Cascading Style Sheet 3.0

Lesson 05: Colors and Borders

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Lesson Objectives

In this lesson, we will learn:

- Background
- Multiple Image Background
- Colors
  - RGB and RGBA
  - HSL and HSLA
- Borders
  - Rounded Corners
  - Applying Shadows in border

Background

CSS background properties are used to define the background effects of an element.

Following are some of the properties used for background effects

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

With CSS 3.0 two more properties are available to define background effects

- background-size
- background-origin

CSS 3 also supports inclusion of multiple background images

Background Properties

Background Color: Specifies the background color of an element.
Ex:

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

Background Image: Specifies an image to use as the background of an element.
Ex:

```
body {background-
image:url(flower.pbg);}
```

Background Properties

Properties background-repeat, background-attachment and background-position are related to background-image property. They define image attributes as follows

- The background-attachment sets whether a background image is fixed or scrolls with the rest of the page
- The background-position property sets the starting position of a background image
- The background-repeat property sets if/how a background image will be repeated.
- By default, a background-image is repeated both vertically and horizontally.

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

Background Properties – CSS 3

Background-size : The background-size property specifies the size of the background image.

Ex : 1

```
div
{
background:url(flower.png);
background-size:80px 60px;
background-repeat:no-repeat;
}
```

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

Ex: Position the background image within the content-box:

```
div
{
  background:url(img_flwr.gif);
  background-repeat:no-repeat;
  background-size:100% 100%;
 -webkit-background-origin:content-box; /* Safari */
  background-origin:content-box;
  }
```

Multiple Background Images

CSS 3 supports multiple background images
Ex:

```
body
{
  background-
image:url(img_flwr.gif),url(img_tree.gif);
}
```

Demo : Background Properties

Background.html
Background2.html
Background_image.html
Multiple_image_background.html

CSS Color

The color property defines the foreground color of an element; in essence, this means it defines the color of the text content

Colors in CSS can be specified by using any of the mechanism

- Hexadecimal colors
- RGB colors
- RGBA colors
- HSL colors
- HSLA colors
- Predefined/Cross-browser color names

CSS Color

Hexadecimal Colors : A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue)

Ex:

```
p
{
background-color:#ff0000;
}
```

RGB Colors:An RGB color value is specified with: rgb(red, green, blue).

Ex

```
p
{
background-
color:rgb(255,0,0);
}
```

CSS Color

RGBA Colors :RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object.

Ex:

```
p
{
        background-
color:rgba(255,0,0,0.5);
}
```

HSL Colors: HSL stands for hue, saturation, and lightness - and represents a cylindrical-coordinate representation of colors. An HSL color value is specified with: hsl(hue, saturation, lightness)

Ex:

```
p
{
        background-color
:hsl(120,65%,75%);
}
```

CSS Color

HSLA Color : HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity of the object.

Ex:

```
p
{
        background-color
:hsla(120,65%,75%,0.3);
}
```

Demo : CSS Colors

demoColor.html

Border

The CSS border properties allow you to specify the style and color of an element's border.

Following are some of the properties we can specify for a border

- border-style
- border-width
- border-color

CSS 3 adds 3 more border properties

- border-radius
- box-shadow
- border-image
- border-collapse
- border-spacing

Border Style

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

```
div.wrapper
{
   border-
style:solid;
}
```

Border style can be dotted, dashed ,solid etc
Above example code will draw a border as shown below

Border Width

Border Width :The border-width property is used to set the width of the border.

The width is set in pixels, or by using one of the three pre-defined values: thin, medium, or thick.

Ex:

```
div.one
{
border-style:solid;
border-width:5px;
}
```

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

Border Color

Border Color : The border-color property is used to set the color of the border. The color can be set by:

- name - specify a color name, like "red"
- RGB - specify a RGB value, like "rgb(255,0,0)"
- Hex - specify a hex value, like "#ff0000"
- You can also set the border color to "transparent".

Ex:

```
div.one
{
border-style:solid;
border-color:red;
}
```

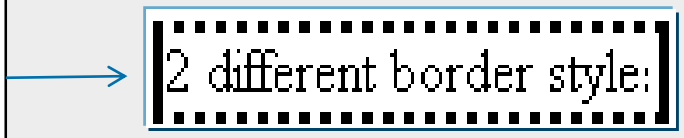
```
div.two
{
border-style:dotted;
border-
color:#98bf21;
}
```

Border - Individual sides

In CSS it is possible to specify different borders for different sides:

Ex:

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



Border - Shorthand property:it is also possible to specify all the individual border properties in one property.

Ex : border:5px solid red;

Above example sets 5px width, solid as border style and red as color

Demo : Border

demoBorder.html

Rounded Corners Border

With CSS3, we can create rounded borders as shown below:

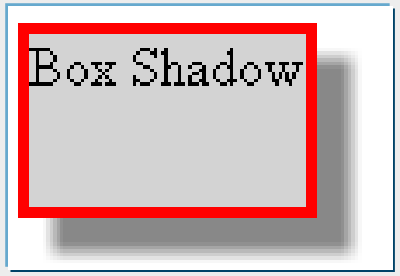
border-radius

```
div
{
border:2px solid;
border-radius:25px;
}
```

Applying Shadows in border

With CSS3, we can add shadow to border as shown below:

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



Demo : CSS 3 Border

demoBorder_CSS 3.0.html

Transformation

- CSS 3 supports transformation
- With CSS 3 transform we can move, scale, turn, spin, and stretch elements.
- We can transform our elements using 2D or 3D transformation.
- It can be achieved using *'transform'* property

2D Transforms

➢With CSS 3 transformation can be achieved with the following methods

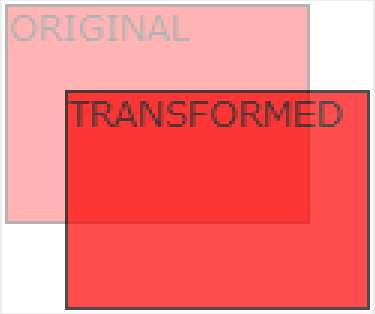
- translate()
- rotate()
- scale()
- skew()
- matrix()

Translate

- The translate() method, the element moves from its current position, depending on the parameters given for the left (X-axis) and the top (Y-axis) position:

- Ex:

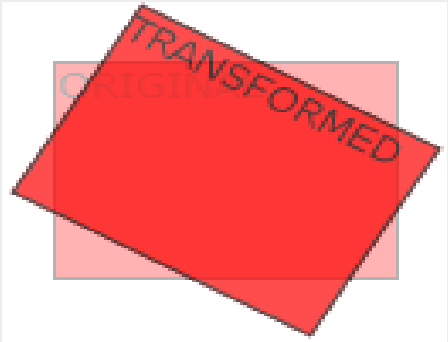
```
div
{
    transform: translate(25px,50px);
}
```



Rotate

- The rotate() method, rotates element clockwise at a given degree. Negative values are allowed and rotates the element counter-clockwise.
- Ex:

```
div
{
    transform: rotate(30deg);
}
```



Scale

- The scale() method, increases or decreases the size of element, depending on the parameters given for the width (X-axis) and the height (Y-axis):
- Ex:

```
div
{
    transform: scale(2,2);
}
```

Skew

- The skew() method, turns an element in a given angle, depending on the parameters given for the horizontal (X-axis) and the vertical (Y-axis) lines:
- Ex:

```
div
{
    transform: skew(20deg,30deg);
}
```

Matrix

- The matrix() method combines all of the 2D transform methods into one.
- The matrix method take six parameters, containing mathematic functions, which allows you to: rotate, scale, move (translate), and skew elements.
- Ex:

```
div
{
    transform: matrix(0.866,0.5,-0.5,0.866,0,0);
}
```

Demo : 2D Transformation

- Translate.html
- Rotate.html
- Skew.html
- Scale.html
- Transform.html

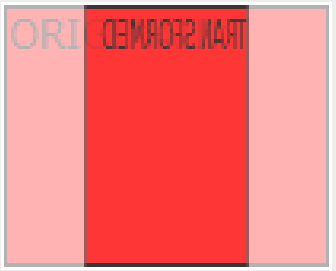
3D Transform

- In CSS 3 we can format elements 3D transforms.
- We can achieve it using following methods
  - rotateX()
  - rotateY()

- Ex:

```
div
{
  transform: rotateX(120deg);
}
```


```
div
{
  transform: rotateY(130deg);
}
```



Demo : 3D Transformation

- Transform_3D.html

Lesson Summary

In this lesson, you have learn about

- Background
- Multiple Image Background
- Colors
  - RGB and RGBA
  - HSL and HSLA
- Borders
- Rounded Corners
- Applying Shadows in border

Review Questions

Question 1: In HSLA color scheme H,S,L,A stands for _____,_____,_____and _____ respectively

Question 2: With Background Attachment _____ property stops the background-image from scrolling with its containing bloc

- Option 1: Stop
- Option 2: No-scroll
- Option 3: Static
- Option 4: Fixed

Review Questions

Question 3: Which of the following are CSS 3 properties

- Option 1 : border-image
- Option 2 : border-width
- Option 3 : border-color
- Option 4 : border-radius
- Option 5 : box-shadow

Question 4: In CSS it is possible to specify different borders for different sides:

- Option 1 : True
- Option 2 : False