

# 23CSCI03P

# Web Programming

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# Chapter 6

## More CSS Basics

### Key Concepts

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# Learning Outcomes

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- Configure **text** typeface, size, weight, and style with CSS
- **Align** and **indent** text with CSS
- **Describe** and **apply** the **CSS Box Model**
- Configure **width** and **height** with CSS
- Configure **margin**, **border**, and **padding** with CSS
- **Center** web page content with CSS
- Apply **shadows** with CSS3
- Configure **rounded corners** with CSS3
- Configure **background images** with CSS3
- Configure **opacity**, **RGBA** color, **HSLA** color and **gradients** with CSS3

# Configure Typeface with CSS

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- **font-family property**
  - Configures the font typeface of the text
  - Include a generic family name

```
p { font-family: Verdana, Arial, sans-serif; }
```

# Configure Typeface with CSS

Font Family Category	Font Family Description	Font Typeface Examples
serif	Serif fonts have small embellishments on the end of letter strokes; often used for headings.	Times New Roman, Georgia, Palatino
sans-serif	Sans-serif fonts do not have serifs; often used for web page text.	Arial, Tahoma, Helvetica, Verdana
monospace	Fixed-width font; often used for code samples.	Courier New, Lucida Console
cursive	Hand-written style; use with caution; may be difficult to read on a web page.	<i>Lucida Handwriting, Brush Script, Comic Sans MS</i>
fantasy	Exaggerated style; use with caution; sometimes used for headings; may be difficult to read on a web page.	<b>Jokerman, Impact</b> , Papyrus

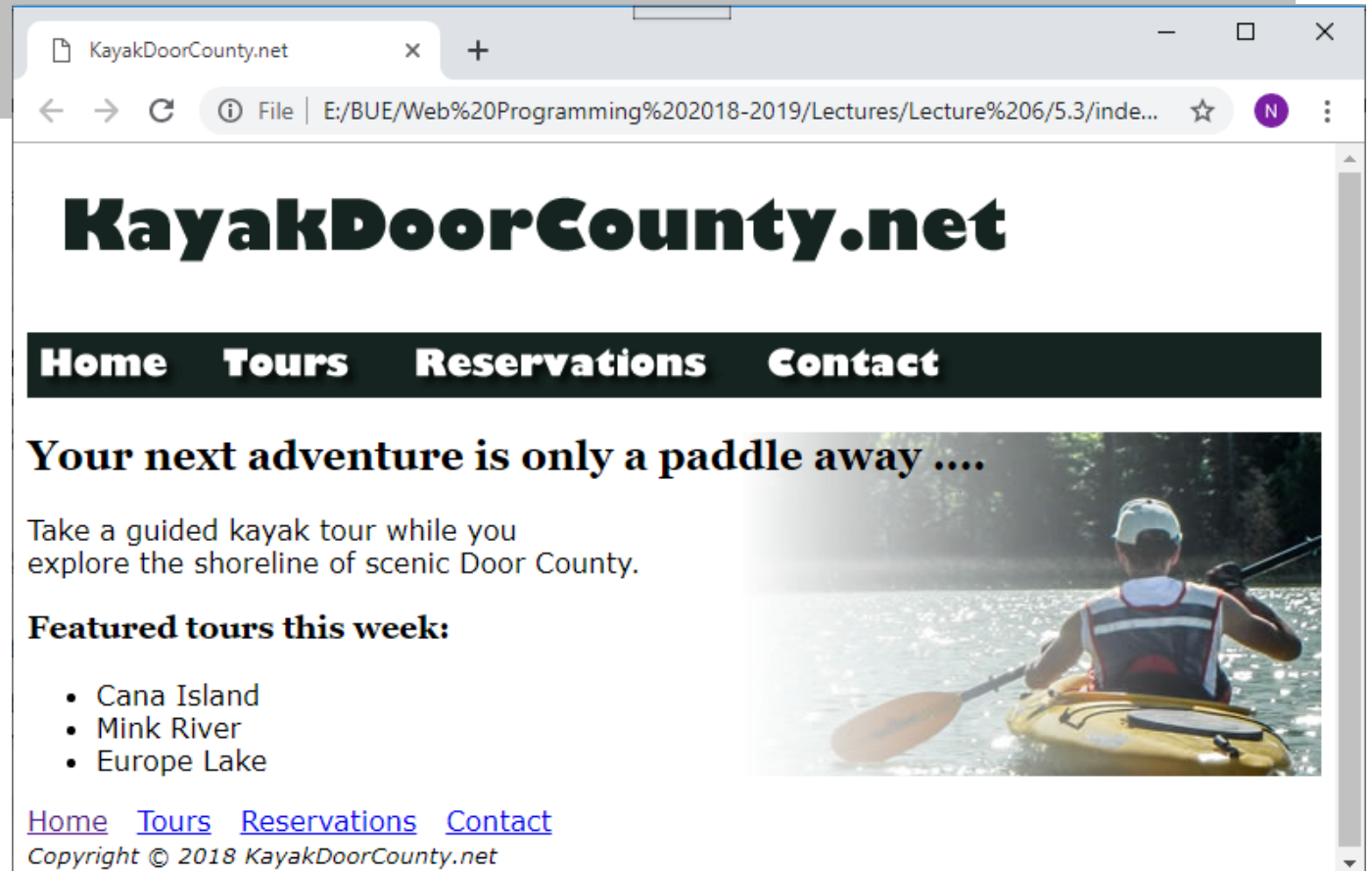
# Font Family Example

```
<style>
```

```
body {font-family: Verdana, Arial, sans-serif;}
```

```
h2,h3 {font-family: Georgia, "Times New Roman", serif;}
```

```
</style>
```



# Configure Text Size, Weight, and Style with CSS

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- **font-size property**

- Configures the **size** of the **text**

```
p { font-size: 90%; }
```

- **font-weight property**

- Configures the **boldness** of **text**

```
li { font-weight: bold; }
```

- **font-style property**

- Configures the **style** of the **text**

```
#footer { font-style: italic; }
```

- **line-height property**

- Modifies the height of a line of text

```
p { line-height: 120%; }
```

# The font-size Property

Text Values	Em Units	Px Units	Pt Units	Percentage
xx-small	.5 em	8 px	6 pt	50%
x-small	.60 em	11 px	8 pt	60%
small	.75 em	13 px	10 pt	75%
medium	1 em	16 px	12 pt	100%
large	1.15 em	18 px	13.5 pt	110%
x-large	1.5 em	24 px	18 pt	150%
xx-large	2 em	30 px	24 pt	200%

- Accessibility Recommendation:
  - Use em or percentage font sizes – these can be easily enlarged in all browsers by users



# Align and Indent Text with CSS

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- **text-transform property:** Configures the **capitalization** of text

```
h1 { text-transform: uppercase; }
```

- **text-align property:** Configures the alignment of text

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

- **text-indent property:** Configures the indentation of the **first line** of text in an element

```
p { text-indent: 5em; }
```

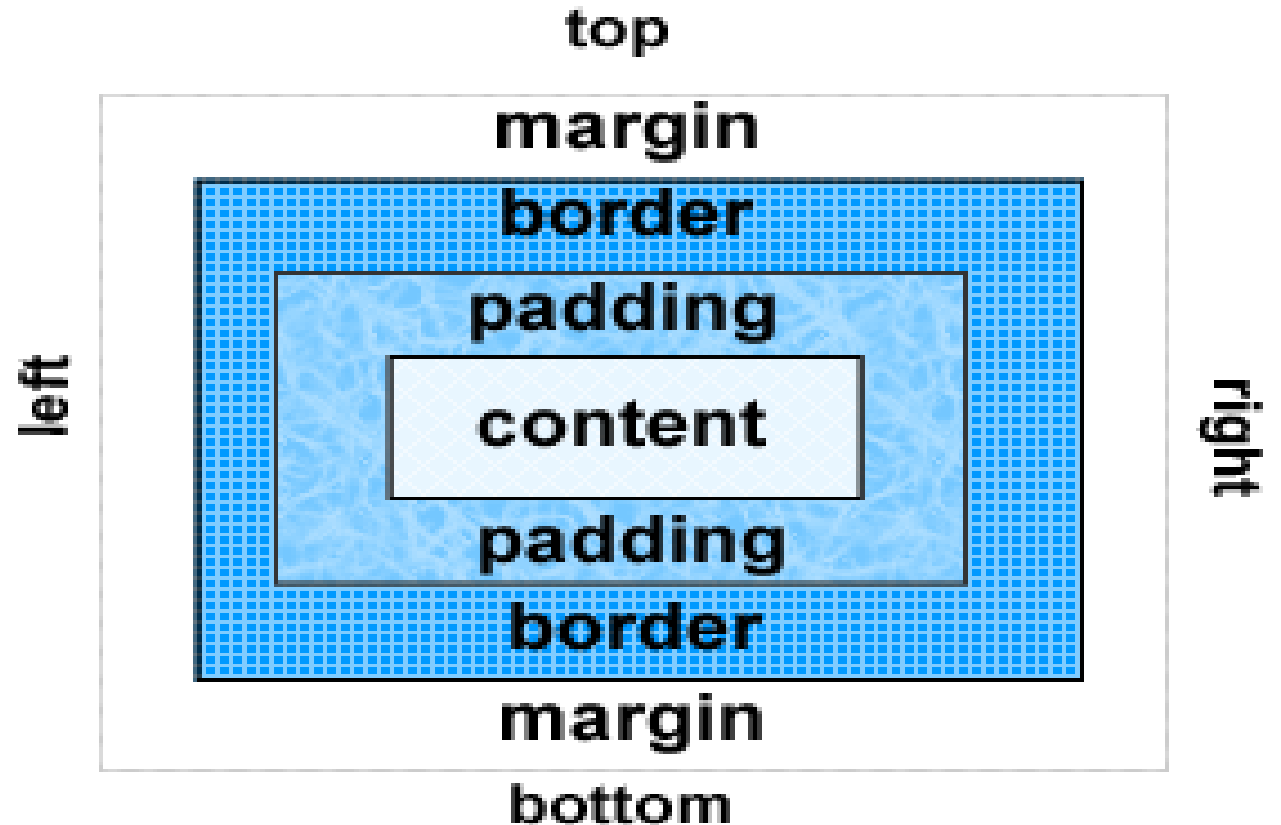
- **text-decoration property:** modify the display of text. (none, underline, overline and line-through)

```
a { text-decoration: none; }
```

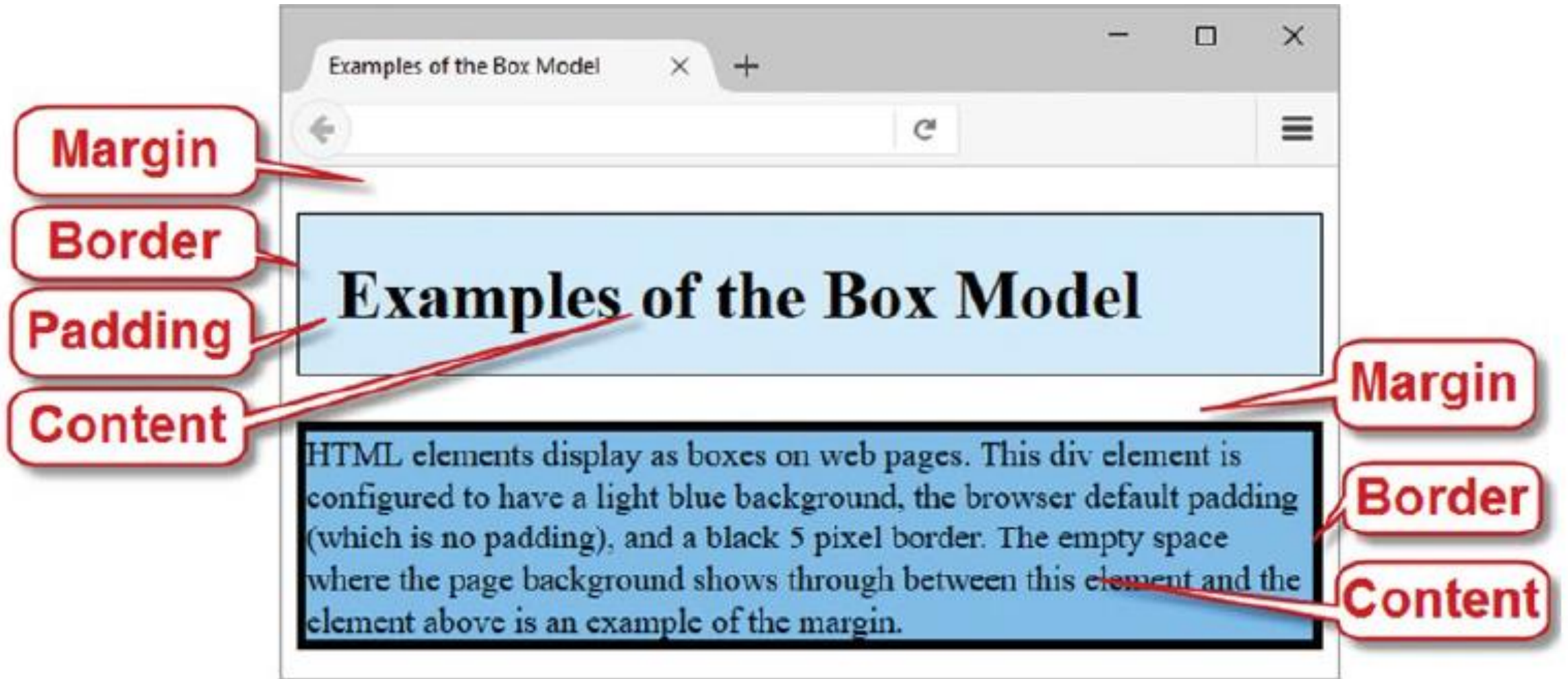
# The Box Model

Each **element** in a document is considered to be a **rectangular box**. This box consists of :

- Content
  - **Text & web page elements** in the container
- Padding
  - **Area between the content and the border**
- Border
  - **Between the padding and the margin**
- Margin
  - **Determines the empty space between the element and adjacent elements**



# The Box Model



# Configure Margin with CSS

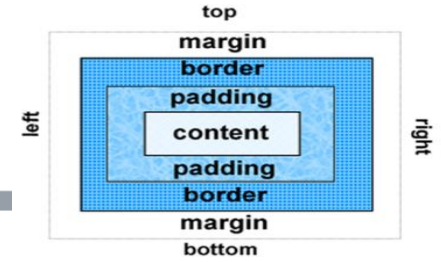
- The margin property:  
Configures **empty space between** the **element** and **adjacent elements**
- Related properties:
  - margin-top, margin-right, margin-left, margin-bottom
- Syntax examples



```
h1 { margin: 0; }  
h1 { margin: 20px 10px; }  
h1 { margin: 10px 30px 20px; }  
h1 { margin: 20px 30px 0 30px; }
```

Top and bottom, left and right  
Top, left and right, bottom  
Top->right->bottom->left

# Configure Padding with CSS



- The padding property  
**Configures empty space** between the **content** of the HTML element (such as text) and the **border**
- Related properties:
  - padding-top, padding-right, padding-left, padding-bottom

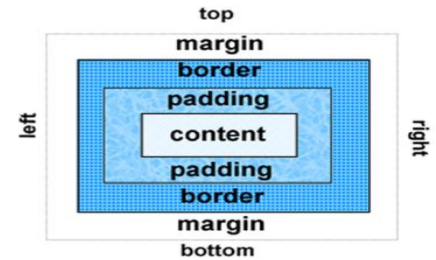
- Syntax examples

```
h1 { padding: 0; }  
h1 { padding : 20px 10px; }  
h1 { padding : 10px 30px 20px; }  
h1 { padding : 20px 30px 0 30px; }
```

Top and bottom, left and right  
Top, left and right, bottom  
Top->right->bottom->left

# The CSS border Property

- **Configures a border** on the top, right, bottom, and left sides of an element
- Consists of
  - border-width
  - border-style
  - border-color



```
h2 { border: 2px solid #ff0000 }
```

**Heading with Border**

# Browser Display Can Vary

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## CSS border-style Values

### Firefox

default

none

inset

outset

double

groove

ridge

solid

dashed

dotted

### Internet Explorer

default

none

inset

outset

double

groove

ridge

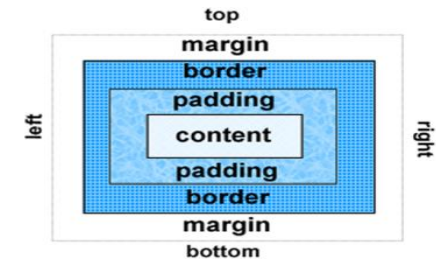
solid

dashed

dotted

# Configuring Specific Sides of a Border

- Use CSS to **configure** a line on one or more sides of an element
  - border-bottom
  - border-left
  - border-right
  - border-top



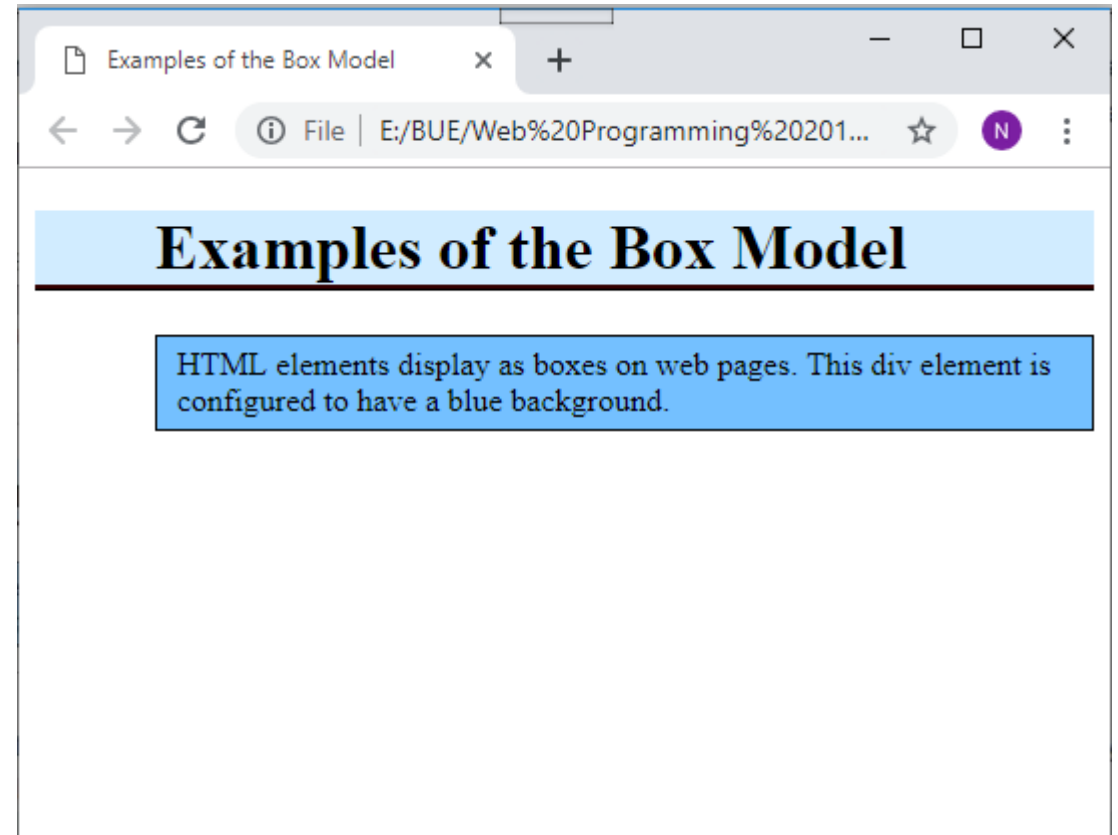
```
h2 { border-bottom: 2px solid #ff0000 }
```

**Heading with Border**



# Example

```
<style>
body { background-color: #FFFFFF;
}
h1 { background-color: #D1ECFF;
      padding-left: 60px;
      border-bottom: 3px ridge #330000;}
#box { background-color: #74C0FF;
      margin-left: 60px;
      padding: 5px 10px;
      border: 1px solid #000000;
}
</style>
```



# CSS3 Rounded Corners

- border-radius property
- Example:  

```
h1 { border: 1px solid #000033;  
      border-radius: 15px; }
```

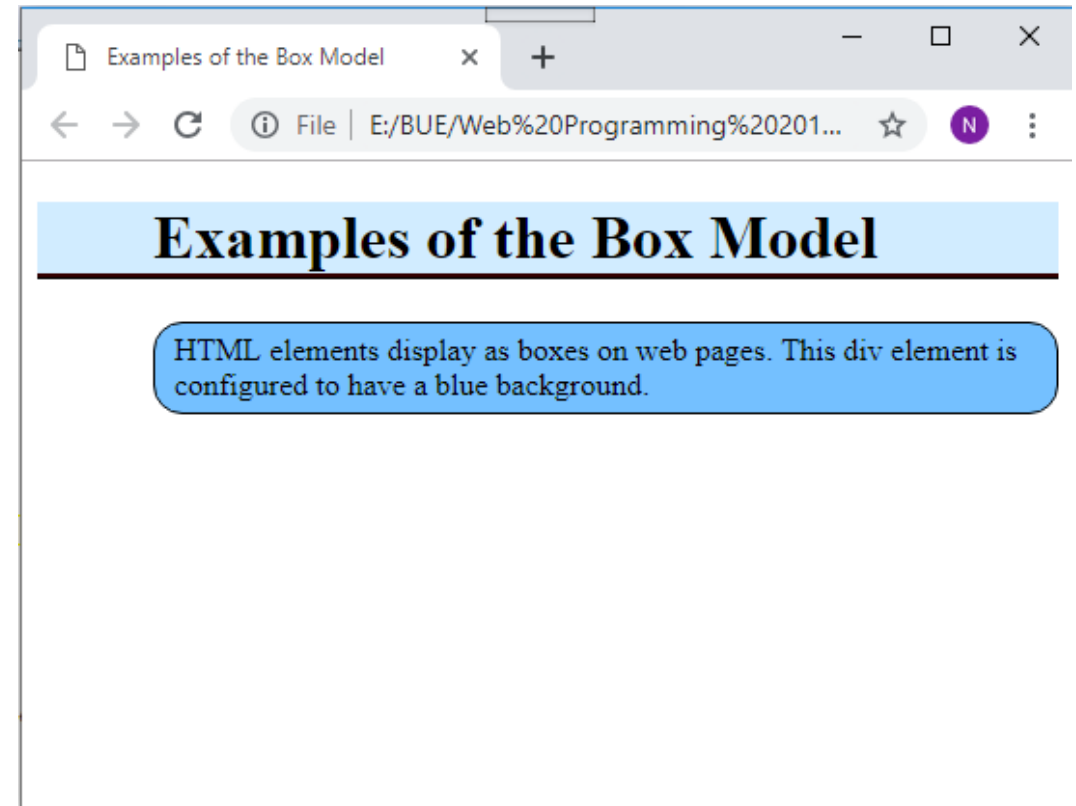
Border-bottom-left-radius

Border-bottom-right-radius

Border-top-left-radius

Border-bottom-right-radius

- single value: configures all four corners.
- four values: top left -> top right -> bottom right -> bottom left.



# Configure Width and Height with CSS

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- width property
  - Configures the width of an element's content

```
h1 { width: 80%; }
```

- min-width property: Configures minimum width of an element
- max-width property: Configures the maximum width of an element
- height property
  - Configures the height of an element

```
h1 { height: 100px; }
```

# Min-width property



Without min-width property



With min-width property

# Centering Page Content with CSS

```
#container{ margin-left: auto;  
margin-right:auto;  
width:80%;  
min-width:750px;}
```

```
<body>  
<div id="container">  
.....  
</div>  
</body>
```



# CSS3 box-shadow Property

- Configure the horizontal offset, vertical offset, blur radius, and valid color value
- Example: `#wrapper { box-shadow: 5px 5px 5px #828282; }`

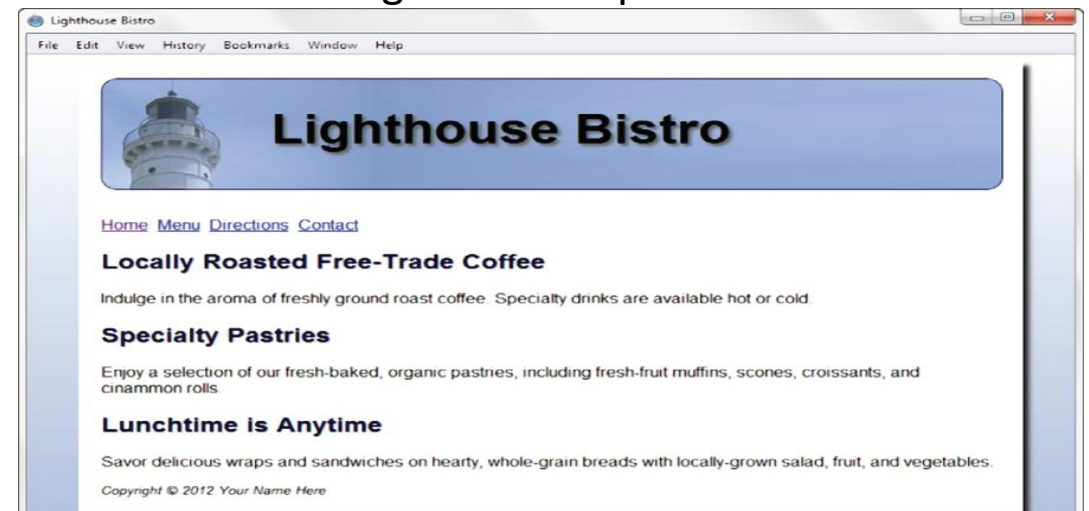
Note: Optional keyword: inset (inner shadow)

```
#container { margin:auto;
              width: 850px;
              padding: 0 20px 10px;
              background-color: #FFFFFF;
              box-shadow: 5px 5px 5px #1e1e1e;
            }
```



# CSS3 box-shadow Property

- Configure the horizontal offset, vertical offset, blur radius, and valid color value
- Example: `#wrapper { box-shadow: 5px 5px 5px #828282; }`
- Horizontal Offset: numeric pixel value. Positive value -> shadow on the right.  
Negative value -> shadow on the left.
- Vertical Offset: numeric pixel value. Positive value -> shadow below.  
Negative value -> shadow above.
- Blur radius: numeric pixel value. If omitted , defaults to the value 0 which configures a sharp shadow.  
Higher values configure more blur
- Color value: configure a valid color value for the shadow.



# CSS3 text-shadow Property

- Configure the horizontal offset, vertical offset, blur radius, and valid color value
- Example: `#wrapper { text-shadow: 3px 3px 3px #666; }`

```
h1 { background-image:  
  .  
  .  
  .  
  border-radius: 15px;  
  text-shadow: 3px 3px 3px #666;  
}
```

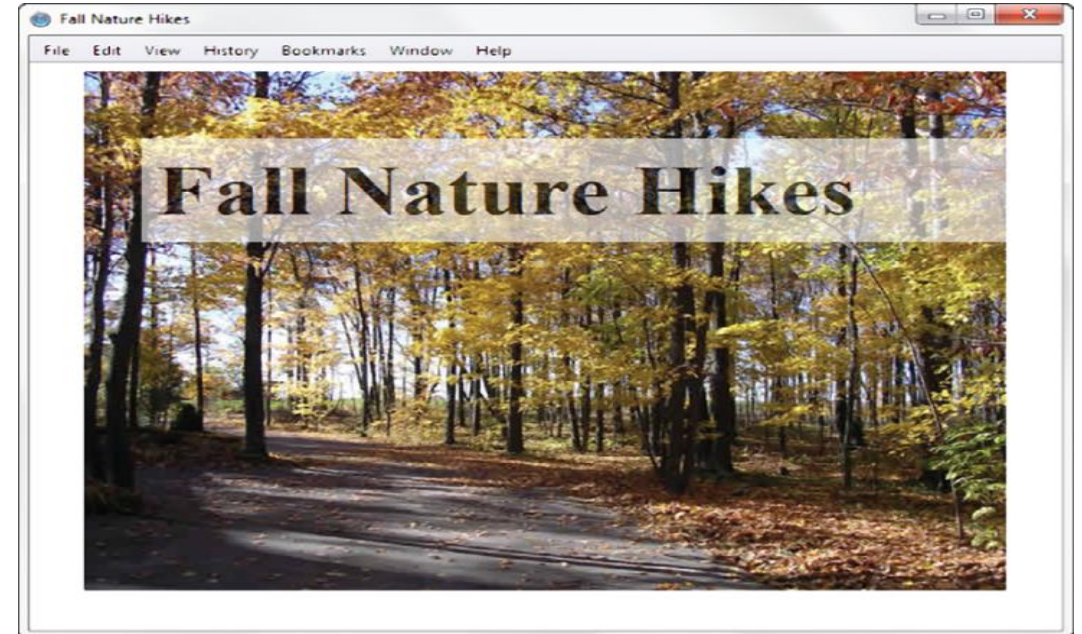




# CSS3 Opacity Property

- Configure the **opacity** of the **background** color
- Opacity range:
  - 0 Completely Transparent
  - 1 Completely Opaque
- Applied to both text and background.
- Example:

```
h1 { background-color: #FFFFFFF;  
      opacity: 0.6; }
```



# RGBA Color

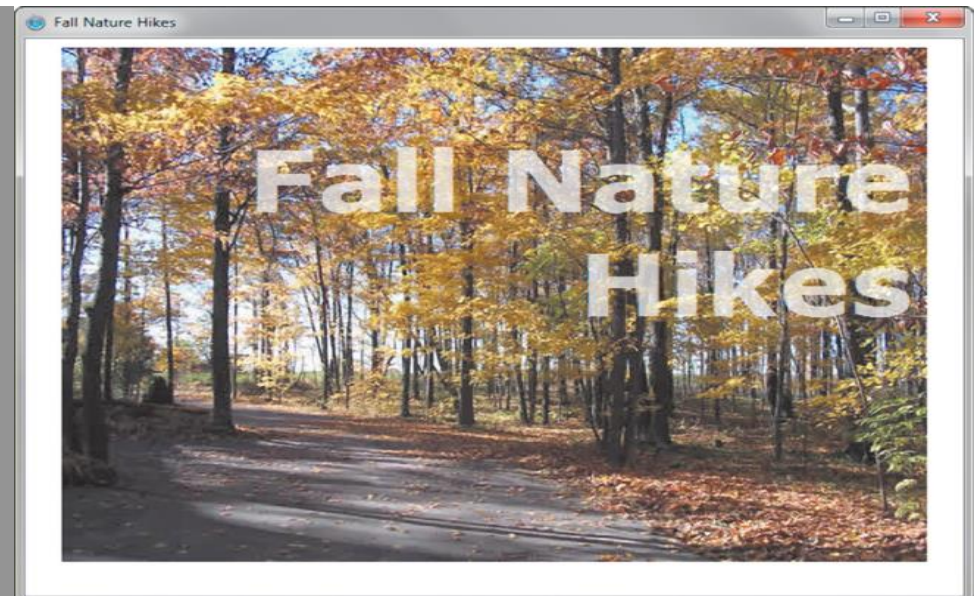
#FFFFFF rgb(255, 255, 255)	#FFFFCC rgb(255, 255, 204)	#FFF999 rgb(255, 255, 153)	#FFF666 rgb(255, 255, 102)
#FFF333 rgb(255, 255, 51)	#FFF000 rgb(255, 255, 0)	#FFCCFF rgb(255, 204, 255)	#FFCCCC rgb(255, 204, 204)
#FFCC99 rgb(255, 204, 153)	#FFCC66 rgb(255, 204, 102)	#FFCC33 rgb(255, 204, 51)	#FFCC00 rgb(255, 204, 0)
#FF99FF rgb(255, 153, 255)	#FF99CC rgb(255, 153, 204)	#FF9999 rgb(255, 153, 153)	#FF9966 rgb(255, 153, 102)

Four values are required:

- red color, green color, blue color, and alpha(transparency)
  - The values for red, green, and blue must be decimal values from 0 to 255.
  - The alpha value must be a number between 0 (transparent) and 1 (opaque).

Example:

```
h1 { color: #ffffff;  
      color: rgba(255, 255, 255, 0.7);  
      font-size: 5em; padding-right: 10px;  
      text-align: right;  
      font-family: Verdana, Helvetica, sans-serif;  
}
```



# HSLA Color

hue, saturation, light, alpha

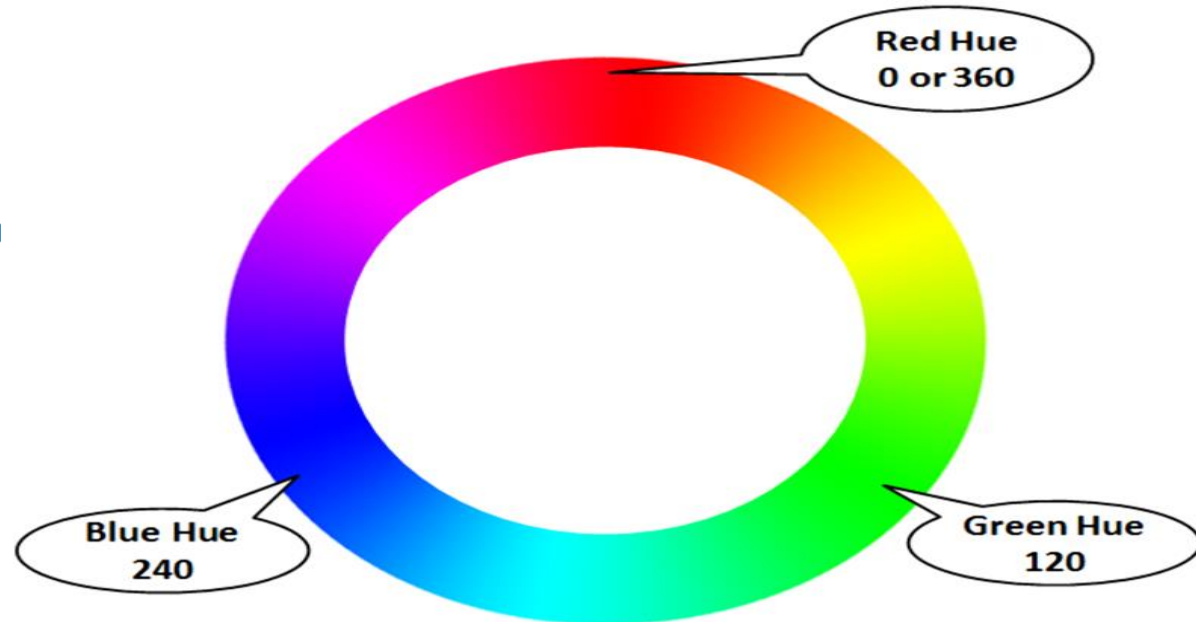
- Hue is a value between 0 and 360
- Saturation: percent
- Lightness: percent
- Optional alpha: from 0 to 1

Shades of cyan blue.

```
hsla(210, 100%, 25%, 1.0);
```

```
hsla(210, 100%, 50%, 1.0);
```

```
hsla(210, 100%, 75%, 1.0);
```



**Red**

```
hsla(360, 100%, 50%, 1.0);
```

**Green**

```
hsla(120, 100%, 50%, 1.0);
```

**Blue**

```
hsla(240, 100%, 50%, 1.0);
```

**Black**

```
hsla(0, 0%, 0%, 1.0);
```

**Gray**

```
hsla(0, 0%, 50%, 1.0);
```

**White**

```
hsla(0, 0%, 100%, 1.0);
```

# CSS3 Gradients

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- Gradient: a smooth blending of shades from one color to another
- Use the background-image property
  - linear-gradient()
  - radial-gradient()

- Example:

Background-image: linear-gradient(to bottom, #FFFFFF, #00FF00);

Background-image: radial-gradient(#FFFFFF, #00FF00);

# Summary

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- This chapter expanded your CSS skillset.
- You configured text with CSS properties.
- You were introduced to the box model.
- You configured CSS properties related to the box model, such as margin, border, padding, and width.
- You centered a web page using CSS.
- You explored new CSS3 properties including: border-radius, box-shadow, text-shadow, opacity.

# Chapter 9

## Table Basics

### Key Concepts

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# Learning Outcomes

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- Describe the recommended use of a table on a web page
- Configure a basic table with the table, table row, table header, and table cell elements.
- Configure a table to provide for accessibility



# HTML Table

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- Tables are used on web pages to **organize tabular information**

Name	Birthday	Phone
Jack	5/13	857-555-5555
Sparky	11/28	303-555-5555

- Composed of **rows** and **columns** – similar to a spreadsheet.
- Each individual **table cell** is at the **intersection** of a **specific row** and **column**.
- Configured with **table**, **tr**, and **td** elements



# HTML Table Elements

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- <table> Contains the **table**
- <tr> Contains a **table row**
- <td> Contains a **table cell**
- <th> Contains a table **header cell**
- <caption> Configures a **description** of the table

Name	Date
Bobolink	5/25/10
Upland Sandpiper	6/03/10

# HTML Table Example

```
<table border="1">
<caption>Birthday List</caption>
<tr>
  <td>Name</td>
  <td>Birthday</td>
</tr>
<tr>
  <td>James</td>
  <td>11/08</td>
</tr>
<tr>
  <td>Karen</td>
  <td>4/17</td>
</tr>
<tr>
  <td>Sparky</td>
  <td>11/28</td>
</tr>
</table>
```

Birthday List

Name	Birthday
James	11/08
Karen	4/17
Sparky	11/28

# HTML Table Example 2

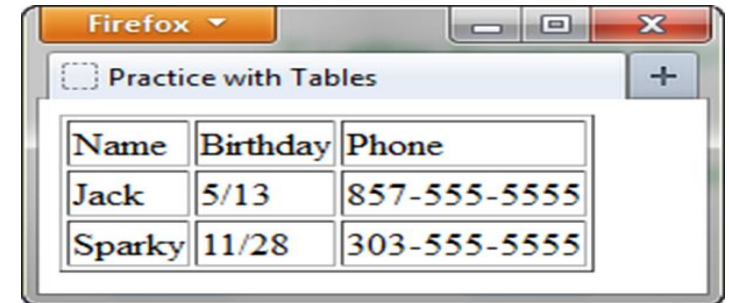
```
<table border="1">
  <tr>
    <th>Name</th>
    <th>Birthday</th>
  </tr>
  <tr>
    <td>James</td>
    <td>11/08</td>
  </tr>
  <tr>
    <td>Karen</td>
    <td>4/17</td>
  </tr>
  <tr>
    <td>Sparky</td>
    <td>11/28</td>
  </tr>
</table>
```

Using the <th> Element

Name	Birthday
James	11/08
Karen	4/17
Sparky	11/28

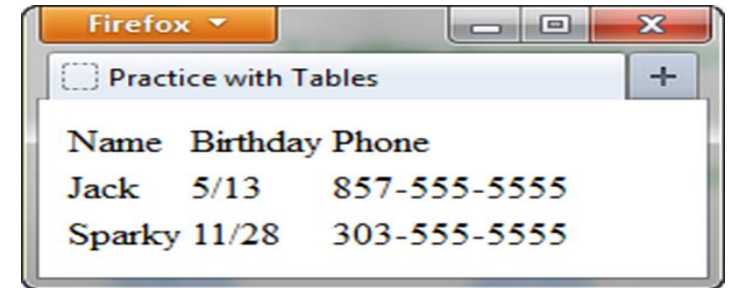
# HTML border Attribute

- Indicates the table is specifically not used for page layout
  - Optional
  - `border="1"`  
Visible browser default border
  - `border=""`  
No visible browser default border.



A screenshot of a Firefox browser window titled "Practice with Tables". Inside the window, there is a table with three columns: "Name", "Birthday", and "Phone". The table has two rows of data. The first row contains "Jack", "5/13", and "857-555-5555". The second row contains "Sparky", "11/28", and "303-555-5555". The table is rendered with a visible border.

Name	Birthday	Phone
Jack	5/13	857-555-5555
Sparky	11/28	303-555-5555



A screenshot of a Firefox browser window titled "Practice with Tables". Inside the window, there is a table with three columns: "Name", "Birthday", and "Phone". The table has two rows of data. The first row contains "Jack", "5/13", and "857-555-5555". The second row contains "Sparky", "11/28", and "303-555-5555". The table is rendered without a visible border.

Name	Birthday	Phone
Jack	5/13	857-555-5555
Sparky	11/28	303-555-5555

# HTML colspan Attribute

```
<table border="1">
  <tr>
    <td colspan="2">
      Birthday List</td>
    </tr>
    <tr>
      <td>James</td>
      <td>11/08</td>
    </tr>
    <tr>
      <td>Karen</td>
      <td>4/17</td>
    </tr>
</table>
```

Birthday List	
James	11/08
Karen	4/17

# HTML rowspan Attribute

---

```
<table border="1">
  <tr>
    <td rowspan="2">This spans two rows</td>
    <td>Row 1 Column 2</td>
  </tr>
  <tr>
    <td>Row 2 Column 2</td>
  </tr>
</table>
```

This spans two rows	Row 1 Column 2
	Row 2 Column 2

# Accessibility and Tables

---

- Use **table header** elements (<th> tags) to indicate column or row headings.
- Use the **summary attribute** on the table element to provide an **overview** of the **purpose** and organization of the table.
- Use the **caption element** to provide the **title/caption** for the table.
- Other attributes that provide for accessibility:
  - headers & id

# Accessibility: headers & id Attributes

```
<table border="1">
<caption> Word Schedule</caption>
<tr>
  <th id="day">Day</th>
  <th id="hours">Hours</th>
</tr>
<tr>
  <td headers="day">Monday</td>
  <td headers="hours">4</td>
</tr>
<tr>
  <td headers="day">Tuesday</td>
  <td headers="hours">3</td>
</tr>
<tr>
  <td headers="day">Total</td>
  <td headers="hours">7</td>
</tr>
</table>
```

Day	Hours
Monday	4
Tuesday	3
Total	7



# Writing Valid HTML

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- Check your code for syntax errors
  - Benefit:
    - Valid code → more consistent browser display
- W3C HTML Validation Tool
  - <http://validator.w3.org>
- Additional HTML5 Validation Tool
  - <http://html5.validator.nu>