

WEB DEVELOPMENT & DESIGN FOUNDATIONS WITH HTML5

Chapter 11 Key Concepts

LEARNING OUTCOMES

- ▶ **In this chapter, you will learn how to ...**
 - ▶ Describe the purpose of plug-ins, helper applications, media containers, and codecs
 - ▶ Describe types of multimedia files used on the Web
 - ▶ Configure hyperlinks to multimedia files
 - ▶ Apply the object element to display audio files, video files, and Flash multimedia
 - ▶ Configure audio and video on a web page with HTML5 elements
 - ▶ Describe features and common uses of Adobe Flash
 - ▶ Configure a Flash animation on a web page
 - ▶ Create an interactive image gallery with CSS
 - ▶ Configure the CSS3 transform and transition properties
 - ▶ Describe the purpose of the HTML5 canvas element

HELPER APPLICATIONS & PLUG-INS

▶ Helper Application

- ▶ A program that can be designated to handle a particular file type (such as .wav or.mpg) to allow the user to view or otherwise utilize the special file.
- ▶ The helper application runs in a separate window from the browser.

▶ Plug-In

- ▶ A newer and more common method
- ▶ Plug-ins run right in the browser window so that media objects can be integrated directly into the web page.

CONTAINERS & CODECS

▶ Container

- ▶ Designated by the file extension – contains the media and metadata

▶ Codec

- ▶ The algorithm used to compress the media

▶ HTML5 audio & video

- ▶ Native to the browser
- ▶ Browsers do not support the same codecs

COMMONLY USED PLUG-INS

- ▶ Adobe Flash Player
- ▶ Adobe Reader
- ▶ Windows Media Player
- ▶ Apple Quicktime

COMMON AUDIO FILE TYPES

- .wav Wave File
- .aiff Audio Interchange File Format
- .mid Musical Instrument Digital Interface (MIDI)
- .au Sun UNIX sound file
- .mp3 MPEG-I Audio Layer-3
- .ogg Ogg Vorbis (open-source)
- .m4a MPEG 4 Audio.
This audio-only MPEG-4 format is supported by Quicktime, iTunes, and iPods.

COMMON VIDEO FILE TYPES

- ▶ .mov Quicktime
- ▶ .avi Microsoft Audio Video Interleaved
- ▶ .wmv Windows Media File
- ▶ .flv Flash Video File
- ▶ .mpg MPEG (Motion Picture Experts Group)
- ▶ .m4v .mp4 (MPEG-4)
- ▶ .ogv Ogg Theora (open-source)
- ▶ .webm VP8 codec (open video format, free)

COPYRIGHT ISSUES

- ▶ Only publish web pages, images, and other media that you have personally created or have obtained the rights or license to use.
- ▶ Ask permission to use media created by another person instead of simply “grabbing” it.
- ▶ All work (including web pages) are automatically copyrighted even if there is not copyright mark or date.
- ▶ Fair Use Clause of the Copyright Act
- ▶ Creative Commons – A new approach to copyright

CONFIGURE AUDIO & VIDEO

- ▶ Most basic method to provide audio or video files:
 - ▶ Hyperlink

```
<a href="wdfpodcast.mp3" title="Web Design Podcast">Web Design Podcast</a>
```



XHTML: USING <OBJECT> & <PARAM /> TAGS TO EMBED AUDIO

```
<object data="soundloop.mp3" height="50" width="100"  
type="audio/mpeg" title="Music Sound Loop">  
  <param name="src" value="soundloop.mp3" />  
  <param name="controller" value="true" />  
  <param name="autoplay" value="false" />  
</object>
```



XHTML: USING <OBJECT> AND <PARAM /> TAGS TO EMBED VIDEO

```
<object data="sparky.mov" height="150" width="160"
  type="video/quicktime"
  classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
  codebase="http://www.apple.com/qtactivex/qtplugin.cab"
  title="Video of a cute Pekingese dog barking">
  <param name="src" value="sparky.mov" />
  <param name="controller" value="true" />
  <param name="autoplay" value="false" />
  <p>A video of a cute Pekingese dog barking.</p>
</object>
```



MULTIMEDIA & ACCESSIBILITY

- ▶ Provide alternate content
 - ▶ Transcript (for audio)
 - ▶ Captions (for video)
 - ▶ Text format

WHAT IS ADOBE FLASH?

- ▶ A popular multimedia application
- ▶ Create multimedia which adds visual interest and interactivity to web pages
- ▶ Flash movies are saved in “.swf” files
- ▶ Perception of speedy display
- ▶ .swf files play as they download
- ▶ Flash Player
 - ▶ Free browser plug-in
 - ▶ Widely installed on browsers

ADDING FLASH TO A WEB PAGE

<OBJECT> & <PARAM /> TAGS

<object ... *object attributes go here....*

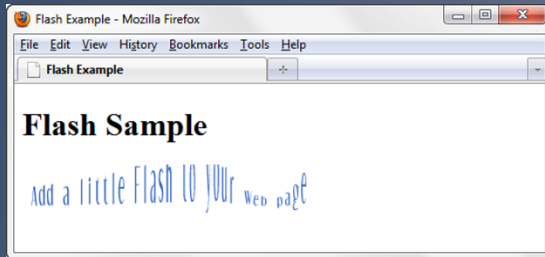
<param name="movie" ...*value attribute goes here... />*

<param name="quality" ...*value attribute goes here... />*

<param name="bgcolor" ...*value attribute goes here... />*

... a brief description of the Flash media can go here along with a link to alternate text content if appropriate...

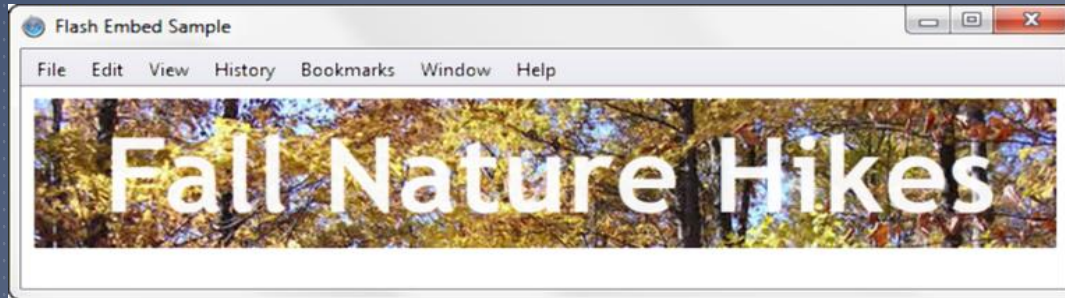
</object>



FLASH DETAIL SAMPLE

```
<object type="application/x-shockwave-flash"  
  data="flashlogo.swf" width="300" height="70"  
  title="Add a little Flash to your web page">  
  <param name="movie" value="flashlogo.swf" />  
  <param name="bgcolor" value="#ffffff" />  
  <param name="quality" value="high" />  
  <p>Add a little Flash to your web page</p>  
</object>
```

HTML5 EMBED ELEMENT

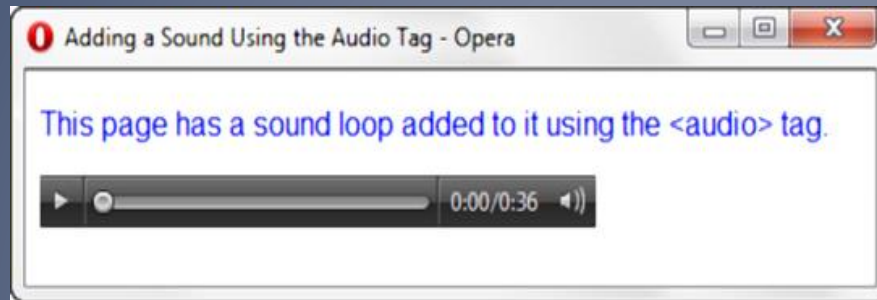


```
<embed type="application/x-shockwave-flash"  
  src="fall5.swf"  
  width="640"  
  height="100"  
  quality="high"  
  title="Fall Nature Hikes">
```

CHECKPOINT

1. List three common web browser plug-ins and describe their use.
2. Describe issues involved with adding media such as audio or video to a web page.
3. Describe a disadvantage of using Flash on a web page.

HTML5 AUDIO & SOURCE ELEMENTS



```
<audio controls="controls">
```

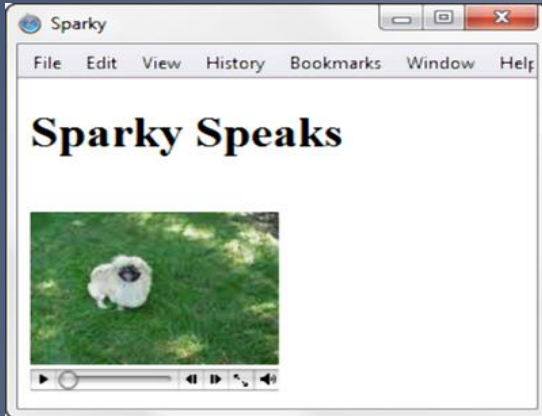
```
<source src="soundloop.mp3" type="audio/mpeg">
```

```
<source src="soundloop.ogg" type="audio/ogg">
```

```
<a href="soundloop.mp3">Download the Audio File</a> (MP3)
```

```
</audio>
```

HTML5 VIDEO & SOURCE ELEMENTS



```
<video controls="controls" poster="sparky.jpg"
  width="160" height="150">
  <source src="sparky.m4v" type="video/mp4">
  <source src="sparky.ogv" type="video/ogg">
  <a href="sparky.mov">Sparky the Dog</a> (.mov)
</video>
```


CHECKPOINT

1. Describe a benefit of using the new HTML5 video and audio elements.
2. Describe the purpose of the transform property.

CSS IMAGE GALLERY

- Configure each thumbnail image:

```
<li><a href="photo1.jpg">
    <span><br>Golden Gate Bridge </span></a>
</li>
```

- The key CSS:

```
#gallery span { display: none; }
#gallery a:hover span { display: block;
    position: absolute;
    top: 10px;
    left: 300px;
    text-align: center; }
```



CSS3 TRANSFORM PROPERTY

▶ Allows you to rotate, scale, skew, or move an element

▶ Example:

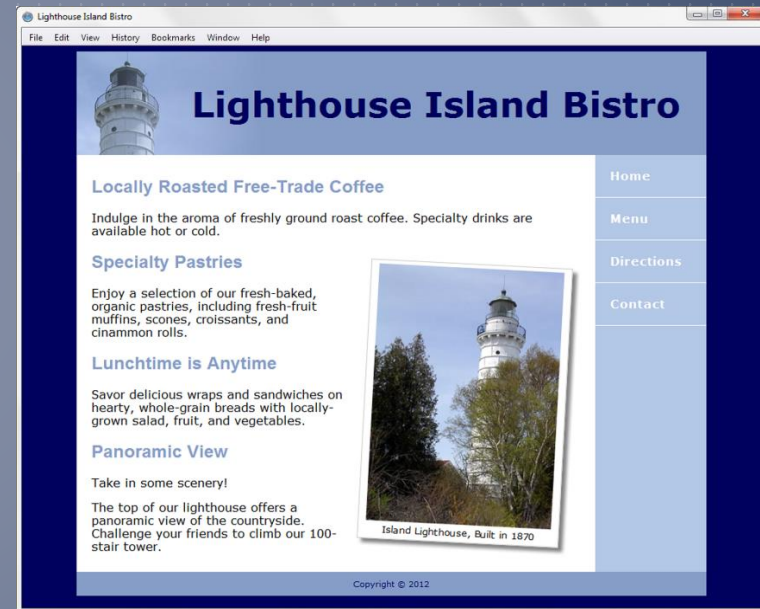
-webkit-transform: rotate(3deg);

-moz-transform: rotate(3deg);

-o-transform: rotate(3deg);

-ms-transform: rotate(3deg);

transform: rotate(3deg);



CSS3 TRANSITION PROPERTY

- ▶ Provides for changes in property values to display in a smoother manner over a specified time.

- ▶ Example:

background-color: #cccccc;

-webkit-transition: background-color 1s ease-in;

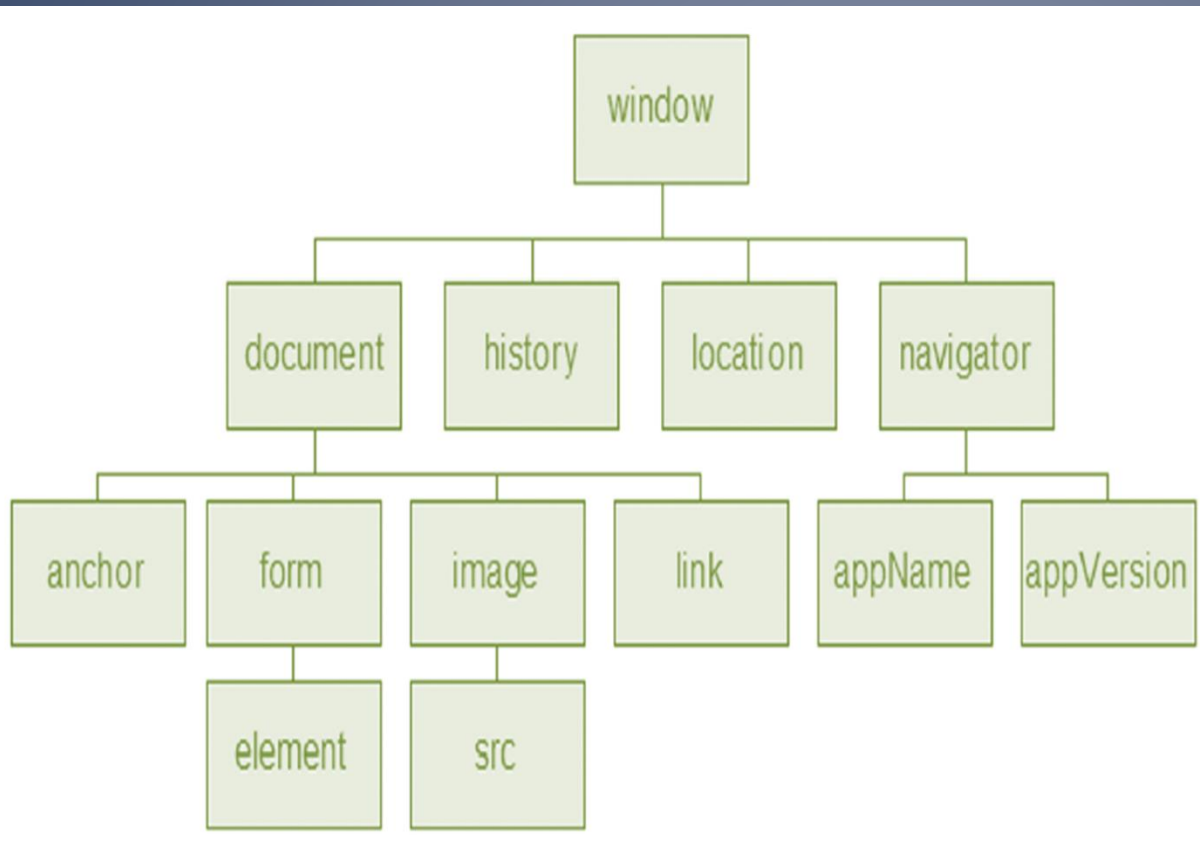
-moz-transition: background-color 1s ease-in;

-o-transition: background-color 1s ease-in;

transition: background-color 1s ease-in;



DOCUMENT OBJECT MODEL (DOM)



A portion of the DOM is shown at the left.

Defines every object and element on a Web page

Hierarchical structure

Accesses page elements and apply styles to page elements

MULTIMEDIA & ACCESSIBILITY

- ▶ Provide links to plug-ins
- ▶ Provide text descriptions and captions
- ▶ Verify keyboard access
- ▶ Check for screen flickering
- ▶ Verify functionality if JavaScript is disabled
- ▶ If media is used for main navigation, provide plain text links

SUMMARY

- ▶ This chapter introduced the HTML & CSS techniques and technologies used to configure sound, video, and interactivity on web pages.
- ▶ Issues related to accessibility and copyright were also discussed.
- ▶ The number one reason for visitors to leave web pages is too long of a download time. When using multimedia, be careful to minimize this issue.