CIS 300
Web Design and Development

Chapter 11 | Media and Interactivity Basics

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

Learning Objectives

2

- Describe types of multimedia files used on the Web
- Configure hyperlinks to multimedia files
- Configure audio and video on a web page with HTML5 elements
- Configure a Flash animation on a web page
- Describe features and common uses of JavaScript and jQuery
- Use the CSS3 transform and transition properties
- Create an interactive image gallery with CSS
- Configure a drop-down interactive menu with CSS
- Describe the purpose of geolocation, web storage, offline web applications, and canvas HTML5 APIs

ASU W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

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

ASU W. P. CAREY SCHOOL of BUSINESS ARIZONA STATE UNIVERSITY

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.

ASU W. P. CAREY SCHOOL of BUSINESS ARIZONA STATE UNIVERSITY

Commonly Used Plug-ins

5

- Adobe Flash Player
- Adobe Reader
- Windows Media Player
- Apple QuickTime

Containers & Codecs

6

- 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
    http://www.jwplayer.com/html5/

Configure Audio & Video   7

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

Web Design Podcast

Web Design Podcast

Podcast Episode 1 (MP3)

Podcast Transcript

What is Adobe Flash?   8

- 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

HTML5 Embed Element
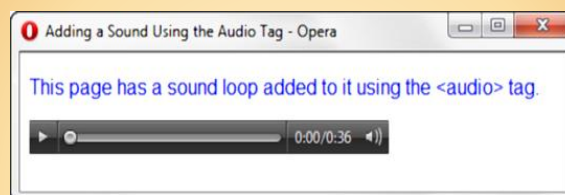
```
<embed type="application/x-shockwave-flash"
       src="fall5.swf"
       width="640"
       height="100"
       quality="high"
       title="Fall Nature Hikes">
```

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

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>
```

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 Video & Source Elements
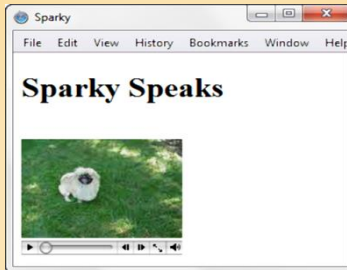
```
<video controls="controls" poster="sparky.jpg"
      width="160" height="150">
         <source src="sparky.m4v" type="video/mp4">
         <source src="sparky.ogv" type="video/ogg">
  <a href="sparky.mov">Sparky the Dog</a> (.mov)
</video>
```
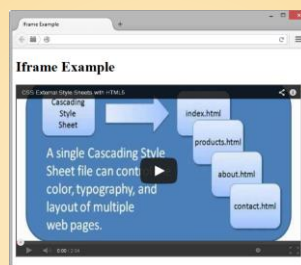
W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

Use the iframe element to embed YouTube Video

```
<iframe src="http://www.youtube.com/embed/VIDEO_ID"  width="640"
height="385">
   View the
<a href="http://www.youtube.com/watch?v=VIDEO_ID">YouTube Video</a>
</iframe>
```

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

CSS3 Transform Property
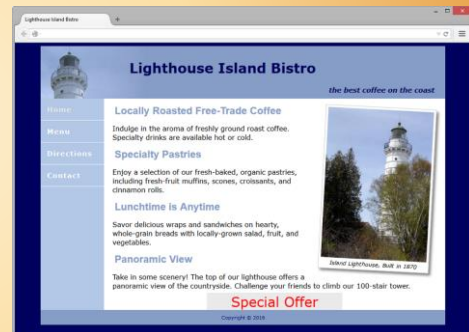
13

- Allows you to rotate, scale, skew, or move an element
- Examples:
  - Rotate 3 degrees:

    transform: rotate(3deg);

- Display twice as large:

    transform: scale(2);

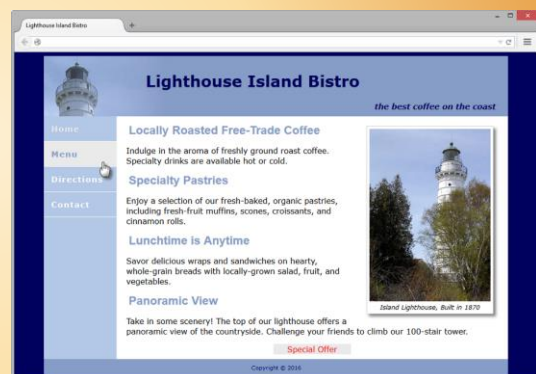W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

CSS3 Transition Property

14

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

- Example:

  nav a:hover { color: #869dc7; background-color: #eaeaea; transition: background-color 2s linear; }

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

CSS Image Gallery

- Configure each thumbnail image:
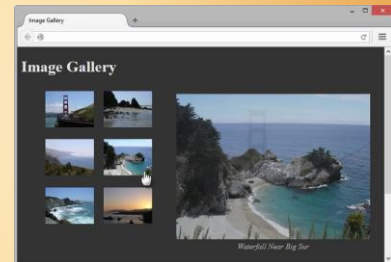
```
<li><a href="photo1.jpg"><img src="photo1thumb.jpg"
width="100" height="75" alt="Golden Gate Bridge">
    <span><img src="photo1.jpg"  width="400"  height="300"
  alt="Golden Gate Bridge"><br>Golden Gate Bridge
</span></a>
</li>
```

- The CSS:

```
#gallery span { position: absolute;
            left: -1000px;; }
#gallery a:hover span   {
            position: absolute;
            top: 16px; left: 320px;
            text-align: center; }
```
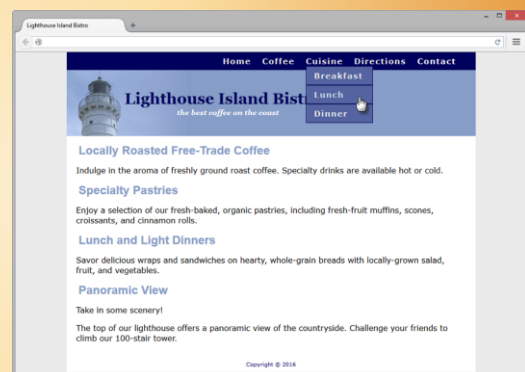
W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

CSS Drop Down Menu

- Configure nav container with position relative
- Code submenu (drop down menu) ul element with the parent li element
- Configure submenu ul element to initially not display
- Configure submenu ul element with absolute positioning

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

What is JavaScript?

17

- Object-based scripting language
- Manipulates the objects associated with a Web page document:
  - The window
  - The document
  - The elements such as forms, images, hyperlinks, etc.

ASU W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

Common Uses of JavaScript

18

- Display a message box
- Select list navigation
- Edit and validate form information
- Create a new window with a specified size and screen position
- Image Rollovers
- Status Messages
- Display Current Date
- Calculations

ASU W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

Exploring jQuery

- A JavaScript library intended to simplify client-side scripting
  - Example: http://webdevfoundations.net/jquery

- API – Application Programming Interface
  - A protocol that allows software components to communicate – interacting and sharing data.

- The jQuery API can be used to configure many interactive features, including:
  - Image slideshows, animation (moving, hiding, fading), event handling (mouse movements and mouse clicking), document manipulation, Ajax

ASU W. P. CAREY SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 APIs

- API – a protocol that allows software components to communicate – interacting and sharing data
- A variety of APIs that are intended to work with HTML5, CSS, and JavaScript are currently under development and in the W3C approval process, including:
  - geolocation
  - web storage
  - offline web applications
  - canvas

ASU W. P. CAREY SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 Geolocation

21

- Allows your web page visitors to share their geographic location
- Their location may be determined by the IP address, wireless network connection, local cell tower, or GPS hardware depending on the type of device and browser.
- JavaScript is used to work with the latitude and longitude coordinates provided by the browser.
- Examples:
  - http://webdevfoundations.net/geo
  - http://html5demos.com/geo

ASU W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 Web Storage

22

- Traditionally, the JavaScript cookie object has been used to store information in key-value pairs on the client (the website visitor's computer).
- NEW FOR HTML5: Web Storage API
  - provides two new ways to store information on the client side:
    local storage and session storage.
  - Advantage: increase in the amount of data that can be stored (5MB per domain).
  - The localStorage object stores data without an expiration date.
  - The sessionStorage object stores data only for the duration of the current browser
  - JavaScript is used to work with the values stored in the localStorage and sessionStorage objects.
- Examples:
  - http://webdevfoundations.net/storage
  - http://html5demos.com/storage

ASU W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 Offline Web Applications

23

- An offline web application enables website visitors to view documents and access web applications even when they are not connected to the Internet.
- A web application (app) can be written with HTML, CSS and JavaScript and can run in any browser – as long as you are online.
- An offline web application takes this one step further and stores the HTML, CSS, and JavaScript files on the visitor's device for use offline, even when the device is not connected to the Internet.
- Examples:
  - http://html5demos.com/offlineapp
  - http://www.w3schools.com/html/html5_app_cache.asp

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

HTML5 Canvas Element

24

- Configures dynamic graphics
- Draw lines, shapes, text, image
- Interact with actions taken by the user
- Canvas API (application programming interface)
- JavaScript – client-side scripting language

The Canvas Element
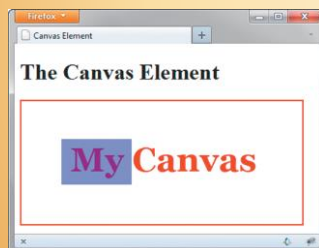
My Canvas

```
<script type="text/javascript">
function drawMe() {
 var canvas = document.getElementById("myCanvas");
 if (canvas.getContext) {
  var ctx = canvas.getContext("2d");
  ctx.fillStyle = "rgb(255, 0, 0)";
  ctx.font = "bold 3em Georgia";
  ctx.fillText("My Canvas", 70, 100);
  ctx.fillStyle = "rgba(0, 0, 200, 0.50)";
  ctx.fillRect (57, 54, 100, 65);
 }
}
</script>
```

W. P. CAREY
SCHOOL of BUSINESS
ARIZONA STATE UNIVERSITY

See you in the next video!