

Cascading Style Sheet

Introduction

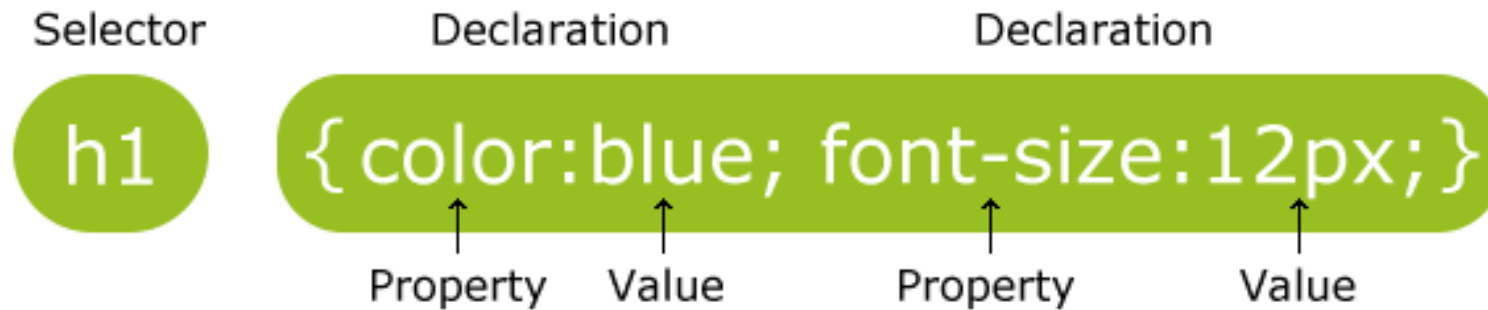
- What is CSS?
 - **CSS** stands for **Cascading Style Sheets**
 - Styles define **how to display** HTML elements
 - Styles were added to HTML 4.0 **to solve a problem**
 - **External Style Sheets** can save a lot of work
 - External Style Sheets are stored in **CSS files**

CSS Version

- First CSS specification is CSS 1 which is become the World Wide Web Consortium (W3C) recommendation in December 1996.
- CSS2 came out in 1998 and contained a lot of the feature that designers been longing for.
 - CSS2 usually mean CSS2.1 (CSS Level 2 Revision 1) since the original CSS2 was never really implemented by any web browser.
- The work on CSS3 has been going on for years, but seems to advance very slowly.
- The earliest CSS 3 drafts were published in June 1999.

Syntax

- A CSS rule has two main parts: a selector, and one or more declarations:



- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.

CSS Example

- A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets:

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

- To make the CSS more readable, you can put one declaration on each line, like this:

Example

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

CSS Comment

- Comments are used to explain your code, and may help you when you edit the source code at a later date. Comments are ignored by browsers.
- A CSS comment begins with "/*", and ends with "*/", like this:
- Example:

```
/*This is a comment*/  
p  
{  
text-align:center;  
/*This is another comment*/  
color:black;  
font-family:arial;  
}
```

The id and class Selectors

- In addition to setting a style for a HTML element, CSS allows you to specify your own selectors called "id" and "class"
- The id Selector
 - The id selector is used to specify a style for a single, unique element.
 - The id selector uses the id attribute of the HTML element, and is defined with a "#".
 - The style rule below will be applied to the element with id="para1":

Example of ID

```
<html>
<head>
<style type="text/css">
#para1
{
text-align:center;
color:red;
}
</style>
</head>
<body>
<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>
</body>
</html>
```


The id and class Selectors (cont.)

- The class Selector

- The class selector is used to specify a style for a group of elements. Unlike the id selector, the class selector is most often used on several elements.
- This allows you to set a particular style for many HTML elements with the same class.
- The class selector uses the HTML class attribute, and is defined with a "."

Example of Class

- In the example below, all HTML elements with class="center" will be center-aligned:

```
<html>
<head>
<style type="text/css">
.center
{
text-align:center;
}
</style>
</head>

<body>
<h1 class="center">Center-aligned heading</h1>
<p class="center">Center-aligned paragraph.</p>
</body>
</html>
```

Inserting CSS

- There are three ways of inserting a style sheet:
 - External style sheet
 - Internal style sheet
 - Inline style sheet

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 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>
```

External Style Sheet (cont.)

- 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:sienna;}  
p {margin-left:20px;}  
body {background-image:url("images/  
back40.gif");}
```

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 of an HTML page, by using the <style> tag, like this:

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

Inline Style Sheet

- An inline style loses many of the advantages of style sheets by mixing content with presentation. Use this method sparingly!
- 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:sienna;margin-left:20px">This is a  
    paragraph.</p>
```

CSS Grouping and Nesting Selectors

- **Grouping Selectors**

- In style sheets there are often elements with the same style.

```
h1
{
color:green;
}
h2
{
color:green;
}
p
{
color:green;
}
```



```
h1,h2,p
{
color:green;
}
```


CSS Grouping and Nesting Selectors (cont.)

- It is possible to apply a style for a selector within a selector.

```
<html>
<head>
<style>
p{
color:blue;
text-align:center;
}
.marked{
background-color:red;
}
.marked p{
color:white;
}
</style>
</head>
```

```
<body>
<p>This paragraph has blue text, and is center
aligned.</p>
<div class="marked">
This isn't a paragraph, therefore has no blue text
nor alignment.
</div>

<div class="marked">
<p>p elements inside a "marked" classed element
keeps the alignment style, but has a different
text color.</p>
</div>
</body>
</html>
```

Style Color Rule Value

- Colors:
 - Names for some:
 - blue, red, green, pink
 - Hexadecimal
 - #0000FF, #FF0000, #00FF00, #FF3399
 - RGB
 - rgb(0,0,255), rgb(255,0,0), rgb(0,255,0)
 - RGB%
 - rgb(0%,0%,100%), rgb(100%,0%,0%)

CSS Styling - Background

- CSS background properties are used to define the background effects of an element.
- CSS properties used for background effects:
 - **background-image: url(<uri>) | none**
 - `body { background-image: url(logo.gif); }`
 - `body { background-image: url(http://someplace.com/logo.gif); }`
 - **background-repeat: repeat | repeat-x | repeat-y | no-repeat**
 - `background-repeat: repeat; /* default */`
 - `background-repeat: repeat-x; /* repeat horizontally */`
 - `background-repeat: repeat-y; /* repeat vertically */`
 - `background-repeat: no-repeat; /* don't tile the image */`

CSS Styling – Background (cont.)

- **background-attachment: scroll | fixed**

- `background-attachment: scroll; /* default */`
- `background-attachment: fixed; /* force image to stay put */`

- **background-position**

- `background-position: 50% 50%; /* image centered on screen */`
- `background-position: 50%; /* this also centers on screen */`
- `background-position: 100px 100px;`
- `background-position: center;`
- `Background-position: top center;`

CSS Styling – Background (cont.)

```
body {background-color:#b0c4de;}
```

```
h1 {background-color:#6495ed;}
```

```
p {background-color:#e0ffff;}
```

```
body {background-image:url('paper.gif');}
```

CSS Styling – Background (cont.)

```
/* By default, the background-image property repeats an image both horizontally and vertically.*/
```

```
body
{
background-image:url('gradient2.png');
}
```

```
/*If the image is repeated only horizontally (repeat-x), the background will look better:*/
```

```
body
{
background-image:url('gradient2.png');
background-repeat:repeat-x;
}
```

```
/* Set position and no-repeat*/
```

```
body
{
background-image:url('img_tree.png');
background-repeat:no-repeat;
background-position:right top;
}
```

CSS Styling – Background (cont.)

- **CSS Background Shorthand**

background: <background-color> | <background-image> |
<background-repeat> | <background-attachment> | <background-position>

Example :

```
background-color: white;  
background-image: url (logo.gif) ;  
background-position: 50% 50%;  
background-repeat: no-repeat;  
background-attachment: fixed;
```

And change to this:

```
background: white url (log.gif) no-repeat fixed 50% 50%;
```

CSS Styling – Background (cont.)

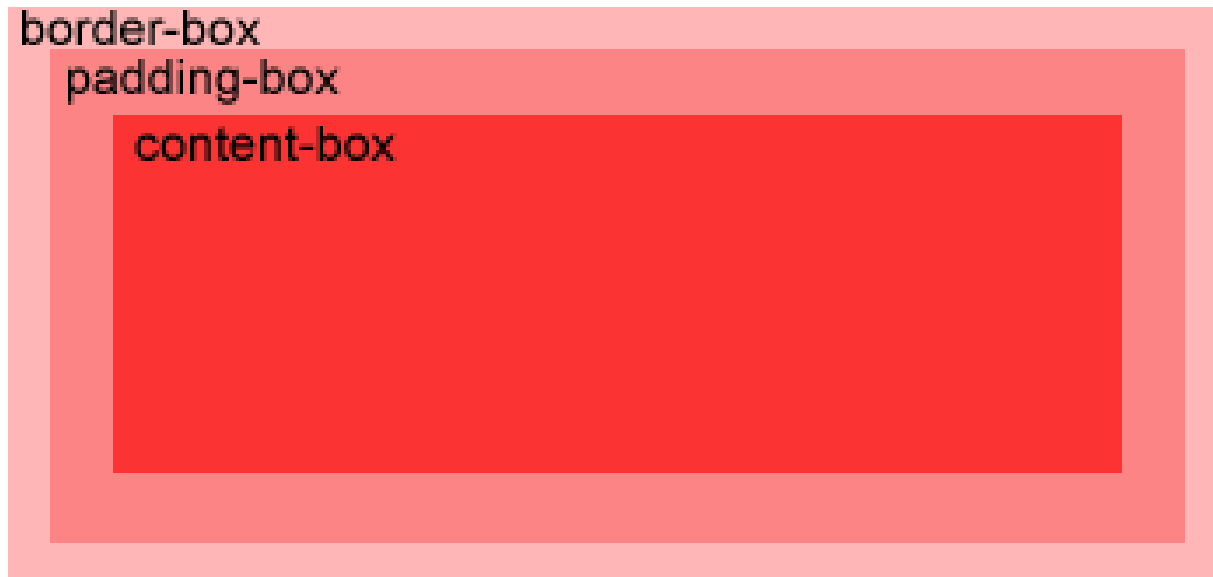
- CSS3 contains several new background properties:
 - background-size : specifies the size of the background image.
 - background-origin : specifies the positioning area of the background images
- Background-size:

```
body
{
background:url(img_flwr.gif);
background-size:80px 60px;
background-repeat:no-repeat;
}
```

```
p
{
background:url(img_flwr.gif);
background-size:100% 100%;
background-repeat:no-repeat;
}
```


CSS Styling – Background (cont.)

- Background-origin:
 - The background image can be placed within the content-box, padding-box, or border-box area.



```
body
{
background:url(img_flwr.gif);
background-repeat:no-repeat;
background-size:100% 100%;
background-origin:content-box;
}
```

CSS Styling – Background (cont.)

- CSS3 allows you to use several background images for an element.

```
body
{
background:url(img_tree.gif),url(img_flwr.gif);
background-size:100% 100%;
background-repeat:no-repeat;
}
```

CSS Styling – Text Color

- The color property is used to set the color of the text.
- Example

```
body {color:blue;}  
h1  {color:#00ff00;}  
h2  {color:rgb(255,0,0);}
```

CSS Styling – Text Shadow

- CSS3 contains several new text features.
 - text-shadow : applies shadow to text.
 - word-wrap :
- Text-shadow : You specify the horizontal shadow, the vertical shadow, the blur distance, and the color of the shadow:

```
h1
{
text-shadow: 5px 5px 5px #FF0000;
}
```

Text shadow effect!

CSS Styling – Word Wrapping

If a word is too long to fit within an area, it expands outside:

This paragraph
contains a very long
word:
thisisaveryveryveryveryveryverylongword.
The long word will
break and wrap to the
next line.

In CSS3, the word-wrap property allows you to force the text to wrap - even if it means splitting it in the middle of a word:

This paragraph
contains a very long
word:
thisisaveryveryveryver
yveryverylongword.
The long word will
break and wrap to the
next line.

```
p {word-wrap:break-word; }
```

CSS Styling – Text Alignment

- The text-align property is used to set the horizontal alignment of a text.
- Text can be centered, or aligned to the left or right, or justified.
- When text-align is set to "justify", each line is stretched so that every line has equal width, and the left and right margins are straight (like in magazines and newspapers).

- Example

```
h1 {text-align:center;}  
p.date {text-align:right;}  
p.main {text-align:justify;}
```

CSS Styling – Text Decoration (cont.)

- The text-decoration property is used to set or remove decorations from text.
- The text-decoration property is mostly used to remove underlines from links for design purposes:
- Example:

```
h1 {text-decoration:overline;}  
h2 {text-decoration:line-through;}  
h3 {text-decoration:underline;}  
h4 {text-decoration:blink;}  
a  {text-decoration:none;}
```

CSS Styling – Text Decoration (cont.)

- The text-transform property is used to specify uppercase and lowercase letters in a text.
- It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word.
- Example

```
p.uppercase {text-transform:uppercase;}  
p.lowercase {text-transform:lowercase;}  
p.capitalize {text-transform:capitalize;}
```


CSS Styling – Text Decoration (cont.)

- The text-indentation property is used to specify the indentation of the first line of a text.
- Example:

```
p {text-indent:50px; }
```

CSS Style - Word Spacing

- You can adjust the space between words in the following manner. You can use negative values.

```
p {word-spacing: 5px;}
```

```
h1 {word-spacing: normal;}
```

CSS Style - Font Families, Style, Size

- Example

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

```
p.normal {font-style:normal;}
```

```
p.italic {font-style:italic;}
```

```
p.oblique {font-style:oblique;}
```

```
h1 {font-size:40px;}
```

```
h2 {font-size:30px;}
```

```
p {font-size:14px;}
```

CSS Style - Font Variant

- You can set the variant of text within an element with the font-variant property

```
h1 {  
    font-variant: normal;  
}  
p {  
    font-variant: small-caps;  
}
```

CSS Style – Font Weight

- You can control the weight of text in an element with the font-weight property:

```
font-weight: value;
```

- Possible values are : lighter, normal, 100, 200, 300, 400, 500, 600, 700, 800, 900, bold, bolder

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

CSS Style – Font Style Short Hand

- The font property can set the style, weight, variant, size, line height and font:

```
p{  
    font: italic bold normal small Verdana, sans-  
    serif;  
}
```

Font Embedding using @font-face

- In CSS3, the web designer use font whatever font he/she like.
- @font-face is a CSS rule which allows you to show a font on a Web page even if that font is not installed on the users' computer.

```
<style type="text/css">
@font-face {
    font-family: "abc" ;
    src: url('abc.ttf');
}
.ace {
    font-family: "abc";
    font-size: 20px;
}
</style>
```

CSS Style - Link

- Links can be styled with any CSS property (e.g. color, font-family, background, etc.).
- Special for links are that they can be styled differently depending on what state they are in.
- The four links states are:
 - a:link - a normal, unvisited link
 - a:visited - a link the user has visited
 - a:hover - a link when the user mouses over it
 - a:active - a link the moment it is clicked

CSS Style – Link (cont.)

- Example

```
a:link {color:#FF0000;}    /* unvisited link */  
a:visited {color:#00FF00;} /* visited link */  
a:hover {color:#FF00FF;}  /* mouse over link */  
a:active {color:#0000FF;} /* selected link */
```

CSS Style – Link (cont.)

- Example

```
<html>
```

```
<head>
```

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

```
a.blue:link {color: #0000ff; background: #ffffff; font-weight: bold;}
a.blue:active {color: #0000ff; background: #ffffff; font-weight: bold;}
a.blue:visited {color: #0000ff; background: #ffffff; font-weight: bold;}
a.blue:hover {color: #0000ff; background: #ffffff; font-weight: bolder;}
```

```
a.red:link {color: #ff0000; background: #ffffff; font-style: italic;}
a.red:active {color: #ff0000; background: #ffffff; font-style: italic;}
a.red:visited {color: #ff0000; background: #ffffff; font-style: italic;}
a.red:hover {color: #ff0000; background: #ffffff; font-style: normal;}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<a href="blue.htm" class="blue">Blue Bold Link</a>
```

```
<a href="red.htm" class="red">Red Italic Links</a>
```

```
</body>
```

Boxes and Border

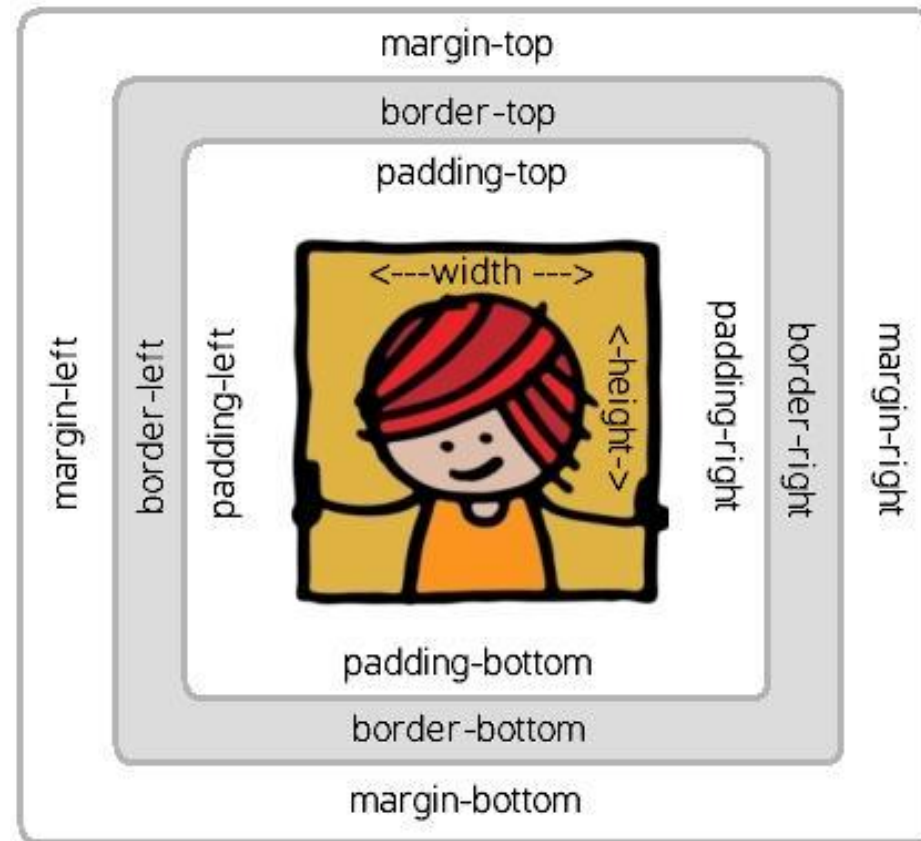
- Every element in a Web page is in a box or is a box, even if it's an image of a circle.
- The boxes on Web pages are constrained by rules defined by the box model.
- The CSS box model is made up of four parts:
 - **Margin** - Clears an area around the border. The margin does not have a background color, it is completely transparent
 - **Border** - A border that goes around the padding and content. The border is affected by the background color of the box
 - **Padding** - Clears an area around the content. The padding is affected by the background color of the box
 - **Content** - The content of the box, where text and images appear

Boxes and Border (cont.)

- The image below illustrates the box model:



Boxes and Border (cont.)



Boxes and Border (cont.)

```
<html>
<head>
<style type="text/css">
  .box300 {
    width:300px;
    height:300px;
    border:1px solid black;
    padding:10px;
    margin:10px;
  }
</style>
</head>

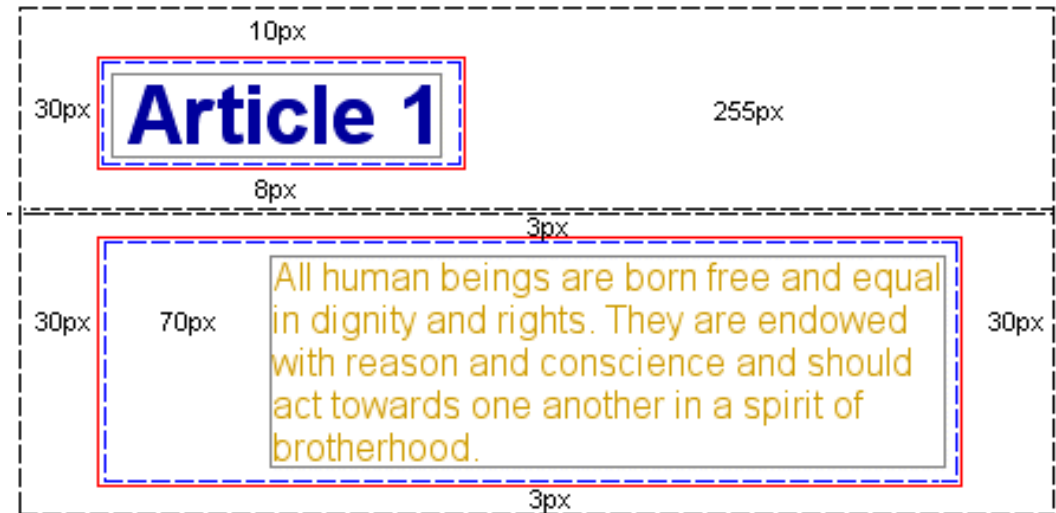
  <body>
    <p class="box300">
      This is a 300 by 300 pixel box
      with a 1px border and 10px
      Padding and 10px margin.
    </p>
    <p>This is outside the box.</p>
  </body>
</html>
```

Boxes and Border (cont.)

- Exercise

Article 1

All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.



Boxes and Border (cont.)

- Border-style value:

none: Defines no border

dotted: Defines a dotted border

dashed: Defines a dashed border

solid: Defines a solid border

double: Defines two borders. The width of the two borders are the same as the border-width value

groove: Defines a 3D grooved border. The effect depends on the border-color value

ridge: Defines a 3D ridged border. The effect depends on the border-color value

inset: Defines a 3D inset border. The effect depends on the border-color value

outset: Defines a 3D outset border. The effect depends on the border-color value

Boxes and Border (cont.)

- Example 1

```
p.one
{
border-style:solid;
border-width:5px;
}
p.two
{
border-style:solid;
border-width:medium;
}
p.three
{
border-style:solid;
border-width:1px;
}
```

Some text.

Some text.

Some text.

Boxes and Border (cont.)

- Example of border with individual sides

```
p
{
border-top-style:dotted;
border-right-style:solid;
border-bottom-style:dotted;
border-left-style:solid;
}
```

2 different border styles.

Boxes and Border (cont.)

- With CSS3, you can create rounded borders, add shadow to boxes, and use an image as a border - without using a design program, like Photoshop. Some of border properties in CSS3 are :
 - border-radius : it is used to create rounded corners.
 - box-shadow : it is used to add shadow to boxes.
 - border-image: it is used to add shadow to boxes.

Boxes and Border (cont.)

```
h1
{
border:2px solid #a1a1a1;
padding:10px 40px;
background:#dddddd;
width:300px;
border-radius:25px;
}
```

The border-radius property allows you to add rounded corners to elements.

Boxes and Border (cont.)

```
<html>
<head>
<style>
div
{
border:2px solid #a1a1a1;
padding:10px 40px;
background:#dddddd;
width:300px;
border-radius:25px;
}
</style>
</head>
```

```
<body>
```

```
<div>The border-radius property allows you to add rounded
corners to elements.</div>
```

```
</body>
```

```
</html>
```

The border-radius property allows you to add rounded corners to elements.

Boxes and Border (cont.)

- Example:

```
border-radius:20px;
```

is equivalent to:

```
border-top-left-radius:20px;
```

```
border-top-right-radius:20px;
```

```
border-bottom-right-radius:20px;
```

```
border-bottom-left-radius:20px;
```

Boxes and Border (cont.)

- Box-shadow

box-shadow: *h-shadow v-shadow blur spread color inset* | outset;

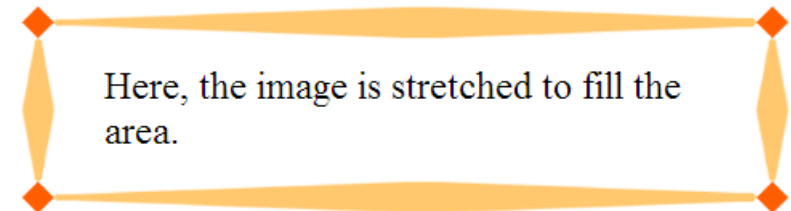
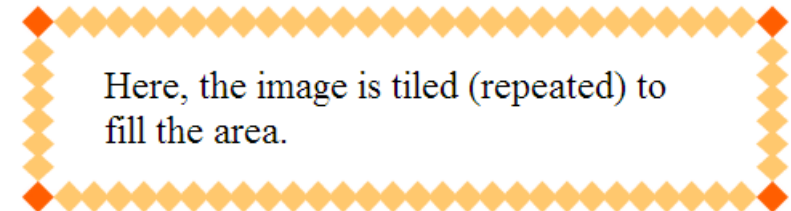
```
div
{
box-shadow: 10px 10px 5px #888888;
}
```



Boxes and Border (cont.)

- With the CSS3 border-image property you can use an image to create a border:

```
#round{
border-image:url(border.png) 30 30 round;
-webkit-border-image:url(border.png) 30 30
round; /* Safari 5 and older */
-o-border-image:url(border.png) 30 30
round; /* Opera */
}
#stretch{
-webkit-border-image:url(border.png) 30 30
stretch; /* Safari 5 and older */
-o-border-image:url(border.png) 30 30
stretch; /* Opera */
border-image:url(border.png) 30 30 stretch;
}
```



Here is the image used:



CSS Style – List

- The type of list item marker is specified with the list-style-type property:

```
ul.a {list-style-type: circle;}
```

```
ul.b {list-style-type: square;}
```

```
ol.c {list-style-type: upper-roman;}
```

```
ol.d {list-style-type: lower-alpha;}
```

CSS Style – List (cont.)

- An Image as The List Item Marker

```
ul
{
list-style-image: url('sqpurple.gif');
}
```

CSS Styling – List as Navigation Bars

- Having easy-to-use navigation is important for any web site.
- With CSS you can transform boring HTML menus into good-looking navigation bars.

CSS Style – List (cont.)

- Horizontal List Menu

```
<html>
<head>
<style type="text/css" >
#nav{
    float:left;
    width:100%;
    background-color:#303030;
}
#nav ul{
    padding:0;
    margin: 0;
}
#nav ul li{
    display:inline;
}
#nav ul li a{
    float:left;
    text-decoration:none;
    color:white;
    background-color:#303030;
    border-bottom: 5px solid #303030;
    padding: 11px;
}
```

```
#nav ul li a:hover{
    color: #fff;
    background-color:#0b75b2;
    border-bottom: 5px solid red;
}
#nav ul li a:visited{
    color: pink;
}
</style>
</head>
<body>
<div id="nav">
    <ul>
        <li><a href="https://www.facebook.com">Home</a></li>
        <li><a href="https://www.google.com">Download</a></li>
        <li><a href="https://www.yahoo.com">About us</a></li>
    </ul>
</div>
</body>
</html>
```

```
<li><a href="https://www.facebook.com">Home</a></li>
<li><a href="https://www.google.com">Download</a></li>
<li><a href="https://www.yahoo.com">About us</a></li>
```

CSS Style – List (cont.)

- Vertical List Menu

```
<html>
<head>
<style type="text/css" >
#nav2{
    float: left;
    background-color:#333;
}
#nav2 ul{
    margin:0;
    padding:0;
    list-style-type:none;
    width:150px;
}
#nav2 ul li a{
    display: block;
    text-decoration:none;
    color:white;
    padding: 5px 10px;
    border-left: 10px solid #333;
}
```

```
#nav2 ul li a:hover{
    color:yellow;
    background-color:red;
    border-left: 10px solid green;}
#nav2 ul li a:visited{
    color: pink;}
</style>
</head>
<body>
<div id="nav2">
    <ul>
        <li><a href="https://www.facebook.com">Home</a></li>
        <li><a href="https://www.google.com">Download</a></li>
        <li><a href="https://www.yahoo.com">About us</a></li>
    </ul>
</div>
</body>
</html>
```

CSS Style - Table

```
table{  
    border-collapse: collapse;    /* the table borders are collapsed into a single border or separated  
    width: 100%;                  /* Set width for whole table */  
}  
table, td, th{  
    border: 1px solid green;      /* set the border to the table, td, th */  
}  
th{                               /* set background, color and height to the th */  
    background-color: green;  
    color: white;  
    height: 20px;  
}  
td{                               /* set the heigh, align and veritial-align to the td */  
    height: 50px;  
    text-align: right;  
    vertical-align: middle;  
}
```

CSS Style -- Table

```
<html>
<head>
<style>
table, th, td{
border:1px solid black;
}
table{
border-collapse:collapse;
width: 100%;
}
th{
background-color:green;
color:white;
height:50px;
}
td{
padding:15px;
}
</style>
</head>
```

```
<body>
<table>
<tr>
<th>Firstname</th>
<th>Lastname</th>
</tr>
<tr>
<td>Peter</td>
<td>Griffin</td>
</tr>
<tr>
<td>Lois</td>
<td>Griffin</td>
</tr>
</table>
</body>
</html>
```

Homework

<u>England</u> - Premier League			February 11
FT	Cardiff City	0 - 0	Aston Villa
FT	Hull City	0 - 1	Southampton
FT	West Ham United	2 - 0	Norwich City
FT	West Bromwich Albion	1 - 1	Chelsea

CSS Styling: Image Opacity / Transparency

- IE9, Firefox, Chrome, Opera, and Safari use the property **opacity** for transparency. The opacity property can take a value from 0.0 - 1.0. A lower value makes the element more transparent.
- IE8 and earlier use **filter:alpha(opacity=x)**. The x can take a value from 0 - 100. A lower value makes the element more transparent.

```
img
{
opacity:0.4;
filter:alpha(opacity=40); /* For IE8 and earlier */
}
```

- RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object.
- An RGBA color value is specified with: `rgba(red, green, blue, alpha)`. The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque).

```
#p1 {background-color:rgba(255,255,255,0.6);} / * white with opacity */
```



Exercise

Be content with what
you have; rejoice in
the way things are.

When you realize
there is nothing
lacking, the whole
world belongs to
you.

— *Lao Tzu*



CSS Styling: Image Sprites

- An image sprite is a collection of images put into a single image.
- A web page with many images can take a long time to load and generates multiple server requests.
- Using image sprites will reduce the number of server requests and save bandwidth.

```
<html>
<head>
<style>
img.home {
    width:46px;
    height:44px;
    background:url(img_navsprites.gif) 0 0;
}
img.next{
    width:43px;
    height:44px;
    background:url(img_navsprites.gif) -91px 0;
}
</style>
</head>
```

```
<body>

<br><br>

</body>
</html>
```

Original Picture of img_navsprites.gif



After image sprites

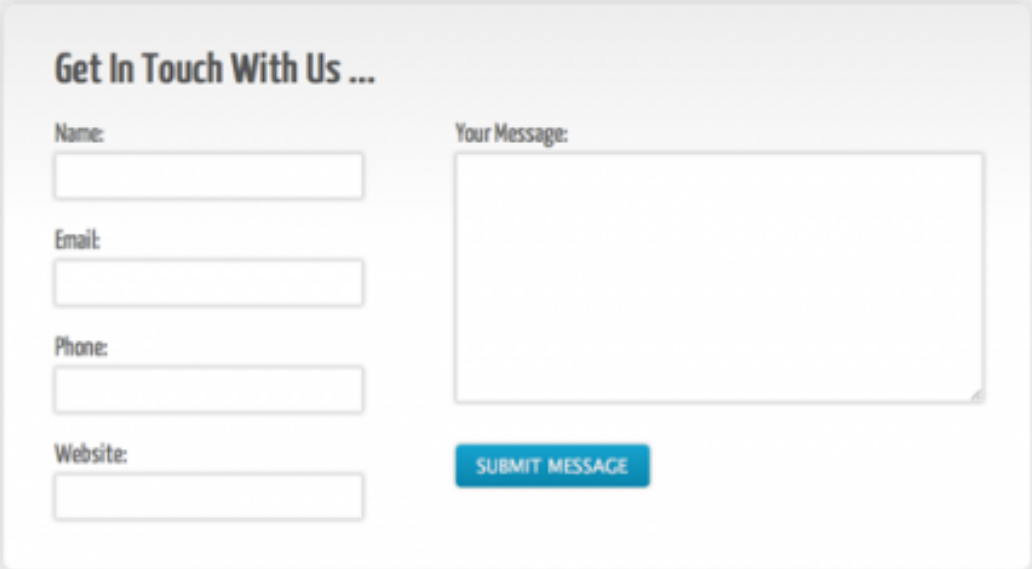


More Reading

- CSS3 2D Transforms
 - http://www.w3schools.com/css/css3_2dtransforms.asp
- CSS3 3D Transforms
 - http://www.w3schools.com/css/css3_3dtransforms.asp
- CSS3 Transition
 - http://www.w3schools.com/css/css3_transitions.asp
- CSS3 Animation
 - http://www.w3schools.com/css/css3_animations.asp

Learn More:

- How can we design our forms such as textbox, listbox, radio button, check button look better?



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