CSS

Cascading Style Sheets

17

Webkits

CSS

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Information for this Unit Was obtained from

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Free tutorials on HTML and CSS
http://www.html.net/

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ABOUT WEB ELEMENTS

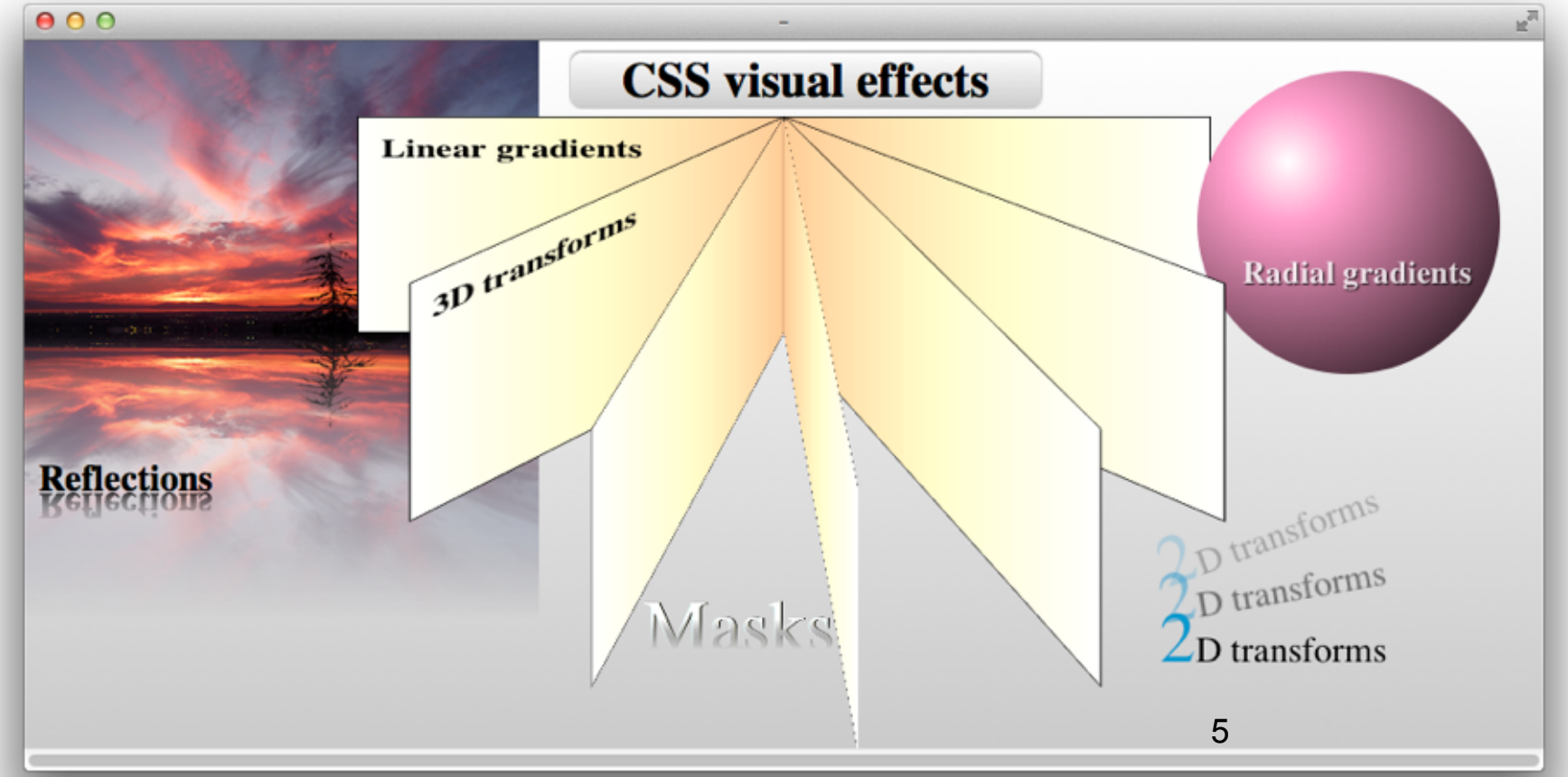
CSS

http://www.w3schools.com/css/

Welcome to the website for the WebKit Open Source Project!

WebKit is an open source web browser engine. WebKit is also the name of the Mac OS X system framework version of the engine that's used by Safari, Dashboard, Mail, and many other OS X applications. WebKit's HTML and JavaScript code began as a branch of the KHTML and KJS libraries from KDE.

Use CSS to create stunning visual effects—masks, gradients, reflections, lighting effects, animations, transitions, 3D rotations, and more. Apply any or all of these effects interactively, triggered by mouse events or touch events; make HTML elements visibly respond to the user—without requiring plug-ins, graphics libraries, or elaborate JavaScript programs.



There are advantages to using CSS instead of graphic images to create visual effects:

- Because they are resolution-independent, CSS effects scale up smoothly when zoomed.
- Text formatted with CSS is searchable; images are not.
- CSS is compact and compresses well compared with graphic images.
- CSS is just text; it can be quickly modified using a text editor or the output of a script.

Safari supports CSS visual effects on Mac OS X and iOS.

Three Ways to Insert CSS

There are three ways of inserting a style sheet:

- External style sheet
- Internal style sheet
- Inline style

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Here's what we are planning to demonstrate

Using Gradients (17),

Using a Gradient as a Mask,

Using Reflections,

Using CSS Filters,

Animating CSS Transitions,

Animating With Keyframes,

Using 2D and 3D Transforms, and

Adding Interactive Control to Visual Effects.

Using Gradients

Use gradients as color fills that blend smoothly from one color to another. Use a CSS gradient anywhere that you can use an image, such as for the background of an element, an element border, or a mask. Because gradients are resolution-independent and compact, a line or two of CSS can replace hundreds of kilobytes—or even megabytes—of graphic imagery. Unlike graphic images, gradients have no inherent size, and automatically expand to fill a container.

To create a gradient, specify a starting color and an ending color, and optionally intermediate colors and a direction. Safari supports two types of CSS gradients: linear and radial. This chapter describes both types of gradients. Safari 5.1 on the desktop, and Safari on iOS 5.0, use the **-webkit-** prefix for specifying gradients, but otherwise conform to the 17 February 2011 working draft for CSS3 gradients: *http://dev.w3.org/csswg/css3-images/*.

Note: *Recent drafts of the W3C proposal have simplified the syntax. This chapter describes the most recent implementation shipping in Safari. You should expect Safari's syntax for gradients to continue to change as the W3C standard evolves. While new syntax is expected, the existing syntax—and prior syntax—should still work. The -webkit-linear-gradient and webkit-radial-gradient properties require iOS 5.0 or later, or Safari 5.1 or later on the desktop.*

Creating Linear Gradients

A linear gradient defines a color change along a specified line. Each point on the line has a particular color. The width of the line, perpendicular to the direction of the line, extends to the edges of the gradient's container. You can use a linear gradient to fill any two-dimensional shape. By default, a linear gradient changes colors from top to bottom. For example:

background: -webkit-linear-gradient(aqua, white)

defines a linear gradient that starts as aqua at the top of the element and ends as white at the bottom of the element. The gradient fills the element completely, as Figure 1-1 illustrates.

Figure 1-1 Simple linear gradient

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If you specify intermediate colors between the starting and ending color, the gradient blends from color to color. For example:

background: -webkit-linear-gradient(red, yellow, orange, green, blue, purple);

defines a rainbow gradient as a background. Apply this style to a div element, and the element is drawn with a rainbow background, as Figure 1-2 illustrates.

Figure 1-2 Rainbow gradient

All **webkit** elements can be used within an internal style sheet

ABOUT WEB ELEMENTS

Setting the Direction of Change

You can define a linear gradient with the color change going in any direction: from any edge or corner to its opposite edge or corner, or at any specified angle. To specify a direction from edge-to-edge or corner-to-corner, just specify the beginning edge or corner. For example:

- background: -webkit-linear-gradient(left, black, white); creates a horizontal gradient going from left to right.
- background: -webkit-linear-gradient(bottom right, black, white); creates a diagonal gradient from bottom right to top left.

You can also specify color change direction by supplying an angle. Angles are given in degrees, with 0deg being straight up and proceeding counterclockwise-positive, so that 90deg is horizontal left and 180deg is straight down. For example:

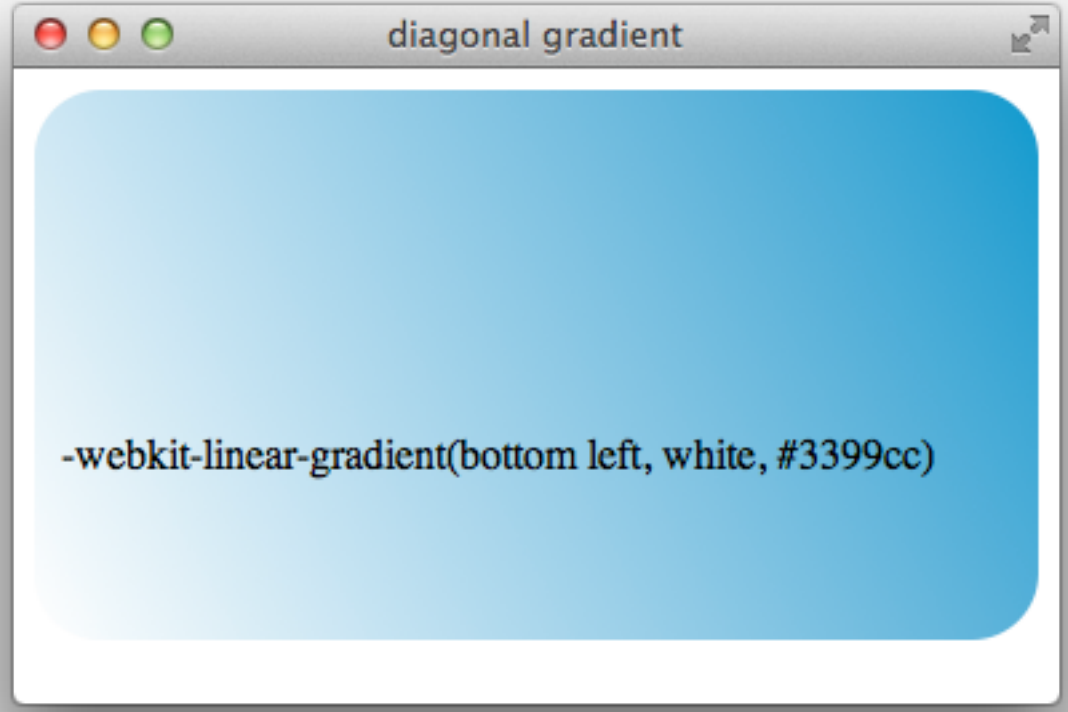
-webkit-linear-gradient(45deg, black, white)

creates a gradient at a 45 degree angle up and to the left.

Note: *If you specify a gradient from corner to corner, the angle of the gradient changes if the parent element is resized and the shape of the element changes. Specify the direction in degrees to create a gradient with a fixed angle.*

Figure 1-3 shows a diagonal gradient starting at the bottom left corner.

Figure 1-3 Diagonal gradients



All **webkit** elements can be used inline within the HTML style tag

Setting the Rate of Change

By default, the rate of color change for a gradient remains constant; if the gradient has three colors, the blend starts with the first color at 0% of the gradient length, reaches the second color at 50% of the gradient length, and reaches the third color at 100% of the gradient length. In other words, the first line of the gradient is the starting color, the middle line is the second color, and the last line is the third color. To modify this behavior, specify color stops. For example, the following snippet creates a gradient that changes gradually from white to cornflower blue over 90% of the gradient length then blends quickly from to black over the remaining 10%:

```
-webkit-linear-gradient(left, white, cornflowerblue 90%, black)
```

Figure 1-4 shows such a gradient.

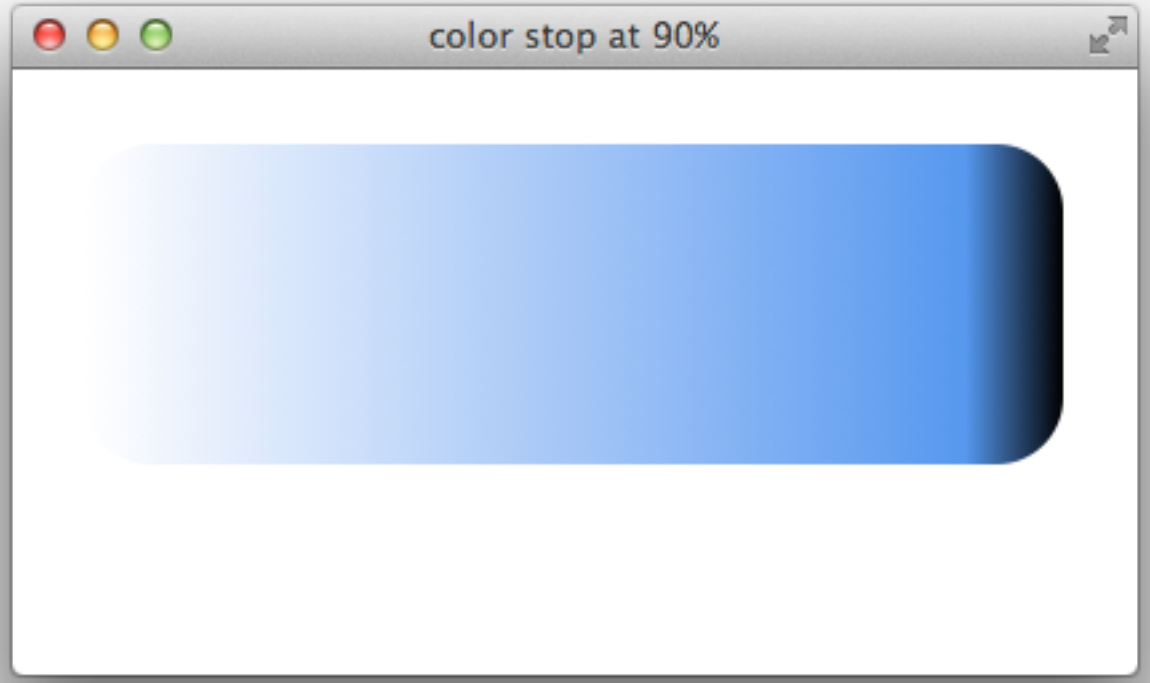


Figure 1-4 Setting color stop percentages

Color stops can create some striking effects. For example, specify the same color at two consecutive stops to create a band of solid color, or specify two different colors at the same percentage point to create an abrupt change in color. Figure 1-5 shows the effect these kind of color stops create.

background: -webkit-linear-gradient(left,black,blue 10%,blue 90%,black);

background: -webkit-linear-gradient(left,white,blue 50%,purple 50%,white);

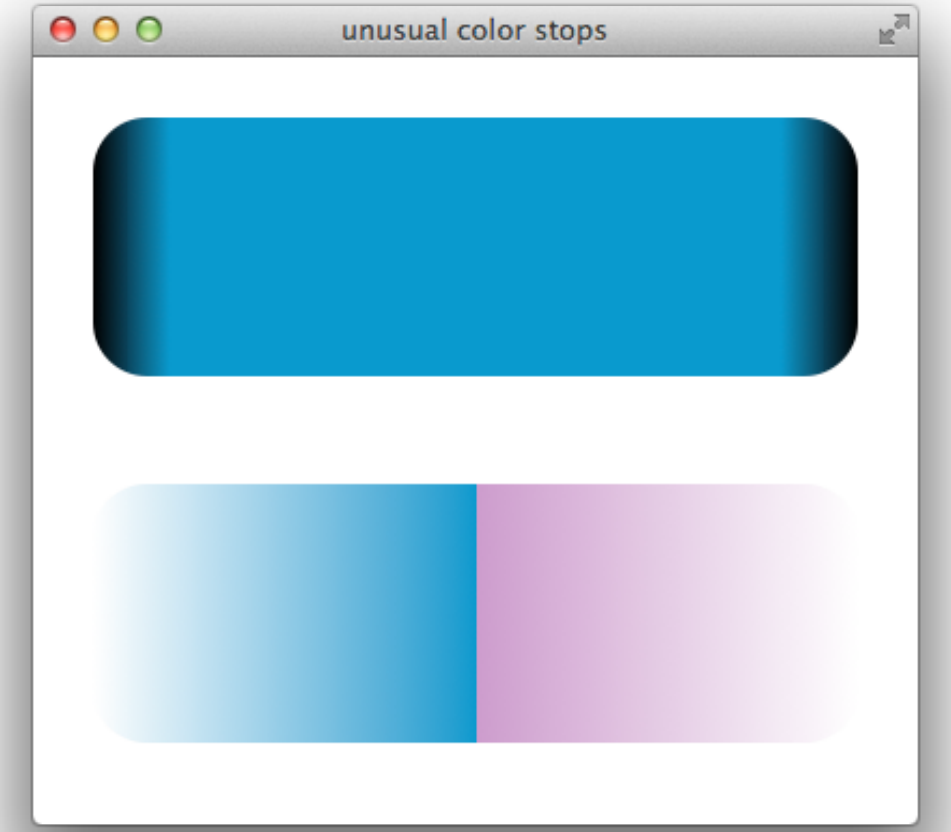


Figure 1-5 Solid color band and abrupt color change

All **webkit** elements can be used from an external style sheet

Creating Gradient Fades

Use RGBa colors in a gradient to soften or fade colors into the background by decreasing the alpha value of the gradient. For example, Listing 1-1 creates a div element with a white background that fades to transparent. Two consecutive white color stops are used, so the div element's background stays white for 50% of its width and then fades into the background of the element's parent. Figure 1-6 shows the result.

Listing 1-1 Linear fade

```
<html>
<head> <title>rgba gradient</title> </head>
<body style="background: #d9d3b8">
<div style="background: -webkit-linear-gradient(left,white,white 50%,rgba(255,255,255,0));
    padding: 10px 0px 10px 10px;">
<h1>RGBa Gradient Fades</h1>
</div>
</body>
</html>
```

Figure 1-6 Linear gradient fade

Creating Radial Gradients

A radial gradient is a color fill that blends from one color to another with the color change proceeding radially, forming a disk clipped by the shape of the element. The disk can be a circle or an ellipse. Specify a starting and ending color, and optionally specify intermediate colors. The starting color begins at the center of the disk, and the color change proceeds outward until the ending color is reached, by default at the farthest corner of the element being filled.

By default, a radial gradient is an ellipse the height and width of the element being filled, with the center of the ellipse at the center of the element being filled. For example, the following snippet creates a radial gradient that blends from white at the center of a `div` element to black at the element's outer edges, as Figure 1-7 illustrates:

```
<div style="background: -webkit-radial-gradient(white,black);">
```

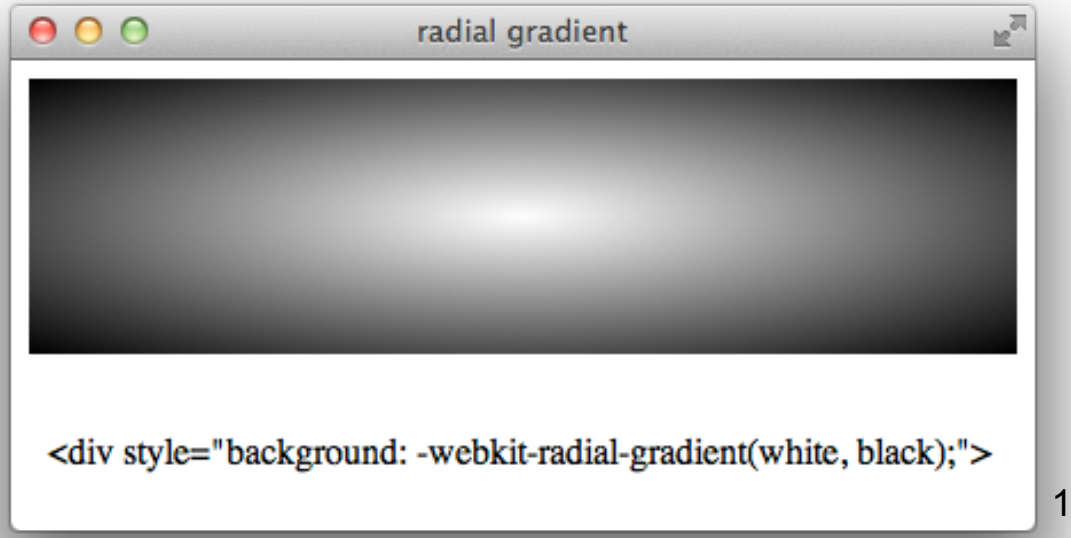


Figure 1-7 Simple radial gradient

That's the complete inline HTML style but remember to close the tag with

To create a circular gradient, pass in the circle parameter:

-webkit-radial-gradient(circle, white, black).

The circle parameter parameter causes the gradient to be circular, instead of an ellipse that conforms to the shape of the element, as Figure 1-8 illustrates:

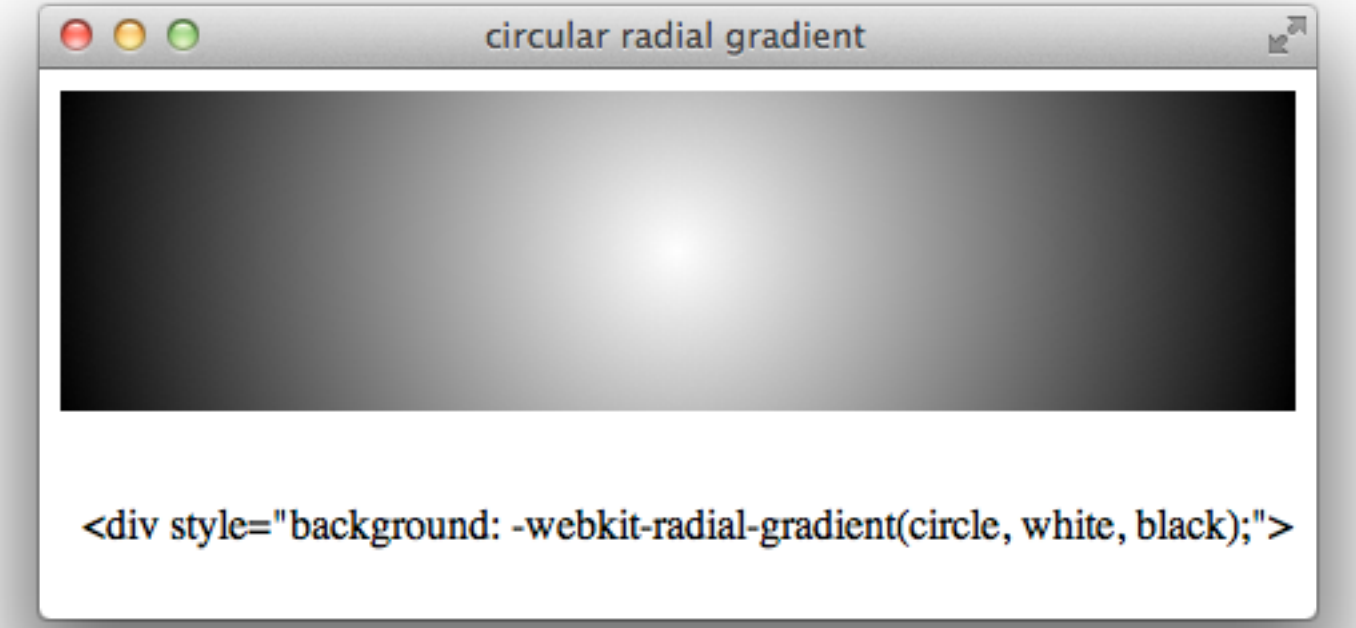


Figure 1-8 Circular gradient

Note that the shape of an element clips a circular gradient just as it does an elliptical gradient.

Moving the Center

By default, the starting point of a radial gradient is the center of the element you are filling. Change this behavior by specifying a different starting point, using horizontal or vertical offsets from the element's top left corner. The following example creates a circular `div` element (a square `div` element with a 50% border radius), then fills it with a radial gradient whose center is offset down and to the right of the element's upper-left corner by 30%, creating a 3D lighting effect, as Figure 1-9 illustrates:

```
<div style="width: 200px; height: 200px; border-radius: 50%;
background: -webkit-radial-gradient(30% 30%, white, black);">
```

<div style= *is one HTML line of code*

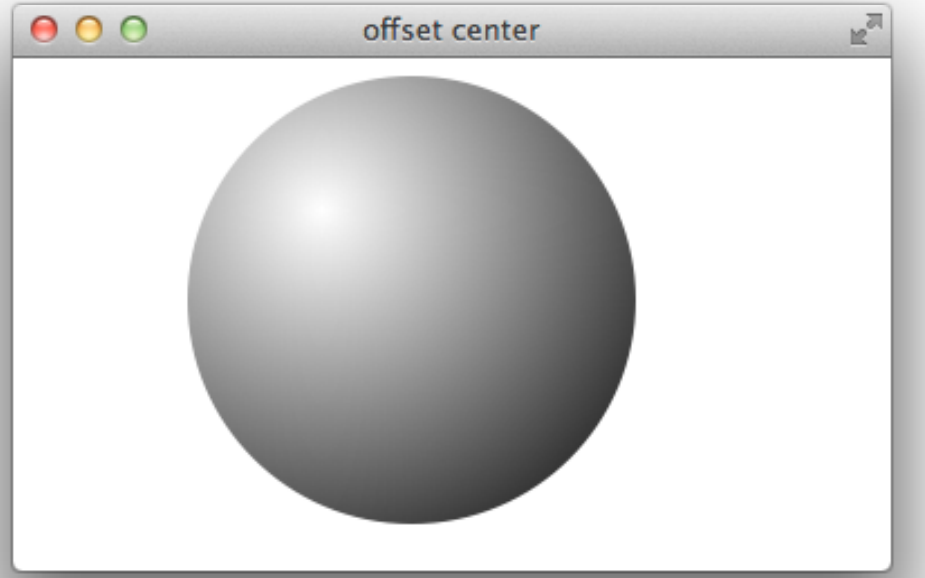


Figure 1-9 3D lighting effect

Notice that you specify the vertical and horizontal offsets are as a distance from the top and left edge of the element, and that you specify both offsets as part of a single comma-delimited parameter, separated by a space. If you specify only a single value, Safari treats it as a vertical offset.

Changing the Ending Color Location

By default, a gradient reaches its ending color at the corner of the element furthest from the specified center of the gradient. Modify this behavior by specifying closest-corner. For example:

-webkit-radial-gradient(30% 10%, closest-corner, white, black)

creates a radial gradient that begins 30% to the right and 10% below the upper-left corner of an element, and reaches its end color at the closest corner.

If you specify both the circle and the closest-corner properties, pass them in the same comma-delimited parameter, separated by a space:

-webkit-radial-gradient(30% 10%, circle closest-corner, white, black)

When the gradient ends at the closest corner, the ending color fills the remainder of the element. Figure 1-10 shows examples of identical div elements filled with radial gradients offset 30% down and to the right of the upper-left corner. Elliptical gradients are on the left of the illustration and circular gradients are on the right. Closest-corner gradient fills are above and default gradient fills are below:

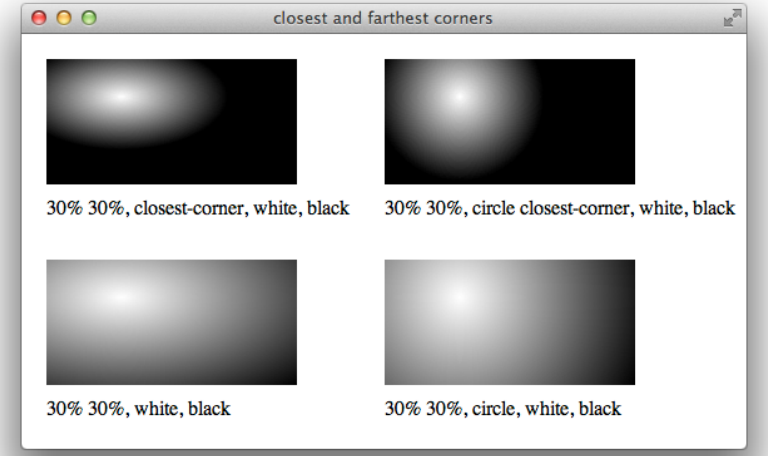


Figure 1-10 Closest-corner gradient fills

Adding Color Stops

To create a multi-colored radial gradient, specify intermediate colors between the starting and ending color. For example, the following snippet creates a radial gradient that blends from white at the center to green half way out, to black at the outer edge, as Figure 1-11 illustrates:

```
<div style="width: 200px; height: 200px; border-radius: 100px;
background: -webkit-radial-gradient(white, green, black);">
```

<div style= *is one HTML line of code*

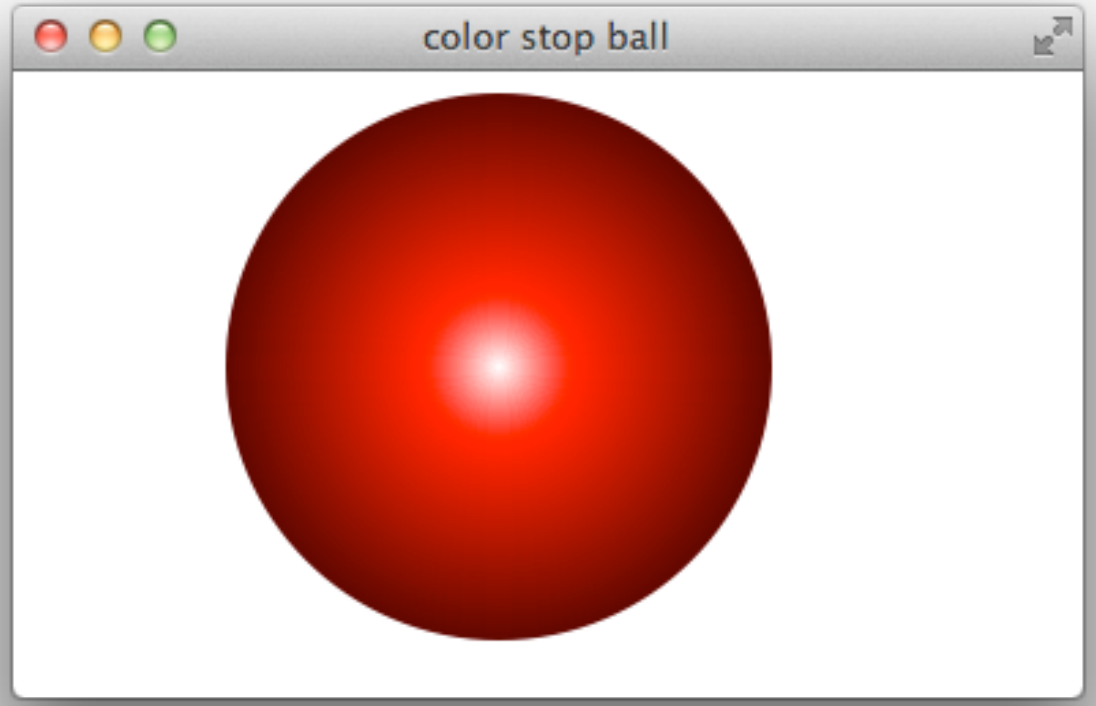


Figure 1-11 Multicolor gradient

Specify paired color stops of the same color to create bands of solid color, or specify pairs of color stops with different colors at the same percentage point to create abrupt color changes. The following snippet defines two radial gradients, one with two color stops of the same color and the other with two differently colored stops at the same percentage point. Figure 1-13 shows the result:

background: -webkit-radial-gradient(white, red 10%, red 90%, black);

background: -webkit-radial-gradient(white, yellow 20%, red 20%, black);

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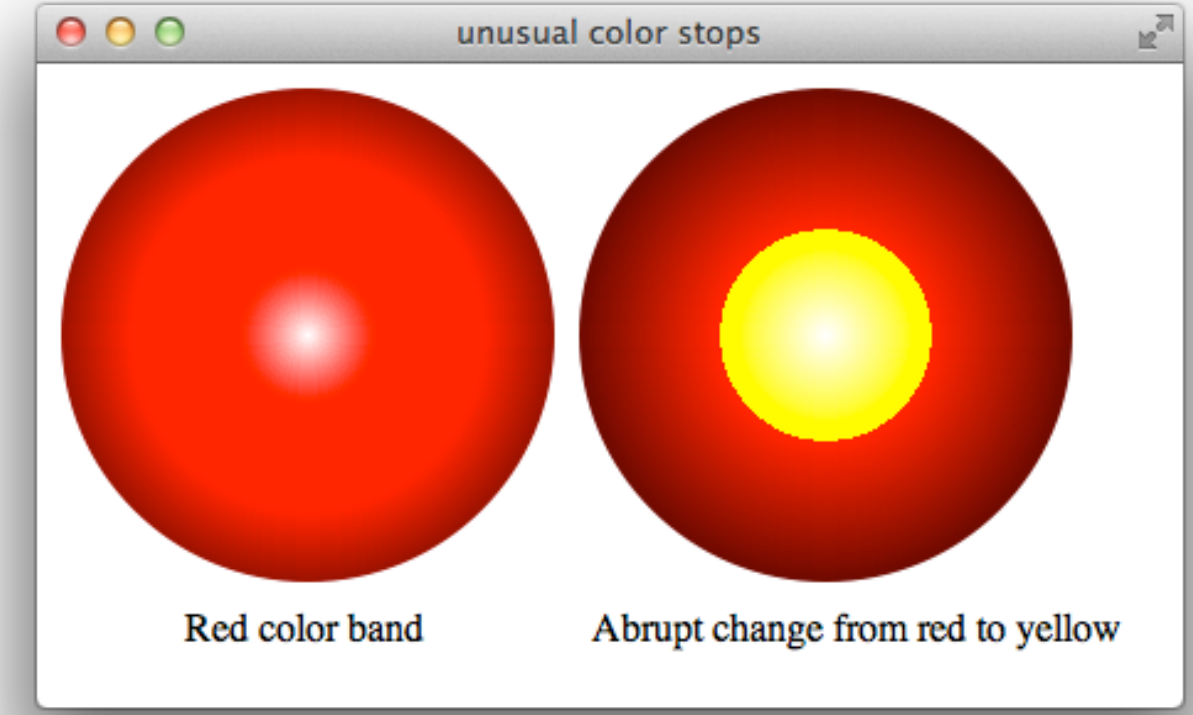

Figure 1-13 Color band and abrupt color change using color stops

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Creating Repeating Gradients

You can create a repeating pattern in a gradient in two different ways. One way is to specify a series of repeating color stops. For example, the following snippet creates linear and radial gradients with two repeating red-to-blue-to-red blend stripes:

-webkit-linear-gradient(red, blue 25%, red 50%, blue 75%, red)

-webkit-radial-gradient(red, blue 25%, red 50%, blue 75%, red)

It's tedious to specify the color stops repeatedly when there are many repetitions, particularly if you need to calculate cumulative percentages for each color stop. To simplify the process, use the repeating gradient properties: -webkit-repeating-linear-gradient and -webkit-repeating-radial-gradient. To create a repeating gradient, specify the first set of color stops with percentages; the gradient repeats the pattern of color stops, keeping the percentages proportional, as needed to reach 100%. The syntax for repeating gradients is otherwise identical to non-repeating gradients. The following snippet specifies color stops that fill 20% of two gradients, which creates linear and radial gradients with five repeating plum-to-powderblue-to-plum blend stripes, as Figure 1-15 illustrates.

-webkit-repeating-linear-gradient(plum, powderblue 10%, plum 20%)

-webkit-repeating-radial-gradient(plum, powderblue 10%, plum 20%)

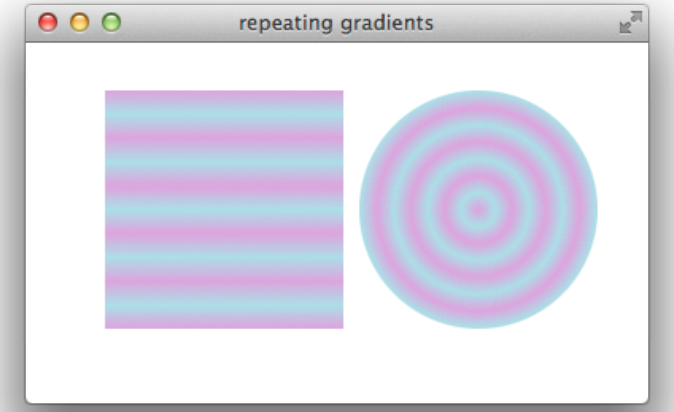

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Figure 1-15 Repeating gradient patterns

Note that the color pattern repeats from the starting color, so if the last color specified is the same as the starting color, the pattern repeats smoothly. If you specify a pattern whose last entry is different from the first entry, the color changes abruptly from the last color to the first color when the pattern repeats, instead of blending smoothly.

Using a Gradient as a Border Image

You can use a gradient anywhere you can use an image—as you would expect, this means you can use a gradient as a border image. However, the syntax is non-obvious. The border-image property uses four values to specify offsets for slicing the image into the top, bottom, and sides of the border. Since a gradient has no inherent size, a pixel or percentage offset into the image is meaningless; the only useful value is 100%.

To make tiles from a linear gradient so that the border edges have the same color everywhere the tiles meet, start and end the gradient with the same color. For example, the following snippet creates a border like the one that Figure 1-16 shows.

<div style= *is one HTML line of code*

```
<div style="border-width: 50px; border-style: solid;
-webkit-border-image: -webkit-linear-gradient(red, white, red) 100% 100% 100% 100%
stretch stretch;">
```

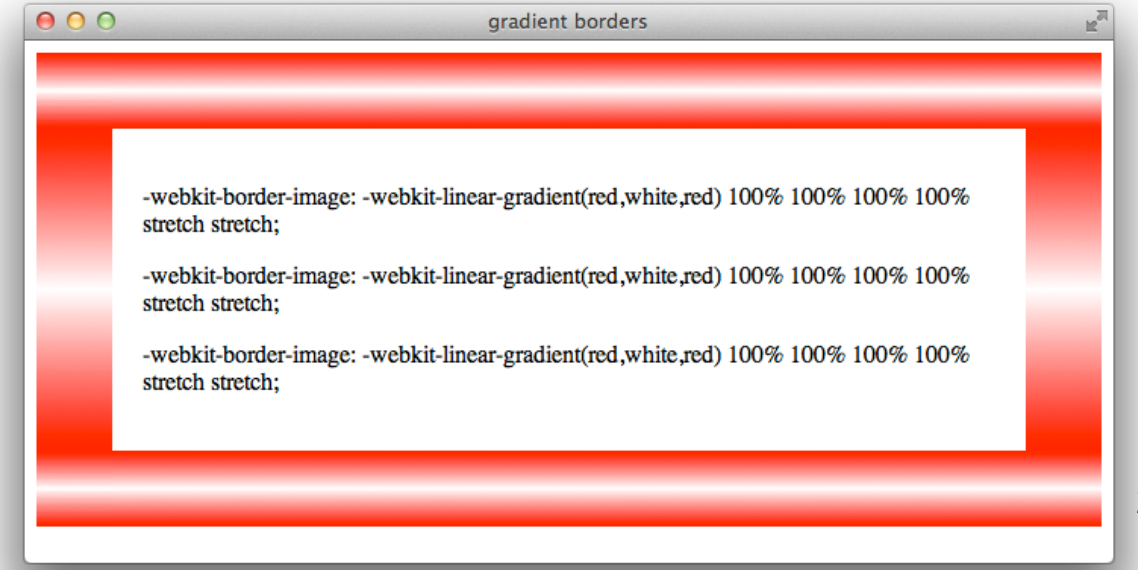

Figure 1-16 Linear gradient border

Radial gradients work nicely as borders, because the outer edges of all the tiles typically match when the stretch value is used for the repeat parameter.

Here is an example of a radial gradient used as a border image:

<div style= *is one HTML line of code*

```
<div style="border-width: 50px; border-style: solid;
-webkit-border-image: -webkit-radial-gradient(white,red) 100% 100% 100%
100% stretch stretch;">
```

Figure 1-17 shows the result.

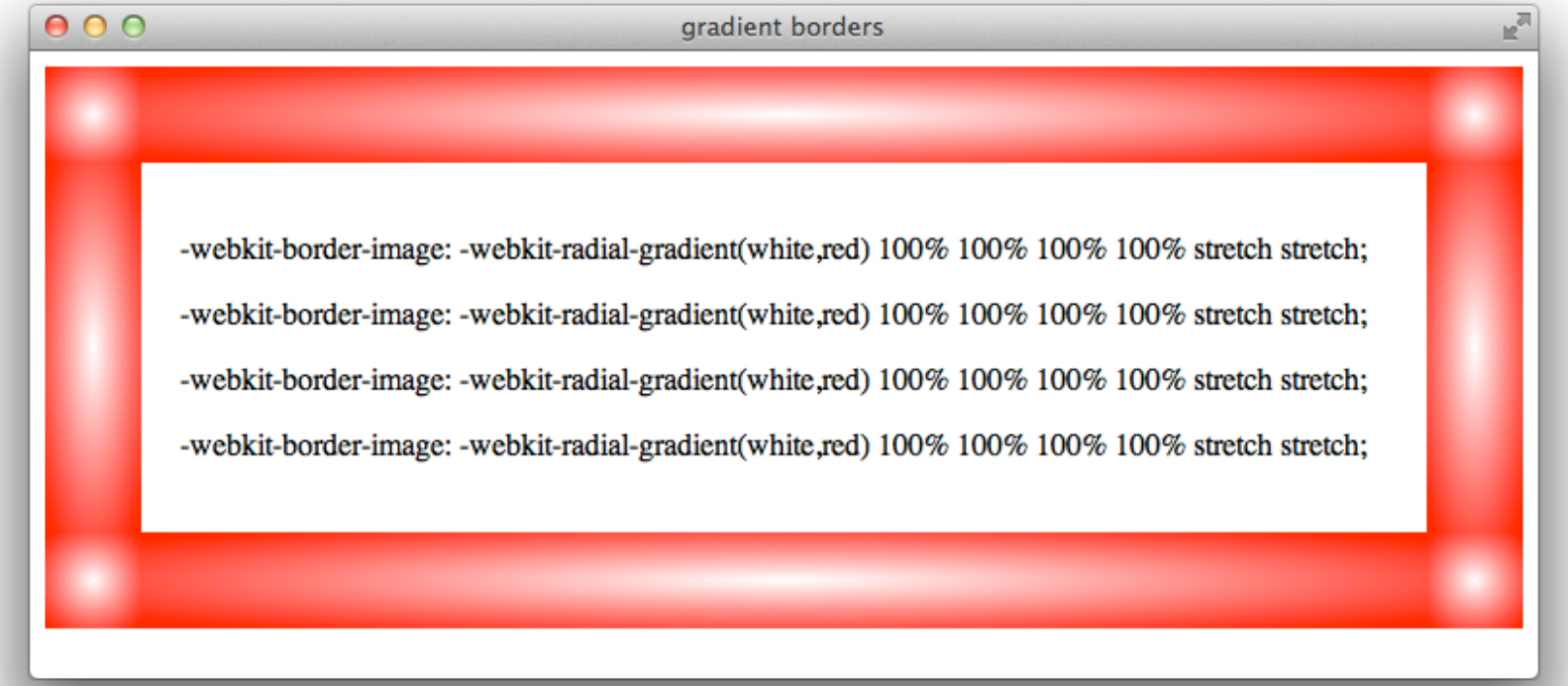

Figure 1-17 Radial gradient border

Creating a Radial Fade

If you use RGBa colors in your color stops, you can specify both the hue and transparency of the gradient at any point. This enables you to create a gradient that blends into the background of its parent element. For example, Listing 1-2 creates a spotlight effect by fading a div element's background from white to transparent, allowing the parent div's background to gradually show through. Figure 1-14 shows the result:

Listing 1-2 Radial fade

```
<html>
<head> <title>rgba gradient</title> </head>
<body>
<div style="background: #d9d3b8">
   <div
    style="background: -webkit-radial-gradient(white,white 30%,rgba(255,255,255,0) 50%);
          padding: 10px 0px 10px 10px;">
   <h1>Spotlight On: Gradients</h1>
   </div>
<h3>Using RGBA Colors</h3>
</div>
<p>A radial gradient using rgba colors can be used to create a spotlight effect.</p>
</body>
</html>
```

<div style= *is one HTML line of code*

Figure 1-14 Spotlight gradient

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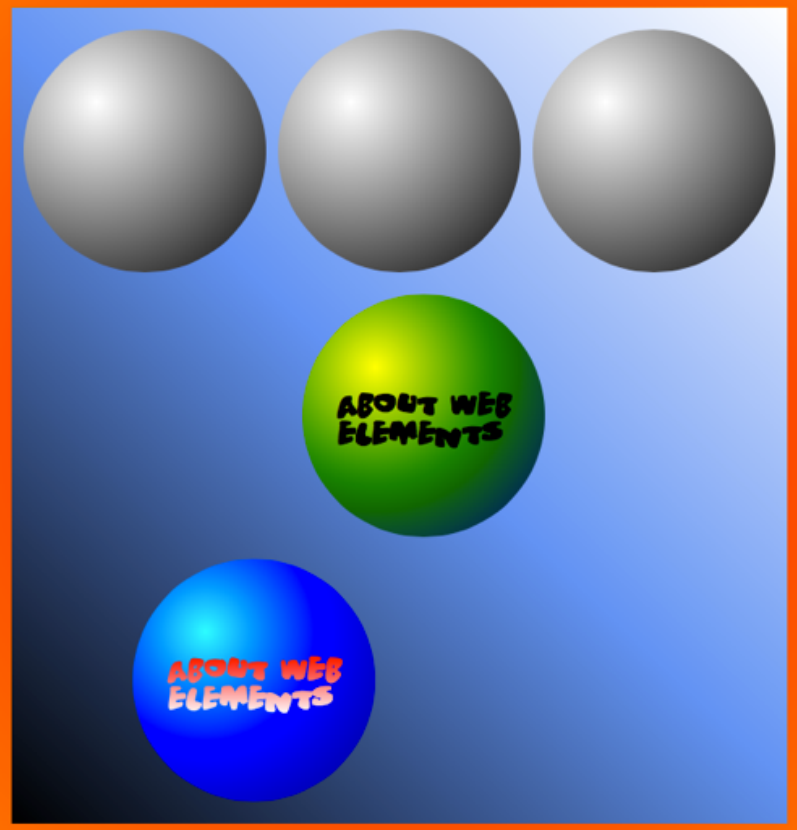

Using the information about gradients you learned from the lesson, create a page similar to the one on the left

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