NEW PERSPECTIVES

Tutorial 4
Creating Page Layouts with CSS

HTML, CSS, and Dynamic HTML

5TH EDITION

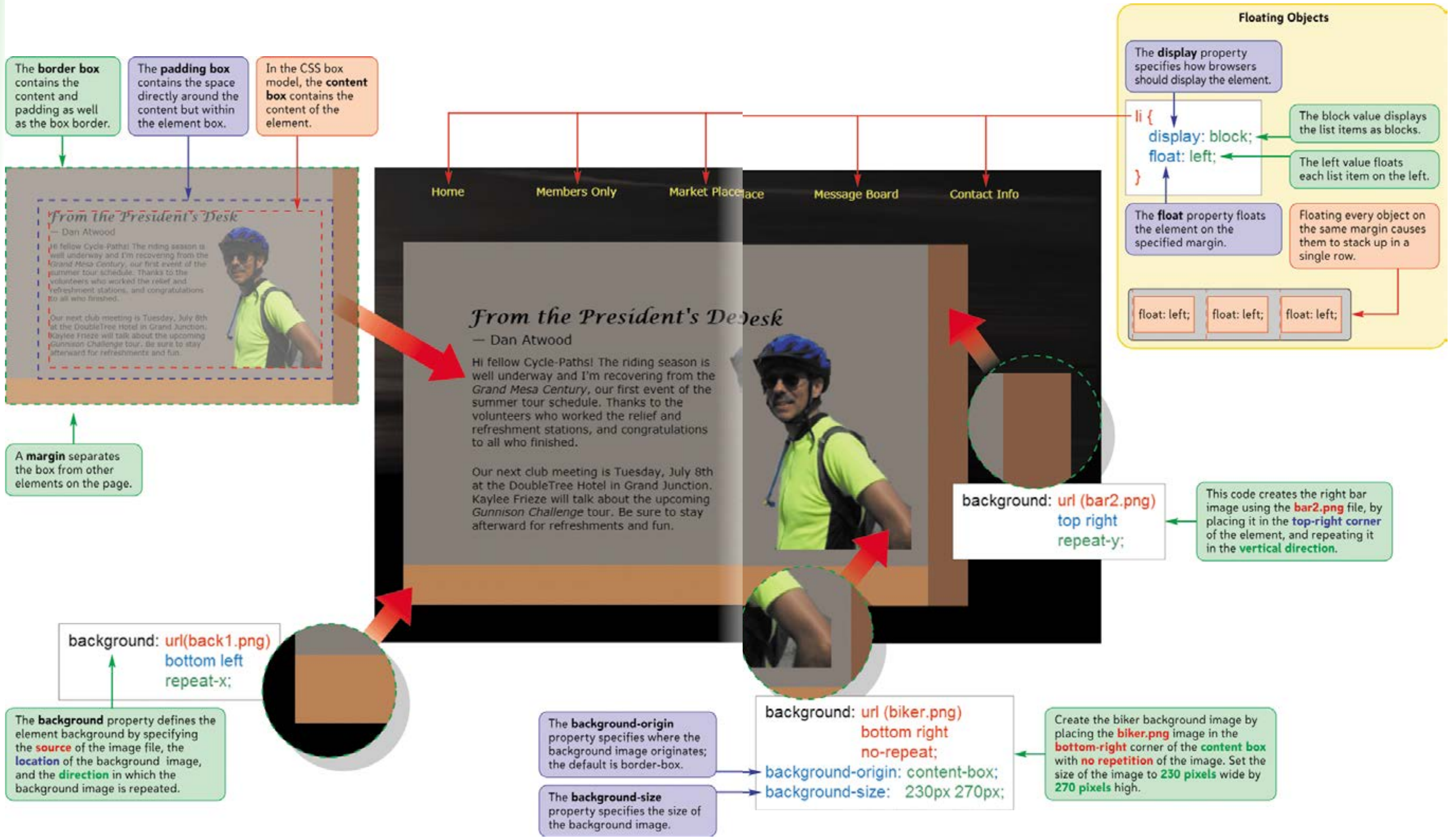
Objectives

- Set display properties
- Create a reset style sheet
- Define a background image
- Set background image properties
- Use browser extension styles
- Explore fixed, fluid, and elastic layouts
- Float elements in a Web page

Objectives

- Set margin and padding spaces
- Format an element border
- Create rounded corners
- Display an element outline
- Explore absolute and relative positioning
- Work with overflow content
- Explore clipped objects
- Stack objects in a page

Backgrounds and Floating Objects



The **border box** contains the content and padding as well as the box border.

The **padding box** contains the space directly around the content but within the element box.

In the CSS box model, the **content box** contains the content of the element.

A **margin** separates the box from other elements on the page.

From the President's Desk

— Dan Atwood

Hi fellow Cycle-Paths! The riding season is well underway and I'm recovering from the *Grand Mesa Century*, our first event of the summer tour schedule. Thanks to the volunteers who worked the relief and refreshment stations, and congratulations to all who finished.

Our next club meeting is Tuesday, July 8th at the DoubleTree Hotel in Grand Junction. Kaylee Frieze will talk about the upcoming *Gunnison Challenge* tour. Be sure to stay afterward for refreshments and fun.

Floating Objects

The **display** property specifies how browsers should display the element.

```
li {
   display: block;
   float: left;
}
```

The block value displays the list items as blocks.

The left value floats each list item on the left.

The **float** property floats the element on the specified margin.

Floating every object on the same margin causes them to stack up in a single row.

```
background: url (bar2.png)
            top right
            repeat-y;
```

This code creates the right bar image using the **bar2.png** file, by placing it in the **top-right corner** of the element, and repeating it in the **vertical direction**.

```
background: url(back1.png)
            bottom left
            repeat-x;
```

The **background** property defines the element background by specifying the **source** of the image file, the **location** of the background image, and the **direction** in which the background image is repeated.

```
background: url (biker.png)
            bottom right
            no-repeat;
background-origin: content-box;
background-size:  230px 270px;
```

The **background-origin** property specifies where the background image originates; the default is border-box.

The **background-size** property specifies the size of the background image.

Create the biker background image by placing the **biker.png** image in the **bottom-right** corner of the **content box** with **no repetition** of the image. Set the size of the image to **230 pixels** wide by **270 pixels** high.

The `display` style

- Most page elements are displayed in one of two ways
  - **Blocks** occupy a defined rectangular area within a page
  - **Inline elements** flow within a block

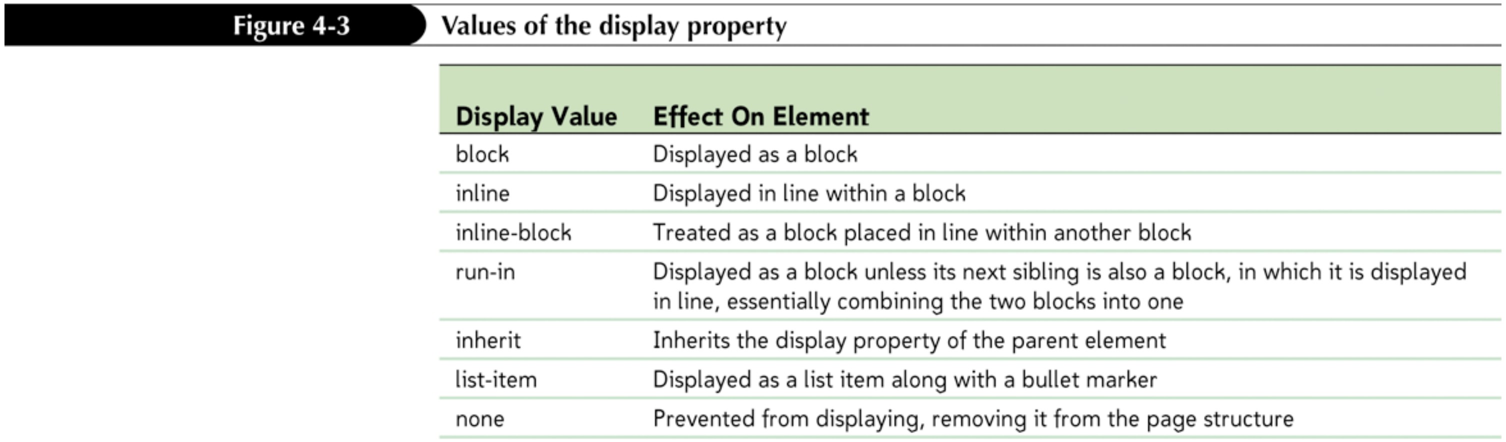


Figure 4-3 Values of the display property

Display Value	Effect On Element
block	Displayed as a block
inline	Displayed in line within a block
inline-block	Treated as a block placed in line within another block
run-in	Displayed as a block unless its next sibling is also a block, in which it is displayed in line, essentially combining the two blocks into one
inherit	Inherits the display property of the parent element
list-item	Displayed as a list item along with a bullet marker
none	Prevented from displaying, removing it from the page structure

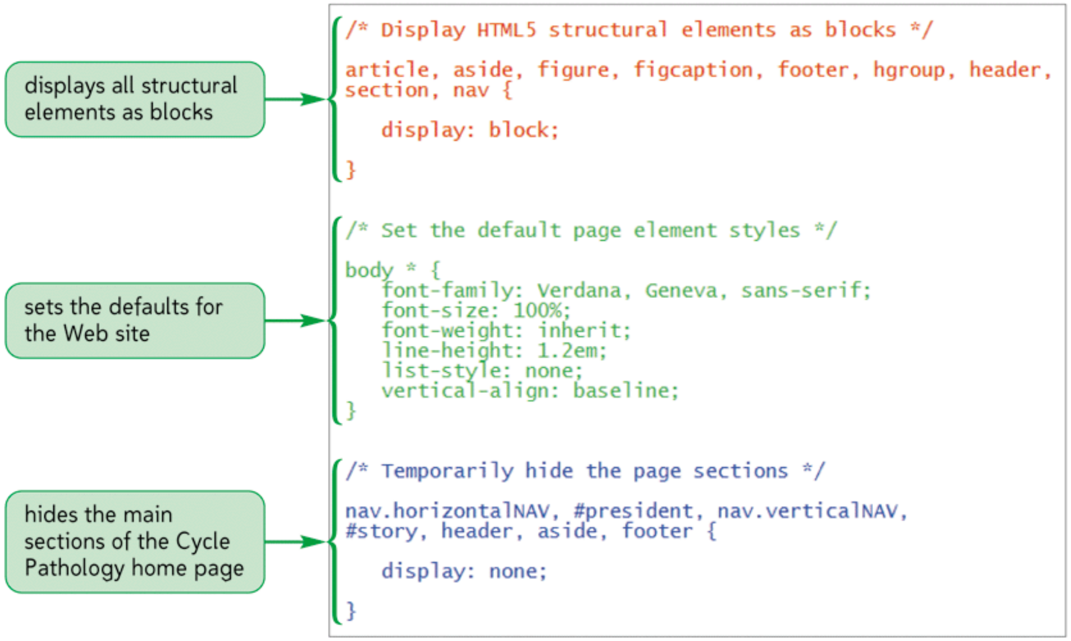
The Box Model

- Elements also are laid out in a Web page following the structure of the **box model**
  - the content of the element itself
  - the padding extending between the element’s content and the border
  - the border of the box surrounding the padding space
  - the margin containing the space between the border and the next page element

Creating a Reset Style Sheet

- Many designers create a **reset style sheet** to define their own default styles

Figure 4-5 Initial reset style sheet



displays all structural elements as blocks
sets the defaults for the Web site
hides the main sections of the Cycle Pathology home page

```
/* Display HTML5 structural elements as blocks */

article, aside, figure, figcaption, footer, hgroup, header,
section, nav {

   display: block;

}

/* Set the default page element styles */

body * {
   font-family: Verdana, Geneva, sans-serif;
   font-size: 100%;
   font-weight: inherit;
   line-height: 1.2em;
   list-style: none;
   vertical-align: baseline;
}

/* Temporarily hide the page sections */

nav.horizontalNAV, #president, nav.verticalNAV,
#story, header, aside, footer {

   display: none;

}
```

Designing the Background

- CSS also supports background images using

```
    background-image: url(url);
```

- Background Image Options:
  - background-repeat
  - background-position
  - background-attachment
  - background-size
  - background-clip

Designing the Background

- You can combine the various background properties into the shorthand property
  - `background: color url(url) attachment position repeat;`
- CSS allows you to specify multiple images and their properties in a comma-separated list
  - `background-property: value1, value2, … ;`

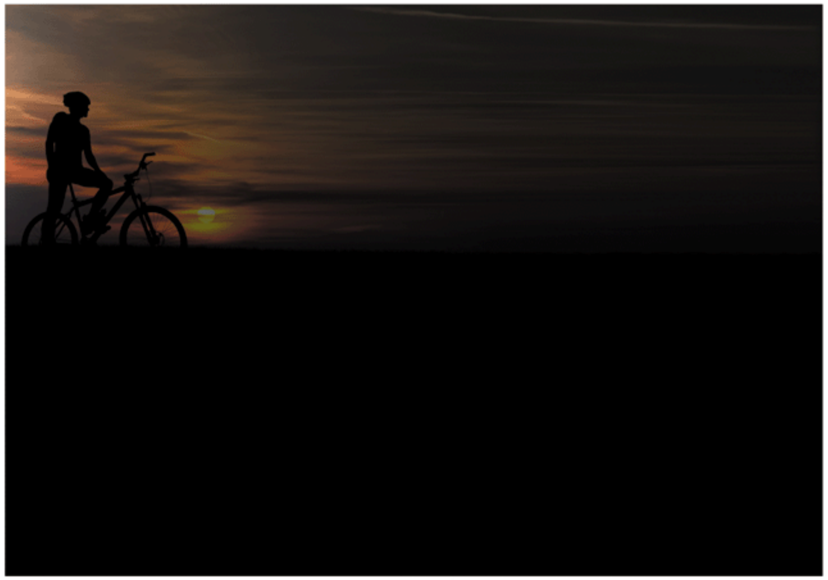
Adding a Page Background

Figure 4-10 Defining the background for the Cycle Pathology home page

```
/* Styles for the Page Body */

body {
   background: black url(bike_bg.png) top left no-repeat;
}
```

Figure 4-11 Cycle Pathology home page background



Vaclav Volrab/Shutterstock.com

Exploring Browser Extensions

- Browser extensions that are not part of the official CSS specifications can be identified through the use of a **vendor prefix** that indicates the browser vendor that created and supports the property

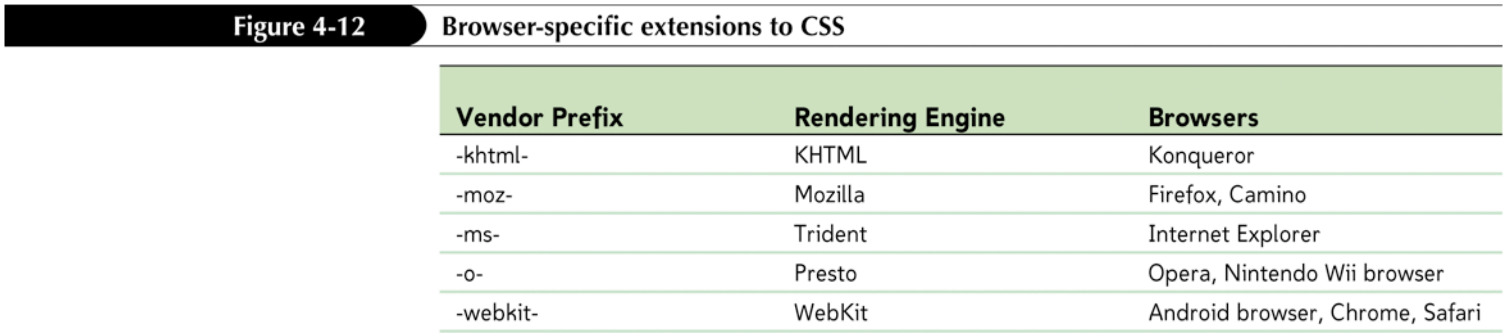
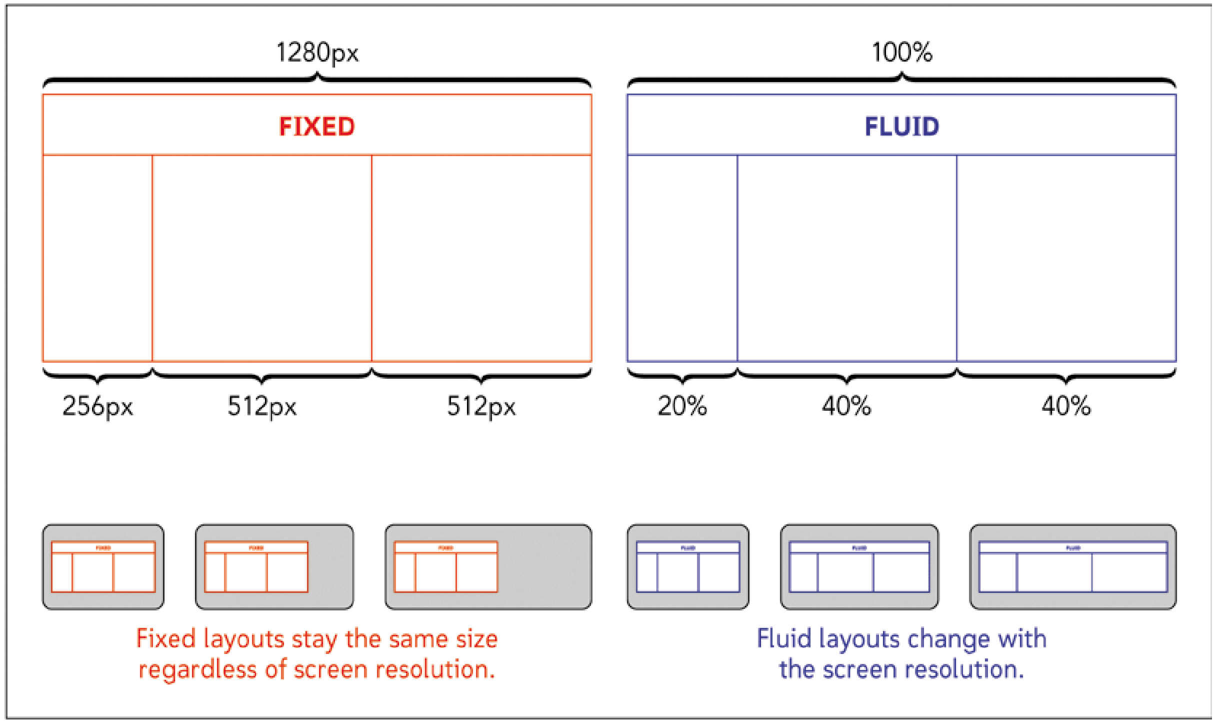


Figure 4-12 Browser-specific extensions to CSS

Vendor Prefix	Rendering Engine	Browsers
-khtml-	KHTML	Konqueror
-moz-	Mozilla	Firefox, Camino
-ms-	Trident	Internet Explorer
-o-	Presto	Opera, Nintendo Wii browser
-webkit-	WebKit	Android browser, Chrome, Safari

Fixed and Fluid Layouts

Figure 4-15 Fixed and fluid layouts


1280px
FIXED
256px
512px
512px
100%
FLUID
20%
40%
40%
Fixed layouts stay the same size regardless of screen resolution.
Fluid layouts change with the screen resolution.

Elastic Layouts

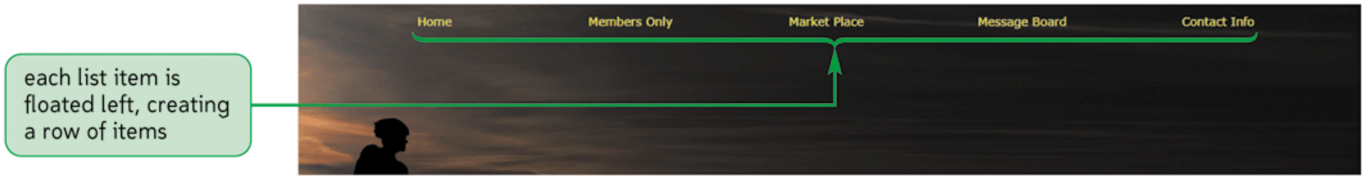
- Some designers propose the use of **elastic layouts**, in which all measurements are expressed relative to the default font size using the em unit
- If a user or the designer increases the font size, the width, height, and location of all of the other page elements, including images, change to match

Floating Elements

- **Floating** an element takes that element out of the normal flow of the document and positions it along the left or right edge of its containing element

```
float: position;
```

Figure 4-21 Horizontal navigation list



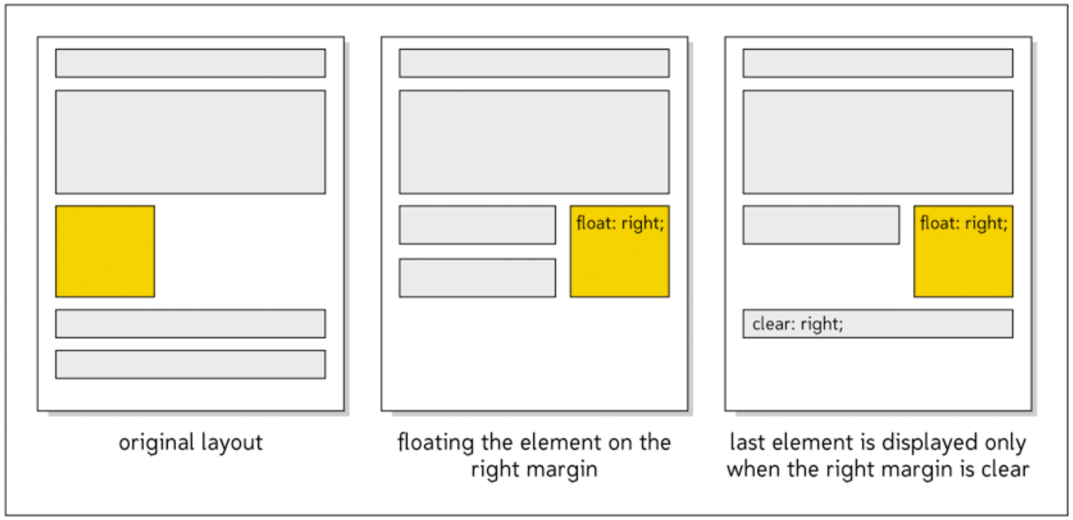
Vaclav Volrab/Shutterstock.com

Floating Elements

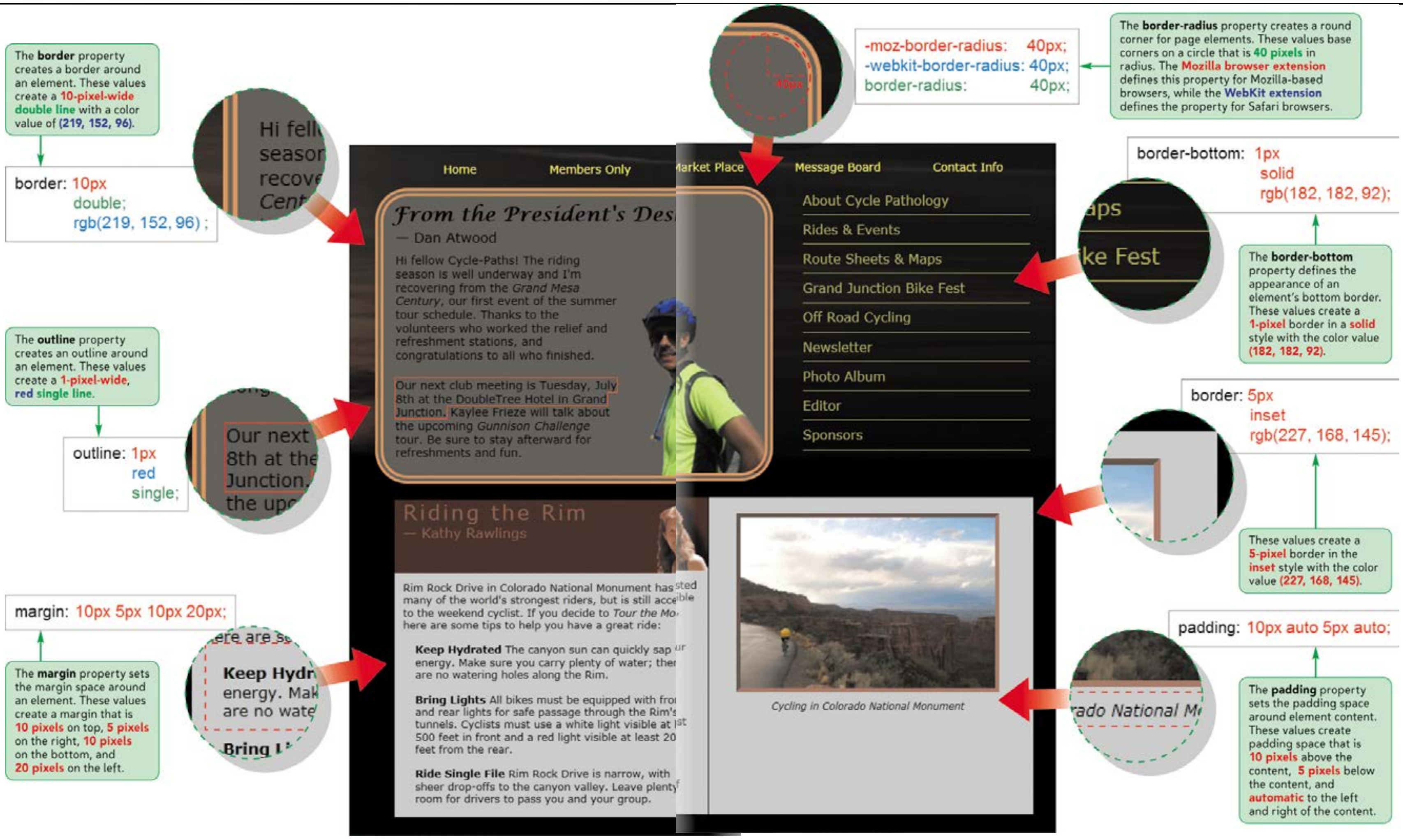
- Clearing a float

```
clear: position;
```

Figure 4-22 Clearing a float


float: right;
float: right;
clear: right;
original layout
floating the element on the right margin
last element is displayed only when the right margin is clear

Margins, Padding, and Borders



The **border** property creates a border around an element. These values create a **10-pixel-wide double line** with a color value of **(219, 152, 96)**.

```
border: 10px
        double;
        rgb(219, 152, 96) ;
```

The **outline** property creates an outline around an element. These values create a **1-pixel-wide**, **red single line**.

```
outline: 1px
         red
         single;
```

```
margin: 10px 5px 10px 20px;
```

The **margin** property sets the margin space around an element. These values create a margin that is **10 pixels** on top, **5 pixels** on the right, **10 pixels** on the bottom, and **20 pixels** on the left.

```
-moz-border-radius:    40px;
-webkit-border-radius: 40px;
border-radius:         40px;
```

The **border-radius** property creates a round corner for page elements. These values base corners on a circle that is **40 pixels** in radius. The **Mozilla browser extension** defines this property for Mozilla-based browsers, while the **WebKit extension** defines the property for Safari browsers.

```
border-bottom: 1px
               solid
               rgb(182, 182, 92);
```

The **border-bottom** property defines the appearance of an element's bottom border. These values create a **1-pixel** border in a **solid** style with the color value **(182, 182, 92)**.

```
border: 5px
        inset
        rgb(227, 168, 145);
```

These values create a **5-pixel** border in the **inset** style with the color value **(227, 168, 145)**.

```
padding: 10px auto 5px auto;
```

The **padding** property sets the padding space around element content. These values create padding space that is **10 pixels** above the content, **5 pixels** below the content, and **automatic** to the left and right of the content.

From the President's Desk
— Dan Atwood

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Riding the Rim
— Kathy Rawlings

Rim Rock Drive in Colorado National Monument has tested many of the world's strongest riders, but is still accessible to the weekend cyclist. If you decide to *Tour the Mo*... here are some tips to help you have a great ride:

Keep Hydrated The canyon sun can quickly sap your energy. Make sure you carry plenty of water; there are no watering holes along the Rim.

Bring Lights All bikes must be equipped with front and rear lights for safe passage through the Rim's tunnels. Cyclists must use a white light visible at least 500 feet in front and a red light visible at least 20 feet from the rear.

Ride Single File Rim Rock Drive is narrow, with sheer drop-offs to the canyon valley. Leave plenty of room for drivers to pass you and your group.

Cycling in Colorado National Monument

Setting Margin and Padding Space in the Box Model

- To set the margin space around an element, use

```
    margin: length;
```

where *length* is the size of the margin using one of the CSS units of measure

- To set the padding space within an element, use the following:

```
    padding: length;
```

- To set a margin or padding for one side of the box model only, specify the direction (top, right, bottom, or left). For example, use

```
    margin-right: length;
```

to set the length of the right margin.

Setting Margin and Padding Space in the Box Model

- To set multiple margin or padding spaces, specify the values in a space-separated list starting from the top and moving clockwise around the element. For example, the style

```
margin: top right bottom left;
```

sets margins for the top, right, bottom, and left sides of the element, respectively

- To set matching top and bottom values and matching right and left values for margins and padding, enter only two values. For example, the style

```
margin: vertical horizontal;
```

sets margins for the top and bottom sides of the element to the value specified by *vertical*, and sets margins for the right and left sides of the element to the value specified by *horizontal*

Working with Borders

- To set the border width, use the property

```
border-width: width;
```

where *width* is the thickness of the border using one of the CSS units of measure.

- To set the border color, use

```
border-color: color;
```

where *color* is a color name or value.

Working with Borders

- To set the border design, use

```
    border-style: style;
```

where *style* is none, solid, dashed, dotted, double, outset, inset, groove, or ridge

- To set all of the border options in one style, use the following:

```
    border: width color style;
```

Creating Rounded Corners

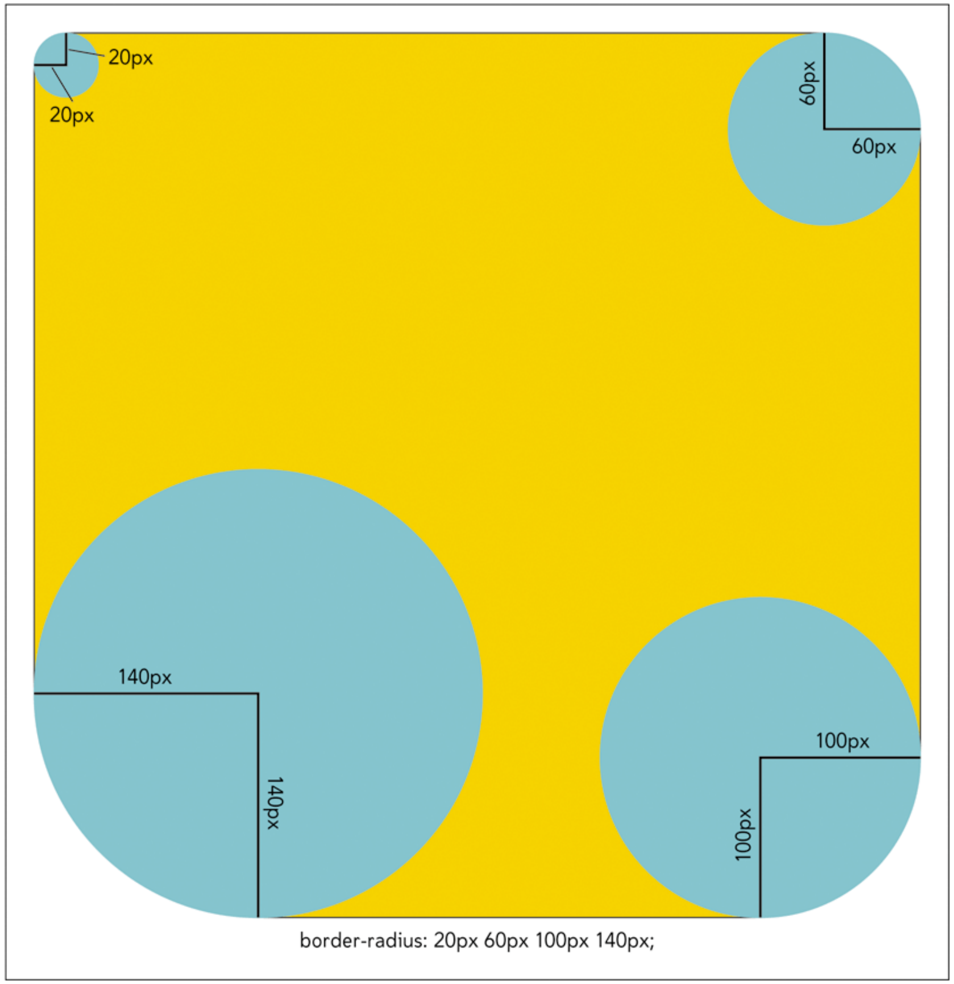
- Rounded corners can be applied to any of the four corners of a block element using the styles

```
border-top-left-radius: radius;
border-top-right-radius: radius;
border-bottom-right-radius: radius;
border-bottom-left-radius: radius;

border-radius: top-left top-right
bottom-right bottom-left;
```

Creating Rounded Corners

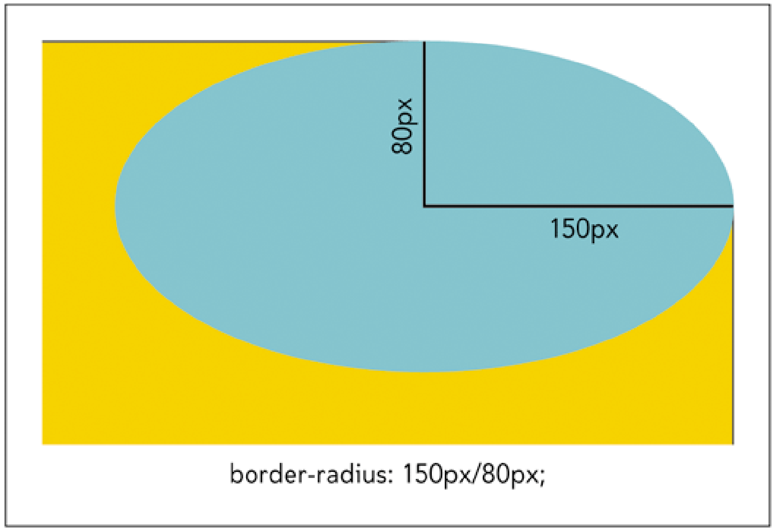
Figure 4-40 Setting the corner radii



border-radius: 20px 60px 100px 140px;

Creating Rounded Corners

Figure 4-41 Creating an elongated corner



Managing Your Layout

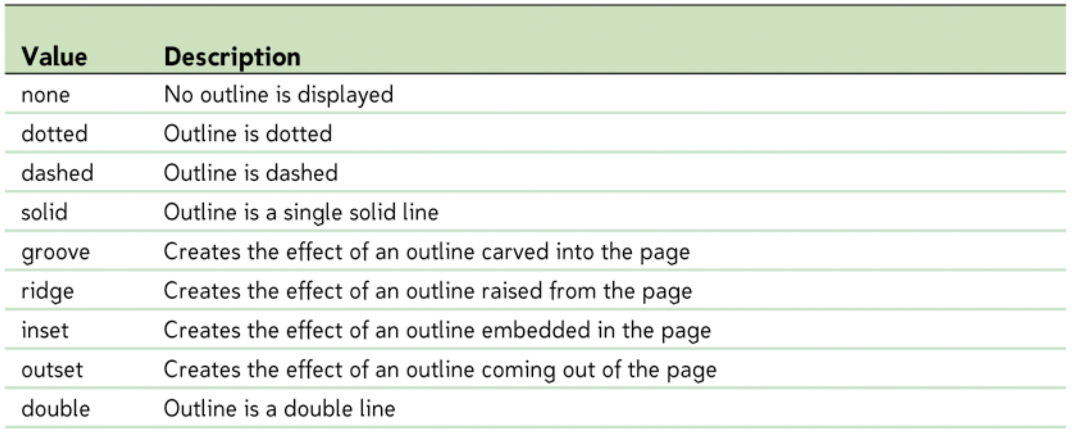
- To add an outline around an element, use the style property

  ```
  outline: width color style;
  ```

  where *width*, *color*, and *style* are the outline width, outline color, and outline style, respectively

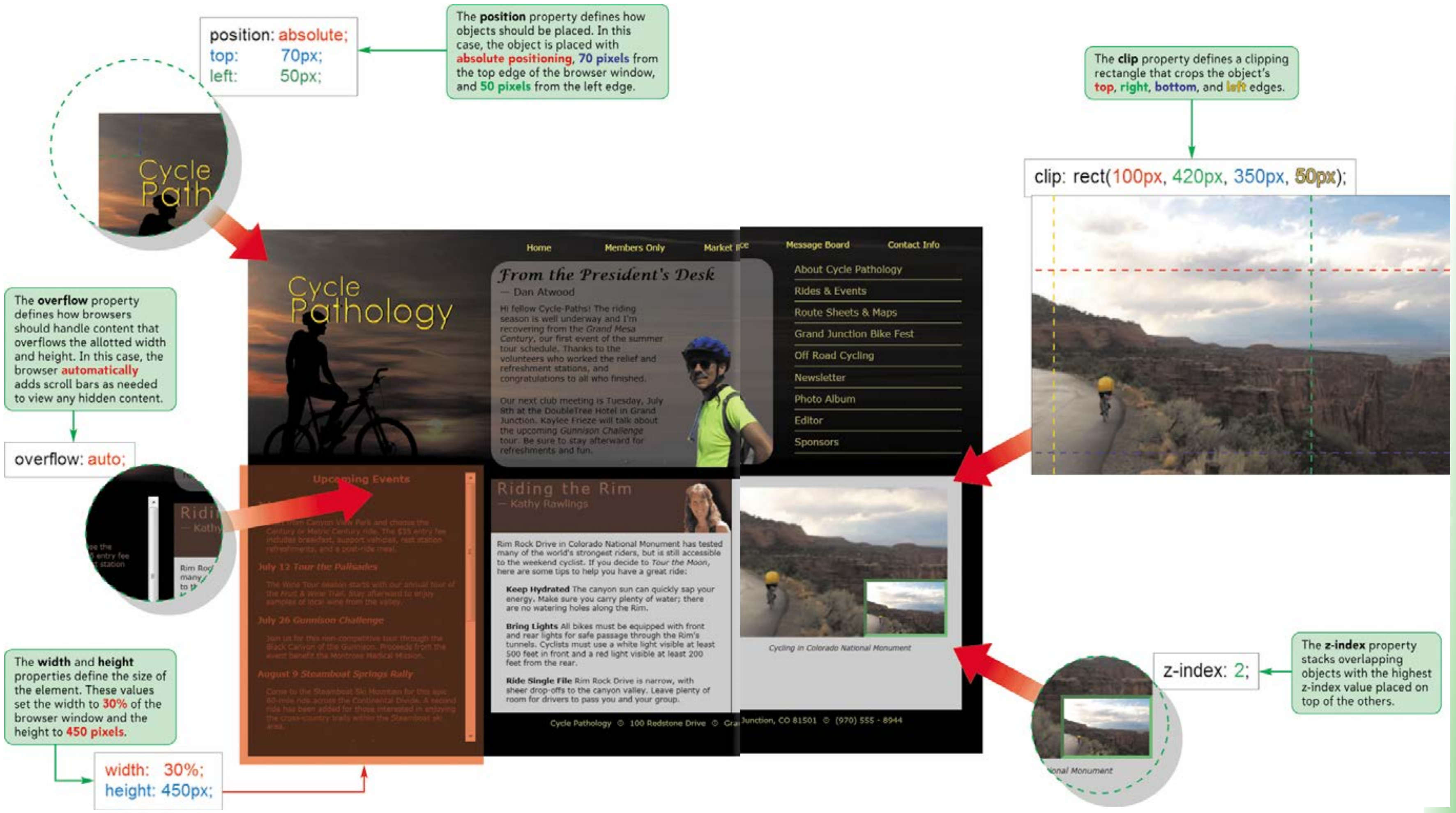
Managing Your Layout

Figure 4-46 **Outline design styles**



Value	Description
none	No outline is displayed
dotted	Outline is dotted
dashed	Outline is dashed
solid	Outline is a single solid line
groove	Creates the effect of an outline carved into the page
ridge	Creates the effect of an outline raised from the page
inset	Creates the effect of an outline embedded in the page
outset	Creates the effect of an outline coming out of the page
double	Outline is a double line

Positioning Elements



```
position: absolute;
top:      70px;
left:     50px;
```

The **position** property defines how objects should be placed. In this case, the object is placed with **absolute positioning**, **70 pixels** from the top edge of the browser window, and **50 pixels** from the left edge.

The **clip** property defines a clipping rectangle that crops the object's **top**, **right**, **bottom**, and **left** edges.

```
clip: rect(100px, 420px, 350px, 50px);
```

The **overflow** property defines how browsers should handle content that overflows the allotted width and height. In this case, the browser **automatically** adds scroll bars as needed to view any hidden content.

```
overflow: auto;
```

The **width** and **height** properties define the size of the element. These values set the width to **30%** of the browser window and the height to **450 pixels**.

```
width:  30%;
height: 450px;
```

The **z-index** property stacks overlapping objects with the highest z-index value placed on top of the others.

```
z-index: 2;
```

Positioning Objects

- To position an object at a specific coordinate, use the style properties

```
position: type;
top: value;
right: value;
bottom: value;
left: value;
```

where type indicates the type of positioning applied to the object (absolute, relative, static, fixed, or inherit), and the top, right, bottom, and left properties indicate the coordinates of the object

Positioning Objects

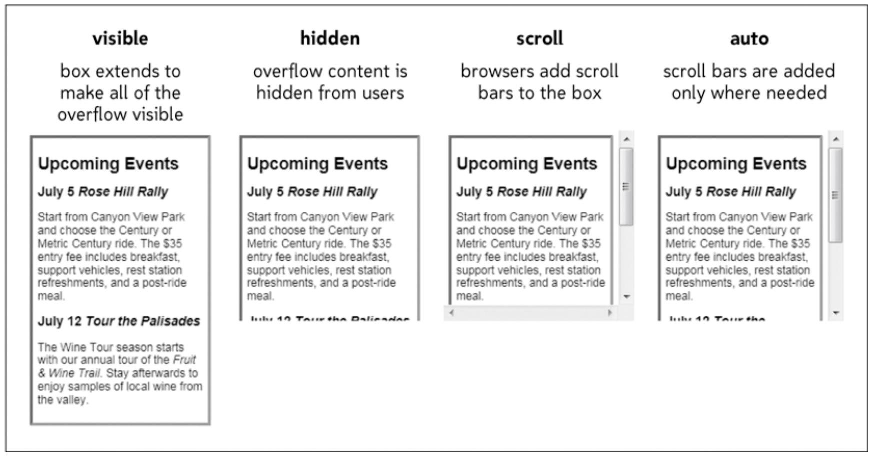
- **Absolute positioning** places an element at specific coordinates either in the page or within a container element
- **Relative positioning** is used to move an element relative to where the browser would have placed it if no positioning had been applied

Working with Overflow and Clipping

- When you force an element into a specified height and width, you can define how browsers should handle content that overflows allotted space using the style

```
    overflow: type;
```

Figure 4-69 Values of the overflow property



visible

box extends to make all of the overflow visible

Upcoming Events

July 5 Rose Hill Rally

Start from Canyon View Park and choose the Century or Metric Century ride. The $35 entry fee includes breakfast, support vehicles, rest station refreshments, and a post-ride meal.

July 12 Tour the Palisades

The Wine Tour season starts with our annual tour of the *Fruit & Wine Trail*. Stay afterwards to enjoy samples of local wine from the valley.

hidden

overflow content is hidden from users

Upcoming Events

July 5 Rose Hill Rally

Start from Canyon View Park and choose the Century or Metric Century ride. The $35 entry fee includes breakfast, support vehicles, rest station refreshments, and a post-ride meal.

scroll

browsers add scroll bars to the box

Upcoming Events

July 5 Rose Hill Rally

Start from Canyon View Park and choose the Century or Metric Century ride. The $35 entry fee includes breakfast, support vehicles, rest station refreshments, and a post-ride meal.

auto

scroll bars are added only where needed

Upcoming Events

July 5 Rose Hill Rally

Start from Canyon View Park and choose the Century or Metric Century ride. The $35 entry fee includes breakfast, support vehicles, rest station refreshments, and a post-ride meal.

Working with Overflow and Clipping

- To specify how browsers should handle content that overflows an element’s boundary, use the style

```
    overflow: type;
```

where *type* is visible (to expand the element height to match the content), hidden (to hide the excess content), scroll (to always display horizontal and vertical scroll bars), or auto (to display scroll bars if needed)

- To specify how browsers should handle content that overflows in the horizontal direction, use the following style:

```
    overflow-x: type;
```

Working with Overflow and Clipping

- To specify how browsers should handle content that overflows in the vertical direction, use the following style:

```
    overflow-y: type;
```

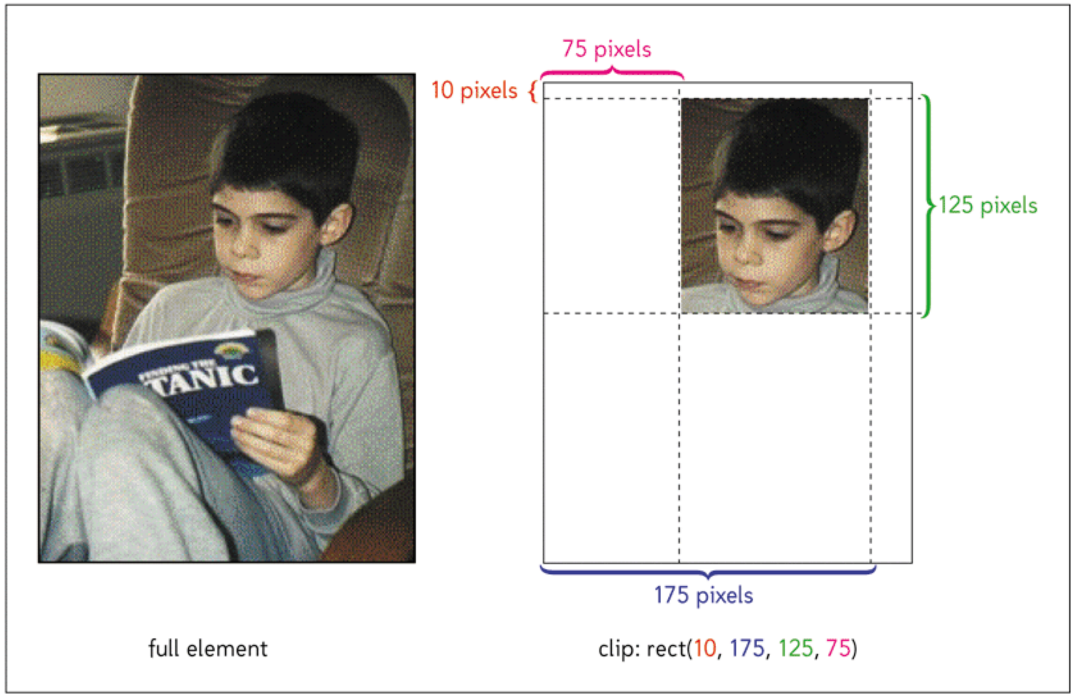
- To clip an element's content, use the style

```
    clip: rect(top, right,
bottom, left);
```

where *top*, *right*, *bottom*, and *left* define the boundaries of the clipping rectangle

Clipping an Element

Figure 4-72 Clipping an element



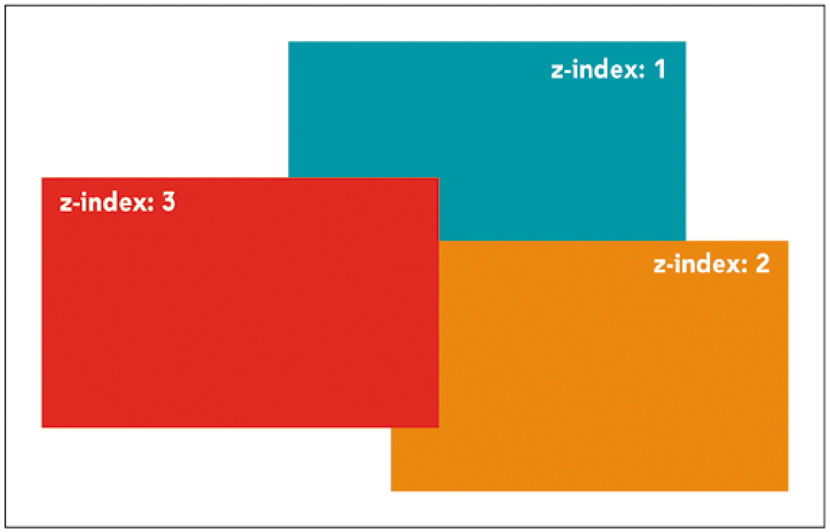
Stacking Elements

- Positioning elements can sometimes lead to objects that overlap each other
- By default, elements that are loaded later by the browser are displayed on top of elements that are loaded earlier
- To specify a different stacking order, use the style property

```
z-index: value;
```

Stacking Elements

Figure 4-73 Using the z-index property to stack elements


z-index: 1
z-index: 3
z-index: 2