

CSS Basics

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For customized training related to JavaScript or Java, email hall@coreservlets.com
Marty is also available for consulting and development support

Taught by lead author of *Core Servlets & JSP*,
co-author of *Core JSF* (4th Ed), and this tutorial.

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Topics in This Section

- Loading and using style sheets
- CSS selectors
- CSS properties
- Examples

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Loading Stylesheets and Applying Styles

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Overview

- **Many JavaScript developers already know at least the basics of Cascading Style Sheets (CSS)**
 - If you are one of them, skip this mini-tutorial entirely
 - This covers barebones syntax basics only, is not advanced CSS, and covers only syntax – it does not discuss CSS design strategies
- **But some are new to Web development**
 - And jQuery is based in part on CSS, as we will see
- **Far more details are available online**
 - Any of the online CSS tutorials give more details than this very brief introduction

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Loading an External Style Sheet

- **Loading the style sheet**

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

- **Locating the style sheet**

- The CSS file goes in normal directory, in location referred to by relative URL above
 - For example, in the above example, the style sheet styles.css is in the “css” subfolder of the current directory

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Embedding Styles

- **Embedding an internal style sheet**

```
<head>
<style type="text/css">
  p { color: blue; }
  .note { font-weight: bold; background-color: red; }
</style>
...
</head>
```

- **Listing CSS styles inline**

```
<h1 style="color: red; background-color: blue">...</h1>
```

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Applying Styles to General Elements

- **Styles that apply to elements**

- Apply automatically

- **Example CSS**

```
h2 { color: blue; font-family: sans-serif }
```

- All <h2> elements automatically in blue non-serif font

- **Example HTML**

```
<h2>Hello</h2>
```

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Applying Styles to Specific Elements

- **Styles that start with “.”**
 - Must be applied with “class” attribute
- **Example CSS**

```
.warning { color: red; font-weight: bold; font-size: 120% }
```
- **Example HTML**

```
<p class="warning"/>...</p>  
<span class="warning">...</span>
```
- **Separate multiple classes with spaces**

```
<h2 class="class1 class2 class3">...</h2>
```

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CSS Selectors

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Big Idea

- **Selectors are what designate the elements the styles apply to**

```
p { color: red; background-color: yellow }
```

- All <p> elements have foreground red and background yellow

```
.indented { margin-left: 10px }
```

- <blah class="indented"> elements are indented 10 pixels on the left

```
table.colored td { color: blue }
```

- <td>'s within <table class="colored"> have blue foreground

- **Only some of the selectors are shown here**

- For complete list, with examples, see
<http://www.w3.org/TR/css3-selectors/>

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CSS Selectors: Quick Examples

```
#some-id {
```

```
    Styles that apply to <h1 id="some-id">
```

```
}
```

```
p {
```

```
    Styles that apply to <p>
```

```
}
```

```
.note {
```

```
    Styles that apply to <div class="note">
```

```
}
```

```
p span {
```

```
    Styles that apply to <p>...<span>...</span>...</p>
```

```
}
```

```
h1, h2, td li {
```

```
    Styles that apply to <h1> and also to <h2> and also to <td>...<li>...</li>...</td>
```

```
}
```

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Basic Selectors

Selector	Meaning	Examples	
element	Matches all elements with given tag name. Could be many matches.	li {...} p {...}	Matches all li elements Matches all p elements
#id	Matches the element with given id. Matches 0 or 1 elements.	#blah {...}	Matches element with <...id="blah">
.class	Matches all elements with given CSS style.	.important {...}	Matches elements with <... class="important">
element.class	Matches all elements with given tag name that have given class.	div.important {...}	Matches elements like <div class="important">
element#id	Matches the element that has given tag name and given id. Since ids must be unique, you can omit the element name and get same result.	form#blah {...}	Matches element with <form id="blah">
*	Matches all elements in entire page. Particularly useful for nesting and with the :not selector.	* {...} div * {...}	Matches all elements. Matches all elements that are inside divs

Hierarchical Selectors

Selector	Meaning	Examples	
s1 s2	Elements that match selector s2 and are <i>directly or indirectly</i> inside an element that matches selector s1.	div.foo span.bar {...}	Matches all elements that are <i>somewhere</i> inside <div class="foo">.
s1 > s2	Elements that match selector s2 and are <i>directly</i> inside an element that matches s1.	div.foo > span.bar {...}	Matches all elements that are <i>directly</i> inside <div class="foo">.
s1, s2	Elements that match either selector.	ul,ol,dl.foo {...}	Matches all ul, ol, and <dl class="foo"> elements.
s1 + s2	Elements that match s2 and are immediately after a sibling element matching s1.	label + input {...}	Matches all input elements that are immediately after a label element.
s1 ~ s2	Elements that match selector s2 and are somewhere after a sibling element matching s1.	label ~ input {...}	Matches all input elements that have a label element somewhere before them at the same nesting level.

Attribute Selectors

Selector	Meaning	Examples	
s[att]	Elements that match selector s and also contain attribute named att.	div.blah a[name] {...}	Matches all elements that are inside <div class="blah">
s[att=val]	Elements that match selector s and also contain attribute named att whose value is (exactly) val.	a[href=#sect2] {...}	Matches all elements
s[att^=val]	Elements that match selector s and also contain attribute named att whose value starts with val.	a[href^=#] {...}	Matches all internal hyperlinks
s[att\$=val]	Elements that match selector s and also contain attribute named att whose value ends with val.	a[href\$=jquery.com] {...}	Matches all hyperlinks pointing to blah.jquery.com home page (not subpages)
s[att*=val]	Elements that match selector s and also contain attribute named att whose value contains val.	a[href*=jquery.com] {...}	Matches all hyperlinks pointing to any page at blah.jquery.com
s[att!=val]	Elements that match selector s and either do not have the specified attribute, or have a different value.	a[href!=#sect2] {...}	Matches all hyperlinks except elements
s:not([...])	Elements that match s but do not match attribute specification.	a:not([href^=http]) {...}	Matches hyperlinks that do not start with http...

Positional Selectors

Selector	Meaning	Examples	
s:first s:last	First or last match in page.	ul.foo li:first {...}	Matches first li element that is inside <ul class="foo">
s:eq(n)	The nth match in the page. Count starts at 0.	p:eq(3) {...}	Fourth p element in page.
s:gt(n), s:lt(n)	Elements after/before the nth.	p:gt(3) {...}	5 th and following p elements.
s:even s:odd	Elements that are even or odd numbered elements in the page. 0-based, so first match is even.	tr:even {...}	Finds all table rows, then matches the even numbered ones from that overall list.
s:first-child s:last-child s:only-child	Elements that are the first or last child of their parents, or that have no siblings.	tr:first-child {...}	Matches the first row of every table.
s:nth-child(n)	Elements that are the nth child. First child is nth-child(1), not (0)	tr:nth-child(3) {...}	Matches the third row of each table
s:nth-child(even) s:nth-child(odd)	Elements that are even or odd children of their parent. Count starts at 1, so first match is odd.	tr:nth-child(even) {...}	Matches rows that are even numbered rows of their own table.
s:nth-child(xn+y)	Elements matching formula. You list "n" literally. So, 3n means every third. 3n+1 means entry after every third.	tr:nth-child(4n+2) {...}	Matches row 6, 10, 14, ... of each table.

Content Filtering Selectors

Selector	Meaning	Examples	
s:contains(text)	Elements that match s and whose body content contains given text.	.foo li:contains(wow) {...}	Matches li elements that have “wow” in their body text and are inside <... class="foo">
s:empty	Elements that have no child elements. Body content counts as a child element (text node).	div:empty {...}	Empty divs.
s:parent	Elements that have child elements.	div:parent {...}	Non-empty divs.
s1:has(s2)	Elements that match s1 and have directly or indirectly contain elements that match s2.	table:has(th) {...}	All tables that have at least one th element inside.

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CSS Properties: Overview

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Big Idea

- **Properties are what you use to style selected elements**

```
p { color: red; background-color: yellow }
```

- All <p> elements have foreground red and background yellow

```
.indented { margin-left: 10px }
```

- <blah class="indented"> elements are indented 10 pixels on the left.

- **Only a few properties are shown here**

- For complete list, with examples, see

<http://www.w3.org/TR/CSS21/propidx.html>

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CSS Properties: Colors and Fonts

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Colors

- **color**
 - Foreground text color
- **background-color**
 - Color of the background
- **border-color**
 - Color of the border (see upcoming “box model” slides)
- **Example**

```
.colored {  
  color: red;  
  background-color: #00ff00;  
  border-color: black;  
}
```

 - Example usage: `<p class="colored">...</p>`

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Color Units

- **Official predefined color name**
 - aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, orange, purple, red, silver, teal, white, yellow
- **X11 color names**
 - See <http://www.html-color-names.com/color-chart.php>
 - Includes CornSilk, Salmon, PapayaWhip, etc.
 - Universally supported for historical reasons (because the first browser was on OS that used X Windows) but not official
- **RGB spec**
 - #ff00ff
 - `rgb(255, 0, 255)`
- **Examples**

```
.cool { color: red; background-color: #0000ff;  
        border-color: papayawhip}
```

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Fonts

- **font-size**

```
{ font-size: 25px }  
{ font-size: 125% }
```

- **font-family**

```
{ font-family: "Times New Roman", Times, serif; }
```

- **font-style**

```
{ font-style: italic }
```

- **font-weight**

```
{ font-weight: bold }
```

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CSS Properties: Box Model

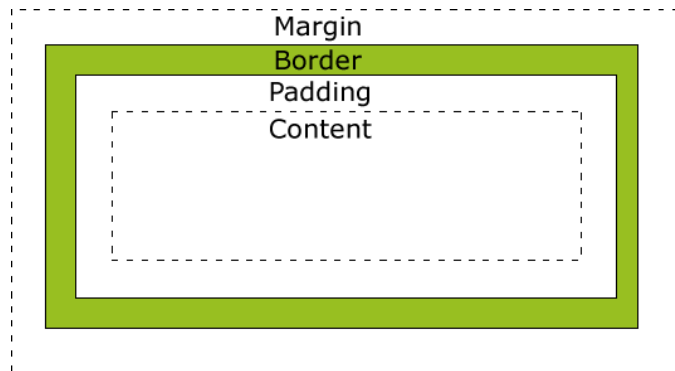
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Box Model: Idea

- **Idea**

- Block-level elements have four parts: margin, border, padding, and the main content section
 - Size units can be in colors or percentages
 - Color units shown earlier



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Image from http://www.w3schools.com/css/css_boxmodel.asp

Box-Model: Properties

- **Margin**

- margin
- margin-left, margin-right, margin-top, margin-bottom

- **Border**

- border, border-color
- border-left, border-left-color, etc.

- **Padding**

- padding
- padding-left, padding-right, padding-top, padding-bottom

- **Content**

- width
- height

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A Few Examples

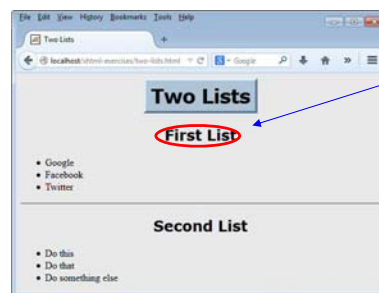
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Centered Headings

- **Code**

```
h1,h2,h3 {  
  text-align: center;  
  font-family: Verdana, Arial, Helvetica, sans-serif;  
  color: black;  
}
```



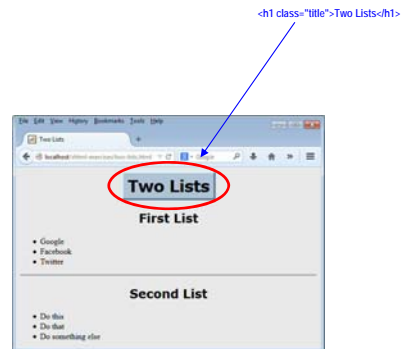
- **Meaning**

- `<h1>`, `<h2>`, and `<h3>` headings are centered and black.
- They use Verdana font if available, Arial as second choice, Helvetica as third choice, and otherwise use the default non-serif font of the system

3D Titles

- **Code**

```
h1.title {
  display: table;
  margin: auto;
  background-color: #afc4d6;
  border-width: 4px;
  border-style: outset;
  border-color: #9fd1ff;
  padding: 5px 8px;
  letter-spacing: -.025em;
}
```



- **Meaning**

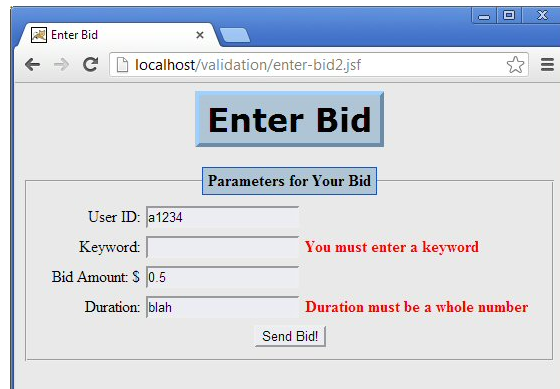
- `<h1 class="title">Text</h1>` displayed as above

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Aligned Textfields and R-Aligned Prompts

- **Code**

```
.formTable {
  display: table;
}
.formTable td:first-child {
  text-align: right;
}
```



- **Meaning**

- The first `<td>` of each `<tr>` is R-aligned when inside `<table class="formTable">`
 - The prompt is in the first `<td>`, the textfield in the second, and the error message (if any) in the third.

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Wrapup

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Summary

- **Load style sheets**

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

- **Apply styles (that start with “.” in the CSS file)**

```
<tag class="name">
```

- **Selectors**

```
h1 {...}
```

- Applies to all h1 elements

```
.foo {...}
```

- Applies to `<tag class="foo">`

```
div table.bar td {...}
```

- Applies to tds inside `<table class="bar">` that are inside divs

Questions?

More info:

<http://www.coreservlets.com/javascript-jquery-tutorial/> – Tutorial on JavaScript, jQuery, and jQuery UI

<http://courses.coreservlets.com/course-materials/java.html> – General Java programming tutorial

<http://www.coreservlets.com/java-8-tutorial/> – Java 8 tutorial

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