

# **CSS3**

## **(Cascading Style Sheet)**

- **Cascading Style Sheets (CSS)**
  - Separation of structure from presentation
  - new way of formatting your page layout, text, fonts, images
  - allow you to position things on your page down to the exact pixel
  - style sheets types:
    - Inline style sheet
    - Embedded or Internal style sheet
    - External style sheet

# Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation.
- Therefore, you should use this method sparingly, such as when a style is to be applied to a single occurrence of an element
- Declare an individual element's format
  - Attribute **style**
  - CSS property
    - Followed by a colon and a value

```
1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
   1.1//EN"
3     "http://www.w3.org/TR/xhtml11/DTD/xhtml11.
       dtd">
4
5  <!-- Fig. 6.1: inline.html -->
6  <!-- Using inline styles      -->
7
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Inline Styles</title>
11     </head>
12     <body
13
14         <p>This text does not have any style applied to it.</p>
15
16         <!-- The style attribute allows you to declare -->
17         <!-- inline styles. Separate multiple styles --> with
18         <!-- a semicolon.                                -->
19         <p style = "font-size: 20pt">This text has the
20         <em>font-size</em> style applied to it, making it 20pt.
21         </p>
22
```

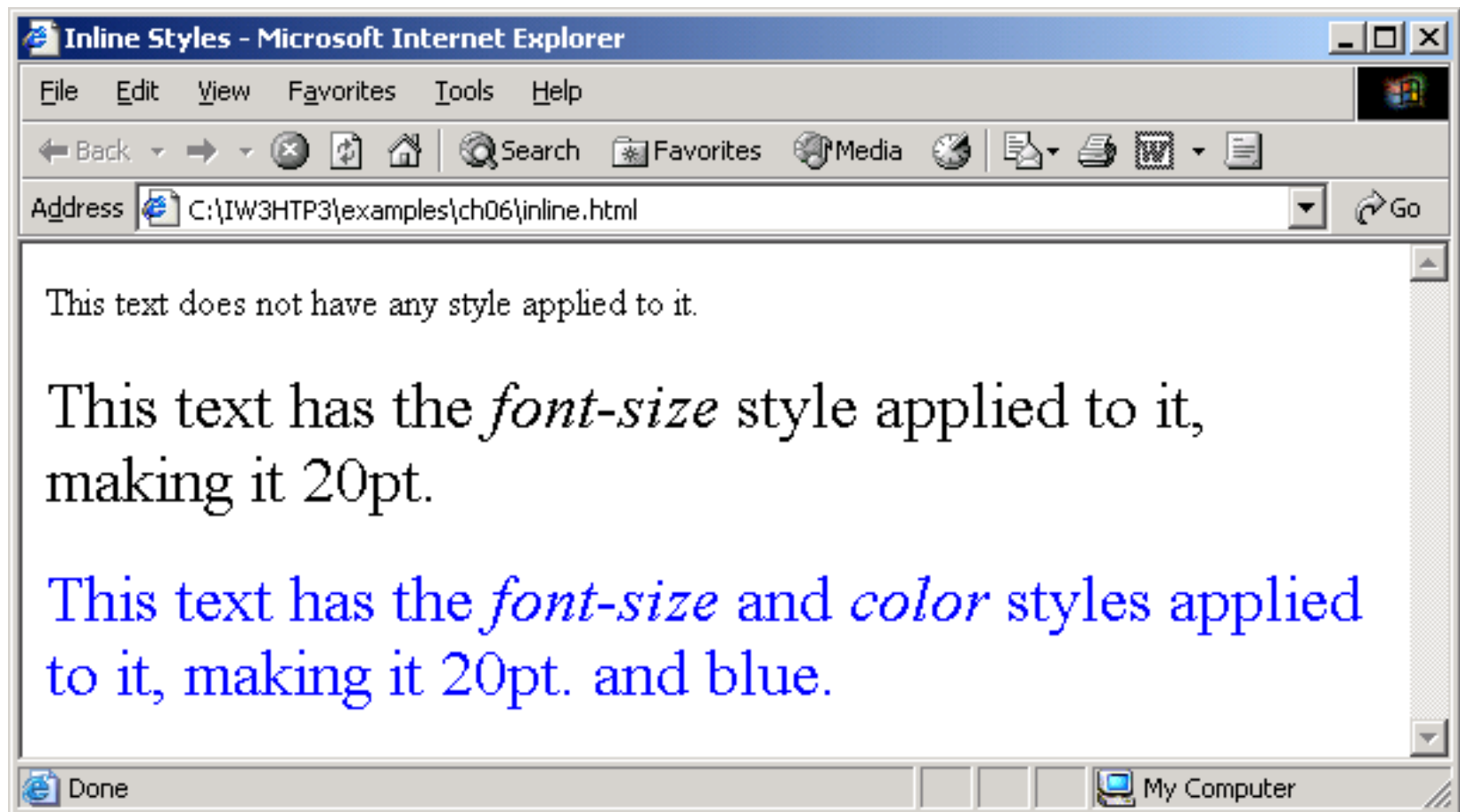
24 `<p style = "font-size: 20pt; color: #0000ff">`

25 This text has the `<em>font-size</em>` and  
26 `<em>color</em>` styles applied to it, making it  
27 20pt. and blue.`</p>`

28 This text has the `<em>font-size</em>` style applied to it,

29 `</body`  
30 `>`

30 `</html>`



# Embedded/Internal Style Sheets

- An internal style sheet should be used when a single document has a unique style.
  - Embed an entire CSS document in an HTML document's `head` section
    - Property **background-color**
      - Specifies the background color
    - **font-family**(line 18)-specifies the name of font to use.
- ```
h1 { font-family: arial, sans-serif }
```

# Embedded/Internal Style Sheets

- Font *arial* will be used. If the *arial* font is not found on the system, the browser instead will display a generic **sans-serif** font.
- Other generic font families:
  - Serif (e.g:Times New Roman, Georgia)
  - Sans-Serif (e.g: Helvetica, Verdana)
  - Cursive ( e.g: script)
  - Fantasy (e.g: critter)
  - Monospace (e.g: Courier, Fixedsys)
- **font-size**(line 20)-specifies the size of font.

# Embedded/Internal Style Sheets

- Other possible measurements in addition to pt(point)- will be introduced later.
- Relative values- **xx-small**, **x-small**, **small**, **smaller**, **medium**, **large**, **larger**, **x-large** and **xx-large**.



# Embedded/Internal Style Sheets

- Relative values are preferred because an author does not know the specific measurements of the display for each client.
- Relative **font-size** values permit more flexible viewing of web pages.
- If relative font-size is specified, the actual size is determined by the browser that displays the font.
- **E.g: Handheld device with a small screen.**

```
1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
3     "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
4
5  <!-- Fig. 6.2: declared.html -->
6  <!-- Declaring a style sheet in the header section. -->
7
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Style Sheets</title>
11
12         <!-- this begins the style sheet section -->
13         <style type = "text/css">
14
15             em      { background-color: #8000ff;
16                       color: white }
17
18             h1       { font-family: arial, sans-serif }
19
20             p        { font-size: 14pt }
21
22             .special { color: blue }
23
24         </style>
25     </head>
```

26 <body

27  
28 <!-- this class attribute applies the .special style -->

29 <h1 class = "special">Deitel & Associates, Inc.</h1>

30  
31 <p>Deitel & Associates, Inc. is an internationally  
32 recognized corporate training and publishing organization  
33 specializing in programming languages, Internet/World  
34 Wide Web technology and object technology education.  
35 Deitel & Associates, Inc. is a member of the World Wide  
36 Web Consortium. The company provides courses on Java,  
37 C++, Visual Basic, C, Internet and World Wide Web  
38 programming, and Object Technology.</p>

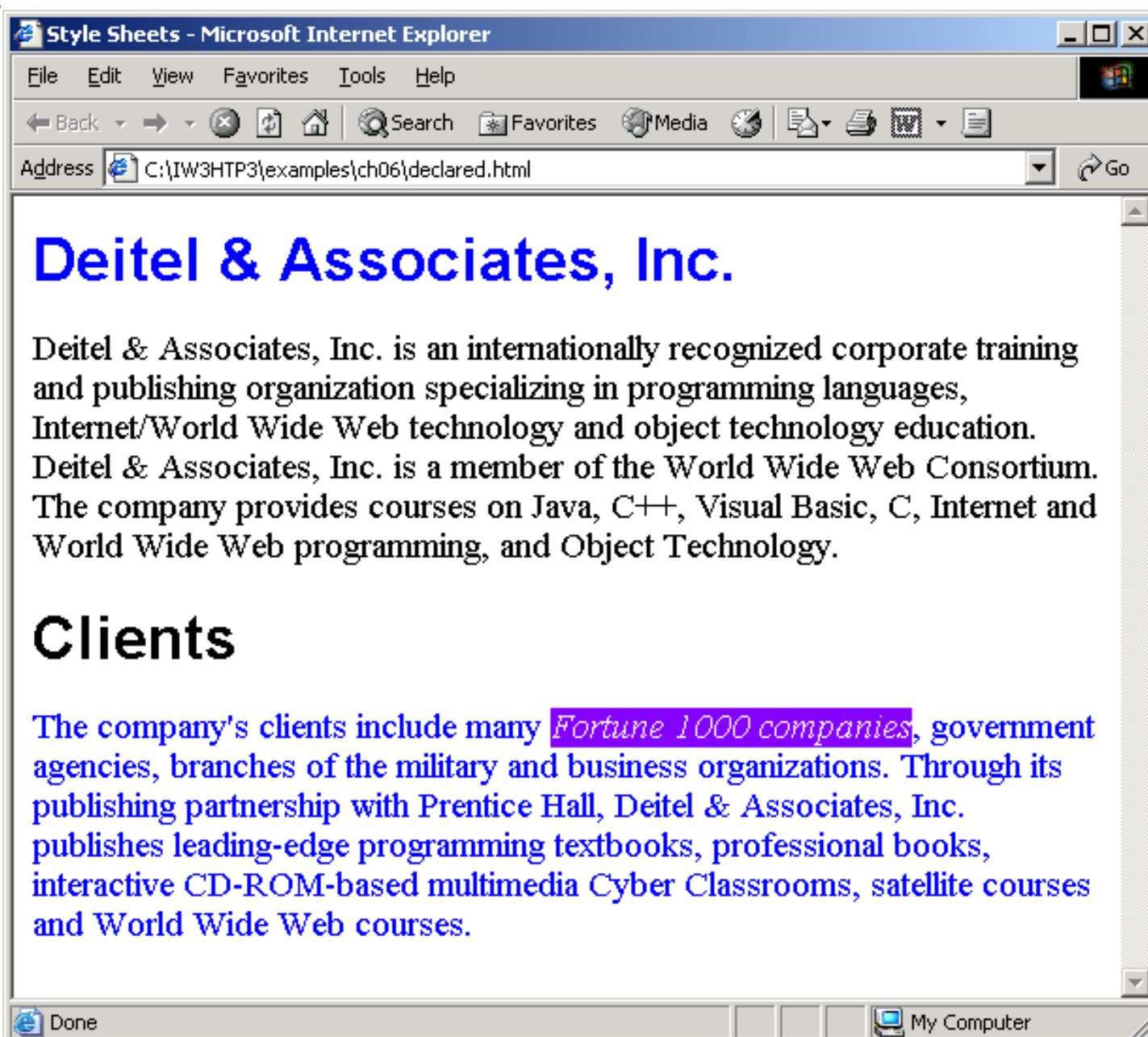
39  
40 <h1>Clients</h1>

41 <p class = "special"> The company's clients include many  
42 <em>Fortune 1000 companies</em>, government  
43 ne agencies, the military and business  
44 branches of organizations. publishing partnership with  
45 Deitel & Associates, Inc. publishes leading-edge  
46 programming textbooks, professional books, interactive  
47 CD-ROM-based multimedia Cyber Classrooms, satellite  
48 courses and World Wide Web courses.</p>

51

</body  
>

52 &lt;/html&gt;



# Selector forms

## Simple Selector Forms

- The simplest selector form is a single element name, such as h1.
- Consider the following examples:
  - h1 {font-size: 20pt;}
  - h2, h3 {font-size: 20pt;}
  - form em {font-size: 20pt;}

# Selector forms

## Class Selectors

- Class selectors are used to allow different occurrences of the same tag to use different style specifications.
- Consider the following examples:

# Selector forms

```
p.normal {font-size: 20pt;}  
p.warning {font-size: 6pt;}
```

```
<p class= "normal">
```

```
.....
```

```
</p>
```

```
<p class= "warning">
```

```
.....
```

```
</p>
```

# Selector forms

## Generic Selectors

- A class of style specifications that applies to the content of more than one kind of tag.



# Selector forms

```
.sale {font-size: 20pt;}
```

```
<p class= "sale">
```

```
.....
```

```
</p>
```

```
<h2 class= "sale">
```

```
.....
```

```
</p>
```

# Conflicting Styles

- Inheritance

## HTML

```
<p class = "special"> The company's clients include  
many <em>Fortune 1000  
companies</em>, government  
agencies.....</p>
```

## CSS

```
background-color: #8000ff;  
color: white }  
{  
font-size: 14pt }  
  
p color: blue }
```

{ Child **em** element inherited the **font-size** property from its parent **p** element.

- However, the child **em** element had a color property that conflicted with the color property of its parent **p** element.

# Conflicting Styles

- Descendant's properties have greater specificity than ancestor's properties.
- Conflicts are resolved in favor of properties with a higher specificity.
- **em** will be white in color instead of blue.

# Conflicting Styles

```
<html>
```

```
<head>
```

```
<style type="text/css">
```

```
.navtext {color: black; font-weight: bold}
```

```
p {color: blue}
```

**Link 1**

```
</style>
```

**Link 2**

```
</head>
```

Link 3

```
<body>
```

```
<p class="navtext" style="color: red">Link 1</p>
```

```
<p class="navtext">Link 2</p>
```

```
<p>Link 3</p>
```

```
</body></html>
```

# Linking External Style Sheets

- External style sheets
  - External style sheets are the best method when you want the style to be applied to many pages.
  - With an external style sheet, you can change the look of an entire web site by changing one external style sheet file.
  - **Text-decoration** applies decorations to text within an element.
  - Possible values of **Text-decoration** – **none, overline, line-through, underline, blink(not supported by IE)**

# Linking External Style Sheets

- **hover** (pseudoclass)(line 16-18)- activated dynamically when the user moves the mouse cursor over an element.
- Pseudoclasses are separated by a colon from the name of the element to which they are applied.

# Linking External Style Sheets

- Margin-left(line 23 & 26)-  
`ul { margin-left: 15px }`
- Left-hand margin of 15 pixels
- **Relative-length measurement-** varies in size, based on screen resolution. Example: **px, em, ex, percentage(%)**
- **Absolute-length measurement-** not vary in size based on the system. Example: **in(inches), cm(centimeter), mm(milimeter), pt(points; 1pt= 1/72 in), pc(picas; 1pc= 12 pt)**

```
1  /* Fig. 6.4: styles.css                */
2  /* An external stylesheet */
3
4  a      {text-decoration: none}
5
6  a:hover{text-decoration: underline;
7          color: red;
8          background-color: #c0ffcc}
9
10 li     {color: red;
11         font-weight: bold; background-color: #ffffff}
12
13
14 ul     {margin-left: 2cm}
15
16 ulul   {text-decoration: underline; margin-left: 5cm}
17
```

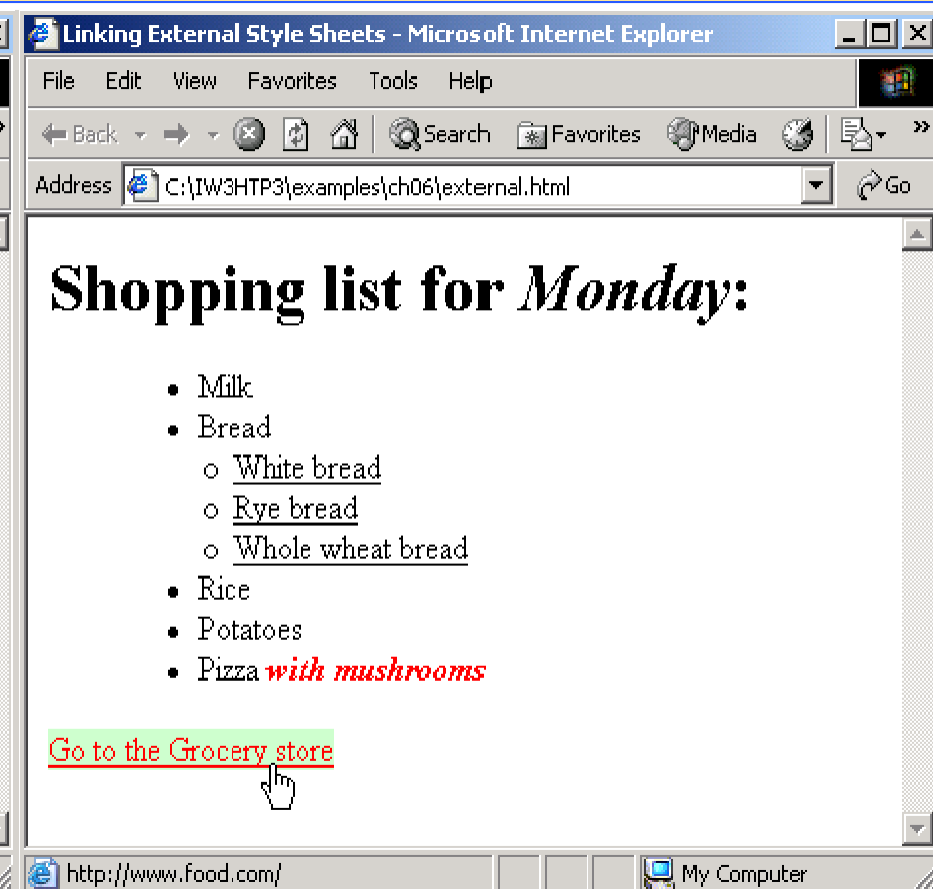
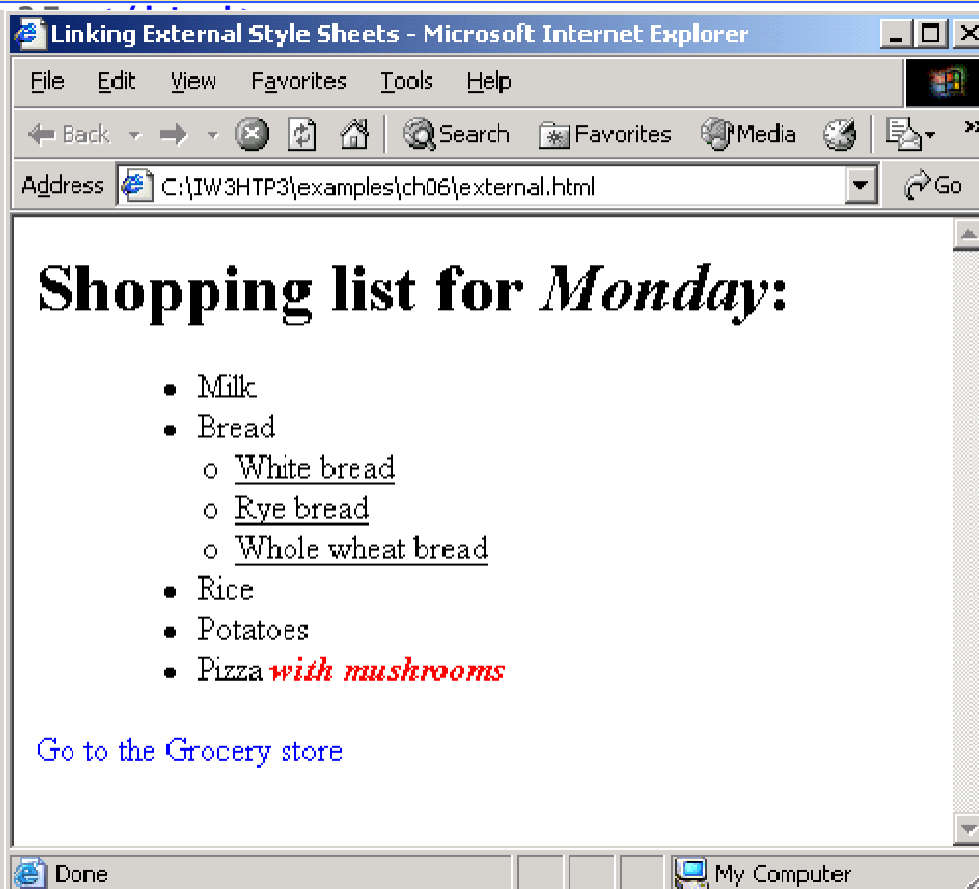


```
1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
   1.1//EN"
3     "http://www.w3.org/TR/xhtml11/DTD/xhtml11.d
      td">
4
5  <!-- Fig. 6.5: external.html      -->
6  <!-- Linking external style sheets  -->
7
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <head>
10         <link rel = "stylesheet" type = "text/css"
11           <title>Linking External Style Sheets</title>
12     </head>
13     <body>
14
15         <h1>Shopping list for
16         <em>Monday</em>:</h1>
17         <ul>
18             <li>Milk</li>
19             <li>Bread
20                 <ul>
21                     <li>White bread</li>
22                     <li>Rye bread</li>
23                     <li>Whole wheat bread</li>
24                 </ul>
```

```

26      </li>
27      <li>Rice</li>
28      <li>Potatoes</li>
29      <li>Pizza <em>with
30      mushrooms</em></li>
31
32      <p>
33      <a href = "http://www.food.com">Go to the Grocery
34      store</a>
35      /- -
36  </body>
>

```



# Positioning Elements

# Positioning Elements

- Elements that have a higher *z-index* values are displayed in front of elements with lower *z-index* values.
- If z-index is not specified or elements have same z-index value
  - Elements are placed from background to foreground in order they are encountered in the document.
- *Relative positioning*
  - Elements are positioned relative to other elements

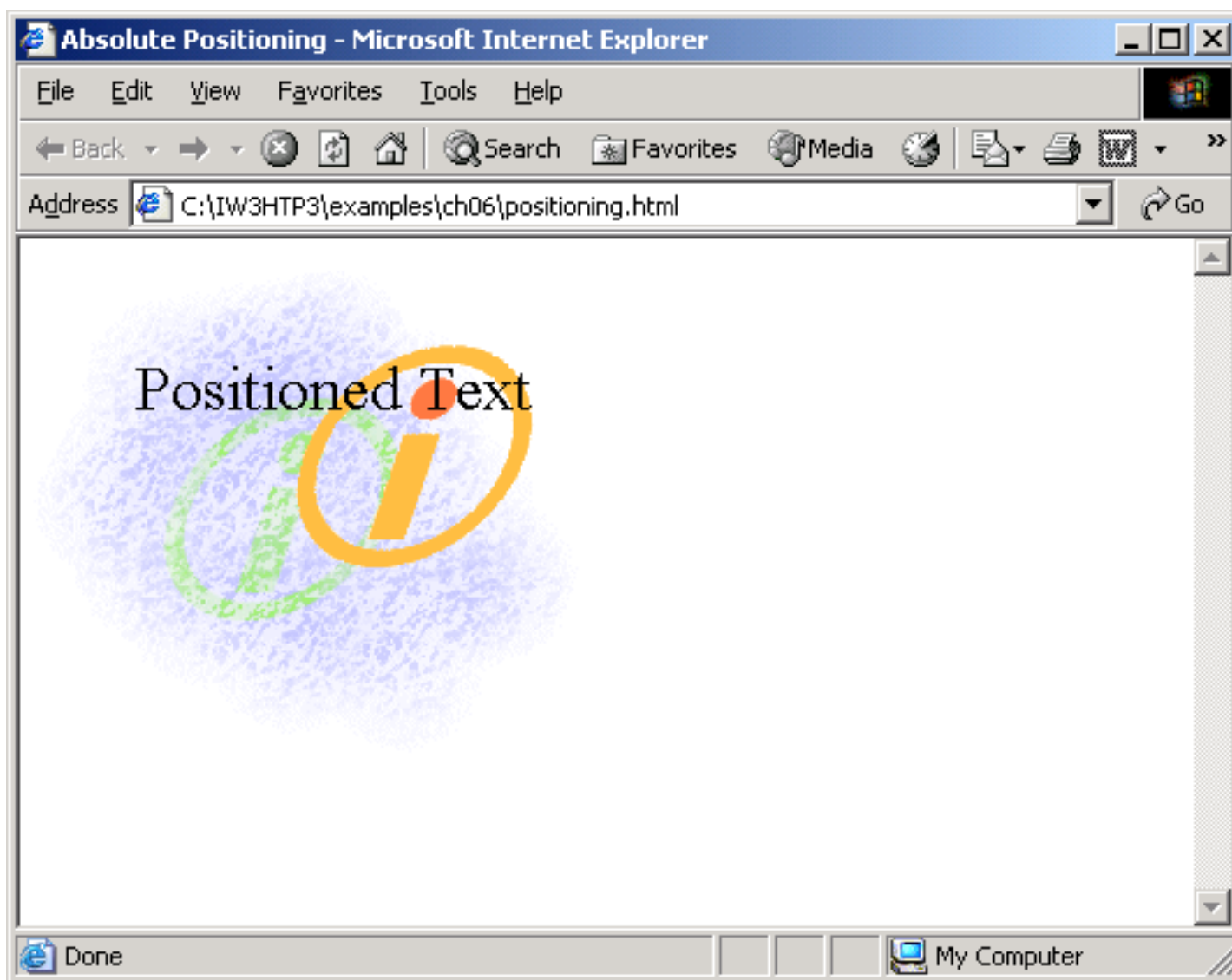
# Positioning Elements

- **Absolute positioning**
  - Removes the elements from the normal flow of elements on the page, instead positioning it according to the distance from the **top**, **left**, **right**, or **bottom** margin of its containing block-level element (i.e: **body**, **p**)
  - **z-index** attribute
    - Layer overlapping elements properly

```

1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
   1.1//EN"
3      "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Absolute Positioning</title>
11         <body>
12
13         <p><img src = "i.gif" style = "position: absolute;
14             top: 0px; left: 0px; z-index: 1"
15             alt = "First positioned image" /></p>
16         <p style = "position: absolute; top: 50px; left: 50px;
17             z-index: 3; font-size: 20pt">Positioned Text</p>
18         <p><img src = "circle.gif" style = "position: absolute;
19             top: 25px; left: 100px; z-index: 2" alt =
20             "Second positioned image" /></p>
21
22
23

```



# span

- One problem with the font properties is that they apply to whole elements, which are often too large
- Solution: a new tag to define an element in the content of a larger element - `<span>`
- The default meaning of `<span>` is to leave the content as it is



# span

- Example:

```
<p>
```

```
Now is the <span> best time </span> ever!
```

```
</p>
```

- Use <span> to apply an inline style sheet to its content

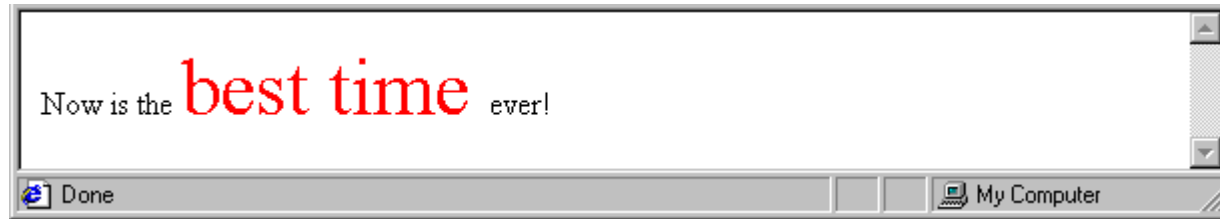
```
<p>
```

```
Now is the
```

```
<span style = "font-size: 40;  
font-family: Arial;  
color: red">
```

```
best time </span> ever!
```

```
</p>
```



- The `<span>` tag is similar to other HTML tags, they can be nested and they have `id` and `class` attributes
- Another tag that is useful for style specifications:  
`<div>`
- Used to create document sections (or divisions) for which style can be specified  
e.g.: A section of five paragraphs for which you want some particular style

```
<html>
<head>
<style type="text/css">
.try {font-size:6pt};
.try1 {font-size:50pt};
</style>
</head>
<body>
<div class="try">
<p> A </p> <p> A </p>
<p> A </p> <p> A </p>
<p> A </p> <p> A </p>
</div>
<p>Hello <span class="try1">Welcome </span>to Web Programming
  </p>
</body>
</html>
```

A

A

A

A

A

A

Hello **Welcome** to Web Programming

```

1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
   1.1//EN"
3     "http://www.w3.org/TR/xhtml11/DTD/xhtml11.d
      td">
4
5  <!-- Fig. 6.9: positioning2.html          -->
6  <!-- Relative positioning of elements    -->
7
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Relative Positioning</title>
11         <style type = "text/css">
12
13             p          { font-size: 1.3em;
14                          font-family: verdana, arial, sans-serif }
15
16             spa        { color: red;
17                          font-size: .6em;
18                          height: 1em }
19
20             .super     { position: relative;
21                          top: -1ex }

```

```

23         </style>
24     >
25
26 <body>
27
28     <p>The text at the end of this sentence
29     <span class = "super">is in
30     superscript</span></p>
31 </body>
32 </html>

```

**Output:**

The text at the end of this sentence <sup>is in superscript</sup>.

# Backgrounds

- **background-image**
  - Specifies the image URL
  - Can also set background-color property in case the image is not found
- **background-position**
  - Places the image on the page
  - Some of the values: **top**, **bottom**, **center**, **left**, **right**

# Backgrounds

- All above values are used individually or combination for vertical and horizontal positioning.
- Example: To position the image as horizontally centered(positioned at 50% of the distance across the screen) and 30 pixels from the top, use:

`background-position: 50% 30px;`

# Backgrounds

- **background-repeat**
  - Controls the tiling of the background image
  - Possible values: **no-repeat**, **repeat**, **repeat-x** (tile the image horizontally), **repeat-y** (tile the image vertically)
- **background-attachment**
  - **Fixed** (fix the image in the position specified by background-position)
  - **Scroll** (moves the image when user scrolls through the document)



# Backgrounds

- **font-weight**
  - Specify the “boldness” of text
  - Possible values: bold, normal, bolder, lighter
- **font-style**
  - Possible values: **none**, **italic**, **oblique** (will default to italic if the system does not support oblique text.)

```
1 <?xml version = "1.0"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
  1.1//EN"
3   "
```

26

&lt;/style&gt;

27

&lt;/head&gt;

28

&lt;body&gt;

29

30

&lt;p&gt;

31

This example uses the background-image, background-position and background-attachment styles to place the `<span class="dark">` Deitel & Associates, Inc. `</span>` logo in the bottom, right corner of the page. Notice how the logo stays in the proper position when you resize the browser window.

32

33

34

35

&lt;/p&gt;

36

37

38

39

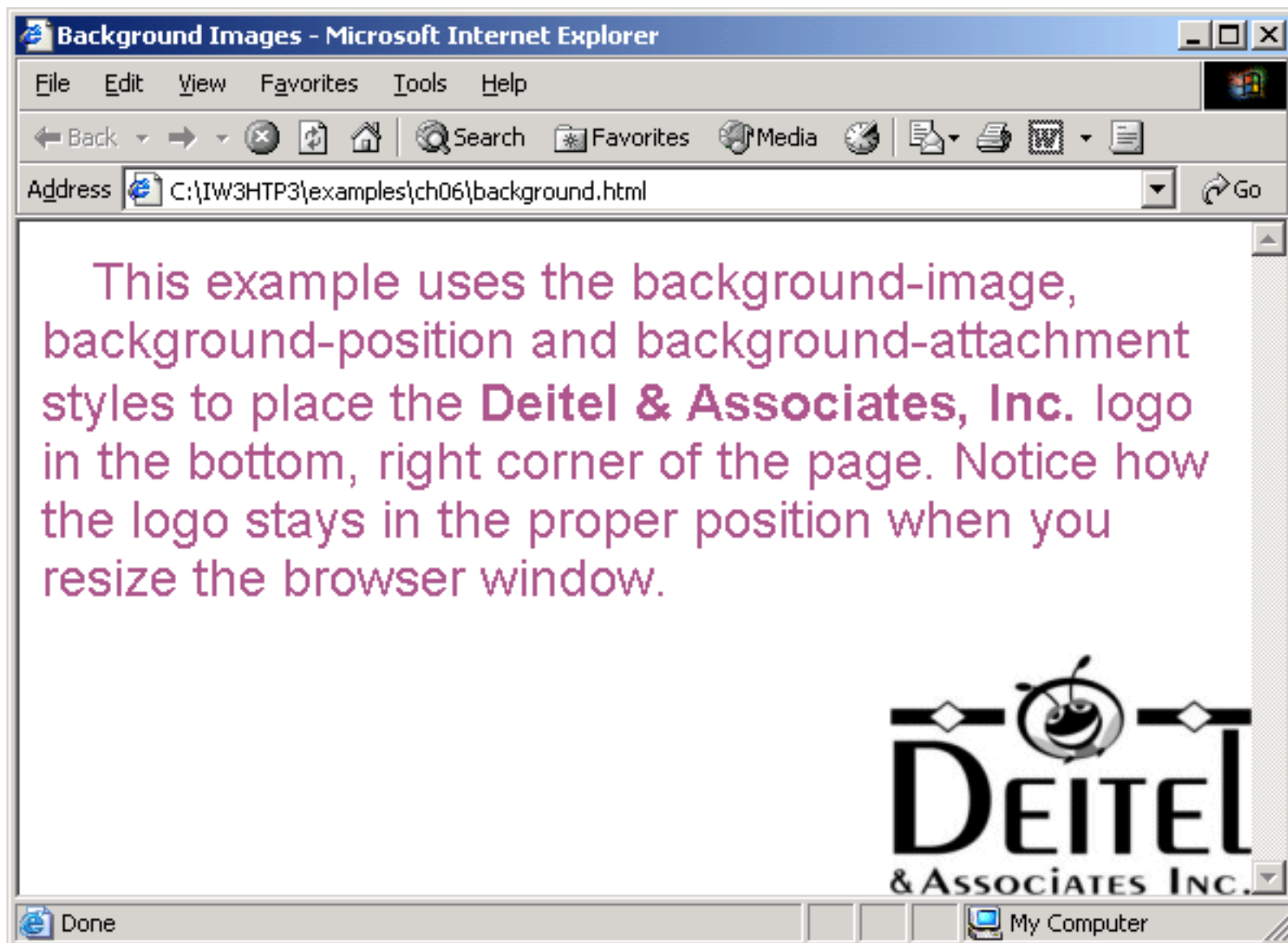
40

41

&lt;/body&gt;

42

&lt;/html&gt;



# Alignment of Text

- The `text-indent` property can be used to indent the first line of a paragraph.
- The `float` property is used to specify that text should flow around some element, often an image or a table.
- The possible values for `float` are `left`, `right`, and `none`, which is the default.

# Alignment of Text

```
<html><head>
<style type="text/css">
  p.indent {text-indent: 0.5in}
</style>
</head>
<body>
<p class="indent">
```

A Web programmer or Web developer is the person in charge of making the website do things. They create the interactivity on the site including the actions on forms, rollovers for menus, and any Ajax or other programming on the site.

```
</p>
</body></html>
```

# Alignment of Text

A Web programmer or Web developer is the person in charge of making the website do things. They create the interactivity on the site including the actions on forms, rollovers for menus, and any Ajax or other programming on the site.

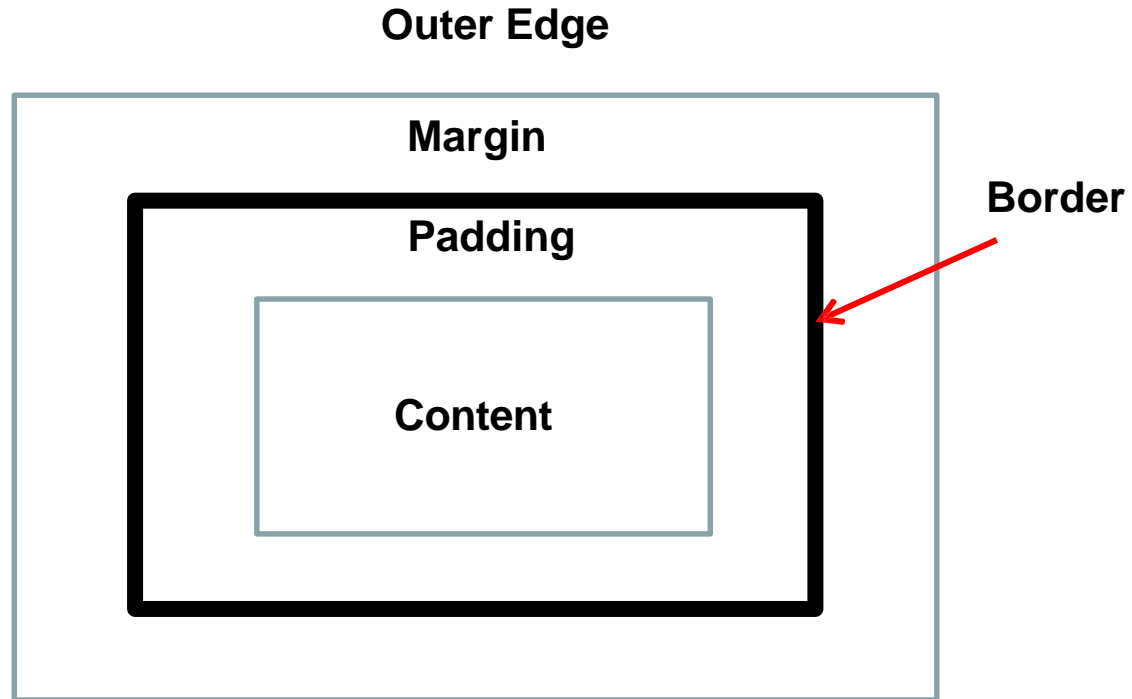
```
<html><head>
<style type="text/css">
    img {float: right}
</style>
</head>
<body>
<p>
    
</p>
<p>
A Web programmer or Web developer is
the person in charge of
making the website do things. They
create the interactivity on
the site including the actions on
forms, rollovers for menus, and
any Ajax or other programming on the
site.
</p>
</body></html>
```

A Web programmer or Web developer is the person in charge of making the website do things. They create the interactivity on the site including the actions on forms, rollovers for menus, and any Ajax or other programming on the site.





# The Box Model



# The Box Model

- Box model
  - Margins
    - margin-top, margin-right, margin-left, margin-bottom
  - Padding
    - padding-top, padding-right, padding-left, and padding-bottom
  - Border
    - border-width
      - thin, medium, thick
    - border-color
      - Sets the color
    - border-style
      - none, hidden, dotted, dashed, solid, double, groove, ridge, inset and outset

```

1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
3      "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
4
5  <!-- Fig. 6.12: floating.html -->
6  <!-- Floating elements and element boxes -->
7
8  <html xmlns = "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Flowing Text Around Floating Elements</title>
11
12         <style type = "text/css">
13
14             div { background-color: #ffccff;
15                 margin-bottom:
16                 font-size: 1.5em;
17                 width: 50% }
18
19             p    { text-align: justify }
20
21         </style>
22
23     </head>
24

```

**<body**

**<div style = "text-align: center">**

**Deitel & Associates, Inc.</div>**

**<div style = "float: right; margin: .5em;  
text-align: right">**

**Corporate Training and Publishing</div>**

**<p>Deitel & Associates, Inc. is an internationally  
recognized corporate training and publishing organization  
specializing in programming languages, Internet/World  
Wide Web technology and object technology education.**

**The company provides courses on Java, C++, Visual Basic, C, Internet  
and World Wide Web programming, and Object Technology.</p>**

**<div style = "float: right; padding: .5em;  
text-align: right">**

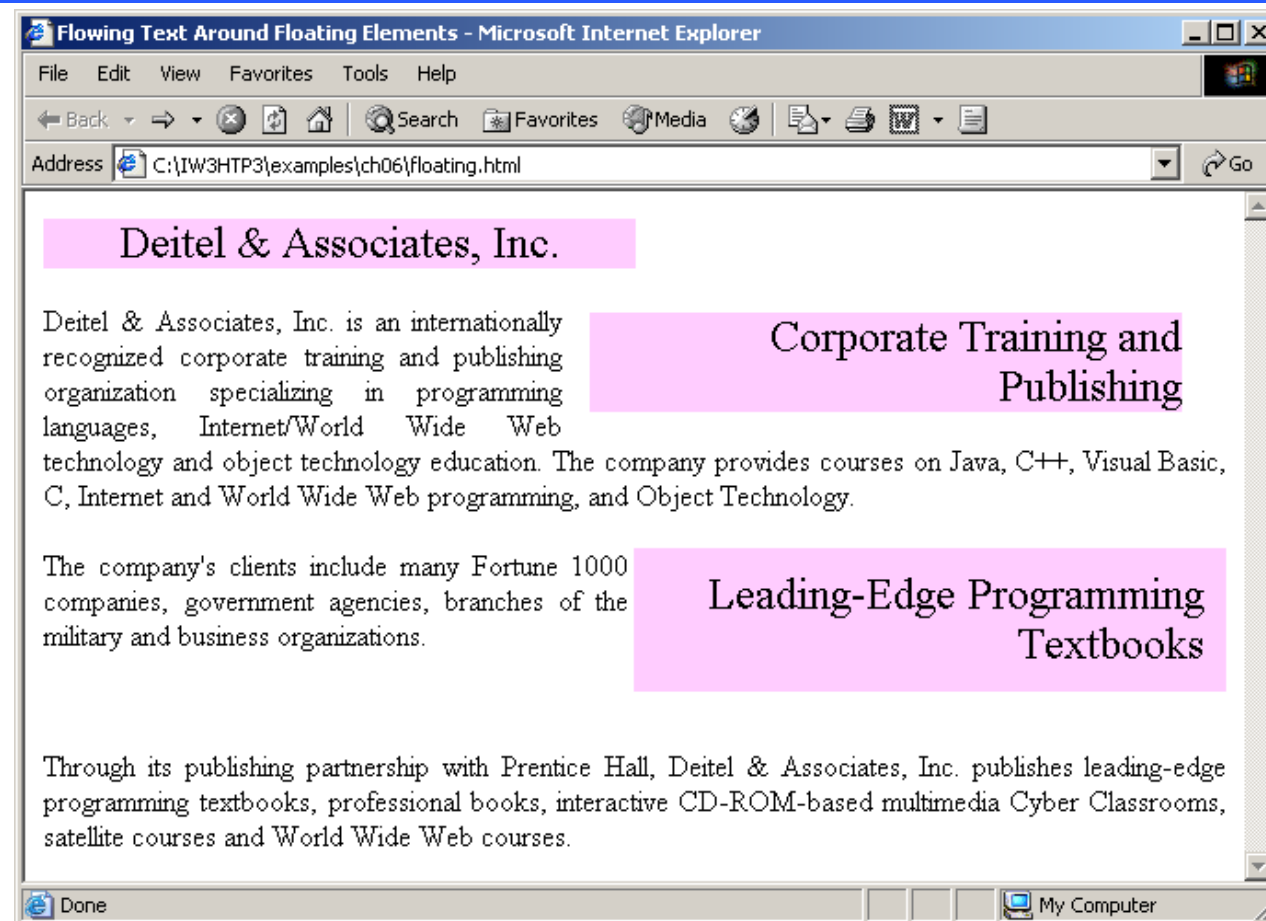
**Leading-Edge Programming  
Textbooks</div>**

**<p>The company's clients include many Fortune 1000  
companies, government agencies, branches of the military  
and business organizations.</p>**

```
49 <p style = "clear: right">Through its publishing
50 partnership with Prentice Hall, Deitel & Associates,
51 Inc. publishes leading-edge programming textbooks,
52 professional books, interactive CD-ROM-based multimedia
53 Cyber Classrooms, satellite courses and World Wide Web
54 courses.</p>
```

```
55
56 </body
>
```

```
57 </html>
```

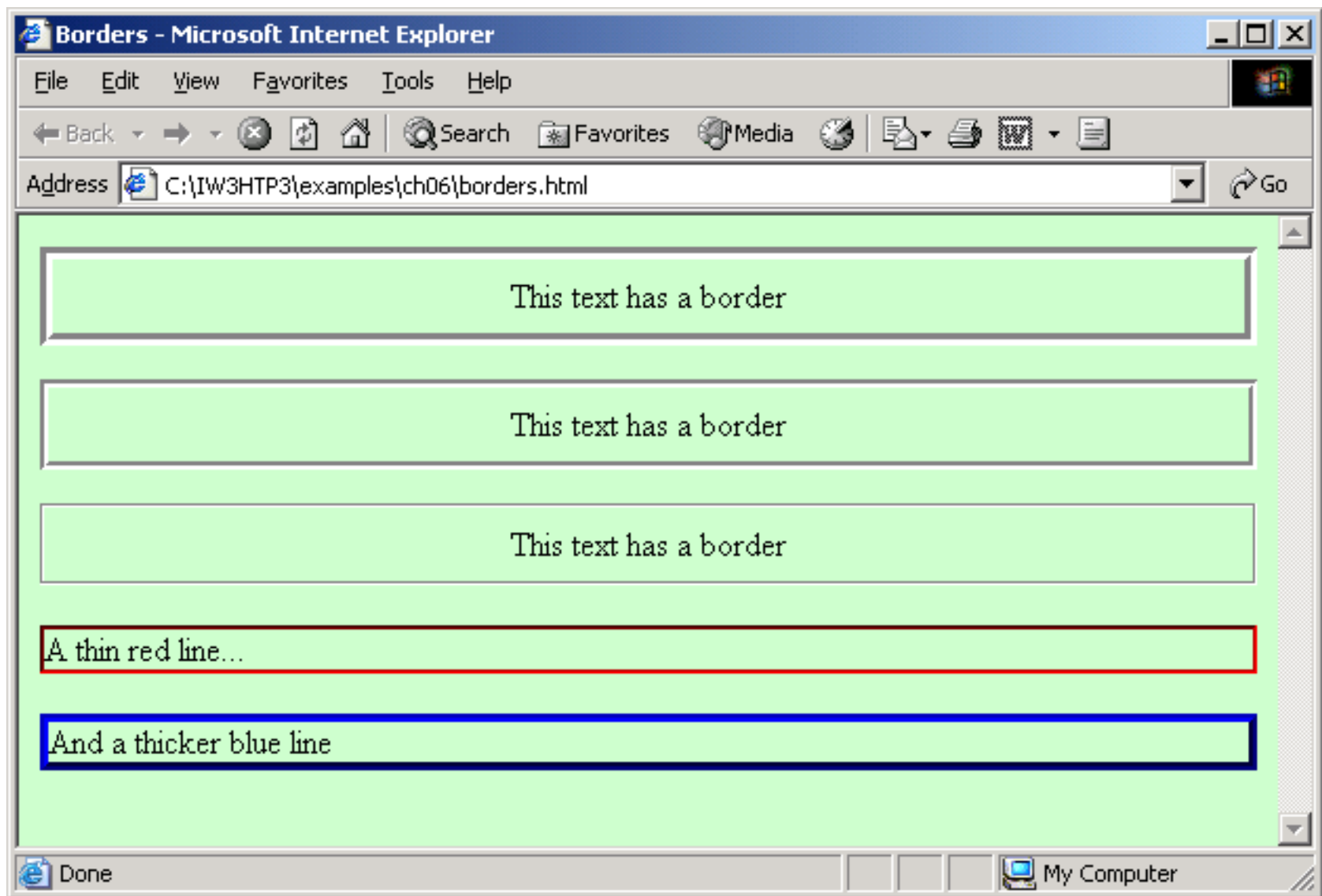


- `<p style="clear: right">.....</p>`(line 49)
- Possible values of *clear* = **right, left**
- By setting *clear* property to the same direction as that in which the elements is floated (right or left), you can interrupt the flow of text around a floated element.

```
1 <?xml version = "1.0"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
  1.1//EN"
3   "http://www.w3.org/TR/xhtml11/DTD/xhtml11.d
  td">
4
5 <!-- Fig. 6.14: borders.html -->
6 <!-- Setting borders of an element -->
7
8 <html xmlns = "http://www.w3.org/1999/xhtml">
9   <head>
10     <<title>Borders</title>
11     <style type = "text/css">
12         bod      { background-color: #ccffcc }
13         "
14         div      { text-align: center;
15                   margin-bottom:
16                   1em;      padding:
17                   - -
18         .thick    { border-width: thick }
19
20         .medium   { border-width: medium
21         ,
22         .thin     { border-width: thin }
```

```
26     .groove { border-style: groove }
27
28     .inset   { border-style: inset }
29
30     .outset  { border-style: outset }
31
32     .red     { border-color: red }
33
34     .blue    { border-color: blue }
35
36 </style>
37 >
38 </head>
39 <body>
40
41     <div class = "thick groove">This text has a border</div>
42     <div class = "medium groove">This text has a border</div>
43     <div class = "thin groove">This text has a border</div>
44
45     <p class = "thin red inset">A thin red line...</p>
46     <p class = "medium blue
47         outset">
48         And a thicker blue line</p>
49 </body>
50 >
51 </html>
```





```

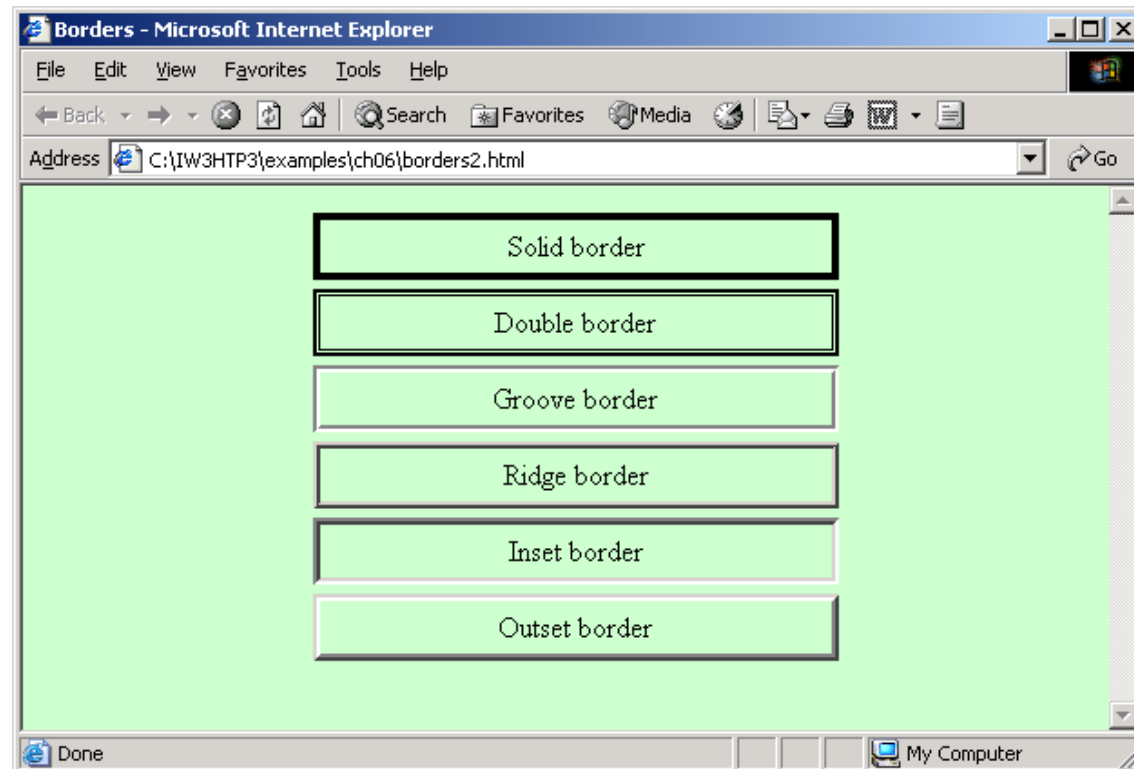
1  <?xml version = "1.0"?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
   1.1//EN"
3      "http://www.w3.org/1999/xhtml">
9      <head>
10         <title>Borders</title>
11
12         bod    { background-color: #ccffcc }
13
14         div    { text-align: center;
15                 margin-bottom:
16                 .3em; width: 50%;
17                 position: relative;
18                 left: 25%;
19                 padding: .3em }
20         </style>
21     </head>
22
23     <body
24

```

```
26 <div style = "border-style: solid">Solid border</div>
27 <div style = "border-style: double">Double border</div>
28 <div style = "border-style: groove">Groove border</div>
29 <div style = "border-style: ridge">Ridge border</div>
30 <div style = "border-style: inset">Inset border</div>
31 <div style = "border-style: outset">Outset border</div>
```

```
34 </body>
35 >
```

```
35 </html>
```



# Margins and Padding

```
<html><head>
<style type="text/css">
p.one {margin:0.1in;
      padding:0.3in;
      background-color:#C0C0C0;
      border-style:solid;
      }
</style>
</head>
<body>

<p class="one">
margin= 0.1in, padding=0.3in
</p>
</body></html>
```

# Margins and Padding

padding = 0.3in

margin = 0.1in

