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12. **Introduction**

There's no difference. Just like HTML and HTML 5. CSS 3 is simply the latest 'version' of CSS which has more advanced features than earlier 'releases'.

1. **Selectors**

**What is Selector?**

Selectors are one of the most important aspects of CSS as they are used to select elements on a web page so that they can be styled. You can define selectors in various ways.

* Universal Selector
* Element Type Selector
* Id Selectors
* Class Selectors
* Descendant Selectors
* Child Selectors
* Grouping Selectors

1. **Universal Selector**

\*{

Margin:0;

Padding:0

}

1. **Element Type Selector**

p{color: blue;}

1. **Id Selectors**

<style type="text/css">

#error {

color: #ff0000;

}

</style>

<p id="error"></p>

1. **Class Selectors**

<style type="text/css">

.error {

color: #ff0000;

}

</style>

<p class="error">This is warning</p>

1. **Descendant Selector**

<style type="text/css">

h1 em {color: green;}

ul.menu {padding: 0; list-style: none; }

ul.menu li{ display: inline; }

ul.menu li a {margin: 10px; text-decoration: none; }

</style>

<h1>This is <em>Heading </em></h1>

<ul class="menu">

<li><a href="#">Home</a></li>

<li><a href="#">About</a></li>

<li><a href="#">Services </a></li>

<li><a href="#">Contact </a></li>

</ul>

1. Child Selectors

<style type="text/css">

ul > li {

list-style: square;

}

ul > li ol {

list-style: none;

}

</style>

<h1>This is<em>Heading </em></h1>

<ul>

<li><a href="#">Home </a></li>

<li><a href="#">About </a></li>

<li>

<a href="#">Services </a>

<ol>

<li><a href="#">Design </a></li>

<li><a href="#">Development </a></li>

</ol>

</li>

<li><a href="#">Contact </a></li></ul>

1. **Grouping Selectors**

<style type="text/css">

h1, h2, h3 {font-weight: normal; }

h1 {font-size: 36px; }

h2 {font-size: 28px; }

h3 {font-size: 22px; }

</style>

<h1>This heading h1</h1>

<h2>This heading h2</h2>

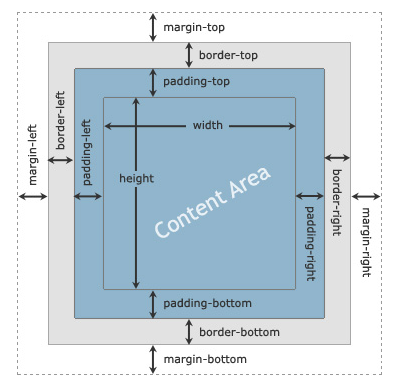
<h3>This heading h3</h3>

1. **Box Model**

The CSS box model is essentially a box that wraps around HTML elements, and it consists of

* margins
* borders
* padding
* the actual content

## WHAT IS THE BOX MODEL?



1. **Background**

The CSS3 provides several new properties to manipulate the background of an element like background clipping, multiple backgrounds, and the option to adjust the background size.

CSS3 gives you ability to add multiple backgrounds to a single element. The backgrounds are layered on the top of one another. The number of layers is determined by the number of comma-separated values in the background-image or background shorthand property.

**Example:**

<html lang="en"><head>

<title>Example of CSS3 Multiple Backgrounds</title>

<style type="text/css">

.box {

width: 100%;

height: 500px;

background:url("images/birds.png") no-repeat center, url("images/clouds.png") repeat-x center left 109px, url("images/sun.png") no-repeat 10% 30%, #BDDDF9;

}

</style>

</head>

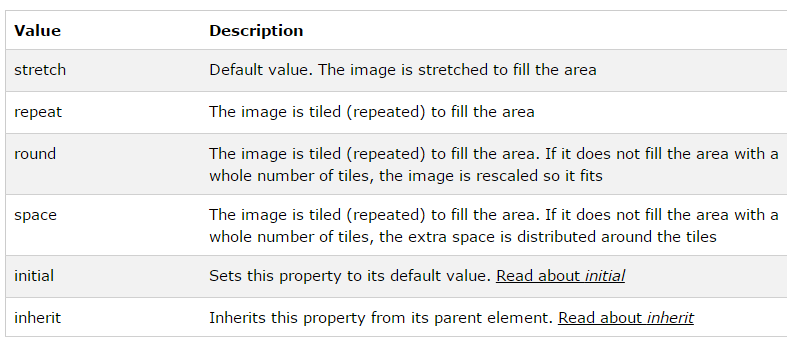
<body>

<div class="box"></div>

</body></html>

1. **Border**

The CSS3 provides two new properties for styling the borders of an element in a more elegant way — the border-image property for adding the images to borders, and the border-radius property for making the rounded corners without using any images.



**Example:**

<html lang="en"><head>

<title>Example of CSS3 Border Images</title>

<style type="text/css">

.box {

width: 300px;

height: 150px;

border: 15px solid transparent;

-webkit-border-image: url("images/border.png") 30 30 round; /\* Safari 3.1-5 \*/

-o-border-image: url("images/border.png") 30 30 round; /\* Opera 11-12.1 \*/

border-image: url("images/border.png") 30 30 round;

}

</style>

</head>

<body>

<div class="box"></div>

</body></html>

**Example:**

<html lang="en"><head>

<title>Example of CSS3 Border Images</title>

<style type="text/css">

.box {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

-webkit-border-image: url("images/border.png") 30 30 round; /\* Safari 3.1-5 \*/

-o-border-image: url("images/border.png") 30 30 round; /\* Opera 11-12.1 \*/

border-image: url("images/border.png") 30 30 round;

}

.box1 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 50 repeat;

}

.box2 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 20% round;

}

.box3 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 30% round;

}

.box4 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 40% round;

}

.box5 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 20% stretch;

}

.box6 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 30% stretch;

}

.box7 {

width: 300px;

height: 150px;

float:left;

margin-left:50px;

border: 15px solid transparent;

border-image: url("images/border.png") 40% stretch;

}

</style>

</head>

<body>

<div class="box"></div>

<div class="box1"></div>

<div class="box2"></div>

<div class="box3"></div>

<div class="box4"></div>

<div class="box5"></div>

<div class="box6"></div>

<div class="box7"></div>

</body></html>

1. **Gradient**

**Types of Gradient are –**

* Linear Gradient
* Radial Gradient

1. **Linear Gradient**
   1. **Linear Gradient - Top to Bottom**

<html lang="en"><head>

<title>Example of Linear Gradients from Left to Right</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient( red, yellow);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient( red, yellow);

/\* Standard syntax \*/

background: linear-gradient(, red, yellow);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Linear Gradient - Left to Right**

<html lang="en"><head>

<title>Example of Linear Gradients from Left to Right</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient(left, red, yellow);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient(left, red, yellow);

/\* Standard syntax \*/

background: linear-gradient(to right, red, yellow);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Linear Gradient – Diagonal**

<html lang="en"><head>

<title>Example of Linear Gradients along Diagonal</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient(bottom left, red, yellow);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient(bottom left, red, yellow);

/\* Standard syntax \*/

background: linear-gradient(to top right, red, yellow);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Setting Direction of Linear Gradients Using Angles**

<html lang="en"><head>

<title>Example of Setting Linear Gradients Direction Using Angles</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Permalink - use to edit and share this gradient: http://colorzilla.com/gradient-editor/#184663+0,c97c38+100 \*/

background: #184663; /\* Old browsers \*/

background: -moz-linear-gradient(-45deg, #184663 0%, #c97c38 100%); /\* FF3.6+ \*/

background: -webkit-gradient(linear, left top, right bottom, color-stop(0%,#184663), color-stop(100%,#c97c38)); /\* Chrome,Safari4+ \*/

background: -webkit-linear-gradient(-45deg, #184663 0%,#c97c38 100%); /\* Chrome10+,Safari5.1+ \*/

background: -o-linear-gradient(-45deg, #184663 0%,#c97c38 100%); /\* Opera 11.10+ \*/

background: -ms-linear-gradient(-45deg, #184663 0%,#c97c38 100%); /\* IE10+ \*/

background: linear-gradient(135deg, #184663 0%,#c97c38 100%); /\* W3C \*/

filter: progid:DXImageTransform.Microsoft.gradient( startColorstr='#184663', endColorstr='#c97c38',GradientType=1 ); /\* IE6-9 fallback on horizontal gradient \*/

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Creating Linear Gradients Using Multiple Color Stops**

<html lang="en"><head>

<title>Example of Linear Gradients with Multiple Color Stops</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient(red, yellow, lime);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient(red, yellow, lime);

/\* Standard syntax \*/

background: linear-gradient(red, yellow, lime);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Setting the Location Color Stops**

<html lang="en"><head>

<title>Example of Setting the Color Stops Location</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient(red, yellow 30%, lime 60%);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient(red, yellow 30%, lime 60%);

/\* Standard syntax \*/

background: linear-gradient(red, yellow 30%, lime 60%);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

* 1. **Repeating the Linear Gradients**

<html lang="en"><head>

<title>Example of Setting the Color Stops Location</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-linear-gradient(red, yellow 30%, lime 60%);

/\* For Internet Explorer 10 \*/

background: -ms-linear-gradient(red, yellow 30%, lime 60%);

/\* Standard syntax \*/

background: linear-gradient(red, yellow 30%, lime 60%);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

1. **Radial Gradient**
2. **Creating CSS3 Radial Gradients**

<html lang="en"><head>

<title>Example of Radial Gradients</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-radial-gradient(red, yellow, lime);

/\* For Internet Explorer 10 \*/

background: -ms-radial-gradient(red, yellow, lime);

/\* Standard syntax \*/

background: radial-gradient(red, yellow, lime);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

1. **Setting the Shape of Radial Gradients**

<html lang="en"><head>

<title>Example of Setting the Shape Radial Gradients</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-radial-gradient(circle, red, yellow, lime);

/\* For Internet Explorer 10 \*/

background: -ms-radial-gradient(circle, red, yellow, lime);

/\* Standard syntax \*/

background: radial-gradient(circle, red, yellow, lime);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

1. **Setting the Size of Radial Gradients**

<html lang="en"><head>

<title>Example of Setting the Size Radial Gradients</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: red;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-radial-gradient(left bottom, circle farthest-side, red, yellow, lime);

/\* For Internet Explorer 10 \*/

background: -ms-radial-gradient(left bottom, circle farthest-side, red, yellow, lime);

/\* Standard syntax \*/

background: radial-gradient(circle farthest-side at left bottom, red, yellow, lime);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

1. **Repeating the Radial Gradients**

<html lang="en"><head>

<title>Example of Repeating the Size Radial Gradients</title>

<style type="text/css">

.gradient {

width: 400px;

height: 300px;

/\* Fallback for browsers that don't support gradients \*/

background: white;

/\* For Safari 5.1 to 6.0 \*/

background: -webkit-repeating-radial-gradient(black, white 10%, lime 20%);

/\* For Internet Explorer 10 \*/

background: -ms-repeating-radial-gradient(black, white 10%, lime 20%);

/\* Standard syntax \*/

background: repeating-radial-gradient(black, white 10%, lime 20%);

}

</style>

</head>

<body>

<div class="gradient"></div>

</body></html>

1. **Box Shadow**

The box-shadow property can be used to add shadow to the element's boxes. You can even apply more than one shadow effects using a comma-separated list of shadows. The basic syntax of creating a box shadow can be given with:

box-shadow: offset-x offset-y blur-radius color;

Example:

1. **Single Color Shadow**

<html lang="en"><head>

<title>Example of CSS3 Box Shadow Effect</title>

<style type="text/css">

.box{

width: 200px;

height: 150px;

background: #ccc;

box-shadow: 50px 50px 50px red;

}

</style>

</head>

<body>

<div class="box"></div>

</body></html>

1. **Multiple Color Shadow**

<html lang="en"><head>

<title>Example of CSS3 Multiple Box Shadow Effects</title>

<style type="text/css">

.box{

width: 200px;

height: 150px;

background: #000;

box-shadow: 5px 5px 10px red, 10px 10px 20px yellow;

}

</style>

</head>

<body>

<div class="box"></div>

</body></html>

1. **Text Shadow**

<html lang="en"><head>

<title>Example of CSS3 Text Shadow Effect</title>

<style type="text/css">

h1 {

text-shadow: 5px 5px 10px #666;

}

h2 {

text-shadow: 5px 5px 10px red, 10px 10px 20px yellow;

}

</style>

</head>

<body>

<h1>This is heading 1</h1>

<h2>This is heading 2</h2>

</body></html>

1. **2D Transformation**
2. **The Translate( ) Function**

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 translate() Method</title>

<style type="text/css">

img {

-webkit-transform: translate(200px, 50px); /\* Chrome, Safari, Opera \*/

-moz-transform: translate(200px, 50px); /\* Firefox \*/

-ms-transform: translate(200px, 50px); /\* IE 9 \*/

-o-transform: translate(200px, 50px);/\* Opera \*/

transform: translate(200px, 50px); /\* Standard syntax \*/

}

.box{

margin: 50px;

width:153px;

height:103px;

background: url("images/tortoise-transparent.png") no-repeat;

}

</style>

</head>

<body>

<div class="box">

<img src="images/tortoise.png" alt="Tortoise">

</div>

</body></html>

1. **The Rotate ( ) Function**

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 rotate() Method</title>

<style type="text/css">

img {

-webkit-transform: rotate(30deg); /\* Chrome, Safari, Opera \*/

-moz-transform: rotate(30deg); /\* Firefox \*/

-ms-transform: rotate(30deg); /\* IE 9 \*/

transform: rotate(30deg); /\* Modern Browsers \*/

}

.box{

margin: 50px;

width:120px;

height:110px;

background: url("images/star-fish-transparent.png") no-repeat;

}

</style>

</head>

<body>

<div class="box">

<img src="images/star-fish.png" alt="Star Fish">

</div>

</body></html>

1. **The Scale ( ) Function**

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 scale() Method</title>

<style type="text/css">

img:hover {

transform: scale(1.5) rotate(200deg); /\* Modern Browsers \*/

opacity: 0.5;

}

.box{

margin: 50px;

width:103px;

height:130px;

background: url("images/octopus.png") no-repeat;

}

</style>

</head>

<body>

<div class="box">

<img src="images/octopus.png" alt="Octopus">

</div>

</body></html>

1. **3D Transformation**
2. **The Translate3d ( ) Function**

<html lang="en"><head>

<title>Example of CSS3 translate3d() Method</title>

<style type="text/css">

.container{

width: 125px;

height: 125px;

perspective: 500px;

border: 4px solid #e5a043;

background: #fff2dd;

margin: 30px;

}

.transformed {

-webkit-transform: translate3d(25px, 25px, 50px); /\* Chrome, Safari, Opera \*/

transform: translate3d(25px, 25px, 50px); /\* Standard syntax \*/

}

</style>

</head>

<body>

<h2>Before Translation:</h2>

<div class="container">

<img src="images/diamond.jpg" alt="Diamond Card">

</div>

<h2>After Translation:</h2>

<div class="container">

<img src="images/diamond.jpg" class="transformed" alt="Diamond Card">

</div>

</body></html>

1. **The Rotate3d ( ) Function**

<html lang="en"><head>

<title>Example of CSS3 rotate3d() Method</title>

<style type="text/css">

.container{

margin: 50px;

width: 125px;

height: 125px;

perspective: 300px;

border: 4px solid #a2b058;

background: #f0f5d8;

}

.transformed {

transform: rotate3d(0, 1, 0, 60deg); /\* Standard syntax \*/

}

</style>

</head>

<body>

<h2>Before Rotation:</h2>

<div class="container">

<img src="images/club.jpg" alt="Club Card">

</div>

<h2>After Rotation:</h2>

<div class="container">

<img src="images/club.jpg" class="transformed" alt="Club Card">

</div>

</body></html>

1. **The Scale 3d ( ) Function**

<html lang="en"><head>

<title>Example of CSS3 scale3d() Method</title>

<style type="text/css">

.container{

margin: 50px;

width: 125px;

height: 125px;

perspective: 300px;

border: 4px solid #6486ab;

background: #e9eef3;

}

.transformed {

-webkit-transform: scale3d(1, 1, 2) rotate3d(1, 0, 0, 60deg); /\* Chrome, Safari, Opera \*/

transform: scale3d(1, 1, 2) rotate3d(1, 0, 0, 60deg); /\* Standard syntax \*/

}

</style>

</head>

<body>

<h2>Before Scaling:</h2>

<div class="container">

<img src="images/spade.jpg" alt="Club Card">

</div>

<h2>After Scaling:</h2>

<div class="container">

<img src="images/spade.jpg" class="transformed" alt="Club Card">

</div>

</body></html>

1. **Transition**

Normally when the value of a CSS property changes, the rendered result is instantly updated. A common example is changing the background color of a button on mouse hover. In a normal scenario the background color of the button is changes immediately from the old property value to the new property value when you place the cursor over the button

**Example:**

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 Multiple Transitions</title>

<style type="text/css">

button {

color: #fff;

padding: 10px 20px;

font: bold 18px sans-serif;

background: #fd7c2a;

border: 3px solid #dc5801;

/\* For Safari 3.0+ \*/

-webkit-transition-property: background, border;

-webkit-transition-duration: 1s, 2s;

/\* Standard syntax \*/

transition-property: background, border;

transition-duration:1s;

transition-delay:2s;

}

button:hover {

background: #3cc16e;

border-color: #288049;

}

</style>

</head>

<body>

<button type="button">Hover on me</button>

</body></html>

1. **Animation**

**Creating CSS3 Animations**

The CSS3 animations take it a step further with keyframe-based animations that allow you to specify the changes in CSS properties over time as a set of keyframes, like flash animations. Creating CSS animations is a two step process, as shown in the example below:

* The first step of building a CSS animation is to defining individual keyframes and naming an animation with a keyframes declaration.
* The second step is referencing the keyframes by name using the animation-name property as well as adding animation-duration and other optional animation properties to control the animation's behaviour.

However, it is not necessary to define the keyframes rules before referencing or applying it. The following example will show you how to animate a box horizontally from one position to another using the CSS3 animation feature.

**Example:**

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 Translate Animation</title>

<style type="text/css">

.box {

margin: 50px;

width:153px;

height:103px;

background: url("images/tortoise-transparent.png") no-repeat;

position: relative;

/\* Chrome, Safari, Opera \*/

-webkit-animation-name: XYZ;

-webkit-animation-duration: 2s;

/\* Standard syntax \*/

animation-name: XYZ;

animation-duration: 2s;

}

/\* Chrome, Safari, Opera \*/

@-webkit-keyframes XYZ {

from {left: 0;}

to {left: 100%;}

}

/\* Standard syntax \*/

@keyframes XYZ {

from {left: 0;}

to {left: 90%;}

}

</style>

</head>

<body>

<div class="box"></div>

</body></html>

[**Defining Keyframes**](file:///E:\Pankaj\OFFICE\Training\Presentation\4.CSS3\Practice\CSS%203\8.2%20defining%20keyframe.html)

Keyframes are used to specify the values for the animating properties at various stages of the animation. Keyframes are specified using a specialized CSS at-rule — @keyframes. The keyframe selector for a keyframe style rule starts with a percentage (%) or the keywords from (same as 0%) or to (same as 100%). The selector is used to specify where a keyframe is constructed along the duration of the animation.

Percentages represent a percentage of the animation duration, 0% represents the starting point of the animation, 100% represents the end point, 50% represents the midpoint and so on. That means, a 50% keyframe in a 2s animation would be 1s into an animation.

**Animation Shorthand Property**

There are many properties to consider when creating the animations. However, it is also possible to specify all the animations properties in one single property to shorten the code.

The animation property is a shorthand property for setting all the individual animation properties at once in the listed order. For example:

<html lang="en"><head>

<meta charset="UTF-8">

<title>Example of CSS3 Shake Animation</title>

<style type="text/css">

.box {

margin: 50px;

width:120px;

height:110px;

background: url("images/star-fish-transparent.png") no-repeat;

position: relative;

left: 0;

/\* Chrome, Safari, Opera \*/

-webkit-animation-name: shakeit;

-webkit-animation-duration: 2s;

/\* Standard syntax \*/

animation-name: shakeit;

animation-duration: 2s;

}

/\* Chrome, Safari, Opera \*/

@-webkit-keyframes shakeit {

12.5% {left: -50px;}

25% {left: 50px;}

37.5% {left: -25px;}

50% {left: 25px;}

62.5% {left: -10px;}

75% {left: 10px;}

}

/\* Standard syntax \*/

@keyframes shakeit {

12.5% {left: -50px;}

25% {left: 50px;}

37.5% {left: -25px;}

50% {left: 25px;}

62.5% {left: -10px;}

75% {left: 10px;}

}

</style>

</head>

<body>

<p><strong>Note:</strong> Click the "Show Output" button to repeat the animation.</p>

<div class="box"></div>

</body></html>