

IT204: WEB PROGRAMMING

lecture 3&4: CSS

Internet & World Wide Web
How to Program, 5/e Chapter 3



OUTLINE

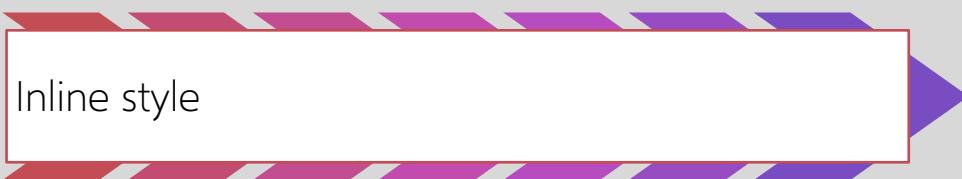
- **What is CSS?**
- **Inline style**
- **Embedded Style Sheets**
- **External CSS**
- **Background.**
- **Dimensions**
- **List**
- **Box Model**
- **Float**
- **Position**
- **Dropdowns**



WHAT IS CSS?

3.1 Introduction

- Cascading Style Sheets (CSS)
 - Used to specify the presentation of elements separately from the structure of the document.





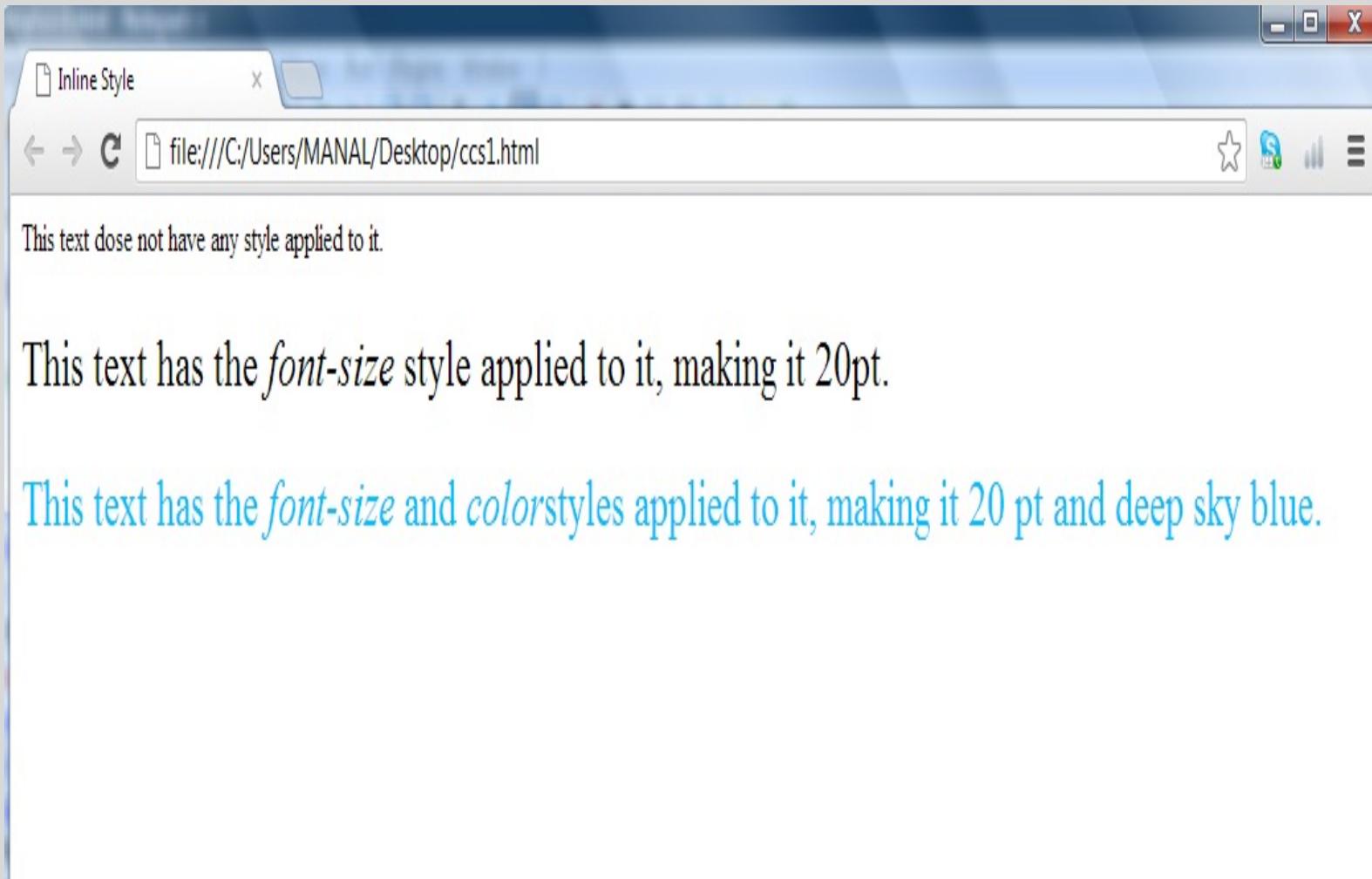
INLINE STYLE

3.2 Inline Styles

- **Inline style**
 - declare an individual element's format using the HTML attribute **style**
 - Each CSS property is followed by a colon and the value of the attribute
 - Multiple property declarations are separated by a semicolon
 - Figure 3.1 applies inline styles to p elements to alter their font size and color.

```
1
2 <!Doctype html>
3
4 <!-- using inline style -->
5 <html>
6   <head>
7     <title>Inline Style </title>
8   </head>
9   <body>
10    <p> This text dose not have any style applied to it. </p>
11    <p style= "font-size: 20pt;">This text has the
12      <em> font-size</em> style applied to it, making it 20pt.
13    </p>
14    <p style= "font-size: 20pt; color: deepskyblue;">
15      This text has the <em>font-size</em> and <em>color</em> styles
16      applied to it, making it 20 pt and deep sky blue.</p>
17  </body>
18 </html>
```

Fig 3.1



3.2 Inline Styles (Cont.)

- **color** property sets text color
 - Color names and hexadecimal codes may be used as the **color** property value.
 - Figure 3.2 contains the HTML standard color set.
 - You can also find a complete list of HTML standard and extended colors at
 - www.w3.org/TR/css3-color/

Color name	Value	Color name	Value
aqua	#00FFFF	navy	#000080
black	#000000	olive	#808000
blue	#0000FF	purple	#800080
fuchsia	#FF00FF	red	#FF0000
gray	#808080	silver	#C0C0C0
green	#008000	teal	#008080
lime	#00FF00	yellow	#FFFF00
maroon	#800000	white	#FFFFFF

Fig 3.2 | HTML standard colors and hexadecimal RGB



EMBEDDED STYLE SHEETS

3.3 Embedded Style Sheets

- A second technique for using style sheets is **embedded style sheets**, which enable you to embed a CSS document in an HTML document's head section.
- Figure 3.3 creates an embedded style sheet containing four styles.

```
1 <!Doctype html>
2
3
4 <!-- Embedded style sheet -->
5 <html>
6   <head>
7     <title> Embedded style sheet </title>
8     <!-- this begins the style sheet section -->
9     <style type="text/css">
10       em          { font-weight: bold;
11           ....      color:black; }
12       h1          { font-family: tahoma, helvetica,sans-serif; }
13       p           { font-size: 12pt;
14           ....      font-family: arial, sans-serif; }
15       .special    { color: purple; }
16     </style>
17   </head>
18   <body>
19     <!-- this attribute applies the .special style class -->
20     <h1 class = "special" > Detile & Associates, Inc. </h1>
21     <p> Detile & Associates, Inc is an authoring and corporate training
22         orgnization specializing in programming languages </p>
23     <h1> Clients </h1>
24     <p class= "special">The Company's clients include many
25       <em> Fortune 1000 companies </em> goverment branches of the militiery
26       and business </p>
27     </body>
28 </html>
```

Fig 3.3

The screenshot shows a web browser window with a blue header bar. In the header, there are two tabs: "Inline Style" and "Embedded style sheet". Below the tabs is a toolbar with icons for back, forward, search, and other functions. The address bar displays the URL "file:///C:/Users/MANAL/Desktop/new%202.html". The main content area of the browser contains the following text:

Detile & Associates, Inc.

Detile & Associates, Inc is an authoring and corporate training orgnization specializing in programming languages

Clients

The Company's clients include many **Fortune 1000 companies** goverment branches of the militiery and business

3.3 Embedded Style Sheets (cont.)

The `style` Element and MIME Types

- ▶ Styles that are placed in a **style** element use selectors to apply style elements throughout the entire document
- ▶ **style** element **type** attribute specifies the MIME type (the specific encoding format) of the style sheet. Style sheets use **text/css**.
- ▶ Figure 3.4 lists common MIME types used in this book. For a complete list, visit:

MIME type	Description
text/css	CSS documents
image/png	PNG images
text/javascript	JavaScript markup
text/plain	Plain text
image/jpeg	JPEG image
text/html	HTML markup

Fig. 3.4 A few common MIME types.

3.3 Embedded Style Sheets (cont.)

- The style sheet’s body declares the CSS.
- An **em** element indicates that its contents should be *emphasized*.
- Each rule body in a style sheet is enclosed in curly braces ({ and }).

3.3 Embedded Style Sheets (Cont.)

- **font-weight** property specifies the “boldness” of text.

Possible values are:

- **bold**
- **normal** (the default)
- **bolder** (bolder than bold text)
- **lighter** (lighter than normal text)
- Boldness also can be specified with multiples of 100, from 100 to 900 (e.g., 100, 200, ..., 900). Text specified as normal is equivalent to 400, and bold text is equivalent to 700

3.3 Embedded Style Sheets (Cont.)

Style Classes

- ▶ Style-class declarations are preceded by a period (.).
- ▶ They define styles that can be applied to *any* element.
- ▶ In this example, class special sets color to purple.

The CSS id Selector

The id selector uses the id attribute of an HTML element to select a specific element.

The id of an element is unique within a page, so the id selector is used to select one unique element!

To select an element with a specific id, write a hash (#) character, followed by the id of the element.

3.3 Embedded Style Sheets (Cont.)

font-family Property

- ▶ **font-family** property specifies the name of the font to use.
 - Generic font families allow authors to specify a type of font instead of a specific font, in case a browser does not support a specific font.

Generic font families

Examples

serif	times new roman, georgia
sans-serif	arial, verdana, futura
cursive	script
fantasy	critter
monospace	courier, fixedsys

Generic font families.

3.3 Embedded Style Sheets (Cont.)

font-size Property

- ▶ **font-size** property specifies the size used to render the font.
- ▶ You can specify a point size or a relative value such as
 - xx-small
 - x-small
 - small
 - smaller
 - medium
 - large
 - larger,
 - x-large
 - xx-large.
- ▶ Relative values permit more flexible viewing of web pages.
 - For example, users can change font sizes the browser displays for readability.

3.3 Embedded Style Sheets (Cont.)

Applying a Style Class

- In many cases, the styles applied to an element (the **parent**) also apply to the element's *nested elements (child)*.
- Multiple values of one property can be set or inherited on the same element, so the browser must reduce them to one value for that property per element before they're rendered.

3.3 Embedded Style Sheets (Cont.)

- Figure 3.3 contains an example of inheritance
 - child **em** element inherits the **font-size** property from its parent **p** element.
 - the child **em** element has a **color** property that conflicts with (i.e., has a different value than) the **color** property of its parent **p** element.

3.4 Conflicting Styles

- **Text-decoration**

- **text-decoration** property applies decorations to text in an element For example, you can underline the text, have a line through or above the text, etc.
 - Underline
 - overline
 - line-through
 - blink

3.4 Conflicting Styles (Cont.)

- Figure 4.6 illustrates examples of inheritance and specificity.

```
1  <!Doctype html>
2
3
4  <!-- Inheritance is style sheet --&gt;
5  &lt;html&gt;
6    &lt;head&gt;
7      &lt;title&gt; More Styles &lt;/title&gt;
8
9      &lt;style type= "text/css"&gt;
10        body          { font-family: arial, helvetica, sans-serif; }
11        a.nodec       { text-decoration: none; }
12        a.hover       { text-decoration: underline; }
13        li em         { font-weight: bold; }
14        h1, em        { text-decoration: underline; }
15        ul            { margin-left: 20px; }
16        ul ul         { font-size: .8em; }
17      &lt;/style&gt;
18    &lt;/head&gt;
19    &lt;body&gt;
20      &lt;h1&gt; Shopping list for Monday: &lt;/h1&gt;
21
22      &lt;ul&gt;
23        &lt;li&gt;Milk&lt;/li&gt;
24        &lt;li&gt;Bread
25          &lt;ul&gt;
26            &lt;li&gt;white bread&lt;/li&gt;
27            &lt;li&gt;Rye bread&lt;/li&gt;
28            &lt;li&gt;Whole wheat bread&lt;/li&gt;
29          &lt;/ul&gt;
30        &lt;/li&gt;
31        &lt;li&gt;Carrots&lt;/li&gt;
32        &lt;li&gt;Yogurt&lt;/li&gt;
33        &lt;li&gt;Pizza &lt;em&gt;with mushrooms &lt;/em&gt; &lt;/li&gt;
34      &lt;/ul&gt;</pre>
```

Fig 3.6

```
35  
36     <p><em> Go to the </em>  
37         <a class= "nodec" href= "http://www.deitel.com">  
38             Grocery store </a>  
39     </p>  
40     </body>  
41 </html>  
42 </body>  
43 </html>  
44  
45
```

Fig 3.6

The screenshot shows a web browser window with a blue header bar. In the header, there are three tabs: "Inline Style" (disabled), "Embedded style sheet" (disabled), and "More Styles". Below the tabs, the address bar displays the URL: "file:///C:/Users/MANAL/Desktop/web-example/Fig3.6.html".

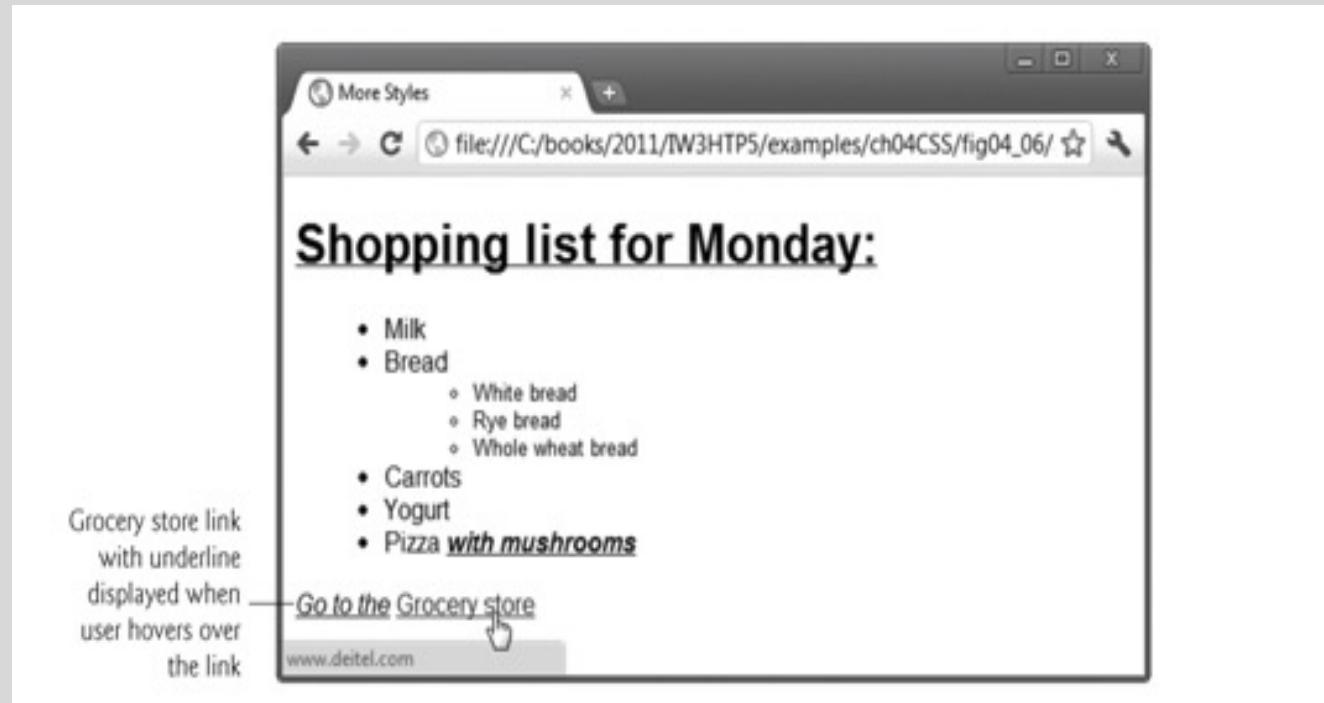
The main content area of the browser contains the following text:

Shopping list for Monday:

- Milk
- Bread
 - white bread
 - Rye bread
 - Whole wheat bread
- Carrots
- Yogurt
- Pizza with mushrooms

Go to the [Grocery store](#)

hover pseudoclass is activated when the user moves the mouse cursor over an element.





External CSS

- With an external style sheet, you can change the look of an entire website by changing just one file!
- Each HTML page must include a reference to the external style sheet file inside the `<link>` element, inside the head section.
- External styles are defined within the `<link>` element, inside the `<head>` section of an HTML page:

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" href="mystyle.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

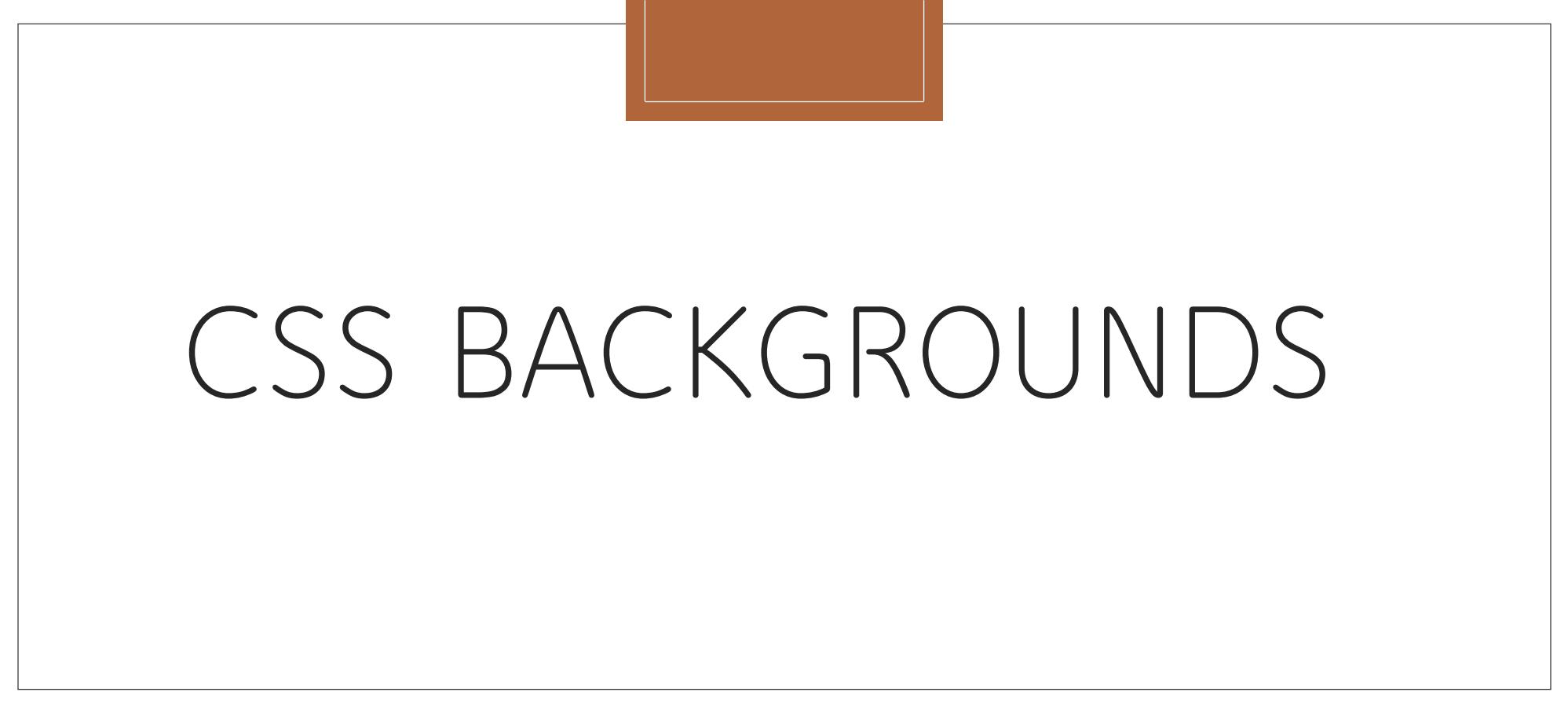
An external style sheet can be written in any text editor, and must be saved with a .css extension.

The external .css file should not contain any HTML tags.

Here is how the "mystyle.css" file looks like:

"mystyle.css"

```
body {  
    background-color: lightblue;  
}  
  
h1 {  
    color: navy;  
    margin-left: 20px;  
}
```



CSS BACKGROUNDS

3.8 Backgrounds

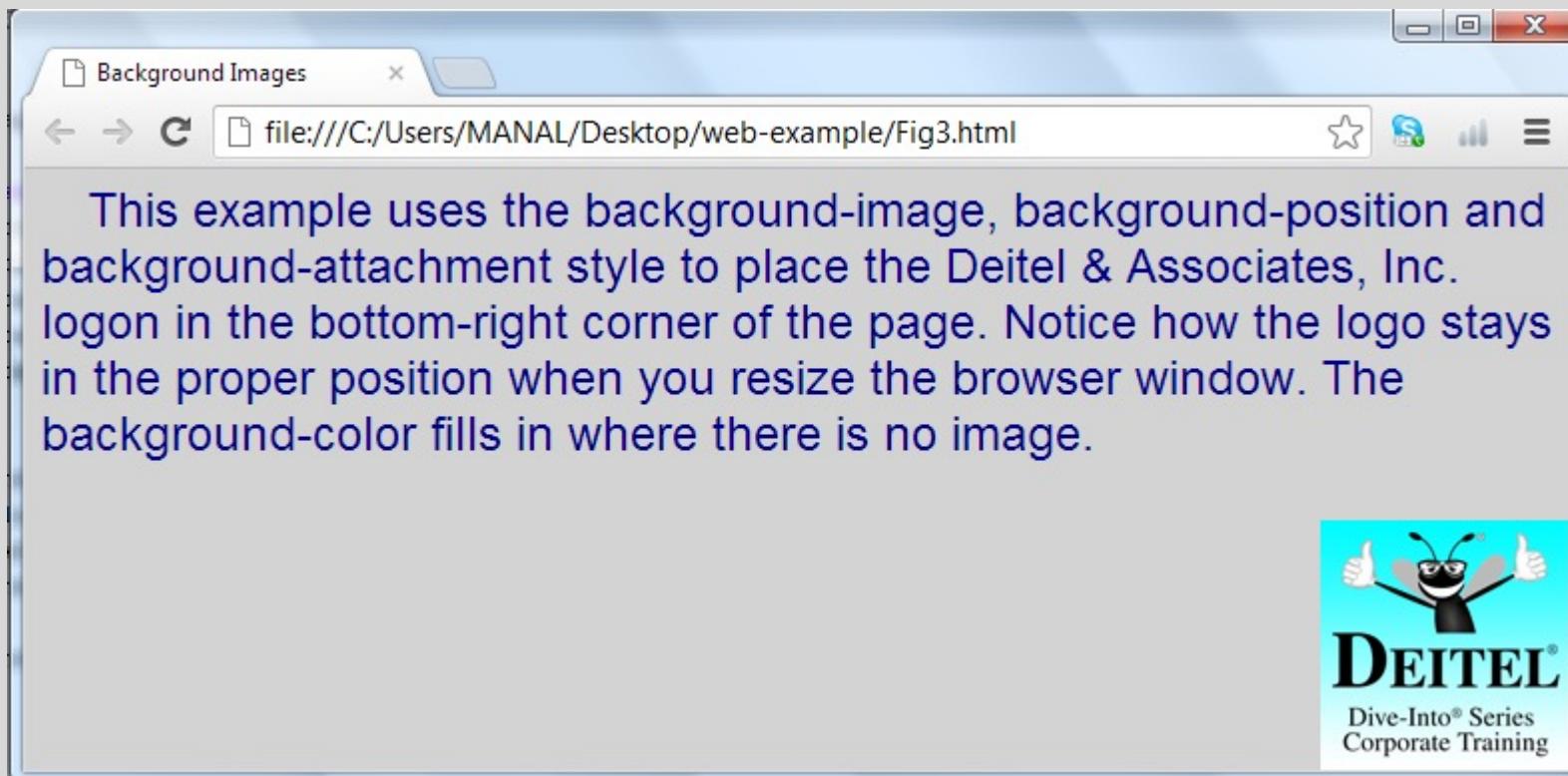
- ▶ CSS can control the backgrounds of block-level elements by adding:
 - Colors
 - Images
- ▶ Figure 3.11 adds a corporate logo to the bottom-right corner of the document. This logo stays fixed in the corner even when the user scrolls up or down the screen.

```
1      <!Doctype html>
2
3
4      <!-- Adding background image and indentation -->
5      <html>
6          <head>
7              <title> Background Images </title>
8
9          <style type= "text/css">
10             body           { background-image: url(logo.png);
11                           background-position: bottom right;
12                           background-repeat: no-repeat;
13                           background-attachment: fixed;
14                           background-color: lightgrey; }
15
16
17             p            { font-size: 18pt;
18                           color: Darkblue;
19                           text-indent: 1em;
20                           font-family: arial, sans-serif; }
21
22             . dark     { font-weight: bold; }
23
24         </style>
25
26     </head>
```

Fig 3.11

```
27 |     <p> This example uses the background-image,  
28 |     background-position and background-attachment  
29 |     style to place the <span class = "dark">Deitel & Associates, Inc. </span>  
30 |     logon in the bottom-right corner of the page. Notice how the logo  
31 |     stays in the proper position when you resize the browser window.  
32 |  
33 |     The background-color fills in where there is no image.  
34 |     </p>  
35 |     </body>  
36 |     </html>
```

Fig 3.11



3.8 Backgrounds (Cont.)

background-image Property

- ▶ Specifies the URL of the image, in the format
url(fileLocation)

background-position Property

Places the image on the page using the values

- ❖ **Top**
- ❖ **bottom**
- ❖ **center**
- ❖ **left**
- ❖ **right**

- ▶ You can also position by using lengths

3.8 Backgrounds (Cont.)

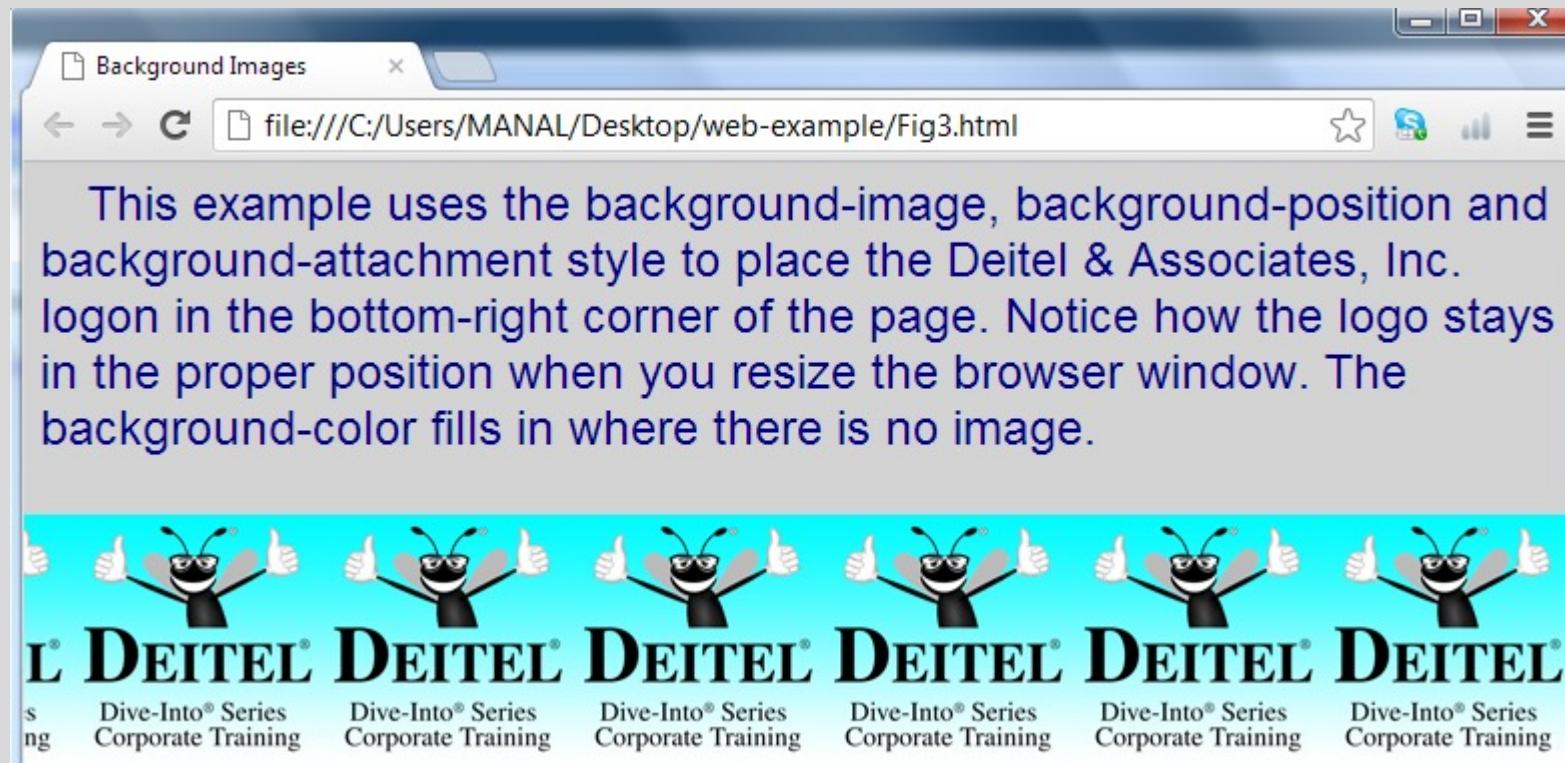
background-repeat Property

- ▶ **background-repeat** property controls the tiling of the background image
 - Setting the tiling to **no-repeat** displays one copy of the background image on screen
 - Setting to **repeat** (the default) tiles the image vertically and horizontally
 - Setting to **repeat-x** tiles the image only horizontally
 - Setting to **repeat-y** tile the image only vertically

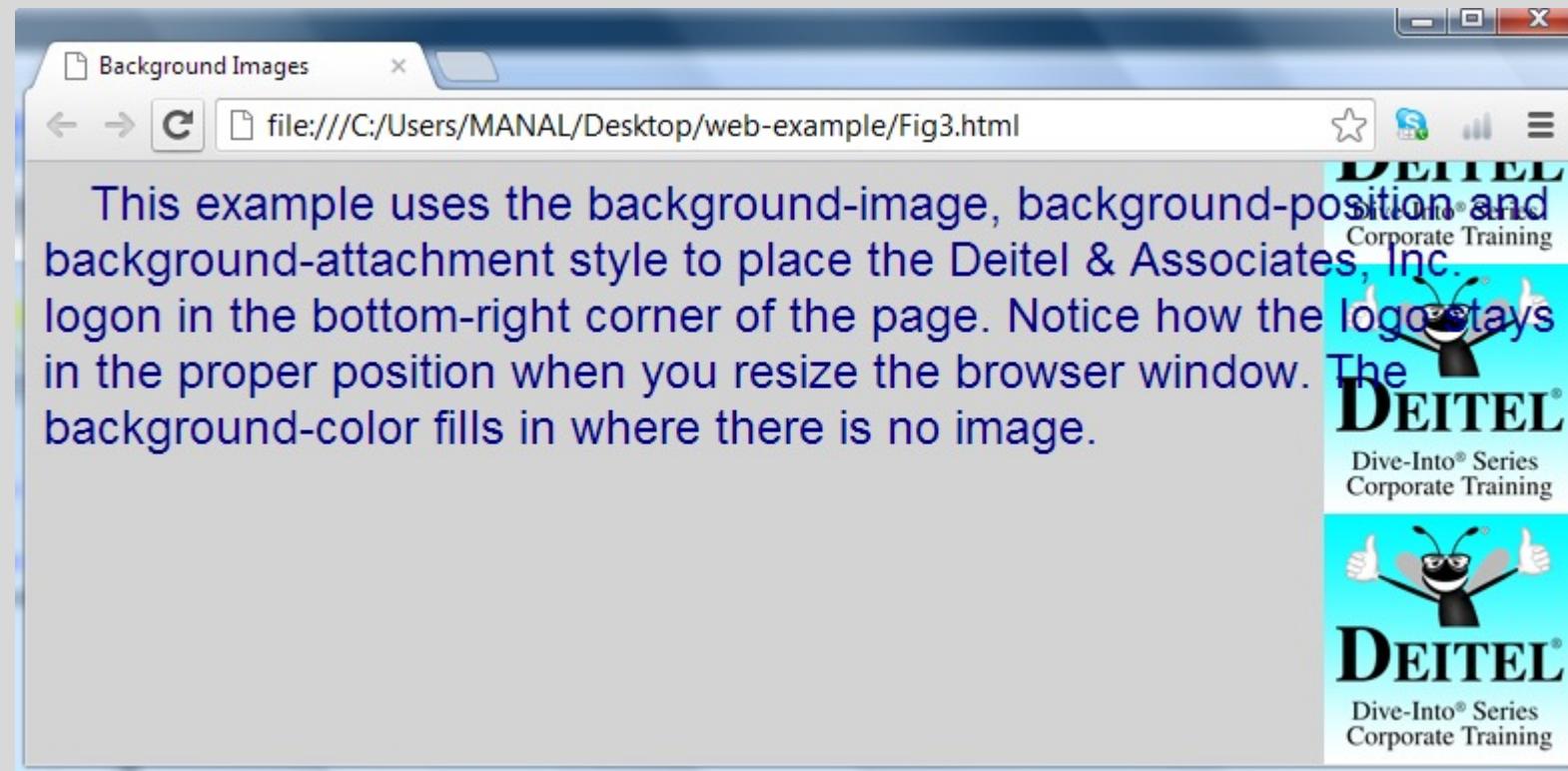
Setting to repeat



Setting to repeat-x



Setting to repeat-y



3.8 Backgrounds (Cont.)

background-attachment: fixed Property

- ▶ Fixes the image in the position specified by background-position.
- ▶ Scrolling the browser window will not move the image from its set position.
- ▶ The default value, scroll, moves the image as the user scrolls the window



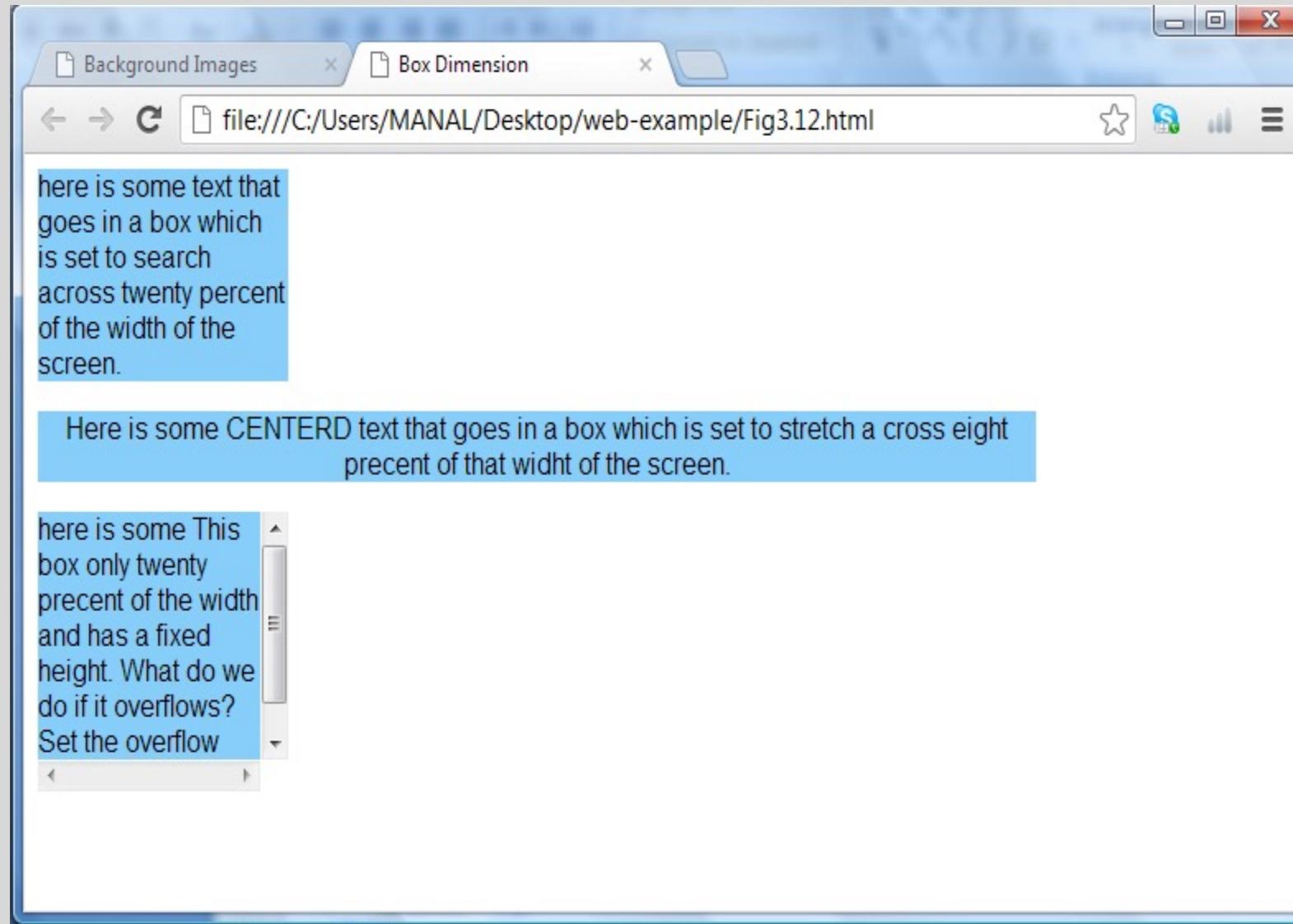
CSS DIMENSIONS

3.9 Element Dimensions

- ▶ Figure 3.12 demonstrates how to set the dimensions of elements.

```
1      <!Doctyp html>
2
3
4      <!-- Element dimensions and text alignment -->
5      <html>
6          <head>
7              <title> Box Dimension</title>
8
9          <style type= "text/css">
10             p           { background-color: lightskyblue;
11                           margin-bottom: .5em;
12                           font-family: arial, helvetica, sans-serif; }
13
14         </style>
15     </head>
16     <body>
17         <p style= "width: 20%" > here is some
18             text that goes in a box which is
19             set to stretch across twenty percent
20             of the width of the screen. </p>
21
22         <p style= "width: 80%; text-align: center" >
23             Here is some CENTERD text that goes in a box
24             which is set to stretch across eight percent of
25             that width of the screen. </p>
26
27         <p style= "width: 20%; height: 150 px; overflow: scroll" > here is some
28             This box only twenty percent of the width and has
29             a fixed height. What do we do if it overflows? Set the overflow property
30             to scroll! </p>
31
32     </body>
33 </html>
```

Fig 3.12



3.9 Element Dimensions

Specifying the **width** and **height** of an Element

- ▶ Dimensions of elements on a page can be set with CSS by using properties **height** and **width**
 - Their values can be relative or absolute

text-align Property

- ▶ Text in an element can be centered using **text-align: center**; other values for the text-align property are **left** and **right**

3.9 Element Dimensions (Cont.)

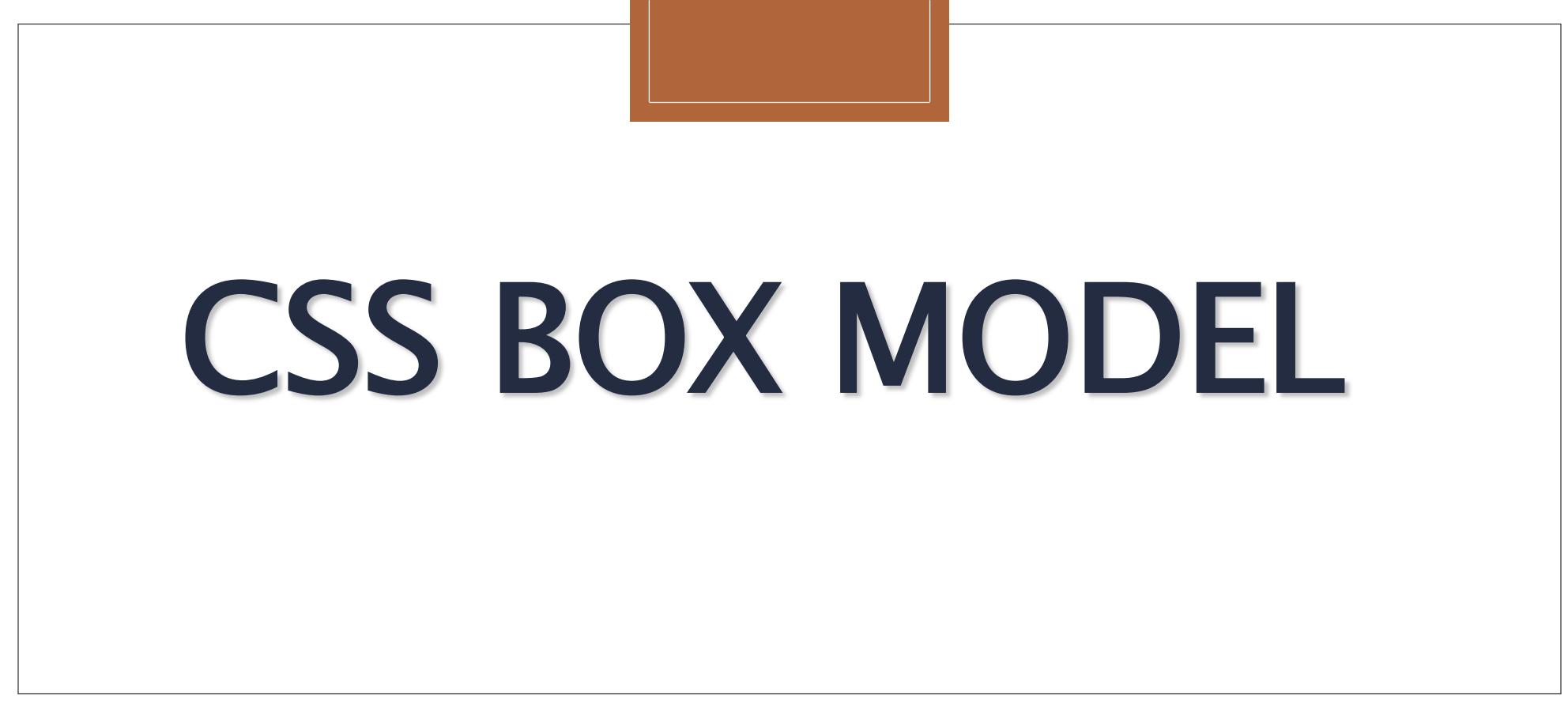
overflow Property and Scroll Bars

- ▶ Problem with setting both vertical and horizontal dimensions of an element
 - Content might sometimes exceed the set boundaries, in which case the element must be made large enough for all the content to fit
 - Can set the **overflow** property to **scroll**, which adds scroll bars if the text overflows the boundaries set for it



CSS LIST

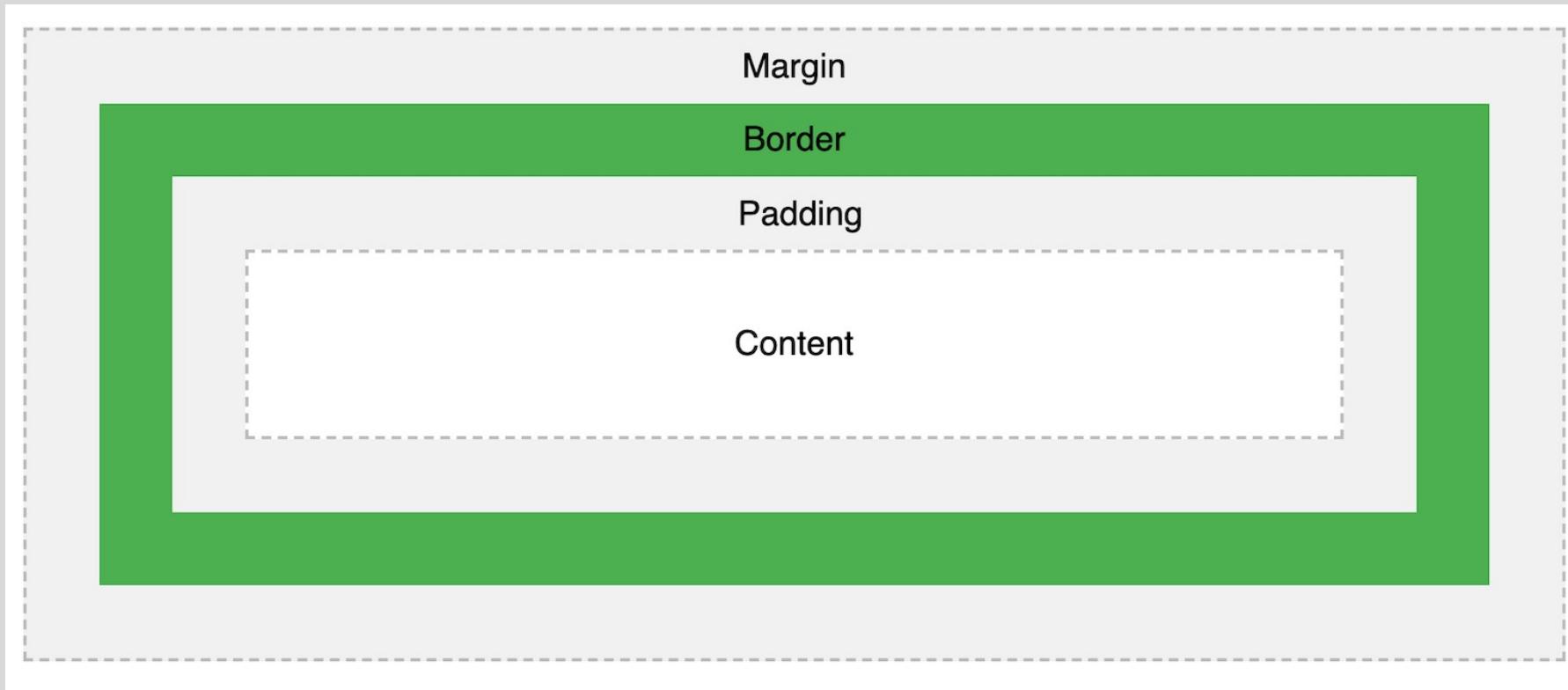
https://www.w3schools.com/css/css_list.asp



CSS BOX MODEL

Box Model

- All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout.



3.10 Border

► Border

- The border is controlled using the properties:
- **border-width**
 - May be set to any of the CSS lengths or to the predefined value of **thin**, **medium** or **thick**
- **border-color**
 - Sets the color used for the border
- **border-style**
 - Options are: **none**, **hidden**, **dotted**, **dashed**, **solid**, **double**, **groove**, **ridge**, **inset** and **outset**

3.10 Border

- ▶ CSS controls the border using three properties: border-width, border-color and border-style.
- ▶ We illustrate these properties in Fig. 3.14.

```
1      <!Doctyp html>
2
3
4      <!-- Border of block-level element -->
5      <html>
6          <head>
7              <title> Brder</title>
8
9          <style type= "text/css">
10             div      { text-align: center;
11                         width: 50%;
12                         position: relative;
13                         left: 25%;
14                         border-width: 6px;      }
15             .thick   { border-width:thick; }
16             .medium  { border-width:medium; }
17             .thin    { border-width:thin;  }
18             .solid   { border-style:solid; }
19             .double  { border-style:double; }
20             .groove  { border-style:groove; }
21             .ridge   { border-style:ridge;  }
22             .dotted  { border-style:dotted; }
23             .inset   { border-style:inset; }
24             .outset  { border-style:outset; }
25             .dashed  { border-style:dashed; }
26             .red     { border-color:red;   }
27             .blue    { border-color:blue;  }
28         </style>
29     </head>
```

Fig. 3.14

```
30 <body>
31     <div class = "solid"> Solid border </div> <hr>
32     <div class = "double"> Double border </div> <hr>
33     <div class = "groove"> groove border </div> <hr>
34     <div class = "ridge"> ridge border </div> <hr>
35     <div class = "dotted"> dotted border </div> <hr>
36     <div class = "inset"> inset border </div> <hr>
37     <div class = "thick dashed"> Thick dashed border </div> <hr>
38     <div class = "thin red solid"> Thin red solid border </div> <hr>
39     <div class = "medium blue outset"> Medium blue outset border </div> <hr>
40
41 </body>
42 </html>
43
```

Fig. 3.14

Background Images

Box Dimension

Brder



file:///C:/Users/MANAL/Desktop/web-example/Fig3.14.html



Solid border

Double border

groove border

ridge border

dotted border

inset border

Thick dashed border

Thin red solid border

Medium blue outset border

3.10 Margin and Padding

margin and padding Properties

- ▶ The **margin** property sets the space between the outside of an element's border and all other content on the page.
- ▶ The **padding** property determines the distance between the content inside an element and the inside of the element's border.
- ▶ Margins for individual sides of an element can be specified by using the properties margin-top, margin-right, margin-left and margin-bottom.
- ▶ Padding can be specified in the same way, using padding-top, padding-right, padding-left and padding-bottom.

3.11 Margin

https://www.w3schools.com/css/css_margin.asp

3.12 Padding

https://www.w3schools.com/css/css_padding.asp



CSS FLOAT

https://www.w3schools.com/css/css_float.asp

Float Elements

Floating Elements

- ▶ Floating allows you to move an element to one side of the screen; other content in the document then flows around the floated element.
- ▶ Figure 3.15 demonstrates how floating elements and the box model can be used to control the layout of an entire page.

```
1 <!Doctype html>
2
3
4 <!-- Floating element -->
5 <html>
6   <head>
7     <title> Flowing Text Around Floating Elements</title>
8
9   <style type= "text/css">
10    header      { background-color: skyblue;
11          text-align: center;
12          padding: .2em;
13          font-family: arial, helvetica, sans-serif;  }
14
15    p           { text-align: justify;
16          font-family: verdana, geneva, sans-serif;
17          margin: .5em; }
18
19    h1          { margin-top: 0px; }
20
21    .floated    { background-color: lightgrey;
22          font-size: 1.5 em;
23          font-family: arial, helvetica, sans-serif;
24          padding: .2em;
25          margin-left: .5em;
26          margin-bottom: .5em;
27          float: right; float: right;
28          text-align: right;
29          width: 59%; }
30
31    section     { border: 1px solid skyblue; }
32
33   </style>
34 </head>
```

Figure 3.15

```
33 <body>
34     <header></header>
35     <section>
36         <h1 class = "floated"> Cororate Training and Authoring </h1>
37         <p> Detil and Associated> Inc, is an internationally recognizing in programming language
38             Internet/web technology, iphone and Androing app development and
39             object technology education</p>
40     </section>
41     <section>
42         <h1 class = "floated"> Programming Books and Video</h1>
43         <p> Throught its publishing
44             parthershi woth Pearson, Deitel & Associates,
45             INS. publishes leading-edge programming textbooks,professional books
46             and interactive web-base DD LiveLesson video couses.</p>
47     </section>
48 </body>
49 </html>
```

Figure 3.15

Background Images X Box Dimension X Brder X Flowing Text Around X

file:///C:/Users/MANAL/Desktop/web-example/Fig3.15.html



DEITEL®

Detil and Associated> Inc, is an internationally recognizing in programming language Internet/web technology, iphone and Androing app development and object technology education

Cororate Training and Authoring

Through its publishing parthershi woth Pearson, Deitel & Associates, INS. publishes leading-edge programming textbooks,professional books and interactive web-base DD LiveLesson video courses.

Programming Books and Video



CSS POSITION

3.6 Positioning Elements: Absolute Positioning, z-index

- ▶ CSS position property
 - Normally, elements are positioned on the page in the order in which they appear in the HTML document
 - Specifying an element's position as absolute removes it from the normal flow of elements on the page and positions it according to distance from the top, left, right or bottom margin of its parent element

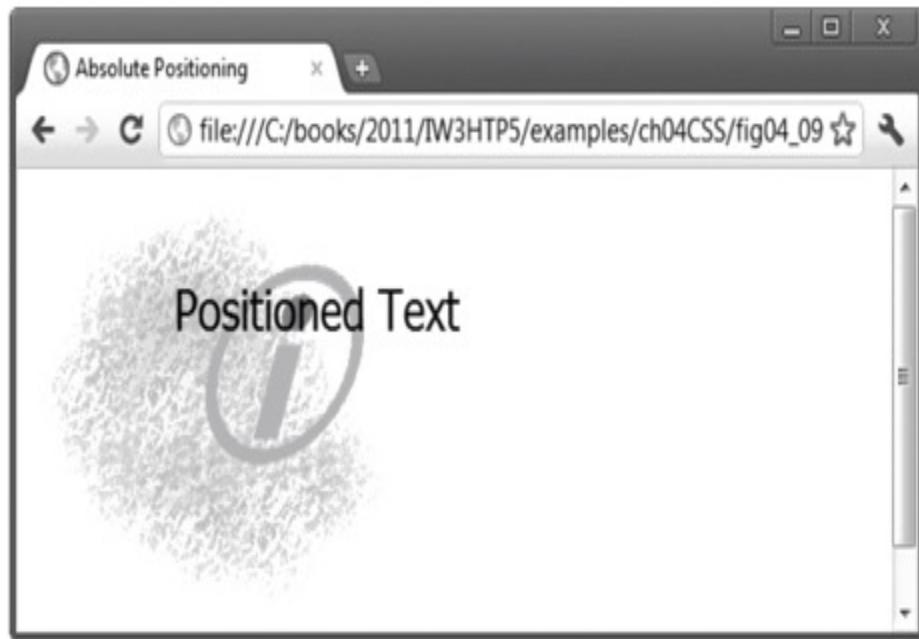
```
1 <!DOCTYPE html>
2
3
4 <!-- Absolute positioning of elements. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Absolute Positioning</title>
9     <style type = "text/css">
10       .background_image { position: absolute;
11                     top: 0px;
12                     left: 0px;
13                     z-index: 1; }
14       .foreground_image { position: absolute;
15                     top: 25px;
16                     left: 100px;
17                     z-index: 2; }
18       .text           { position: absolute;
19                     top: 25px;
20                     left: 100px;
21                     z-index: 3;
22                     font-size: 20pt;
23                     font-family: tahoma, geneva, sans-serif; }
24     </style>
25   </head>
```

Fig. 3.9 | Absolute positioning of elements. (Part I of 3.)

```
26    <body>
27        <p><img src = "background_image.png" class = "background_image"
28            alt = "First positioned image" /></p>
29
30        <p><img src = "foreground_image.png" class = "foreground_image"
31            alt = "Second positioned image" /></p>
32
33        <p class = "text">Positioned Text</p>
34    </body>
35 </html>
```



Fig. 3.9 | Absolute positioning of elements. (Part 2 of 3.)



Absolute positioning of elements. (Part 3 of 3.)

3.6 Positioning Elements: Absolute Positioning, z-index (Cont.)

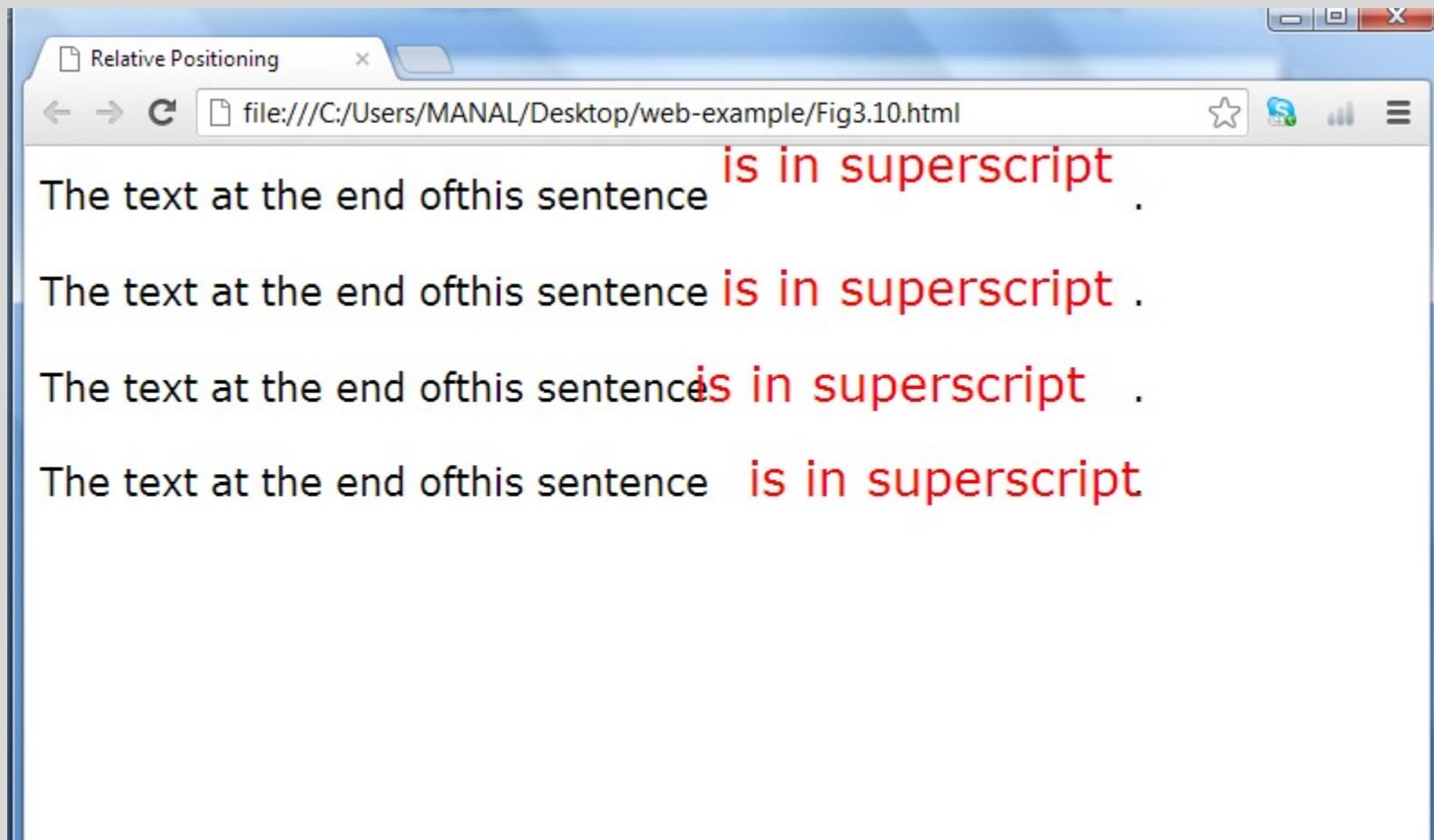
- ▶ The *z-index* property allows a developer to layer **overlapping elements**
- ▶ Elements that have higher *z-index* values are **displayed in front of elements** with lower *z-index* values
- ▶ Figure 3.10 demonstrates relative positioning, in which elements are positioned relative to other elements

```
1
2 <!Doctype html>
3
4 <!-- Inheritance is style sheet -->
5 <html>
6   <head>
7     <title> Relative Positioning </title>
8
9   <style type= "text/css">
10    p          { font-size: 1.3em;
11                  font-family: verdana, arial, sans-serif; }
12    span        { color: red;
13                  font-size: 1.3em;
14                  height: 1em; }
15    .super      { position: relative;
16                  top: -1ex; }
17    .sub        { position: relative;
18                  bottom: -1ex; }
19    .shiftleft  { position: relative;
20                  left: -1ex; }
21    .shiftright { position: relative;
22                  right: -1ex; }
23  </style>
24 </head>
```

Figure 3.10

```
25 <body>
26     <p> The text at the end of this sentence
27         <span class = "super"> is in superscript </span>.</p>
28
29     <p> The text at the end of this sentence
30         <span class = "sub"> is in superscript </span>.</p>
31
32     <p> The text at the end of this sentence
33         <span class = "shiftleft"> is in superscript </span>.</p>
34
35     <p> The text at the end of this sentence
36         <span class = "shiftright"> is in superscript </span>.</p>
37     </body>
38 </html>
39 </body>
40 </html>
41
```

Figure 3.10





CSS DROPPDOWNS

https://www.w3schools.com/css/css_dropdowns.asp

```
1  <!Doctype html>
2
3
4  <!-- drop-down menu -->
5  <html>
6    <head>
7      <title> drop-down menu </title>
8
9    <style type= "text/css">
10       body      { font-family: arial, sans-serif}
11       div.menu   { font-weight: bold;
12                     color:white;
13                     border: 2px solid royalblue;
14                     text-align: center;
15                     width: 10 em;
16                     background-color: royalblue; }
17       div.menu:hover a   { display: block;}
18       div.menu a     {display: none;
19                     border-top: 2px solid royalblue;
20                     background-color: white;
21                     width: 10em;
22                     color: black;
23                     text-decoration: none}
24       div.menu a:hover { background-color: powderblue;}
25
26   </style>
27
28   </head>
29   <body>
30
31     <div class ="menu"> Menu
32       <a href="Fig3.6.html"> home </a>
33       <a href="#"> News </a>
34       <a href="#"> Artical </a>
35       <a href="#"> Contact </a>
36
37     </div>
38
39   </body>
</html>
```

A drop-down menu is displayed when the mouse cursor is hovered over Menu

