



Cascading Style Sheets (CSS)

```
171 #content .article img.left.border {  
172     padding: 0 9px 9px 0;  
173     border-right: 1px dotted #999;  
174     border-bottom: 1px dotted #999; }  
175 #content .article blockquote {  
176     margin-left: 10px;  
177     padding-left: 10px;  
178     border-left: 3px solid #252525; }  
179 #content .article ul {  
180     padding-left: 1em;  
181     list-style-type: circle; }
```

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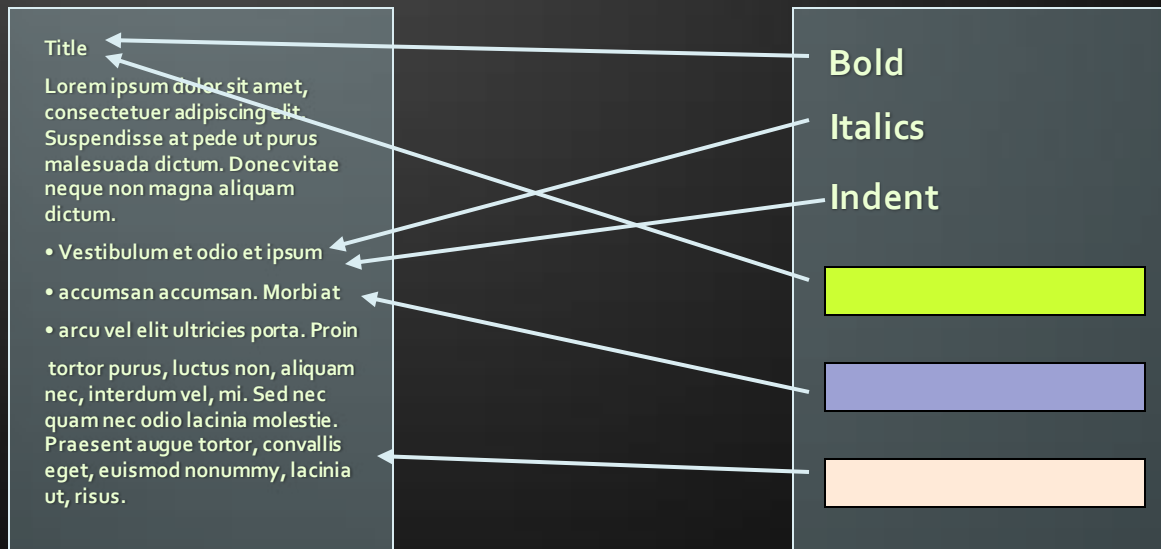
- ◆ What is CSS?
- ◆ Styling with Cascading Stylesheets (CSS)
- ◆ Selectors and style definitions
- ◆ Linking HTML and CSS
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CSS: A New Philosophy

◆ Separate content from presentation!

Content
(HTML document)

Presentation
(CSS Document)



The Resulting Page

Title

Lorem ipsum dolor sit amet,
consectetur adipiscing elit.
Suspendisse at pede ut purus
malesuada dictum. Donec vitae neque
non magna aliquam dictum.

- *Vestibulum et odio et ipsum*
- *accumsan accumsan. Morbi at*
- *arcu vel elit ultricies porta. Proin*

Tortor purus, luctus non, aliquam nec,
interdum vel, mi. Sed nec quam nec
odio lacinia molestie. Praesent augue
tortor, convallis eget, euismod
nonummy, lacinia ut, risus.



CSS Intro

Styling with Cascading Stylesheets

CSS Introduction

- ◆ Cascading Style Sheets (CSS)
 - ◆ Used to describe the presentation of documents
 - ◆ Define sizes, spacing, fonts, colors, layout, etc.
 - ◆ Improve content accessibility
 - ◆ Improve flexibility
- ◆ Designed to separate presentation from content
- ◆ Due to CSS, all HTML presentation tags and attributes are deprecated, e.g. font, center, etc.

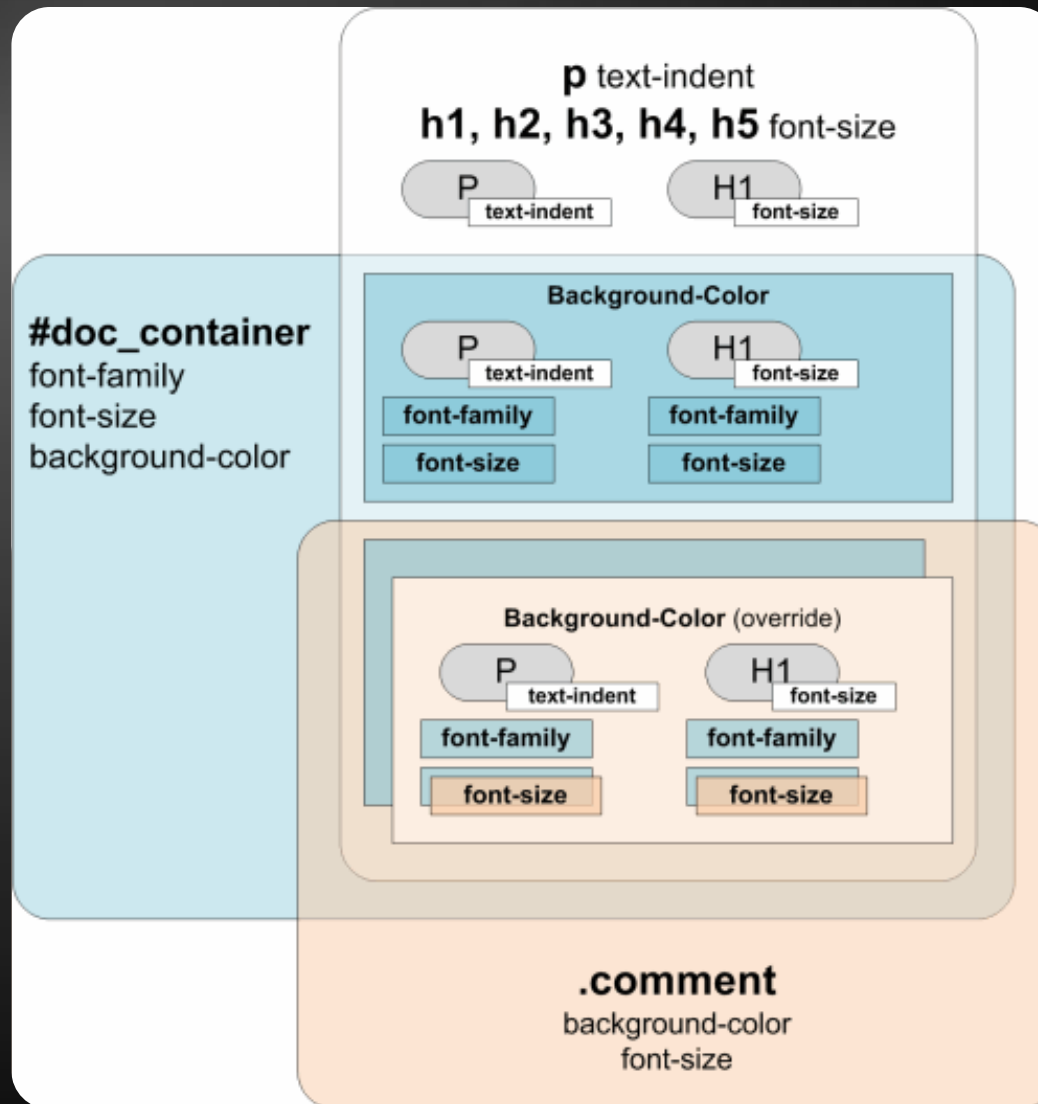
CSS Introduction (2)

- ◆ CSS can be applied to any XML document
 - ◆ Not just to HTML / XHTML
- ◆ CSS can specify different styles for different media
 - ◆ On-screen
 - ◆ In print
 - ◆ Handheld, projection, etc.
 - ◆ ... even by voice or Braille-based reader

Why “Cascading”?

- ◆ Priority scheme determining which style rules apply to element
 - ◆ Cascade priorities or specificity (weight) are calculated and assigned to the rules
 - ◆ Child elements in the HTML DOM tree inherit styles from their parent
 - ◆ Can override them
 - ◆ Control via `!important` rule

Why “Cascading”? (2)



CSS Cascade (Precedence)

- ◆ There are browser, user and author stylesheets with "normal" and "important" declarations
 - ◆ Browser styles (least priority)
 - ◆ Normal user styles
 - ◆ Normal author styles (external, in head, inline)
 - ◆ Important author styles
 - ◆ Important user styles (max priority)

```
a { color: red !important ; }
```

<http://www.slideshare.net/maxdesign/css-cascade-1658158>

Why “Cascading”? (3)

- ◆ Some CSS styles are inherited and some not
 - ◆ Text-related and list-related properties are inherited - color, font-size, font-family, line-height, text-align, list-style, etc
 - ◆ Box-related and positioning styles are not inherited - width, height, border, margin, padding, position, float, etc
 - ◆ `<a>` elements do not inherit color and text-decoration

Linking HTML and CSS

- ◆ HTML (content) and CSS (presentation) can be linked in three ways:
 - ◆ Inline: the CSS rules in the `style` attribute
 - ◆ No selectors are needed
 - ◆ Embedded: in the `<head>` in a `<style>` tag
 - ◆ External: CSS rules in separate file (best)
 - ◆ Usually a file with `.css` extension
 - ◆ Linked via `<link rel="stylesheet" href=...>` tag or `@import` directive in embedded CSS block

Linking HTML and CSS (2)

- ◆ Using external files is highly recommended
 - ◆ Simplifies the HTML document
 - ◆ Improves page load speed as the CSS file is cached

Inline Styles: Example

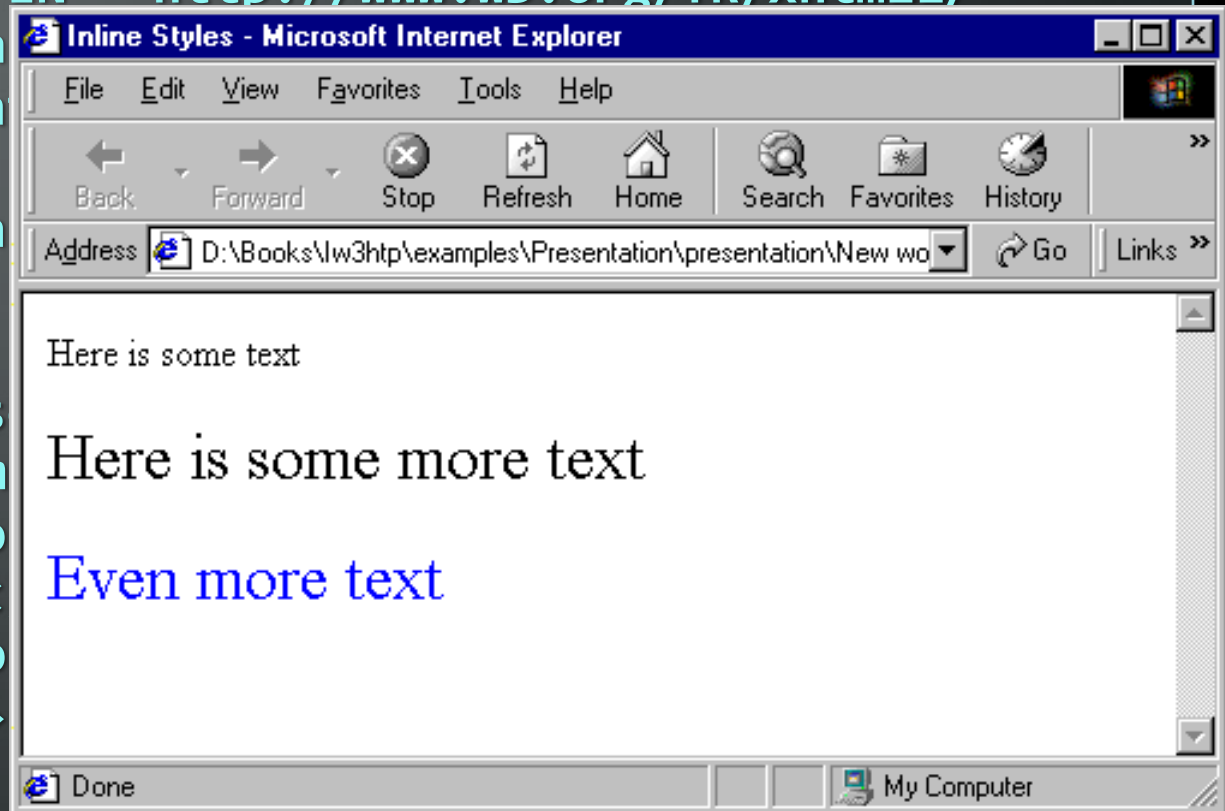
inline-styles.html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0  
Transitional//EN" "http://www.w3.org/TR/xhtml1/  
DTD/xhtml1-transitional.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
<head>  
  <title>Inline Styles</title>  
</head>  
<body>  
  <p>Here is some text</p>  
<!--Separate multiple styles with a semicolon-->  
  <p style="font-size: 20pt">Here is some  
    more text</p>  
  <p style="font-size: 20pt;color:  
    #0000FF" >Even more text</p>  
</body>  
</html>
```

Inline Styles: Example

inline-styles.html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0  
Transitional//EN" "http://www.w3.org/TR/xhtml1/  
DTD/xhtml1-tra  
<html xmlns="h  
<head>  
  <title>Inlin  
</head>  
<body>  
  <p>Here is s  
<!--Separate m  
  <p style="fo  
    more text<  
  <p style="fo  
    #0000FF" >  
</body>  
</html>
```



Embedded Styles

- ◆ Embedded in the HTML in the `<style>` tag:

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

- ◆ The `<style>` tag is placed in the `<head>` section of the document
- ◆ `type` attribute specifies the MIME type
 - ◆ MIME describes the format of the content
 - ◆ Other MIME types include `text/html`, `image/gif`, `text/javascript` ...
- ◆ Used for document-specific styles

Embedded Styles: Example

embedded-stylesheets.html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0  
Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-  
transitional.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
<head>  
  <title>Style Sheets</title>  
  <style type="text/css">  
    em {background-color:#8000FF; color:white}  
    h1 {font-family:Arial, sans-serif}  
    p {font-size:18pt}  
    .blue {color:blue}  
  </style>  
</head>
```

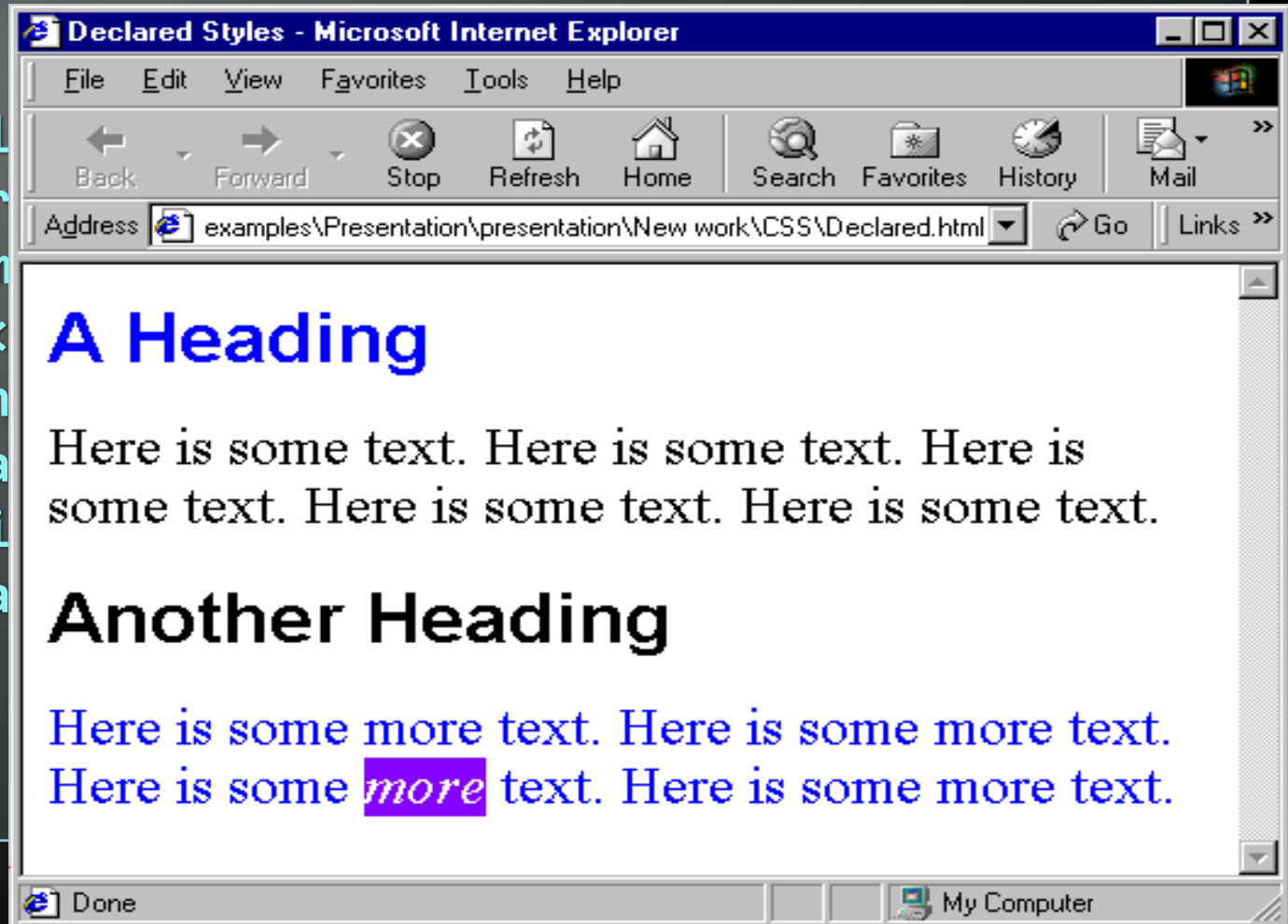
Embedded Styles: Example (2)

...

```
<body>
  <h1 class="blue">A Heading</h1>
  <p>Here is some text. Here is some text. Here
  is some text. Here is some text. Here is some
  text.</p>
  <h1>Another Heading</h1>
  <p class="blue">Here is some more text.
  Here is some more text.</p>
  <p class="blue">Here is some <em>more</em>
  text. Here is some more text.</p>
</body>
</html>
```

Embedded Styles: Example (3)

```
<body>
  <h1 class="title">Hello World</h1>
  <p>Here is some text.</p>
  <h1>Another title</h1>
  <p class="text">Here is more text.</p>
  <p class="text">And here is more text.</p>
</body>
</html>
```



External CSS Styles

- ◆ External linking

- ◆ Separate pages can all use a shared style sheet
- ◆ Only modify a single file to change the styles across your entire Web site (see <http://www.csszengarden.com/>)

- ◆ link tag (with a rel attribute)

- ◆ Specifies a relationship between current document and another document

```
<link rel="stylesheet" type="text/css"  
      href="styles.css">
```

- ◆ link elements should be in the <head>

External CSS Styles (2)

@import

- ♦ Another way to link external CSS files
- ♦ Example:

```
<style type="text/css">  
  @import url("styles.css");  
  /* same as */  
  @import "styles.css";  
</style>
```

- ♦ Ancient browsers do not recognize @import
- ♦ Use @import in an external CSS file to workaround the IE 32 CSS file limit

External Styles: Example

styles.css

```
/* CSS Document */

a          { text-decoration: none }

a:hover    { text-decoration: underline;
             color: red;
             background-color: #CCFFCC }

li em      { color: red;
             font-weight: bold }

ul          { margin-left: 2cm }

ul ul      { text-decoration: underline;
             margin-left: .5cm }
```

External Styles: Example (2)

external-styles.html

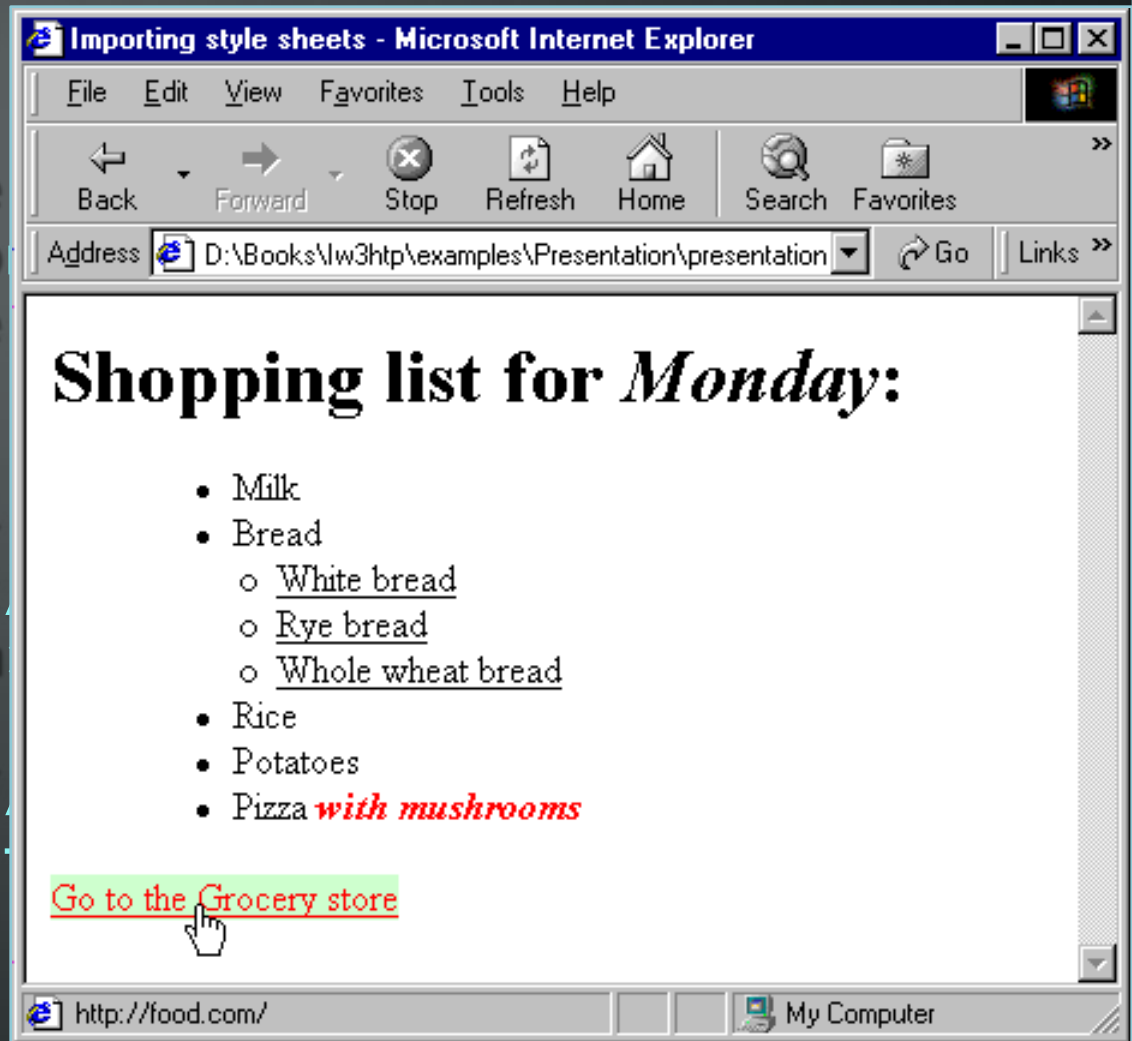
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
  Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
  transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <title>Importing style sheets</title>
  <link type="text/css" rel="stylesheet"
    href="styles.css" />
</head>
<body>
  <h1>Shopping list for <em>Monday</em>:</h1>
  <li>Milk</li>
  ...
```

External Styles: Example (3)

```
...
<li>Bread
  <ul>
    <li>White bread</li>
    <li>Rye bread</li>
    <li>Whole wheat bread</li>
  </ul>
</li>
<li>Rice</li>
<li>Potatoes</li>
<li>Pizza <em>with mushrooms</em></li>
</ul>
<a href="http://food.com" title="grocery
  store">Go to the Grocery store</a>
</body>
</html>
```

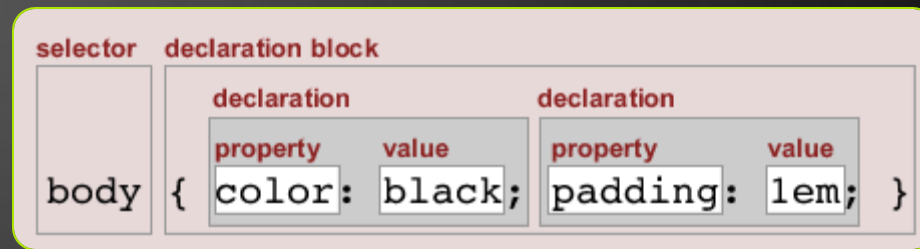
External Styles: Example (4)

```
...  
<li>Bread  
  <ul>  
    <li>White  
    <li>Rye b  
    <li>Whole  
  </ul>  
</li>  
<li>Rice</li>  
<li>Potatoes</li>  
<li>Pizza <em>  
</ul>  
<a href="http://  
  store">Go to  
</body>  
</html>
```



Style Sheets Syntax

- ◆ Stylesheets consist of rules, selectors, declarations, properties and values



<http://css.maxdesign.com.au/>

- ◆ Selectors are separated by commas
- ◆ Declarations are separated by semicolons
- ◆ Properties and values are separated by colons

```
h1,h2,h3 { color: green; font-weight: bold; }
```

Values in the CSS Rules

- ◆ Colors are set in RGB format (decimal or hex):
 - ◆ Example: `#a0a6aa = rgb(160, 166, 170)`
- ◆ Numeric values are specified in:
 - ◆ Pixels, ems, e.g. `12px` , `1.4em`
 - ◆ Points, inches, centimeters, millimeters
 - ◆ E.g. `10pt` , `1in`, `1cm`, `1mm`
 - ◆ Percentages, e.g. `50%`
 - ◆ Percentage of what?...
 - ◆ Zero can be used with no unit: `border: 0;`

Default Browser Styles

- ◆ Browsers have default CSS styles
 - ◆ Used when there is no CSS information or any other style information in the document
- ◆ Caution: default styles differ in browsers
 - ◆ E.g. margins, paddings and font sizes differ most often and usually developers reset them

```
* { margin: 0; padding: 0; }
```

```
body, h1, p, ul, li { margin: 0; padding: 0; }
```