# WEB DEVELOPMENT & DESIGN FOUNDATIONS WITH HTML5

Key Concepts

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# LEARNING OUTCOMES

**In this chapter, you will learn how to …**

- Revisit HTML
- Describe HTML5
- Identify the markup language in a web page document
- Use the html, head, body, title, and meta elements to code a template for a web page
- Configure the body of a web page with headings, paragraphs, line breaks, divs, lists, and blockquotes
- Configure text with phrase elements
- Configure a web page using new HTML5 header, nav, main, and footer elements
- Configure special characters
- Use the anchor element to link from page to page
- Create absolute, relative, and e-mail hyperlinks
- Code, save, and display a web page document
- Test a web page document for valid syntax
- Other advanced topics on HTML5

# WHAT IS HTML5 ?

▶ Newest draft version of HTML/XHTML

▶ Supported by modern browsers

    ▶ Safari, Google Chrome, Firefox, Internet Explorer 9

▶ Intended to be backwards compatible

▶ Adds new elements

▶ Adds new functionality

    ▶ Edit form data

    ▶ Native video and audio

    ▶ And more!

Source: W3C  http://www.w3.org/html/logo/

# DOCUMENT TYPE DEFINITION

▶ **Document Type Definition (DTD)**

   ▶ doctype statement

   ▶ identifies the version of HTML contained in your document.

   ▶ placed at the top of a web page document

**XHTML 1.0 Transitional DTD**

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd>

**HTML5 DTD**

<!DOCTYPE html>

# EXAMPLE HTML5 WEB PAGE

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Page Title Goes Here</title>
<meta charset="utf-8">
</head>
<body>
... body text and more HTML5 tags go here ...
</body>
</html>
```

▶ **Head Section**
Contains information that describes the Web page document

  **&lt;head&gt;**

  *…head section info goes here*

  **&lt;/head&gt;**
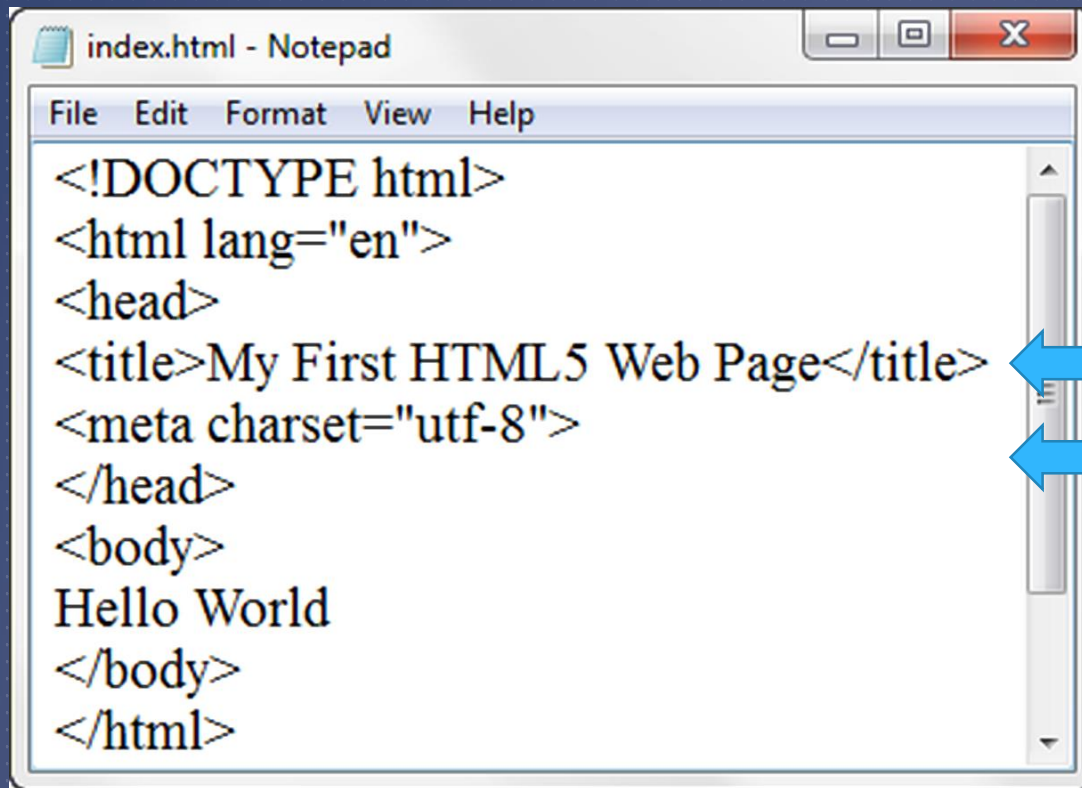
▶ **Body Section**
Contains text and elements that display in the Web page document
**&lt;body&gt;**

  *…body section info goes here*

  **&lt;/body&gt;**

TITLE ELEMENT

META ELEMENT

&lt;h1&gt;Heading Level 1&lt;/h1&gt;

&lt;h2&gt;Heading Level 2&lt;/h2&gt;

&lt;h3&gt;Heading Level 3&lt;/h3&gt;

&lt;h4&gt;Heading Level 4&lt;/h4&gt;

&lt;h5&gt;Heading Level 5&lt;/h5&gt;
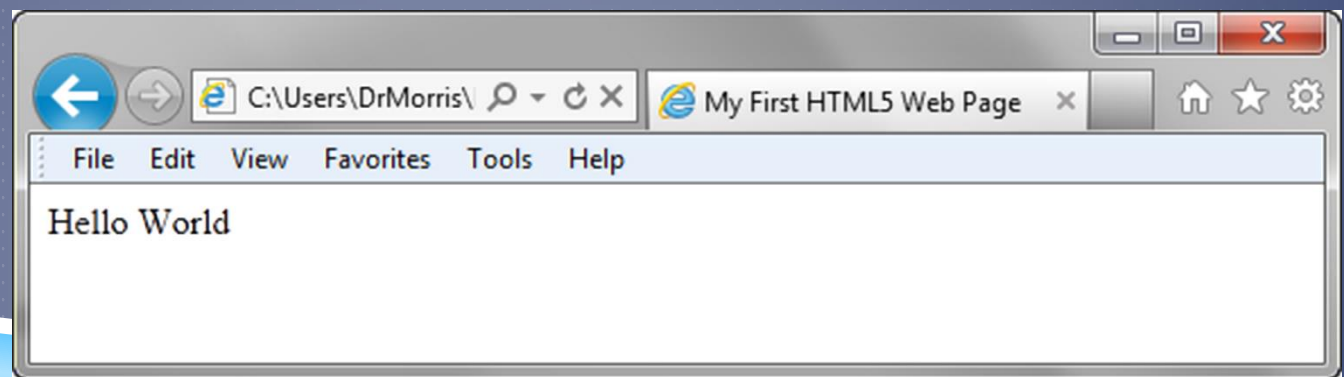
&lt;h6&gt;Heading Level 6&lt;/h6&gt;

# Heading Level 1

## Heading Level 2

### Heading Level 3

#### Heading Level 4

##### Heading Level 5

###### Heading Level 6

▶ Paragraph element

**<p> *…paragraph goes here…* </p>**

- ▶ Groups sentences and sections of text together.

- ▶ Block Display – Configures empty space above and below

# LINE BREAK ELEMENT

▶ Line Break element

  ▶ Stand-alone, or void tag

  *…text goes here \<br>*
  *This starts on a new line….*

  ▶ Causes the next element or text to display on a new line

# BLOCKQUOTE ELEMENT

▶ Blockquote element

  ▶ Indents a block of text for special emphasis

**<blockquote>**

  *…text goes here…*

**</blockquote>**

▶ Block Display – Configures empty space above and below

- Indicate the context and meaning of the text

| Element | Example | Usage |
|---------|---------|-------|
| **<b>** | bold text | Text that has no extra importance but is styled in bold font by usage and convention |
| **<em>** | emphasized text | Causes text to be emphasized in relation to other text; usually displayed in italics |
| **<i>** | italicized text | Text that has no extra importance but is styled in italics by usage and convention |
| **<mark>** | mark text | Text that is highlighted in order to be easily referenced (HTML5 only) |
| **<small>** | small text | Legal disclaimers and notices ("fine print") displayed in small font-size |
| **<strong>** | strong text | Strong importance; causes text to stand out from surrounding text; usually displayed in bold |
| **<sub>** | sub text | Displays a subscript as small text below the baseline |
| **<sup>** | sup text | Displays a superscript as small text above the baseline |

# PROPER NESTING

CODE:

<p><i>Call for a free quote for your web development needs: <strong>888.555.5555 </strong></i></p>

BROWSER DISPLAY:

*Call for a free quote for your web development needs: **888.555.5555***

▶ Unordered List

▶ Ordered List

▶ Description List
*formerly called a definition list*

# UNORDERED LIST

▶ Displays a bullet, or list marker, before each entry in the list.

▶ <ul>

Contains the unordered list

▶ <li>

Contains an item in the list

- TCP
- IP
- HTTP
- FTP

# UNORDERED LIST EXAMPLE

```
<ul>
  <li>TCP</li>
  <li>IP</li>
  <li>HTTP</li>
  <li>FTP</li>
</ul>
```

- TCP
- IP
- HTTP
- FTP

▶ Displays a numbering or lettering system to itemize the information contained in the list

▶ <ol>

Contains the ordered list

  ▶ type attribute determines numbering scheme of list, default is numerals

▶ <li>

Contains an item in the list

```
<ol>
    <li>Apply to school</li>
    <li>Register for course</li>
    <li>Pay tuition</li>
    <li>Attend course</li>
</ol>
```

1. Apply to school
2. Register for course
3. Pay tuition
4. Attend course

# DESCRIPTION LIST

- Useful to display a list of terms and descriptions or a list of FAQ and answers

  - <dl>
    Contains the description list

  - <dt>
    Contains a term/phrase/sentence
    Configures empty space above and below the text

  - <dd>
    Contains a description of the term/phrase/sentence
    - Indents the text
    - Configures empty space above and below the text

# DESCRIPTION LIST EXAMPLE

```
<dl>
  <dt>IP</dt>
    <dd>Internet Protocol</dd>
  <dt>TCP</dt>
    <dd>Transmission Control Protocol</dd>
</dl>
```

IP
     Internet Protocol
TCP
     Transmission Control Protocol

# SPECIAL CHARACTERS

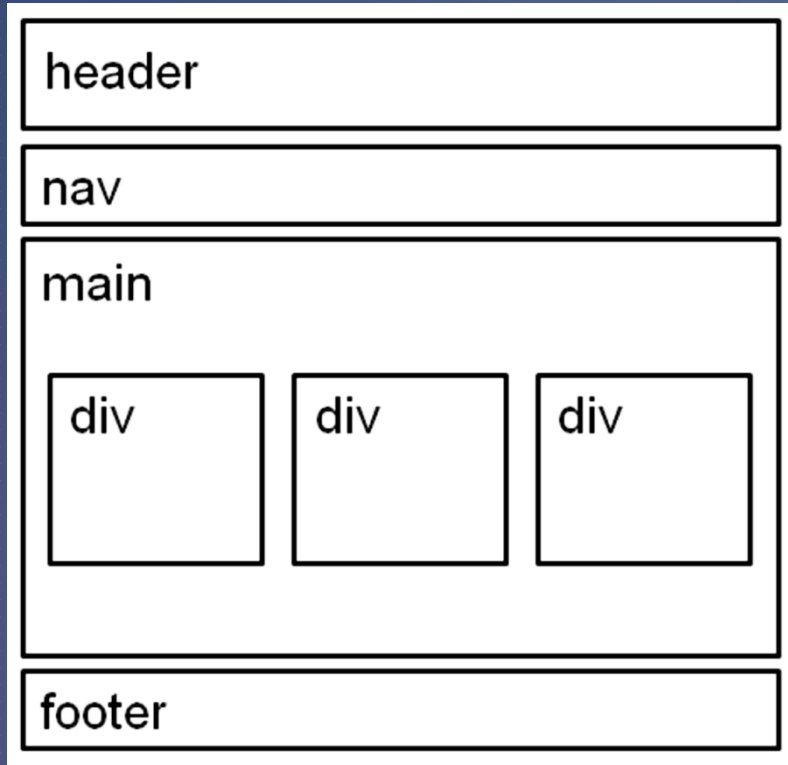- Display special characters such as quotes, copyright symbol, etc.

| Character | Code |
|-----------|------|
| © | &copy; |
| < | &lt; |
| > | &gt; |
| & | &amp; |
| |   |

▶ Configures a structural block area or "division" on a web page with empty space above and below.

▶ Can contain other block display elements, including other div elements

<div>Home Services Contact</div>

# HTML5 STRUCTURAL ELEMENTS



▶ header Element

&lt;header&gt;&lt;/header&gt;
Contains the web page document's headings

▶ nav Element

&lt;nav&gt;&lt;/nav&gt;
Contains web page document's main navigation

▶ main Element
&lt;main&gt;&lt;/main&gt;
Contains the web page document's main content

▶ footer Element

&lt;footer&gt;&lt;/footer&gt;
Contains the web page document's footer

# HTML5 STRUCTURAL ELEMENTS

\<body\>

  \<header\> *document headings go here* \</header\>

  \<nav\> *main navigation goes here* \</nav\>

  \<main\> *main content goes here* \</main\>

  \<footer\>  *document footer information goes here* \</footer\>

\</body\>

# ANCHOR ELEMENT

➢ Specifies a hyperlink reference (href) to a file

➢ Text between the <a> and </a> is displayed on the web page.

**<a href="contact.html">Contact Us</a>**

➢ href Attribute

• Indicates the file name or URL

# ABSOLUTE & RELATIVE HYPERLINKS

▶ **Absolute link**

- ▶ Link to a different website

`<a href="http://yahoo.com">Yahoo</a>`

▶ **Relative link**

- ▶ Link to pages on your own site

`<a href="index.htm">Home</a>`

▶ Automatically launch the default mail program configured for the browser

▶ If no browser default is configured, a message is displayed

```
<a  href="mailto:me@gmail.com">me@gmail.com</a>
```

# HTML5 FIGURE AND FIGCAPTION ELEMENTS

Figure Element: contains a unit of content that is self-contained, such as an image, along with one optional figcaption element.

```
<figure>
  <img src="lighthouseisland.jpg" width="250"
    height="355"
    alt="Lighthouse Island">
    <figcaption>
    Island Lighthouse, Built in 1870
    </figcaption>
</figure>
```

Displays a visual gauge of a numeric value within a known range

```
<meter value="14417" min="0" max="14417">14417</meter>14,417 Total Visits<br>
<meter value="7000" min="0" max="14417">7000</meter> 7,000 Firefox<br>
<meter value="3800" min="0" max="14417">3800</meter> 3,800 Internet Explorer<br>
<meter value="2062" min="0" max="14417">2062</meter> 2,062 Chrome<br>
<meter value="1043" min="0" max="14417">1043</meter> 1,043 Safari<br>
<meter value="312" min="0" max="14417">312</meter>    312 Opera<br>
<meter value="200" min="0" max="14417">200</meter>    200 other<br>
```
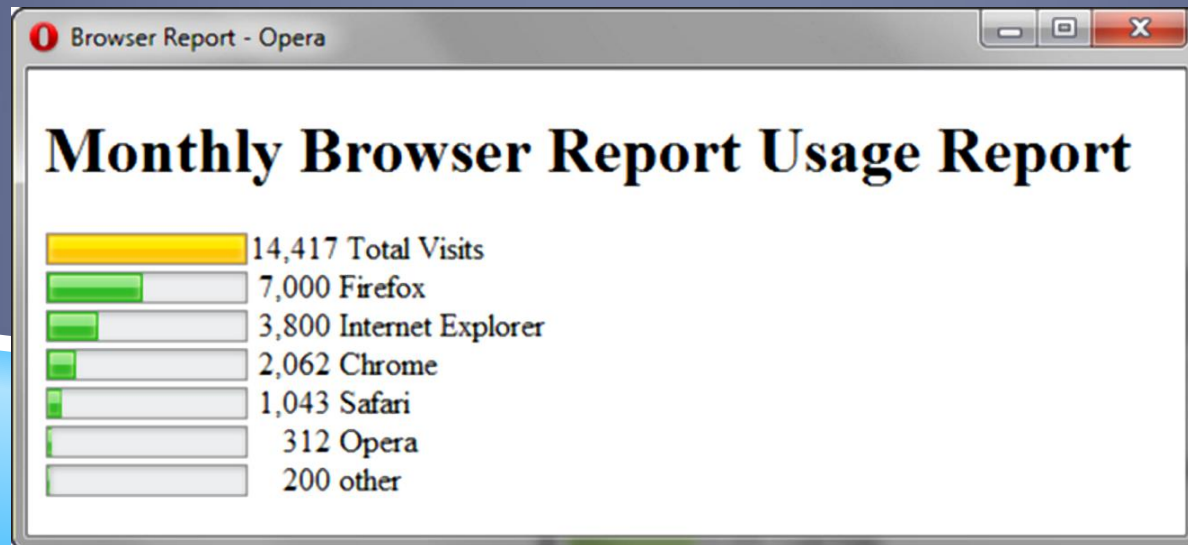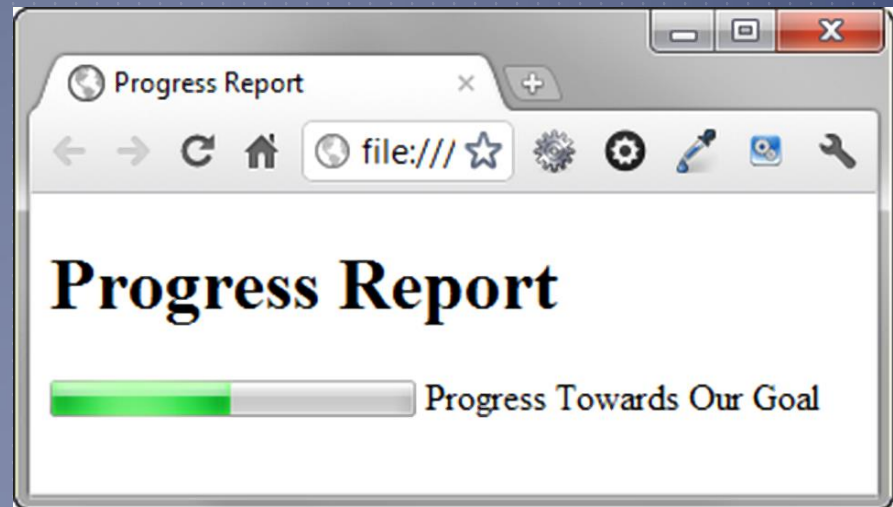
# HTML5 PROGRESS ELEMENT

Displays a bar that depicts a numeric value within a specified range

<progress value="5000" max="10000">5000</progress>
Progress Towards Our Goal

# HTML5 STRUCTURAL ELEMENTS REVIEW

▶ **Header Element**

　▶ block display; contains the headings of either a web page document or an area in the document such as a section or article

▶ **Nav Element**

　▶ block display; contains a section of navigation hyperlinks

▶ **Main Element**

　▶ block display; contains main page content

▶ **Footer Element**

　▶ block display; contains the footer content of a web page or specific area (such as a section or article) on a web page

- **Aside Element**
  - block display; contains a sidebar, a note, or other tangential content
- **Section Element**
  - contains a "section" of a document, such as a chapter or topic
  - block display
- **Article Element**
  - contains an independent entry, such as a blog posting, comment, or e-zine article that could stand on its own
  - block display
- **Time Element**
  - represents a date or a time
  - could be useful to date articles or blog posts
  - inline display

# HTML5 COMPATIBILITY WITH OLDER BROWSERS

▶ CSS

header, main, nav, footer, section, article,
        figure, figcaption, aside { display: block; }

▶ HTML5 Shim (aka HTML5 Shiv)

```
<!--[if lt IE 9]>
<script src=" http://html5shim.googlecode.com/svn/trunk/html5.js">
</script>
<![endif]-->
```

- <input>
- Accepts text information in e-mail address format

- Common Attributes:
  - type="email"
  - name
  - id
  - size
  - maxlength
  - value
  - placeholder
  - required

- \<input>

- Accepts text information in URL format

- Common Attributes:
  - type="url"
  - name
  - id
  - size
  - maxlength
  - value
  - placeholder
  - required
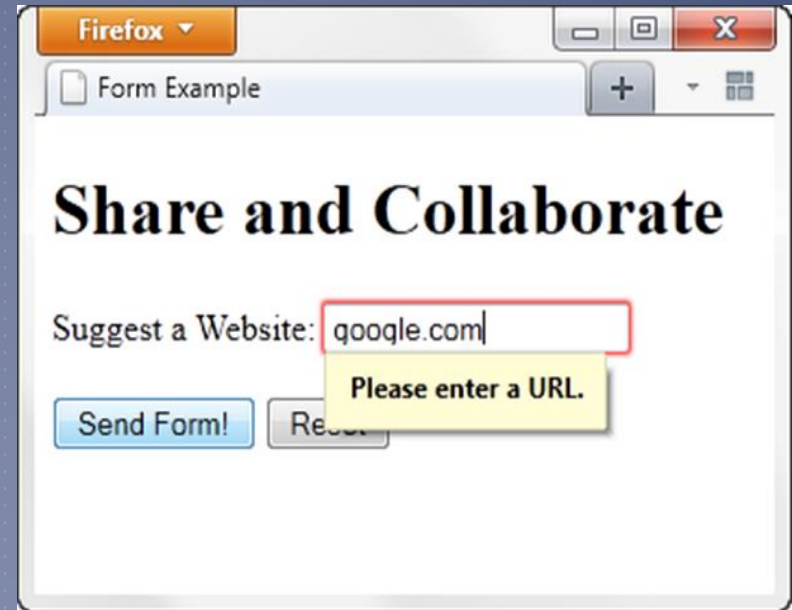
# HTML5: TELEPHONE NUMBER TEXT BOX

- <input>

- Accepts text information in telephone number format

- Common Attributes:
  - type="tel"
  - name
  - id
  - size
  - maxlength
  - value
  - placeholder
  - required

- \<input>
- Accepts search terms
- Common Attributes:
  - ◦ type="search"
  - ◦ name
  - ◦ id
  - ◦ size
  - ◦ maxlength
  - ◦ value
  - ◦ placeholder
  - ◦ required

```
<label for="color">Favorite Color:</label>
  <input type="text" name="color" id="color"
  list="colors" >
<datalist id="colors">

    <option value="red">

    <option value="green">

    <option value="blue">

    <option value="yellow">

    <option value="pink">

     <option value="black">
</datalist>
```
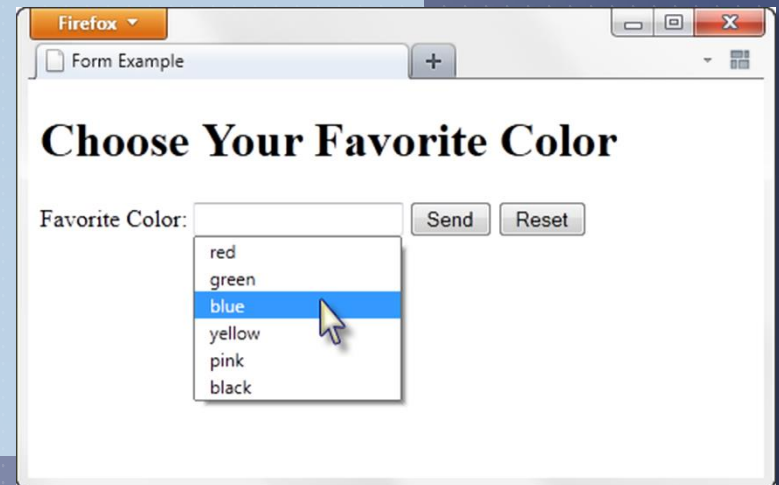
```
<label for="myChoice">
Choose a number between 1 and 100:</label><br>
Low <input type="range" name="myChoice" id="myChoice" min="1" max="100"> High
```
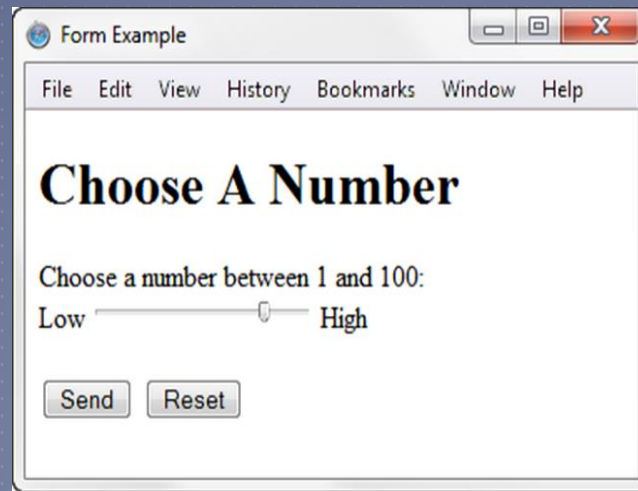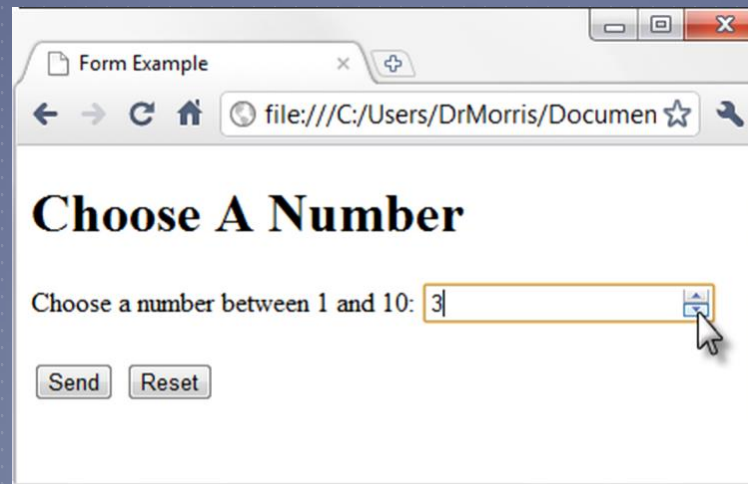
<label for="myChoice">Choose a number between 1 and 10:</label>
<input type="number"  name="myChoice"  id="myChoice"
        min="1" max="10">

# HTML5: CALENDAR CONTROL

```
<label for="myDate">Choose a Date</label>
<input type="date" name="myDate" id="myDate">
```
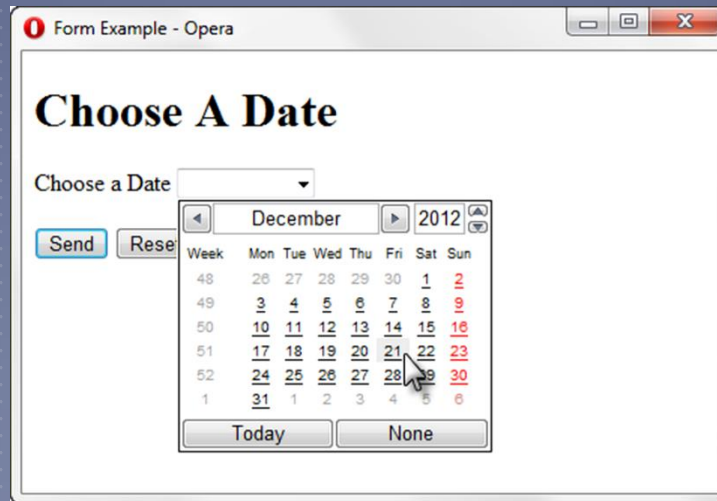
# HTML5 EMBED ELEMENT



```
<embed type="application/x-shockwave-flash"
      src="fall5.swf"
      width="640"
      height="100"
      quality="high"
      title="Fall Nature Hikes">
```

# WRITING VALID HTML

▶ Check your code for syntax errors

   ▶ Benefit:

      ▶ Valid code →

         more consistent browser display

▶ W3C HTML Validation Tool

   ▶ http://validator.w3.org

# SUMMARY

- This chapter introduced you to HTML5.
- You will use these skills over and over again as you create web pages.