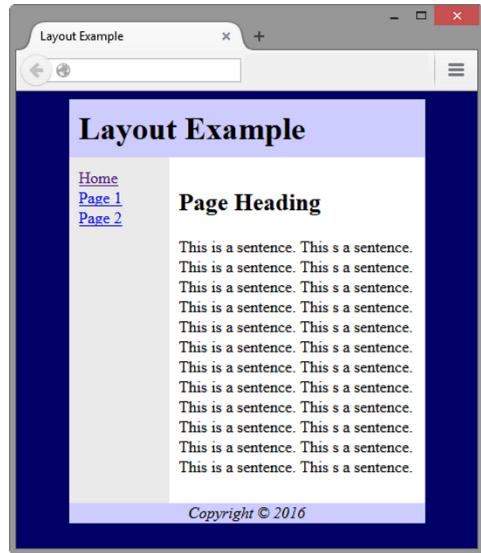
Basic Two-Column Layout



```
<body>
<div id="wrapper">
  <header> <header>
  <nav> </nav>
  <main> </main>
  <footer> </footer>
</div>
</body>
```

Basic Two-Column Layout

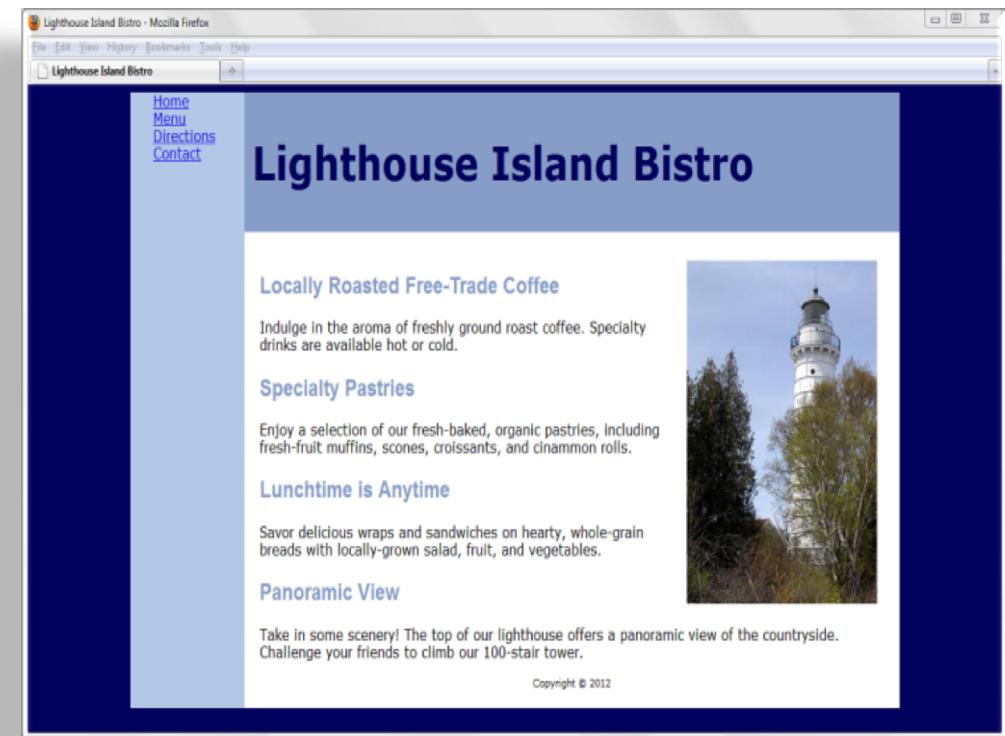
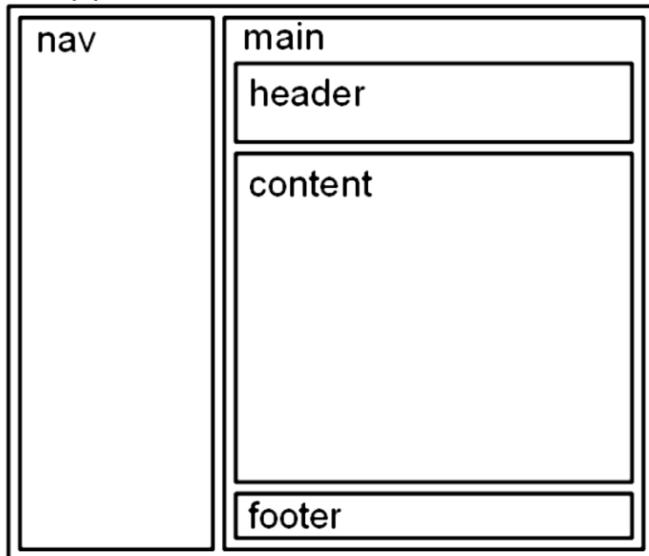
```
#wrapper { width: 80%;  
          margin-left: auto;  
          margin-right: auto;  
          background-color: #EAEEAE; }  
header { background-color: #CCCCFF; }  
h1 { margin: 0; padding: 10px; }  
nav { float: left;  
      width: 90px;  
      padding: 10px; }  
main { margin-left: 100px;  
      padding: 10px;  
      background-color: #FFFFFF; }  
footer { text-align: center;  
        font-style: italic;  
        background-color: #CCCCFF; }
```



CSS Page Layout

Two Columns (left nav)

wrapper



```
<nav>  
<ul>  
  <li><a href="index.html">Home</a></li>  
  <li><a href="menu.html">Menu</a></li>  
  <li><a href="directions.html">Directions</a></li>  
  <li><a href="contact.html">Contact</a></li>  
</ul>  
</nav>
```

Vertical navigation

- [Home](#)
- [Menu](#)
- [Directions](#)
- [Contact](#)

CSS removes the list marker and underline:

```
nav ul { list-style-type: none; }  
nav a { text-decoration: none; }
```

Home
Menu
Directions
Contact



Home Menu Directions Contact

Horizontal Navigation

HTML:

```
<nav>  
<ul>  
  <li><a href="index.html">Home</a></li>  
  <li><a href="menu.html">Menu</a></li>  
  <li><a href="directions.html">Directions</a></li>  
  <li><a href="contact.html">Contact</a></li>  
</ul>  
</nav>
```

CSS removes the list marker, removes the underline, adds padding, and configures the list items for inline display.

```
nav ul { list-style-type: none; }  
nav a { text-decoration: none;  
        padding-right: 10px; }  
nav li { display: inline; }
```

CSS Pseudo-classes

- Pseudo-classes and the anchor element

- **link** – default state for a hyperlink
- **visited** – a hyperlink that has been visited
- **focus** – triggered when the hyperlink has focus
- **hover** – triggered when the mouse moves over the hyperlink
- **active** – triggered when the hyperlink is being clicked

```
a:link {color:#000066;}  
a:visited {color:#003366;}  
a:focus {color:#FF0000;}  
a:hover {color:#0099CC;}  
a:active {color:#FF0000;}
```

Pseudo-classes

1. Text hyperlinks are underlined by default.



[Print This Page](#)

2. The `:hover` pseudo-class is triggered by the mouse. The browser no longer displays the underline below the hyperlink.



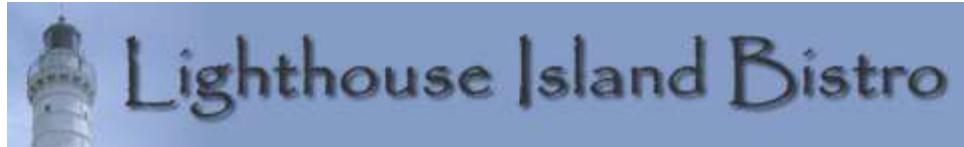
[Print This Page](#)

```
a:link { color: #ff0000; }

a:hover { text-decoration: none;
          color: #000066; }
```

Header Text Image Replacement

Useful when a non web-safe font must be used in the header logo banner area



Display the banner image but also configure text in the h1 for use by search engines and assistive technologies.

1. Configure styles for the header element set the header banner image as the background of the header or h1 element.
2. Code the company or website name with the h1 element.
3. Configure the placement of the h1 text to be beyond the browser viewport:

```
h1 { text-indent: 100%;  
     white-space: nowrap;  
     overflow: hidden; }
```

SOURCE:

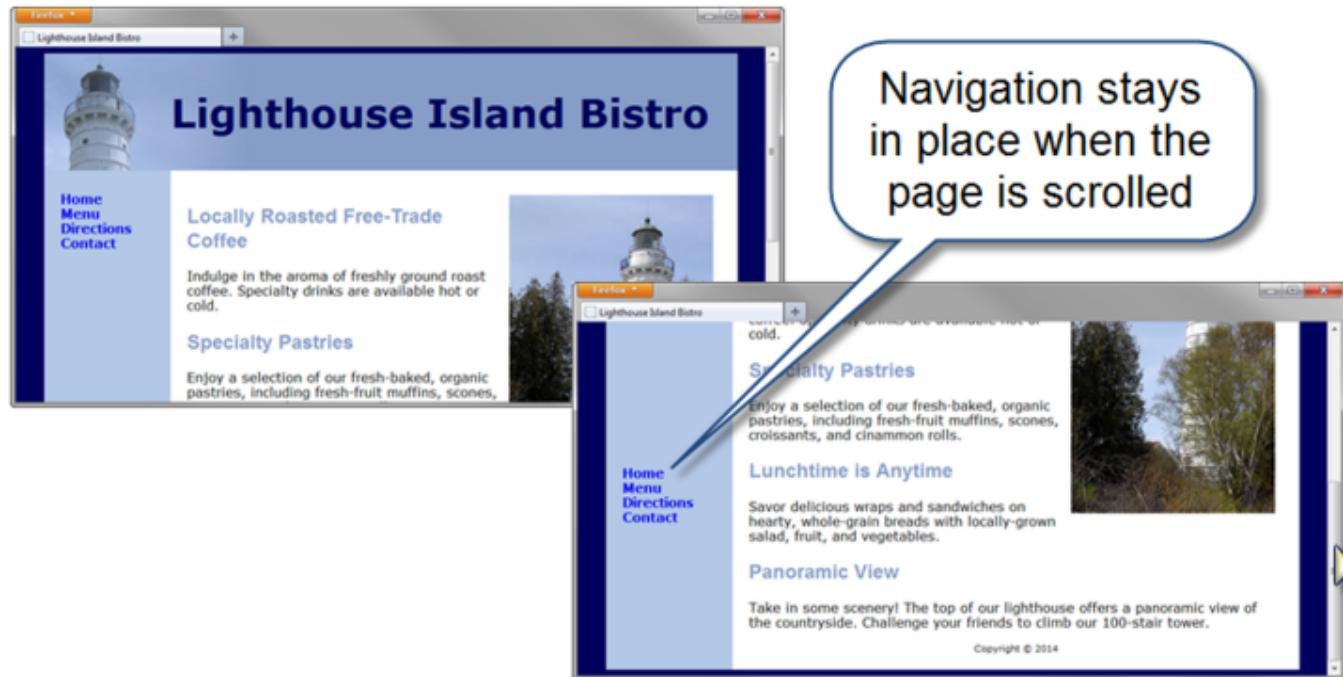
<http://www.zeldman.com/2012/03/01/replacing-the-9999px-hack-new-image-replacement/>

Position Property

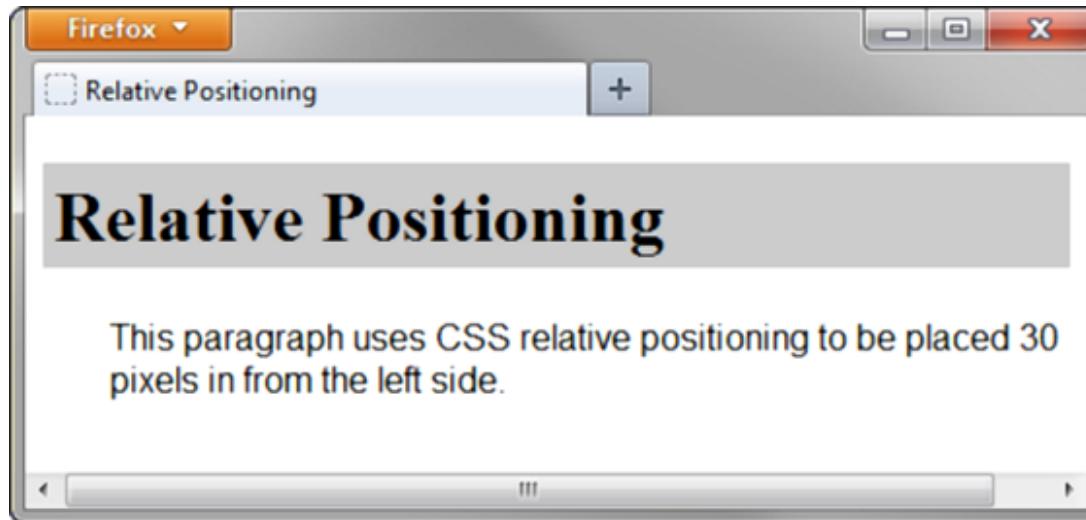
Value	Purpose
static	Default value; the element is rendered in normal flow
fixed	Configures the location of an element within the browser viewport; the element does not move when the page is scrolled
relative	Configures the location of an element relative to where it would otherwise render in normal flow
absolute	Configures the location of an element outside of normal flow precisely in its container element

Fixed Positioning

nav { position: fixed; }



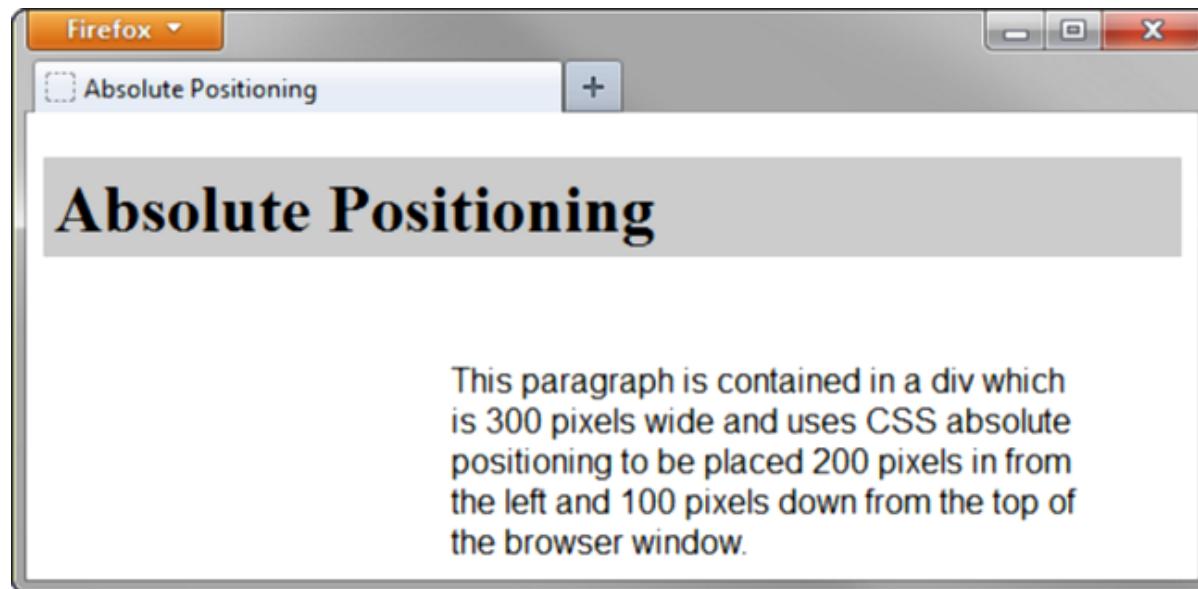
Relative Positioning



```
p { position: relative;  
left: 30px;  
font-family: Arial, sans-serif; }
```

Changes the location of an element in relation to where it would otherwise appear in normal flow

Absolute Positioning



```
p { position: absolute;  
left: 200px;  
top: 100px;  
font-family: Arial, sans-serif;  
width: 300px; }
```

Precisely specifies the location of an element outside of normal flow in relation to its first parent non-static element

CSS Debugging Tips

Manually check syntax errors

Use W3C CSS Validator to check syntax errors

- <http://jigsaw.w3.org/css-validator/>

Configure temporary background colors

Configure temporary borders

Use CSS comments to find the unexpected

`/* the browser ignores this code */`

Don't expect your pages to look exactly the same in all browsers!

Be patient!

HTML5 Structural Elements REVIEW

Header Element

- block display; contains the headings of either a web page document or an area in the document such as a section or article

Nav Element

- block display; contains a section of navigation hyperlinks

Main Element

- block display; contains main page content

Footer Element

- block display; contains the footer content of a web page or specific area (such as a section or article) on a web page



More HTML5 Elements

Aside Element

- block display; contains a sidebar, a note, or other tangential content

Section Element

- contains a “section” of a document, such as a chapter or topic
- block display

Article Element

- contains an independent entry, such as a blog posting, comment, or e-zine article that could stand on its own
- block display

Time Element

- represents a date or a time
- could be useful to date articles or blog posts
- inline display



HTML5 Compatibility with Older Browsers

CSS

```
header, main, nav, footer, section, article,  
    figure, figcaption, aside { display: block; }
```

HTML5 Shim (aka HTML5 Shiv)

```
<!--[if lt IE 9]>  
  
<script src=" http://html5shim.googlecode.com/svn/trunk/html5.js">  
</script>  
  
<![endif]-->
```

Deciding to Configure a class or id

Configure a class:

- If the style may apply to more than one element on a page
- Use the . (dot) notation in the style sheet.
- Use the class attribute in the HTML.

Configure an id:

- If the style is specific to only one element on a page
- Use the # notation in the style sheet.
- Use the id attribute in the HTML.

CHECKPOINT

1. Describe a reason to use HTML5 structural elements instead of div elements for some page areas.
2. Describe one CSS debugging tip that you have found to be helpful.
3. Describe how to choose whether to configure an HTML element selector, create a class, or create an id when working with CSS.

Summary

This chapter introduced you to the box model, CSS pseudo-classes, configuring two-column page layouts with CSS, and additional HTML5 structural elements.