ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ

Εισαγωγή στην Επιστήμη και Τεχνολογία των Υπηρεσιών

Ενότητα 9: Cascading Style Sheets for HTML - 2

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Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

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XML
Cascading Style Sheets for HTML - 2
605.444 / 635.444

David Silberberg

Lecture 10

Table Properties

- Table Elements
  - **table** (In HTML: TABLE) - specifies that an element defines a block-level table: it is a rectangular block that participates in a block formatting context.
  - **inline-table** (In HTML: TABLE) - specifies that an element defines an inline-level table: it is a rectangular block that participates in an inline formatting context.
  - **table-row** (In HTML: TR) **-** specifies that an element is a row of cells.
  - **table-row-group** (In HTML: TBODY) - specifies that an element groups one or more rows.

Table Properties (cont.)

- Table Elements
  - **table-header-group** (In HTML: THEAD) - like 'table-row-group', but for visual formatting, the row group is always displayed before all other rows and rowgroups and after any top captions. Print user agents may repeat footer rows on each page spanned by a table.
  - **table-footer-group** (In HTML: TFOOT) - like 'table-row-group', but for visual formatting, the row group is always displayed after all other rows and rowgroups and before any bottom captions. Print user agents may repeat footer rows on each page spanned by a table.
  - **table-column** (In HTML: COL) - specifies that an element describes a column of cells.

Table Properties (cont.)

- Table Elements
  - **table-column-group** (In HTML: COLGROUP) - specifies that an element groups one or more columns.
  - **table-cell** (In HTML: TD, TH) - specifies that an element represents a table cell.
  - **table-caption** (In HTML: CAPTION) -specifies a caption for the table.

Anonymous Table Objects

- Document languages other than HTML may not contain all the elements in the CSS2 table model.
- In these cases, the "missing" elements must be assumed in order for the table model to work.
- The missing elements generate anonymous objects (e.g., anonymous boxes in visual table layout) according to the rules

Anonymous Table Object Rules

- Any table element
  - automatically generates necessary anonymous table objects around itself
  - consists of at least three nested objects
    - 'table'/'inline-table' element
    - 'table-row' element
    - 'table-cell' element.
- If the parent P of a 'table-cell' element T is not a 'table-row'
  - an object corresponding to a 'table-row' will be generated between P and T
  - this object will span all consecutive 'table-cell' siblings (in the document tree) of T

Anonymous Table Object Rules (cont.)

- If the parent P of a 'table-row' element T is not a 'table', 'inline-table', or 'table-row-group' element
  - an object corresponding to a 'table' element will be generated between P and T
  - this object will span all consecutive siblings (in the document tree) of T that require a 'table' parent: 'table-row', 'table-row-group', 'table-header-group', 'table-footer-group', 'table-column', 'table-column-group', and 'caption'.

Anonymous Table Object Rules (cont.)

- If the parent P of a 'table-row-group' (or 'table-header-group' or 'table-footer-group') element T is not a 'table' or 'inline-table‘‘
  - an object corresponding to a 'table' element will be generated between P and T
  - this object will span all consecutive siblings (in the document tree) of T that require a 'table' parent: 'table-row', 'table-row-group', 'table-header-group', 'table-footer-group', 'table-column', 'table-column-group', and 'caption'.

Anonymous Table Object Rules (cont.)

- If a child T of a 'table-row' element P is not a 'table-cell' element
  - an object corresponding to a 'table-cell' element will be generated between P and T
  - this object spans all consecutive siblings of T that are not 'table-cell' elements.

Column Selectors

- Table cells may belong to two context
  - rows
  - columns
- However, in the source document cells are descendants of rows, never of columns.
- Nevertheless, some aspects of cells can be influenced by setting properties on columns.

Column Properties

- **border -** border properties apply to columns only if 'border-collapse' is set to 'collapse' on the table element
- **background -** background properties for cells in the column, but only if both the cell and row have transparent backgrounds
- **width -** minimum width for the column
- **visibility -** if the 'visibility' of a column is set to 'collapse', none of the cells in the column are rendered, and cells that span into other columns are clipped. Also, the width of the table is diminished by the width the column would have taken up.

Caption Properties

- Property is caption-side
- caption-side: **top**
  - Positions the caption box above the table box.
- caption-side: **bottom**
  - Positions the caption box below the table box.
- caption-side: **left**
  - Positions the caption box to the left of the table box.
- caption-side: **right**
  - Positions the caption box to the right of the table box.

HTML Default Table Settings

```
TABLE     { display: table }
TR        { display: table-row }
THEAD     { display: table-header-group }
TBODY     { display: table-row-group }
TFOOT     { display: table-footer-group }
COL       { display: table-column }
COLGROUP  { display: table-column-group }
TD, TH    { display: table-cell }
CAPTION   { display: table-caption }
```

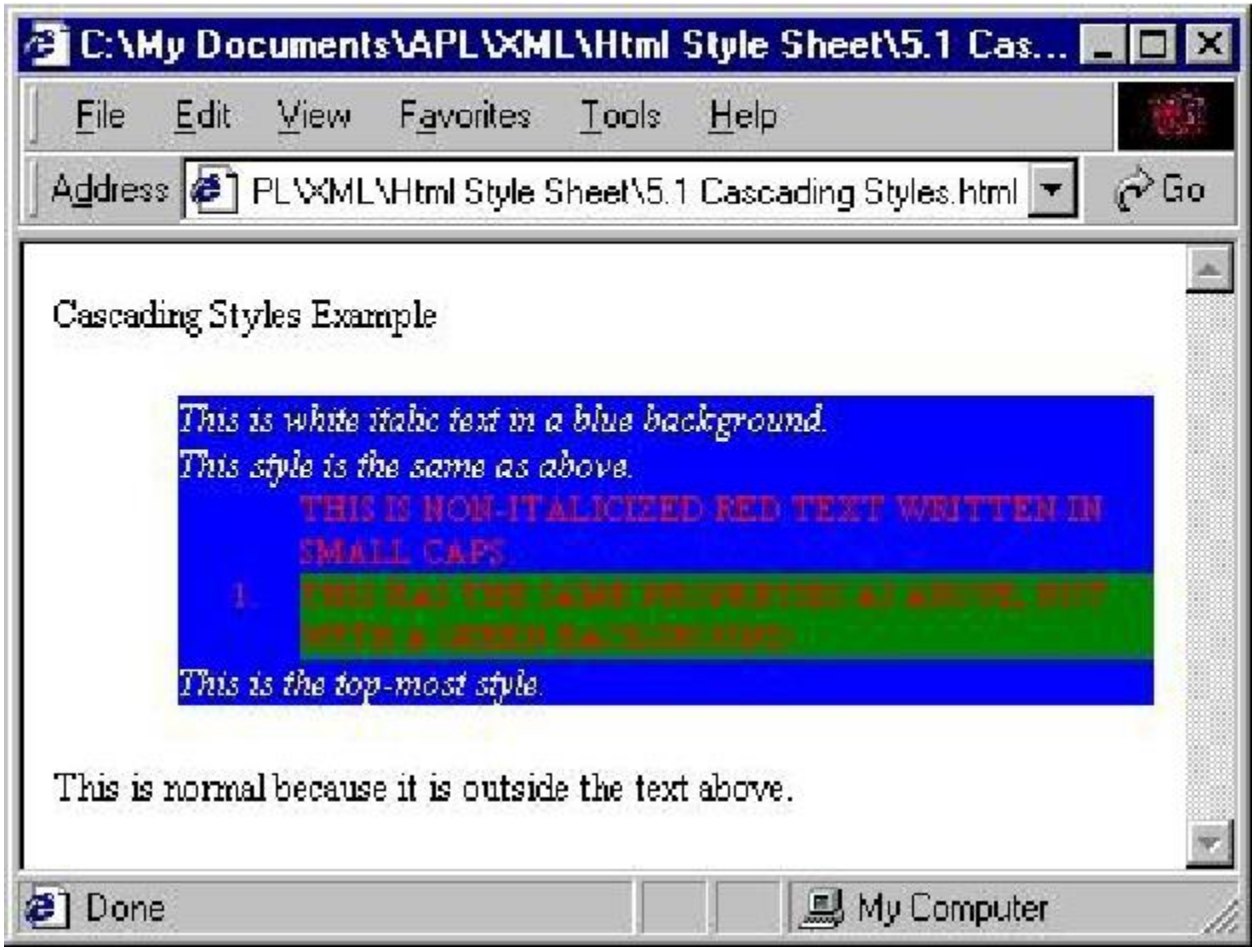
Cascading Styles

- Styles defined at one level apply to all levels underneath
- However, lower levels may override the style
- If so, then all children assume lower level‘s style
- Within or among <STYLE> tags, the last property definition overrides the rest.
- This is true even if the tag <STYLE> is defined after the tag is used.

Cascading Styles Example

```
<HTML>
<HEAD> Cascading Styles Example</HEAD>
<BODY>
<UL STYLE="background-color:blue; color: white; font-style:italic;">
This is white italic text in a blue background.
  <LI> This style is the same as above.</LI>
  <OL STYLE="font-style:normal; color:red; font-variant: small-caps;">
    This is non-italicized red text written in small caps.
    <LI STYLE="background-color:green;">
      This has the same properties as above, but with a green background.
    </LI></OL>
This is the top-most style. </UL>
<DIV> This is normal because it is outside the text above. </DIV>
</BODY>
</HTML>
```

Cascading Style Example Output



Another Cascading Style Sheet

```
<HTML>
<HEAD> Cascading Styles Example</HEAD>
<BODY>
<STYLE>
 UL {background-color:blue; color: white; font-style:italic;}
 OL {font-style:normal; color:red; font-variant: small-caps;}
 OL>LI {background-color:green;}
</STYLE>
<UL>
This is white italic text in a blue background.
 <LI> This style is the same as above.</LI>
 <OL>
  This is non-italicized red text written in small caps.
  <LI>
    This has the same properties as above, but with a green background.
  </LI></OL>
This is the top-most style. </UL>
<DIV> This is normal because it is outside the text above. </DIV>
</BODY>
</HTML>
```

Another Cascading Style Sheet Output

CSS Classes

- Enables one to develop different styles of presentation
- Defines classes of display
- For example, want to define error/warning styles
  - green - OK
  - yellow - warning
  - red - error

```
<STYLE>
    .OK {background-color: green}
    .warning {background-color: yellow}
    .error {background-color: red}
</STYLE>
```

CSS Class Example

```
<HTML>
<HEAD> Cascading Class Example</HEAD>
<STYLE>
      .OK {background-color: green}
      .warning {background-color: yellow}
      .error {background-color: red}
</STYLE>
<BODY>
<H1 class="OK">Compiler Output: </H1>
<P class="error"> 2 errors
<DIV class="warning"> 1 warning </DIV>
<OL>
<LI class="error">error: line 25: syntax error after colon (:)</LI>
<LI class="error">error: line 35: invalid use of reserved word: int</LI>
<LI class="warning">warning: line22: variable „time‟ may not be initialized.</LI>
</OL>
</BODY>
</HTML>
```

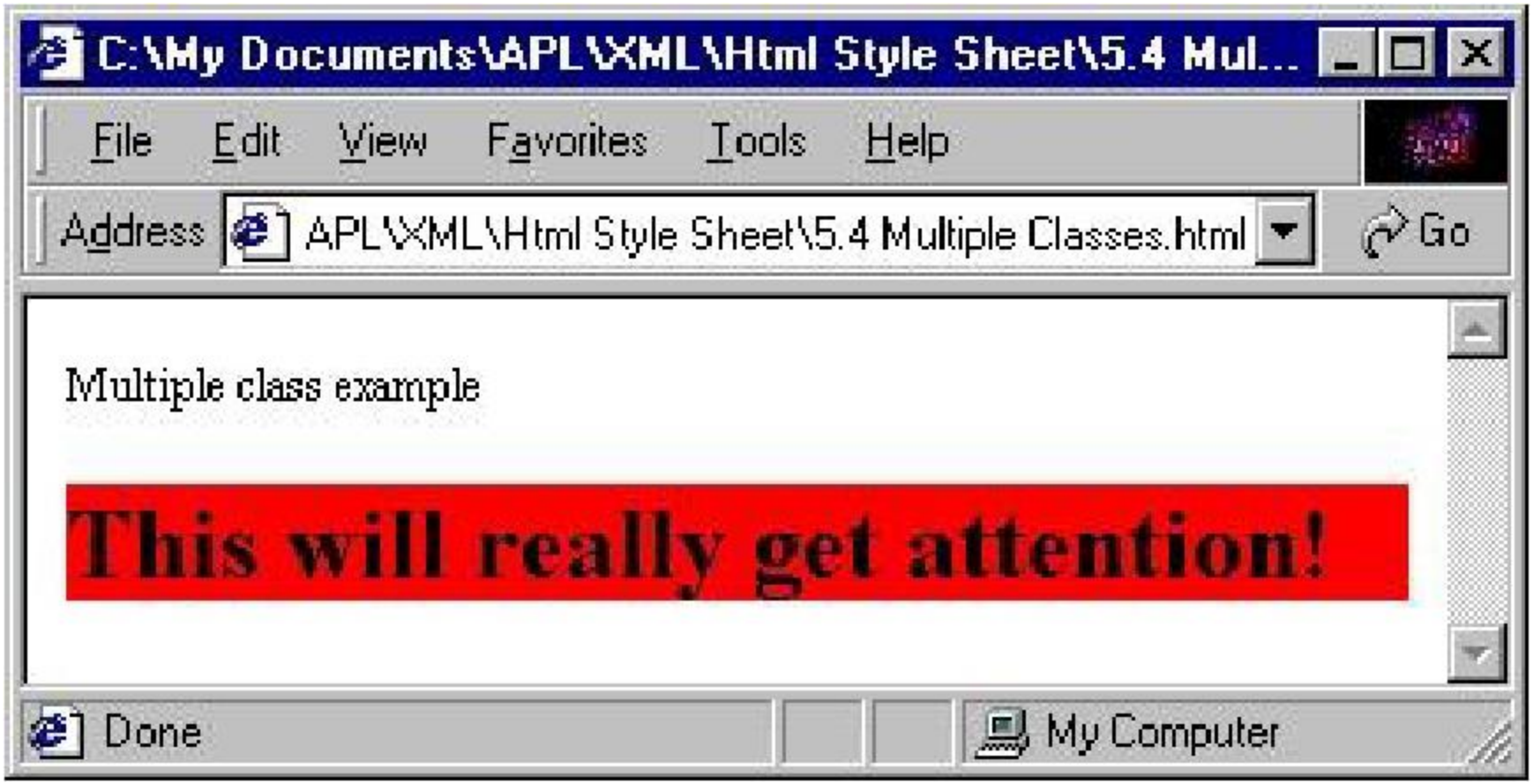
CSS Class Example Output

Applying Multiple Classes to Single Tag

- Suppose you want to mix and match classes
- You may apply more than one class to a tag
- Example:

```
<HTML>
<HEAD> Multiple class example</HEAD>
<STYLE>
    .OK {background-color: green}
    .warning {background-color: yellow}
    .error {background-color: red}
    .emphasis {font-size: 20pt; font-weight: 700}
</STYLE>
<BODY>
<P class="error emphasis"> This will really get attention!
</BODY>
</HTML>
```

Multiple Classes Example Output



Making Classes Dependent on Tags

- What is you want to have a class display differently depending on the tag?
- You may specifically associate classes with tags.
- Example:

```
<HTML>
<HEAD> Multiple class example</HEAD>
<STYLE>
    P.emphasis {font-size: 20pt; background-color:red}
    H1.emphasis {font-size: 28pt; font-weight:700; background-color:blue}
</STYLE>
<BODY>
<H1 class="emphasis"> Title with emphasis.
<P class="emphasis"> Paragraph with emphasis.
</BODY>
</HTML>
```

Inheriting (Cascading) Class Selectors

- What if you want to specify styles for tags within a hierarchy?
- You can specify class styles for tags that are one level below another tag
- Syntax:

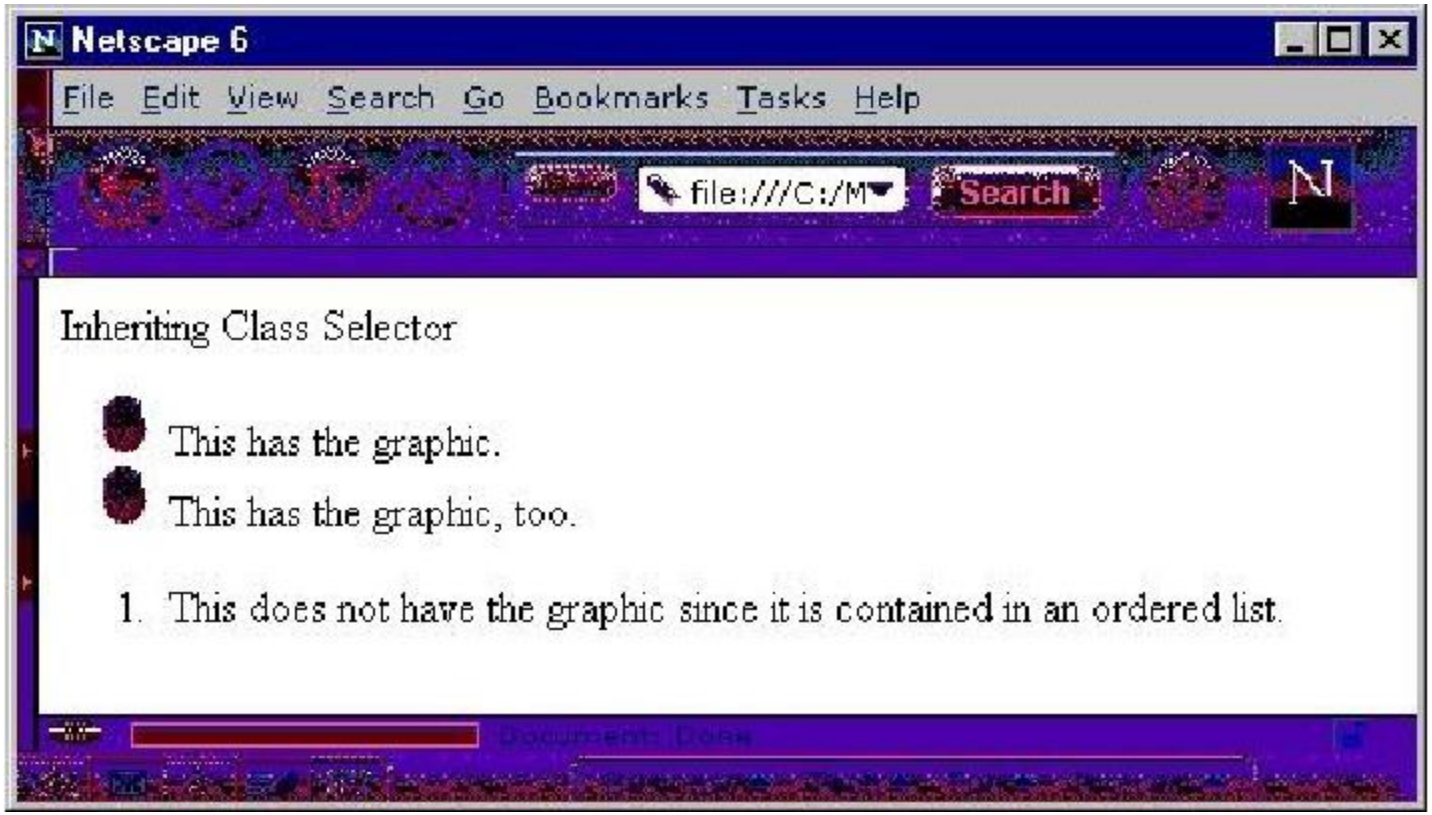
```
<STYLE>
    tag>subtag {style specification}
</STYLE>
```

- All **subtag** tags one level beneath **tag** will be displayed with the *style specification*

Inheriting Selector Example

```
<HTML>
<HEAD> Inheriting  Class Selector</HEAD>
<STYLE>
   UL > LI {list-style-image:url(bluebullet.jpg);}
</STYLE>
<BODY>
<UL>
   <LI> This has the graphic.
   <LI> This has the graphic, too.
</UL>
<OL>
   <LI> This does not have the graphic since it is contained in an ordered list.
</OL>
</BODY>
</HTML>
```

Inheriting Selector Example Output



Inheriting Selectors at any Depth

- You may also specify tag hierarchies at any depth.
- For instance, you may want a specific style for a tag that appears at any depth below a given tag.
- Syntax:

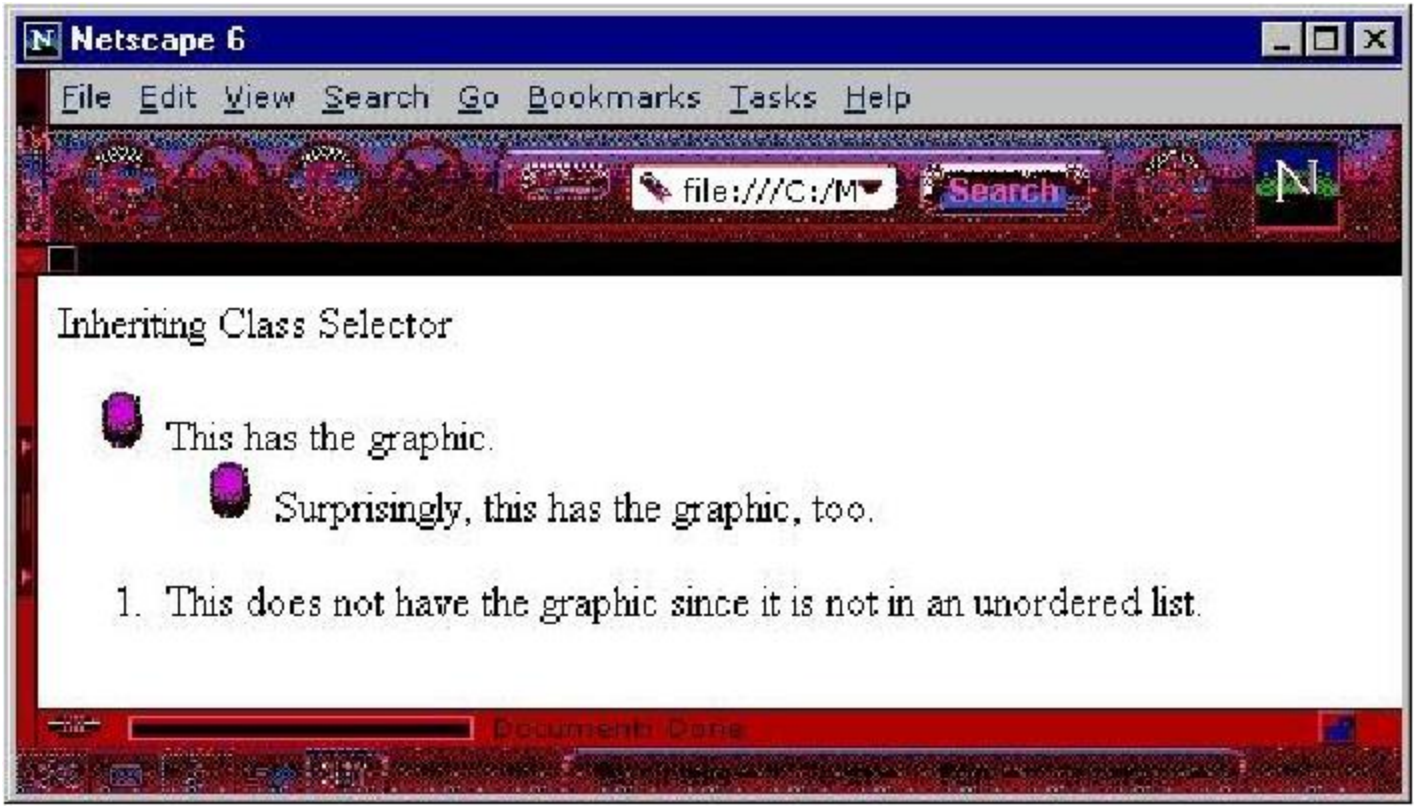
```
<STYLE>
    tag subtag {style specification}
</STYLE>
```

- All **subtag** tags at any level beneath **tag** will be displayed with the *style specification*

Inheriting Selectors at any Depth Example

```
<HTML>
<HEAD> Inheriting  Class Selector</HEAD>
<STYLE>
    UL LI {list-style-image:url(bluebullet.jpg);}
</STYLE>
<BODY>
<UL>
    <LI> This has the graphic.
    <OL>
        <LI> Surprisingly, this has the graphic, too.
    </OL>
</UL>
<OL>
    <LI> This does not have the graphic since it is not in an unordered list.
</OL>
</BODY>
</HTML>
```

Inheriting Selectors at any Depth Example Output



Applying a Default Style

- You may apply a default style to all applicable elements of a document.
- This is specified with the following syntax:

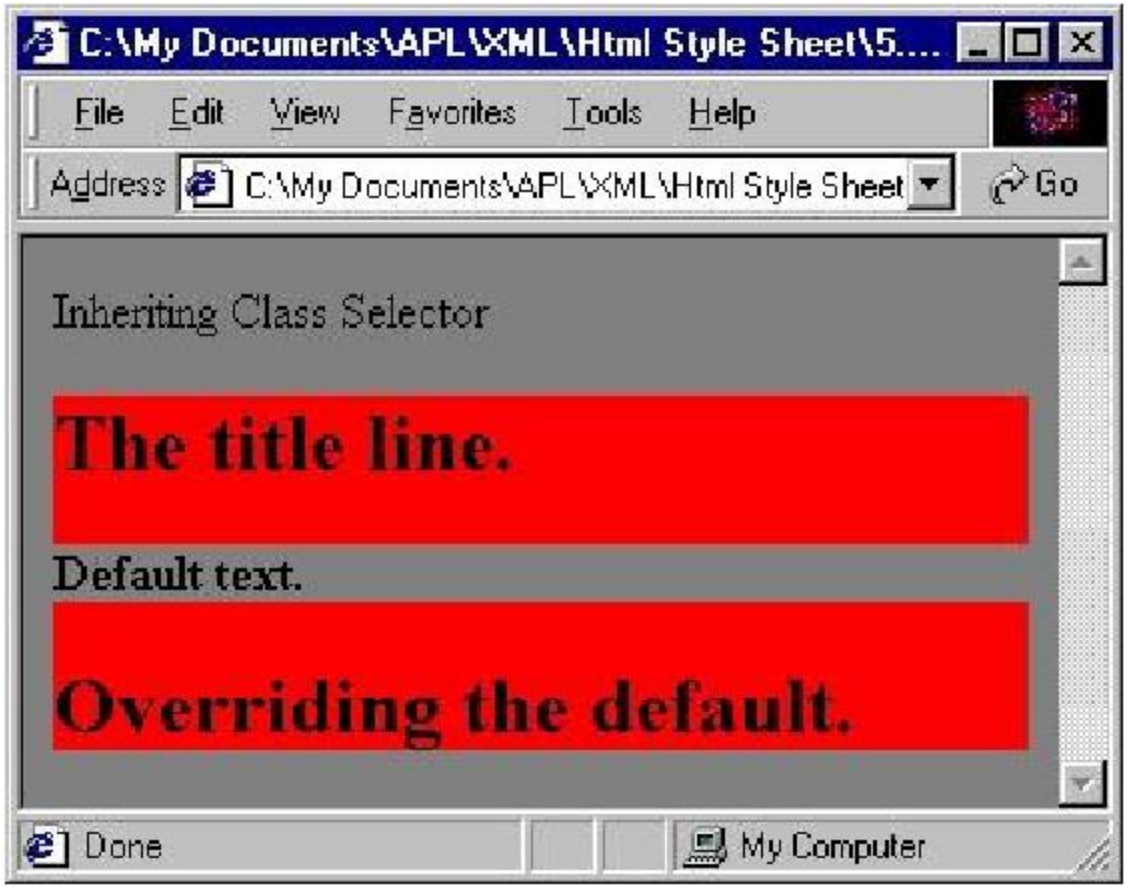
```
<STYLE>
    * {style specification}
</STYLE>
```

- This applies to all styles that do not override it.

Default Style Example

```
<HTML>
<HEAD> Inheriting  Class Selector</HEAD>
<STYLE>
    H1 {font-size: 20pt; background-color:red}
    * {font-size: 12pt; background-color:gray}
</STYLE>
<BODY>
    <H1> The title line.
    <P> Default text.
    <H1> Overriding the default.
</BODY>
</HTML>
```

Default Style Example Output



Pseudo-Classes

- This captures logical presentation elements.
- The CSS2 specification identifies some of the most common logical presentation elements.

Pseudo-Classes Defined

- :first-child
  - Defines the display of the first child element of a set of child tags
  - For example, you may want to display the first child of list of elements differently than the rest of the children.

```
<STYLE>
    UL>LI {font-size: 12pt}
    UL>LI:first-child {font-size: 14pt; color:red}
</STYLE>
```

Pseudo-Classes Defined (cont.)

- :link
  - Display style of unvisited link
  - A:link {background-color:blue; color:white;}
- :visited
  - Display style of visited link
  - A:visited {background-color:navy; color:gray;}
- :hover
  - Display style of tag when cursor is in the area
  - P:hover {background-color:gray}

Pseudo-Classes Defined (cont.)

- :active
  - Display style of selected element
  - UL LI:active {background-color:green; color:white;}
- :focus
  - Display style of selected element in which input is possible
  - INPUT[type=text]:focus {border:solid 2px red;}
- :first-letter
  - Display style of the first letter of a paragraph
  - P:first-letter {float:left; font-size:48pt: margin-top:20px}

External Styles in HTML

- <LINK>
  - Creates relationship between current document and another document
  - Only valid in the <HEAD> of an HTML document
  - Can be used to link to a stylesheet document
- Example
  - <LINK type="text/css" rel="stylesheet" href="mystylesheet.css">
  - **type** indicates the mime type of the other document
  - **rel** indicates the relationship (type) of the other document
  - **href** gives the document name

Importing Style Sheets

- Other style sheets may be imported with CSS
- Syntax:

```
<STYLE>
    @import url(mystylesheet.css)
</STYLE>
```

- mystylesheet.css

```
<!-- mystylesheet.css -->
<!-- defined styles -->
P.emphasis {font-size: 20pt; background-color:red}
H1.emphasis {font-size: 28pt; font-weight:700; background-color:blue}
@import url(myotherstylesheet.css)
```

- Note: @import can be nested within multiple documents

Τέλος Ενότητας

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