1. TUTORIAL ON CSS

Working with css Example Progs

CSS is a language that describes the style of an HTML document.

CSS describes how HTML elements should be displayed.

Example Prog 1 : Internal css

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
   background-color: lightblue;
}

h1 {
   color: white;
   text-align: center;
}

p {
   font-family: verdana;
   font-size: 20px;
}
</style>
</head>
<body>

<h1>My First CSS Example Prog</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

What is CSS?

CSS stands for Cascading Style Sheets

CSS describes how HTML elements are to be displayed on screen, paper, or in other media

CSS saves a lot of work. It can control the layout of multiple web pages all at once

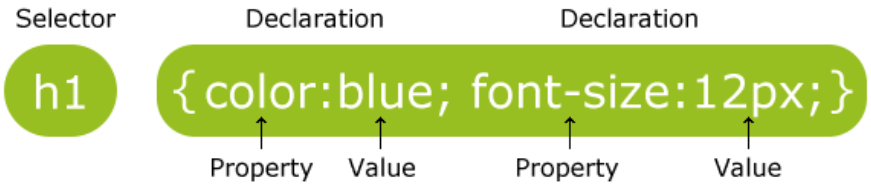
External stylesheets are stored in CSS files.

Why CSS ?

CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

CSS Syntax :

A CSS rule-set consists of a selector and a declaration block:



The selector points to the HTML element you want to style.

The declaration block contains one or more declarations separated by semicolons.

Each declaration includes a CSS property name and a value, separated by a colon.

A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

In the following Example Prog all <p> elements will be center-aligned, with a red text color:

Example Prog 2 :

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

CSS Selectors :

CSS selectors are used to "find" (or select) HTML elements based on their element name, id, class, attribute, and more.

The element Selector :

The element selector selects elements based on the element name.

You can select all <p> elements on a page like this (in this case, all <p> elements will be center-aligned, with a red text color):

Ex3 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  text-align: center;
  color: red;
```

```
}
</style>
</head>
<body>

<p>Every paragraph will be affected by the style.</p>
<p id="para1">Me too!</p>
<p>And me!</p>

</body>
</html>
```

The id Selector :
The id selector uses the id attribute of an HTML element to select a specific element.

The id of an element should be unique within a page, so the id selector is used to select one unique element!

To select an element with a specific id, write a hash (#) character, followed by the id of the element.

The style rule below will be applied to the HTML element with id="para1":

Example Prog 4:

```
<!DOCTYPE html>
<html>
<head>
<style>
#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>
```

Note: An id name cannot start with a number!

The class Selector :

The class selector selects elements with a specific class attribute.

To select elements with a specific class, write a period (.) character, followed by the name of the class.

In the Example Prog below, all HTML elements with class="center" will be red and center-aligned:

Example Prog 5:

```
<!DOCTYPE html>
<html>
<head>
<style>
.center {
   text-align: center;
   color: red;
}
</style>
</head>
<body>

<h1 class="center">Red and center-aligned heading</h1>
<p class="center">Red and center-aligned paragraph.</p>

</body>
</html>
```

You can also specify that only specific HTML elements should be affected by a class.

In the Example Prog below, only <p> elements with class="center" will be center-aligned:

Example Prog 6:

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
   text-align: center;
   color: red;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>

</body>
</html>
```

HTML elements can also refer to more than one class.

In the Example Prog below, the <p> element will be styled according to class="center" and to class="large":

Example Prog 7:

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: red;
}

p.large {
  font-size: 300%;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>
<p class="center large">This paragraph will be red, center-aligned, and in a large font-size.</p>

</body>
</html>
```

Grouping Selectors :
If you have elements with the same style definitions, like this:

```
h1 {
    text-align: center;
    color: red;
}

h2 {
    text-align: center;
    color: red;
}

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

It will be better to group the selectors, to minimize the code.

To group selectors, separate each selector with a comma.

In the Example Prog below we have grouped the selectors from the code above:

Example Prog 8 :

```
<!DOCTYPE html>
<html>
<head>
<style>
h1, h2, p {
   text-align: center;
   color: red;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<h2>Smaller heading!</h2>
<p>This is a paragraph.</p>

</body>
</html>
```

CSS Comments :
Comments are used to explain the code, and may help when you edit the source code at a later date.

Comments are ignored by browsers.

A CSS comment starts with /* and ends with */. Comments can also span multiple lines:

Example Prog 9 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
   color: red;
   /* This is a single-line comment */
   text-align: center;
}

/* This is
a multi-line
comment */
</style>
</head>
<body>

<p>Hello World!</p>
<p>This paragraph is styled with CSS.</p>
```

CSS comments are not shown in the output.
</body>
</html>

2. Three Ways to Insert CSS

There are three ways of inserting a style sheet:

- External style sheet
- Internal style sheet
- Inline style

External Style Sheet :

With an external style sheet, you can change the look of an entire website by changing just one file!

Each page must include a reference to the external style sheet file inside the <link> element. The <link> element goes inside the <head> section:

Example Prog 10 :

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

An external style sheet can be written in any text editor. The file should not contain any html tags. The style sheet file must be saved with a .css extension.

Here is how the "myStyle.css" looks:

```
body {
    background-color: lightblue;
}

h1 {
    color: navy;
    margin-left: 20px;
}
```

Note: Do not add a space between the property value and the unit (such as margin-left: 20 px;). The correct way is: margin-left: 20px;

Internal Style Sheet :

An internal style sheet may be used if one single page has a unique style.

Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

Example Prog 11 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: linen;
}
h1 {
  color: maroon;
  margin-left: 40px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Inline Styles :

An inline style may be used to apply a unique style for a single element.

To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

The Example Prog below shows how to change the color and the left margin of a <h1> element:

Example Prog 12 :

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:blue;margin-left:30px;">This is a heading.</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Multiple Style Sheets :
If some properties have been defined for the same selector (element) in different style sheets, the value from the last read style sheet will be used.
Example Prog :
Assume that an external style sheet has the following style for the <h1> element:

```
h1 {
   color: navy;
}
```

then, assume that an internal style sheet also has the following style for the <h1> element:

```
h1 {
   color: orange;
}
```

If the internal style is defined after the link to the external style sheet, the <h1> elements will be "orange":
Example Prog 13 :

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
h1 {
   color: orange;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>The style of this document is a combination of an external stylesheet, and internal style</p>

</body>
</html>
```

However, if the internal style is defined before the link to the external style sheet, the <h1> elements will be "navy":
Example Prog 14 :

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
   color: orange;
}
</style>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>
```

```
<h1>This is a heading</h1>
<p>The style of this document is a combination of an external stylesheet, and internal style</p>

</body>
</html>
```

Cascading Order :

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 one has the highest priority:

I. Inline style (inside an HTML element)
II. External and internal style sheets (in the head section)
III. Browser default

So, an inline style (inside a specific HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet, or a browser default value.

Example Prog 14 :

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
body {background-color: linen;}
</style>
</head>
<body style="background-color: lightcyan">

<h1>Multiple Styles Will Cascade into One</h1>
<p>In this Example Prog, the background color is set inline, in an internal stylesheet, and in an external stylesheet.</p>
<p>Try experimenting by removing styles to see how the cascading stylesheets work. (try removing the inline first, then the internal, then the external)</p>

</body>
</html>
```

IV. 3.CSS Colors

Colors in CSS are most often specified by:

- a valid color name - like "red"
- an RGB value - like "rgb(255, 0, 0)"
- a HEX value - like "#ff0000"

Color Names :

Colors set by using color names:

Example Prog 15 :

```
<!DOCTYPE html>
<html>
<body>

<h2>Color Names Example Progs</h2>
<p>Note: You will learn more about the background-color and the color property later in our tutorial.</p>

<h2 style="background-color:red">
Red background-color
</h2>

<h2 style="background-color:green">
Green background-color
</h2>

<h2 style="background-color:blue;color:white">
Blue background-color and white text color
</h2>

<h2 style="background-color:orange">
Orange background-color
</h2>

<h2 style="background-color:yellow">
Yellow background-color
</h2>

<h2 style="background-color:cyan">
Cyan background-color
</h2>

<h2 style="background-color:black;color:white">
```

Black background-color and white text color
</h2>

</body>
</html>

Note: Color names are case-insensitive: "Red" is the same as "red" or "RED".
HTML and CSS supports 140 standard colors.

AliceBlue	#F0F8FF	LightPink	#FFB6C1
AntiqueWhite	#FAEBD7	LightSalmon	#FFA07A
Aqua	#00FFFF	LightSeaGreen	#20B2AA
Aquamarine	#7FFFD4	LightSkyBlue	#87CEFA
Azure	#F0FFFF	LightSlateGray	#778899
Beige	#F5F5DC	LightSlateGrey	#778899
Bisque	#FFE4C4	LightSteelBlue	#B0C4DE
Black	#000000	LightYellow	#FFFFE0
BlanchedAlmond	#FFEBCD	Lime	#00FF00
Blue	#0000FF	LimeGreen	#32CD32
BlueViolet	#8A2BE2	Linen	#FAF0E6
Brown	#A52A2A	Magenta	#FF00FF
BurlyWood	#DEB887	Maroon	#800000
CadetBlue	#5F9EA0	MediumAquaMarine	#66CDAA
Chartreuse	#7FFF00	MediumBlue	#0000CD
Chocolate	#D2691E	MediumOrchid	#BA55D3
Coral	#FF7F50	MediumPurple	#9370DB
CornflowerBlue	#6495ED	MediumSeaGreen	#3CB371
Cornsilk	#FFF8DC	MediumSlateBlue	#7B68EE
Crimson	#DC143C	MediumSpringGreen	#00FA9A
Cyan	#00FFFF	MediumTurquoise	#48D1CC

DarkBlue	#00008B
DarkCyan	#008B8B
DarkGoldenRod	#B8860B
DarkGray	#A9A9A9
DarkGrey	#A9A9A9
DarkGreen	#006400
DarkKhaki	#BDB76B
DarkMagenta	#8B008B
DarkOliveGreen	#556B2F
DarkOrange	#FF8C00
DarkOrchid	#9932CC
DarkRed	#8B0000
DarkSalmon	#E9967A
DarkSeaGreen	#8FBC8F
DarkSlateBlue	#483D8B
DarkSlateGray	#2F4F4F
DarkSlateGrey	#2F4F4F
DarkTurquoise	#00CED1
DarkViolet	#9400D3
DeepPink	#FF1493
DeepSkyBlue	#00BFFF
DimGray	#696969
DimGrey	#696969
DodgerBlue	#1E90FF
FireBrick	#B22222
FloralWhite	#FFFAF0

MediumVioletRed	#C71585
MidnightBlue	#191970
MintCream	#F5FFFA
MistyRose	#FFE4E1
Moccasin	#FFE4B5
NavajoWhite	#FFDEAD
Navy	#000080
OldLace	#FDF5E6
Olive	#808000
OliveDrab	#6B8E23
Orange	#FFA500
OrangeRed	#FF4500
Orchid	#DA70D6
PaleGoldenRod	#EEE8AA
PaleGreen	#98FB98
PaleTurquoise	#AFEEEE
PaleVioletRed	#DB7093
PapayaWhip	#FFEFD5
PeachPuff	#FFDAB9
Peru	#CD853F
Pink	#FFC0CB
Plum	#DDA0DD
PowderBlue	#B0E0E6
Purple	#800080
RebeccaPurple	#663399

ForestGreen	#228B22
Fuchsia	#FF00FF
Gainsboro	#DCDCDC
GhostWhite	#F8F8FF
Gold	#FFD700
GoldenRod	#DAA520
Gray	#808080
Grey	#808080
Green	#008000
GreenYellow	#ADFF2F
HoneyDew	#F0FFF0
HotPink	#FF69B4
IndianRed	#CD5C5C
Indigo	#4B0082
Ivory	#FFFFF0
Khaki	#F0E68C
Lavender	#E6E6FA
LavenderBlush	#FFF0F5
LawnGreen	#7CFC00
LemonChiffon	#FFFACD
LightBlue	#ADD8E6
LightCoral	#F08080
LightCyan	#E0FFFF
LightGoldenRodYellow	#FAFAD2
LightGray	#D3D3D3
LightGrey	#D3D3D3
Red	#FF0000
RosyBrown	#BC8F8F
RoyalBlue	#4169E1
SaddleBrown	#8B4513
Salmon	#FA8072
SandyBrown	#F4A460
SeaGreen	#2E8B57
SeaShell	#FFF5EE
Sienna	#A0522D
Silver	#C0C0C0
SkyBlue	#87CEEB
SlateBlue	#6A5ACD
SlateGray	#708090
SlateGrey	#708090
Snow	#FFFAFA
SpringGreen	#00FF7F
SteelBlue	#4682B4
Tan	#D2B48C
Teal	#008080
Thistle	#D8BFD8
Tomato	#FF6347
Turquoise	#40E0D0
Violet	#EE82EE
Wheat	#F5DEB3
White	#FFFFFF
WhiteSmoke	#F5F5F5
Yellow	#FFFF00

LightGreen	#90EE90	YellowGreen	#9ACD32

RGB (Red, Green, Blue) :

RGB color values can be specified using this formula: rgb(red, green, blue).

Each parameter (red, green, blue) defines the intensity of the color between 0 and 255.

For Example Prog, rgb(255,0,0) is displayed as red, because red is set to its highest value (255) and the others are set to 0. Experiment by mixing the RGB values below:

Example Prog 16 :

```
<!DOCTYPE html>
<html>
<body>

<h2>RGB Color Example Progs</h2>

<h2 style="background-color:rgb(255, 0, 0)">
Background-color set by using rgb(255, 0, 0)
</h2>

<h2 style="background-color:rgb(0, 255, 0)">
Background-color set by using rgb(0, 255, 0)
</h2>

<h2 style="background-color:rgb(0, 0, 255)">
Background-color set by using rgb(0, 0, 255)
</h2>

<h2 style="background-color:rgb(255, 165, 0)">
Background-color set by using rgb(255, 165, 0)
</h2>

<h2 style="background-color:rgb(255, 255, 0)">
Background-color set by using rgb(255, 255, 0)
</h2>

<h2 style="background-color:rgb(0, 255, 255)">
Background-color set by using rgb(0, 255, 255)
</h2>

</body>
</html>
```

Shades of grey are often defined using equal values for all the 3 light sources:

Example Prog 17 :

```
<!DOCTYPE html>
<html>
```

```
<body>

<h2>RGB Color Example Progs</h2>

<h2 style="background-color:rgb(0, 0, 0);color:white">
Background-color set by using rgb(0,0,0)
</h2>

<h2 style="background-color:rgb(128, 128, 128);color:white">
Background-color set by using rgb(128,128,128)
</h2>

<h2 style="background-color:rgb(255, 255, 255)">
Background-color set by using rgb(255,255,255)
</h2>

</body>
</html>
```

Hexadecimal Colors :
RGB values can also be specified using hexadecimal color values in the form: #RRGGBB, where RR (red), GG (green) and BB (blue) are hexadecimal values between 00 and FF (same as decimal 0-255).

For Example Prog, #FF0000 is displayed as red, because red is set to its highest value (FF) and the others are set to the lowest value (00).
Note: HEX values are case-insensitive: "#ff0000" is the same as "FF0000".

Example Prog 18:

```
<!DOCTYPE html>
<html>
<body>

<h2>HEX Color Example Progs</h2>

<h2 style="background-color:#FF0000">
Background-color set by using #FF0000
</h2>

<h2 style="background-color:#00FF00">
Background-color set by using #00FF00
</h2>

<h2 style="background-color:#0000FF">
Background-color set by using #0000FF
</h2>

<h2 style="background-color:#FFA500">
Background-color set by using #FFA500
</h2>
```

```
<h2 style="background-color:#FFFF00">
Background-color set by using #FFFF00
</h2>

<h2 style="background-color:#00FFFF">
Background-color set by using #00FFFF
</h2>

</body>
</html>
```

Shades of grey are often defined using equal values for all the 3 light sources:
Example Prog 18:

```
<!DOCTYPE html>
<html>
<body>

<h2>HEX Color Example Progs</h2>

<h2 style="background-color:#000000;color:white">
Background-color set by using #000000
</h2>

<h2 style="background-color:#808080;color:white">
Background-color set by using #808080
</h2>

<h2 style="background-color:#FFFFFF">
Background-color set by using #FFFFFF
</h2>

</body>
</html>
```

4. Background Colors

The CSS background properties are used to define the background effects for elements.

CSS background properties:

- background-color
- background-image
- background-repeat
- background-attachment
- background-position

Background-color :

The background-color property specifies the background color of an element.

The background color of a page is set like this:

Example Prog 19 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
   background-color: lightblue;
}
</style>
</head>
<body>

<h1>Hello World!</h1>

<p>This page has a light blue background color!</p>

</body>
</html>
```

With CSS, a color is most often specified by:

- a valid color name - like "red"
- a HEX value - like "#ff0000"
- an RGB value - like "rgb(255,0,0)"

In the Example Prog below, the <h1>, <p>, and elements have different background colors:

Example Prog 20 :

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
  background-color: green;
}

div {
  background-color: lightblue;
}

p {
  background-color: yellow;
}
</style>
</head>
<body>

<h1>CSS background-color Example Prog!</h1>
<div>
This is a text inside a div element.
<p>This paragraph has its own background color.</p>
We are still in the div element.
</div>

</body>
</html>
```

Background Image :

The background-image property specifies an image to use as the background of an element.

By default, the image is repeated so it covers the entire element.

The background image for a page can be set like this:

Example Prog 21 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("image.gif");
}
</style>
</head>
<body>

<h1>Hello World!</h1>
```

```
<p>This page has an image as the background!</p>

</body>
</html>
```

Below is an Example Prog of a bad combination of text and background image. The text is hardly readable:

Example Prog 22 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("bgdesert.jpg");
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>This text is not easy to read on this background image.</p>

</body>
</html>
```

If the image above is repeated only horizontally (background-repeat: repeat-x;), the background will look better:

Example Prog 23 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("gradient_bg.png");
  background-repeat: repeat-x;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>Here, a backgound image is repeated only horizontally!</p>

</body>
</html>
```

Tip: To repeat an image vertically, set background-repeat: repeat-y;

Background Image - Set position and no-repeat :

Showing the background image only once is also specified by the background-repeat property:

Example Prog 24 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("img_tree.png");
  background-repeat: no-repeat;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>W3Schools background image Example Prog.</p>
<p>The background image is only showing once, but it is disturbing the reader!</p>

</body>
</html>
```

In the Example Prog above, the background image is shown in the same place as the text. We want to change the position of the image, so that it does not disturb the text too much.

The position of the image is specified by the background-position property :

Example Prog 25 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("img_tree.png");
  background-repeat: no-repeat;
  background-position: right top;
  margin-right: 200px;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>W3Schools background no-repeat, set position Example Prog.</p>
<p>Now the background image is only shown once, and positioned away from the text.</p>
```

```
<p>In this Example Prog we have also added a margin on the right side, so the background image will never disturb the text.</p>

</body>
</html>
```

Background Image - Fixed position :

To specify that the background image should be fixed (will not scroll with the rest of the page), use the background-attachment property:

Example Prog 26:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
   background-image: url("img_tree.png");
   background-repeat: no-repeat;
   background-position: right top;
   margin-right: 200px;
   background-attachment: fixed;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
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<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
<p>The background-image is fixed. Try to scroll down the page.</p>
```

```
<p>If you do not see any scrollbars, try to resize the browser window.</p>

</body>
</html>
```

Example Prog 27 :

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background: #ffffff url("img_tree.png") no-repeat right top;
  margin-right: 200px;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>Now the background image is only shown once, and it is also positioned away from the text.</p>
<p>In this Example Prog we have also added a margin on the right side, so that the background image will not disturb the text.</p>

</body>
</html>
```

When using the shorthand property the order of the property values is:

- background-color
- background-image
- background-repeat
- background-attachment
- background-position

It does not matter if one of the property values is missing, as long as the other ones are in this order.

Property	**Description**
Background	Sets all the background properties in one declaration
background-attachment	Sets whether a background image is fixed or scrolls with the rest of the page
background-color	Sets the background color of an element
background-image	Sets the background image for an element
background-position	Sets the starting position of a background image
background-repeat	Sets how a background image will be repeated

5. CSS Borders

CSS Border Properties :
The CSS border properties allow you to specify the style, width, and color of an element's border.

Border Style :

The border-style property specifies what kind of border to display.

The following values are allowed:

- dotted - Defines a dotted border
- dashed - Defines a dashed border
- solid - Defines a solid border
- double - Defines a double border
- 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
- none - Defines no border
- hidden - Defines a hidden border

The border-style property can have from one to four values (for the top border, right border, bottom border, and the left border).

Example Prog :

```
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid double;}
```

Example Prog 28 :

```
<!DOCTYPE html>
<html>
```

```
<head>
<style>
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid double;}
</style>
</head>
<body>

<h2>The border-style Property</h2>
<p>This property specifies what kind of border to display:</p>

<p class="dotted">A dotted border.</p>
<p class="dashed">A dashed border.</p>
<p class="solid">A solid border.</p>
<p class="double">A double border.</p>
<p class="groove">A groove border.</p>
<p class="ridge">A ridge border.</p>
<p class="inset">An inset border.</p>
<p class="outset">An outset border.</p>
<p class="none">No border.</p>
<p class="hidden">A hidden border.</p>
<p class="mix">A mixed border.</p>

</body>
</html>
```

Note: None of the OTHER CSS border properties described below will have ANY effect unless the border-style property is set!

Border Width :

The border-width property specifies the width of the four borders.

The width can be set as a specific size (in px, pt, cm, em, etc) or by using one of the three pre-defined values: thin, medium, or thick.

The border-width property can have from one to four values (for the top border, right border, bottom border, and the left border).

Example Prog 29 :

```
<!DOCTYPE html>
```

```
<html>
<head>
<style>
p.one {
   border-style: solid;
   border-width: 5px;
}

p.two {
   border-style: solid;
   border-width: medium;
}

p.three {
   border-style: dotted;
   border-width: 2px;
}

p.four {
   border-style: dotted;
   border-width: thick;
}

p.five {
   border-style: double;
   border-width: 15px;
}

p.six {
   border-style: double;
   border-width: thick;
}

p.seven {
   border-style: solid;
   border-width: 2px 10px 4px 20px;
}
</style>
</head>
<body>

<h2>The border-width Property</h2>
<p>This property specifies the width of the four borders:</p>

<p class="one">Some text.</p>
<p class="two">Some text.</p>
<p class="three">Some text.</p>
<p class="four">Some text.</p>
<p class="five">Some text.</p>
<p class="six">Some text.</p>
<p class="seven">Some text.</p>
```

```
<p><b>Note:</b> The "border-width" property does not work if it is used alone.
Always specify the "border-style" property to set the borders first.</p>

</body>
</html>
```

Border Color :

The border-color property is used to set the color of the four borders.

The color can be set by:

name - specify a color name, like "red"

Hex - specify a hex value, like "#ff0000"

RGB - specify a RGB value, like "rgb(255,0,0)"

transparent

The border-color property can have from one to four values (for the top border, right border, bottom border, and the left border).

If border-color is not set, it inherits the color of the element.

Example Prog 30 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p.one {
   border-style: solid;
   border-color: red;
}

p.two {
   border-style: solid;
   border-color: green;
}

p.three {
   border-style: solid;
   border-color: red green blue yellow;
}
</style>
</head>
<body>

<h2>The border-color Property</h2>
<p>This property specifies the color of the four borders:</p>
```

```
<p class="one">A solid red border</p>
<p class="two">A solid green border</p>
<p class="three">A solid multicolor border</p>
<p><b>Note:</b> The "border-color" property does not work if it is used alone. Use the
"border-style" property to set the borders first.</p>

</body>
</html>
```

Border - Individual Sides :

From the Example Progs above you have seen that it is possible to specify a different border for each side.

In CSS, there is also properties for specifying each of the borders (top, right, bottom, and left):

Example Prog 31 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
   border-top-style: dotted;
   border-right-style: solid;
   border-bottom-style: dotted;
   border-left-style: solid;
}
</style>
</head>
<body>

<p>2 different border styles.</p>

</body>
</html>
```

The Example Prog above gives the same result as this:

Example Prog 32 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
   border-style: dotted solid;
}
</style>
</head>
<body>

<p>2 different border styles.</p>
```

</body>
</html>

So, here is how it works:

If the border-style property has four values:

- border-style: dotted solid double dashed;

  top border is dotted

  right border is solid

  bottom border is double

  left border is dashed

If the border-style property has three values:

- border-style: dotted solid double;

  top border is dotted

  right and left borders are solid

  bottom border is double

If the border-style property has two values:

- border-style: dotted solid;

  top and bottom borders are dotted

  right and left borders are solid

If the border-style property has one value:

- border-style: dotted;

  all four borders are dotted

The border-style property is used in the Example Prog above. However, it also works with border-width and border-color.

Border - Shorthand Property :

As you can see from the Example Progs above, there are many properties to consider when dealing with borders.

To shorten the code, it is also possible to specify all the individual border properties in one property.

The border property is a shorthand property for the following individual border properties:

- border-width
- border-style (required)
- border-color

Example Prog :

```
p {
    border: 5px solid red;
}
```

Example Prog 32 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  border: 5px solid red;
}
</style>
</head>
<body>

<h2>The border Property</h2>

<p>This property is a shorthand property for border-width, border-style, and border-color.</p>

</body>
</html>
```

You can also specify all the individual border properties for just one side:

Left Border

```
p {
    border-left: 6px solid red;
    background-color: lightgrey;
}
```

Example Prog 33 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  border-left: 6px solid red;
```

```
   background-color: lightgrey;
}
</style>
</head>
<body>

<h2>The border-left Property</h2>
<p>This property is a shorthand property for border-left-width, border-left-style, and border-left-color.</p>

</body>
</html>
```

Bottom Border

```
p {
    border-bottom: 6px solid red;
    background-color: lightgrey;
}
```

Example Prog 34 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
   border-bottom: 6px solid red;
   background-color: lightgrey;
}
</style>
</head>
<body>

<h2>The border-bottom Property</h2>
<p>This property is a shorthand property for border-bottom-width, border-bottom-style, and border-bottom-color.</p>

</body>
</html>
```

Rounded Borders :
The border-radius property is used to add rounded borders to an element:
Example Prog 35 :

```
<!DOCTYPE html>
<html>
<head>
<style>
p.normal {
   border: 2px solid red;
}
```

```
p.round1 {
  border: 2px solid red;
  border-radius: 5px;
}

p.round2 {
  border: 2px solid red;
  border-radius: 8px;
}

p.round3 {
  border: 2px solid red;
  border-radius: 12px;
}
</style>
</head>
<body>

<h2>The border-radius Property</h2>
<p>This property is used to add rounded borders to an element:</p>

<p class="normal">Normal border</p>
<p class="round1">Round border</p>
<p class="round2">Rounder border</p>
<p class="round3">Roundest border</p>

<p><b>Note:</b> The "border-radius" property is not supported in IE8 and earlier
versions.</p>

</body>
</html>
```

Note: The border-radius property is not supported in IE8 and earlier versions.

All CSS Border Properties

Property	Description
Border	Sets all the border properties in one declaration
border-bottom	Sets all the bottom border properties in one declaration
border-bottom-color	Sets the color of the bottom border
border-bottom-style	Sets the style of the bottom border
border-bottom-width	Sets the width of the bottom border
border-color	Sets the color of the four borders
border-left	Sets all the left border properties in one declaration
border-left-color	Sets the color of the left border
border-left-style	Sets the style of the left border
border-left-width	Sets the width of the left border
border-radius	Sets all the four border-*-radius properties

	for rounded corners
border-right	Sets all the right border properties in one declaration
border-right-color	Sets the color of the right border
border-right-style	Sets the style of the right border
border-right-width	Sets the width of the right border
border-style	Sets the style of the four borders
border-top	Sets all the top border properties in one declaration
border-top-color	Sets the color of the top border
border-top-style	Sets the style of the top border
border-top-width	Sets the width of the top border
border-width	Sets the width of the four borders