

```
<h1 style="font-size: 16pt; text-align: center">Heading 1</h1>
<h2 style="font-size: 14pt; font-style: italic">Heading 2</h2>
```

```
<style type="text/css">
  hr {color: silver}
  p {margin-left: 20px}
  body {background-image: url("images/back40.gif")}
</style>
```

```
p.ten{
  font-size: 10pt;
  font-family: arial;
  color: black;
  text-align: center;
}
```

```
p.twelve{
  font-size: 12pt;
  font-family: Courier New;
  color: black;
}
```

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

03

Cascading Style Sheet

Cascade Style Sheet

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- What is CSS?
- Styles solve a common problem
- Style sheets can solve a lot of work
- Multiple styles will cascade into one
- CSS Syntax
- Grouping
- Class selector
- ID selector
- How to insert a style sheet
- Cascading order
- Multiple Style Sheets
- Properties
- Workshop

What is CSS

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- CSS stands for Cascading Style Sheets
- Styles define how to display HTML elements
- Styles are normally stored in Style Sheets
- Styles were added to HTML 4.0 to solve a problem
- External Style Sheets can save you a lot of work
- External Style Sheets are stored in CSS files
- Multiple style definitions will cascade into one

Styles Solve a Common Problem

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- HTML tags were originally designed to define the content of a document.
- They were supposed to say
 - "This is a header"
 - "This is a paragraph"
 - "This is a table"
- By using tags like `<h1>`, `<p>`, `<table>`, and so on.
- The layout of the document was supposed to be taken care of by the browser, without using any formatting tags.

Styles Solve a Common Problem

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- As the two major browsers - Internet Explorer and Firefox - continued to add new HTML tags and attributes (like the tag and the color attribute) to the original HTML specification, it became more and more difficult to create Web sites where the content of HTML documents was clearly separated from the document's presentation layout.
- To solve this problem, the World Wide Web Consortium (W3C) - the non profit, standard setting consortium, responsible for standardizing HTML - created STYLES in addition to HTML 4.0.
- All major browsers support Cascading Style Sheets.

Style Sheets Can Save a Lot of Work

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- Styles sheets define HOW HTML elements are to be displayed, just like the font tag and the color attribute in HTML 3.2.
- Styles are normally saved in external .css files.
- External style sheets enable you to change the appearance and layout of all the pages in your Web, just by editing one single CSS document!
- CSS is a breakthrough in Web design because it allows developers to control the style and layout of multiple Web pages all at once.
- As a Web developer you can define a style for each HTML element and apply it to as many Web pages as you want.
- To make a global change, simply change the style, and all elements in the Web are updated automatically.

Multiple Styles will Cascade into One

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- Style sheets allow style information to be specified in many ways.
- Styles can be specified inside a single HTML element, inside the <head> element of an HTML page, or in an external CSS file.
- Even multiple external style sheets can be referenced inside a single HTML document.

- The CSS syntax is made up of three parts:

- a selector,
- a property and
- a value:

selector {property: value;}

- The selector is normally the HTML element/tag you wish to define.
- The property is the attribute you wish to change, and each property can take a value.
- The property and value are separated by a colon, and surrounded by curly braces:

body {color: black;}

- Note: If the value is multiple words, put quotes around the value:

```
p {font-family: "sans serif";}
```

- Note: If you wish to specify more than one property, you must separate each property with a semicolon. The example below shows how to define a center aligned paragraph, with a red text color:

```
p {text-align:center; color:red;}
```

- To make the style definitions more readable, you can describe one property on each line, like this:

```
p {text-align: center;  
    color: black;  
    font-family: arial;}
```

Grouping

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- You can group selectors.
- Separate each selector with a comma.
- In the example below we have grouped all the header elements.
- All header elements will be displayed in green text color:

```
h1, h2, h3, h4, h5, h6 {  
    color: green;  
}
```

Class Selector

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- With the class selector you can define different styles for the same type of HTML element.
- Say that you would like to have two types of paragraphs in your document: one right-aligned paragraph, and one center-aligned paragraph. Here is how you can do it with styles:

```
p.right {text-align: right;}
```

```
p.center {text-align: center;}
```

```
...
```

```
<p class="right">
```

```
This paragraph will be right-aligned.</p>
```

```
<p class="center">
```

```
This paragraph will be center-aligned.</p>
```

Class Selector

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- You can also omit the tag name in the selector to define a style that will be used by all HTML elements that have a certain class.

```
.center {text-align: center;}
```

```
.red {color: red;}
```

- In the code below both the h1 element and the p element have class="center".

```
<h1 class="center">
```

```
This heading will be center-aligned</h1>
```

```
<p class="center">
```

```
This paragraph will also be center-aligned.</p>
```

- Define 2 classes for the p element

```
<p class="center red">This is a paragraph.</p>
```

ID Selector

- You can also define styles for HTML elements with the id selector. The id selector is defined as a #.

- The style rule below will match the element that has an id attribute with a value of "green":

```
#green {color: green;}
```

- The style rule below will match the p element that has an id with a value of "para1":

```
p#para1{  
    text-align: center;  
    color: red;  
}
```

- Do **NOT** start an ID name with a number! It will not work in Mozilla/Firefox.

Class VS ID

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- ID selector can be called only once in a document, while a class selector can be called multiple times in a document.
- ID can be called by Javascript's getElementById function.
- There is no hard rule on when to use ID and when to use Class.
 - use class as much as possible for maximum flexibility
 - Use ID when you want to use Javascript's getElementById function
- Class and ID names are both case sensitive.
 - For example, `.classone` and `.ClassOne` are two different classes.

How to Insert a Style Sheet

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- When a browser reads a style sheet, it will format the document according to it.
- There are three ways of inserting a style sheet:
 - External Style Sheet
 - Internal Style Sheet
 - Inline Styles

How to Insert a Style Sheet

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■ External Style Sheet

- An external style sheet is ideal when the style is applied to many pages.
- With an external style sheet, you can change the look of an entire Web site by changing **only one file**.
- Each page must link to the style sheet using the <link> tag.
- The <link> tag goes inside the head section:

<head>

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

</head>

- The browser will read the style definitions from the file **mystyle.css**, and format the document according to it.

How to Insert a Style Sheet

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■ External Style Sheet

- An external style sheet can be written in any text editor.
- The file should not contain any html tags.
- Your style sheet should be saved with a **.css** extension.
- An example of a style sheet file is shown below:

```
hr {color: blue;}
```

```
p {margin-left: 20px;}
```

```
body {background-image:url("images/back40.gif") }
```

- Do **NOT** leave spaces between the property value and the units! If you use "margin-left: 20 px" instead of "margin-left: 20px" it will only work properly in IE but it will not work in Mozilla/Firefox or Netscape.

How to Insert a Style Sheet

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■ Internal Style Sheet

- An internal style sheet should be used when a single document has a unique style.
- You define internal styles in the head section by using the `<style>` tag, like this:

```
<head>
```

```
<style type="text/css">  
  hr {color: blue}  
  p {margin-left: 20px}  
  body {background-image: url("images/back40.gif")}  
</style>
```

```
</head>
```

- The browser will now read the style definitions, and format the document according to it.

How to Insert a Style Sheet

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■ Internal Style Sheet

- Note: A browser normally ignores unknown tags.
- This means that an old browser that does not support styles, will ignore the <style> tag, but the content of the <style> tag will be displayed on the page.

```
<head>
```

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

```
    hr {color: black;}
```

```
    p {margin-left: 20px;}
```

```
    body {background-image: url("images/back40.gif");}
```

```
  </style>
```

```
</head>
```

How to Insert a Style Sheet

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■ Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation.
- Use this method sparingly, such as when a style is to be applied to a single occurrence of an element.
- To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property.
- The example shows how to change the color and the left margin of a paragraph:

```
<p style="color: blue; margin-left: 20px;">  
    This is a paragraph  
</p>
```

- What style will be used when there is more than one style specified for an HTML element?
 - Generally speaking, we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number **four** has the highest priority:
 - Browser default
 - External style sheet
 - Internal style sheet (inside the <head> tag)
 - Inline style (inside an HTML element)
- So, an inline style (inside an HTML element) has the highest priority, which means that it will override a style declared inside the <head> tag, in an external style sheet, or in a browser (a default value).

Multiple Style Sheets

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- If some properties have been set for the same selector in different style sheets, the values will be inherited from the more specific style sheet.
- For example, an external style sheet has these properties for the h3 selector:

```
h3 {    color: red;
        text-align: left;
        font-size: 8pt;
    }
```

- And an internal style sheet has these properties for the h3 selector:

```
<style type="text/css">
    h3 {    text-align: right;
            font-size: 20pt;
    }
</style>
```

Multiple Style Sheets

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- If the page with the internal style sheet also links to the external style sheet the properties for h3 will be:

External Style Sheet

```
h3{    color: red;
      text-align: left;
      font-size: 8pt;
}
```

```
h3{    text-align: right;
      font-size: 20pt;
}
```

Internal Style Sheet

```
h3{    color: red;
      text-align: right;
      font-size: 20pt
}
```

- The color is inherited from the external style sheet and the text-alignment and the font-size is replaced by the internal style sheet.

CSS Background Properties

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- The CSS background properties allow you to
 - control the background color of an element,
 - set an image as the background,
 - repeat a background image vertically or horizontally, and
 - position an image on a page.
- Browser support:
 - IE: Internet Explorer,
 - F: Firefox,
 - N: Netscape.
- W3C: The number in the "W3C" column indicates in which CSS recommendation the property is defined (CSS1 or CSS2).

CSS Background Properties

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Property	Description	Values	IE	F	N	W3C
background	A shorthand property for setting all background properties in one declaration	<i>background-color</i> <i>background-image</i> <i>background-repeat</i> <i>background-attachment</i> <i>background-position</i>	4	1	6	1
background-attachment	Sets whether a background image is fixed or scrolls with the rest of the page	Scroll Fixed	4	1	6	1
background-color	Sets the background color of an element	<i>color-rgb</i> <i>color-hex</i> <i>color-name</i> Transparent	4	1	4	1
background-image	Sets an image as the background	<i>url</i> None	4	1	4	1
background-position	Sets the starting position of a background image	top left top center top right center left center center center right bottom left bottom center bottom right <i>x-% y-%</i> <i>x-pos y-pos</i>	4	1	6	1
background-repeat	Sets if/how a background image will be repeated	Repeat repeat-x repeat-y no-repeat	4	1	4	1

- The CSS text properties allow you to control the appearance of text.
- It is possible to
 - change the color of a text,
 - increase or decrease the space between characters in a text,
 - align a text,
 - decorate a text,
 - indent the first line in a text,
 - and more.

CSS Text Properties

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Property	Description	Values	IE	F	N	W3C
color	Sets the color of a text	<i>color</i>	3	1	4	1
direction	Sets the text direction	Ltr Rtl	6	1	6	2
letter-spacing	Increase or decrease the space between characters	Normal <i>Length</i>	4	1	6	1
text-align	Aligns the text in an element	Left Right Center Justify	4	1	4	1
text-decoration	Adds decoration to text	None Underline Overline line-through Blink	4	1	4	1
text-indent	Indents the first line of text in an element	<i>Length</i> %	4	1	4	1
text-shadow		None <i>Color</i> <i>Length</i>				
text-transform	Controls the letters in an element	None Capitalize Uppercase Lowercase	4	1	4	1

CSS Text Properties

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Property	Description	Values	IE	F	N	W3C
unicode-bidi		Normal Embed bidi-override	5			2
white-space	Sets how white space inside an element is handled	Normal Pre Nowrap	5	1	4	1
word-spacing	Increase or decrease the space between words	Normal <i>length</i>	6	1	6	1

CSS Font Properties

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- The CSS font properties allow you to
 - change the font family, boldness, size, and the style of a text.
- **Note:** In CSS1 fonts are identified by a font name.
- If a browser does not support the specified font, it will use a default font.

CSS Font Properties

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Property	Description	Values	IE	F	N	W3C
font	A shorthand property for setting all of the properties for a font in one declaration	<i>font-style</i> <i>font-variant</i> <i>font-weight</i> <i>font-size/line-height</i> <i>font-family</i> Caption Icon Menu message-box small-caption status-bar	4	1	4	1
font-family	A prioritized list of font family names and/or generic family names for an element	<i>family-name</i> <i>generic-family</i>	3	1	4	1
font-size	Sets the size of a font	xx-small x-small Small Medium Large x-large xx-large Smaller Larger <i>Length</i> %	3	1	4	1

CSS Font Properties

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Property	Description	Values	IE	F	N	W3C
font-size-adjust	Specifies an aspect value for an element that will preserve the x-height of the first-choice font	None <i>Number</i>	-	-	-	2
font-stretch	Condenses or expands the current font-family	Normal Wider Narrower ultra-condensed extra-condensed Condensed semi-condensed semi-expanded Expanded extra-expanded ultra-expanded	-	-	-	2
font-style	Sets the style of the font	Normal Italic Oblique	4	1	4	1
font-variant	Displays text in a small-caps font or a normal font	Normal small-caps	4	1	6	1
font-weight	Sets the weight of a font	Normal Bold Bolder Lighter 100, 200, 300 400, 500, 600 700, 800, 900	4	1	4	1

CSS Border Properties

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- The CSS border properties allow you to specify the style and color of an element's border.
- In HTML we use tables to create borders around a text, but with the CSS border properties we can create borders with nice effects, and it can be applied to any element.

CSS Border Properties

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Property	Description	Values	IE	F	N	W3C
border	A shorthand property for setting all of the properties for the four borders in one declaration	<i>border-width</i> <i>border-style</i> <i>border-color</i>	4	1	4	1
border-bottom	A shorthand property for setting all of the properties for the bottom border in one declaration	<i>border-bottom-width</i> <i>border-style</i> <i>border-color</i>	4	1	6	1
border-bottom-color	Sets the color of the bottom border	<i>border-color</i>	4	1	6	2
border-bottom-style	Sets the style of the bottom border	<i>border-style</i>	4	1	6	2
border-bottom-width	Sets the width of the bottom border	Thin Medium Thick <i>Length</i>	4	1	4	1
border-color	Sets the color of the four borders, can have from one to four colors	<i>Color</i>	4	1	6	1
border-left	A shorthand property for setting all of the properties for the left border in one declaration	<i>border-left-width</i> <i>border-style</i> <i>border-color</i>	4	1	6	1
border-left-color	Sets the color of the left border	<i>border-color</i>	4	1	6	2
border-left-style	Sets the style of the left border	<i>border-style</i>	4	1	6	2
border-left-width	Sets the width of the left border	Thin Medium Thick <i>length</i>	4	1	4	1

CSS Border Properties

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Property	Description	Values	IE	F	N	W3C
border-right	A shorthand property for setting all of the properties for the right border in one declaration	<i>border-right-width</i> <i>border-style</i> <i>border-color</i>	4	1	6	1
border-right-color	Sets the color of the right border	<i>border-color</i>	4	1	6	2
border-right-style	Sets the style of the right border	<i>border-style</i>	4	1	6	2
border-right-width	Sets the width of the right border	Thin Medium Thick <i>Length</i>	4	1	4	1
border-style	Sets the style of the four borders, can have from one to four styles	None Hidden Dotted Dashed Solid Double Groove Ridge Inset Outset	4	1	6	1
border-top	A shorthand property for setting all of the properties for the top border in one declaration	<i>border-top-width</i> <i>border-style</i> <i>border-color</i>	4	1	6	1
border-top-color	Sets the color of the top border	<i>border-color</i>	4	1	6	2
border-top-style	Sets the style of the top border	<i>border-style</i>	4	1	6	2

CSS Border Properties

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Property	Description	Values	IE	F	N	W3C
border-top-width	Sets the width of the top border	Thin Medium Thick <i>Length</i>	4	1	4	1
border-width	A shorthand property for setting the width of the four borders in one declaration, can have from one to four values	Thin Medium Thick <i>length</i>	4	1	4	1

Workshop

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Cascading Style Sheets & Install SUTinsServer 5207

■ Laboratory 3

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