

# Tutorial 7: Working with Multimedia



Computer Science Department  
University of Central Florida

*COP 3175 – Internet Applications*



# Objectives

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- Explore various multimedia applications on the Web
- Learn about sound file formats and properties
- Embed a sound clip
- Work with object parameters
- Work with ActiveX objects
- Insert IE conditional comments



# Objectives

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- Learn about video file formats and properties
- Embed a video clip
- Work with the embed element
- Nest embedded objects
- Explore the history of Java
- Embed a Java applet
- Work with applet parameters



# Tutorial 7 Website

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## ■ **Jumbo Popcorn**

- A “movie” website having info about movies and cinematic history
- Made by Maxine Michaels
- Maxine wants to add sound and video to the site, and she’s come to us for help
  
- CGS3175 students to the rescue!




# Tutorial 7 Website

## ■ Modifying site:

- She wants us to insert an audio clip in the “Listen Up” section
- and a video clip in the “In Focus” section

A Web site for lovers of classic films



## Jumbo Popcorn

Home
Movies
Actors
Directors
Genres
My Picks
Links

### Royal Wedding (1951) ★★☆☆

**Overview**

[Title Page](#)  
[User Comments](#)  
[Reviews](#)  
[Quotes](#)  
[Trivia](#)  
[Awards](#)

**Showings**

[Trailers](#)  
[TV Schedule](#)  
[DVD Details](#)  
[Technical Specs](#)  
[Soundtrack](#)

**Featuring**

[Fred Astaire](#)  
[Jane Powell](#)  
[Peter Lawford](#)  
[Keenan Wynn](#)  
[Alan Jay Lerner](#)

**You Might Also Enjoy**

[Finian's Rainbow](#)  
[Seven Brides for 7 Brothers](#)  
[Top Hat](#)  
[Swing Time](#)  
[Three Little Words](#)  
[Roberta](#)  
[Shall We Dance?](#)  
[The Gay Divorcee](#)  
[Easter Parade](#)  
[Funny Face](#)  
[Daddy Long Legs](#)

**Cast**

Tom Bowen ... Fred Astaire  
 Ellen Bowen ... Jane Powell  
 Lord John Brindale ... Peter Lawford  
 Anne Ashmond ... Sarah Churchill  
 Irving Klinger ... Keenan Wynn  
 Edgar Klinger ... Keenan Wynn  
 James Ashmond ... Albert Sharpe

**Synopsis**



Tom Bowen (Fred Astaire) and Ellen Bowen (Jane Powell) are a brother and sister dance team from New York. Their agent (Keenan Wynn) books them in London for performances during the time of the royal wedding. Aboard a cruise ship to London, Ellen becomes involved with aristocrat and playboy, Lord John Brindale (Peter Lawford). In London, Tom meets and falls in love Anne Ashmond (Sarah Churchill), a dancer in his show. Despite a few minor complications, it all ends happily as the two couples find love and marriage on the day of the royal wedding.

*Royal Wedding* is famous for several dance sequences, including a classic number in which Astaire appears to dance on the ceiling and walls of his hotel room. Jane Powell proves to be an elegant and athletic partner for Astaire; though perhaps his best duet of the movie takes place with a hat rack he discovers on the cruise to England. This is one of Astaire's best and I highly recommend it.

**Listen Up**

The music for *Royal Wedding* was composed by Burton Lane, who is best known for his work in *Finian's Rainbow* (1947) and his Grammy Award-winning *On a Clear Day You Can See Forever* (1965). Lane's greatest musical accomplishment may very well be his discovery of an 11-year-old singing phenom named Frances Gumm, whom the world now knows better as Judy Garland.

**In Focus**

The high point of *Royal Wedding* is the "Ceiling Dance" in which Fred Astaire appears to literally dance on the ceiling and walls of his hotel room. The effect was accomplished by putting the whole set inside of a 20-foot diameter rotating cage. As the cage turned, Astaire would seamlessly dance across the four sides of the box, creating the illusion of weightlessness. The same technique would later be used to simulate a zero gravity environment in *2001: A Space Odyssey*.

Home
Movies
Actors
Directors
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My Picks
Links

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Tutorial 7: Working with Multimedia

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# Introducing Multimedia

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- **Multimedia and Bandwidth**
  - When dealing with sound and video on web pages, one of the most important issues to deal with is bandwidth
    - **Bandwidth** is a measure of the amount of data that can be sent through a communication pipeline each second
      - aka the “data transfer rate”
    - Years ago, slow bandwidth connections limited websites from having multiple video clips
    - Two developments occurred: high speed internet, and file compression technology
    - Now we have sites, such as YouTube, which are solely dedicated to the dissemination of multimedia



# Introducing Multimedia

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- Multimedia can be added to a Web page two different ways:
  - **External media:** media file accessed through a link
    - Useful for a low bandwidth, as it allows the user to **choose** whether or not they want to see/hear the clip
    - You add external media through a hypertext link:
    - Example:

```
<a href="royal.mp3">Royal Wedding Music</a>
```
    - Upon clicking the link, the file is downloaded and then played in the users media player program
      - Such as Windows Media Player or Apple's QuickTime player



# Introducing Multimedia

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- Multimedia can be added to a Web page two different ways:
  - **Embedded media:** placed within a Web page as an embedded object
    - Similar to placing an inline image in a Web page
      - So the embedded media is now part of the page content
    - To play embedded media, the user's browser will often need to have a plug-in or add-on, which allows the browser to play the multimedia clip
      - This plug-in will have controls to play the media clip, pause it, rewind it, etc.



# Introducing Multimedia

The image shows a web browser window titled "Comparing External and Embedded Media" with the address bar showing "C:\example.htm". The page content includes instructions: "To view an external media file, click the [link](#) to the file." and "To access and view an embedded media clip, click the controls on the video plug-in below." Below the text is a video player titled "The Ceiling Dance" with playback controls. A red arrow points from the "link" text to a separate window titled "royal wedding" which also displays "The Ceiling Dance" video. Red boxes with arrows label the embedded player as "embedded media clip" and "plug-in controls to play the media clip", and the external window as "external media clip".



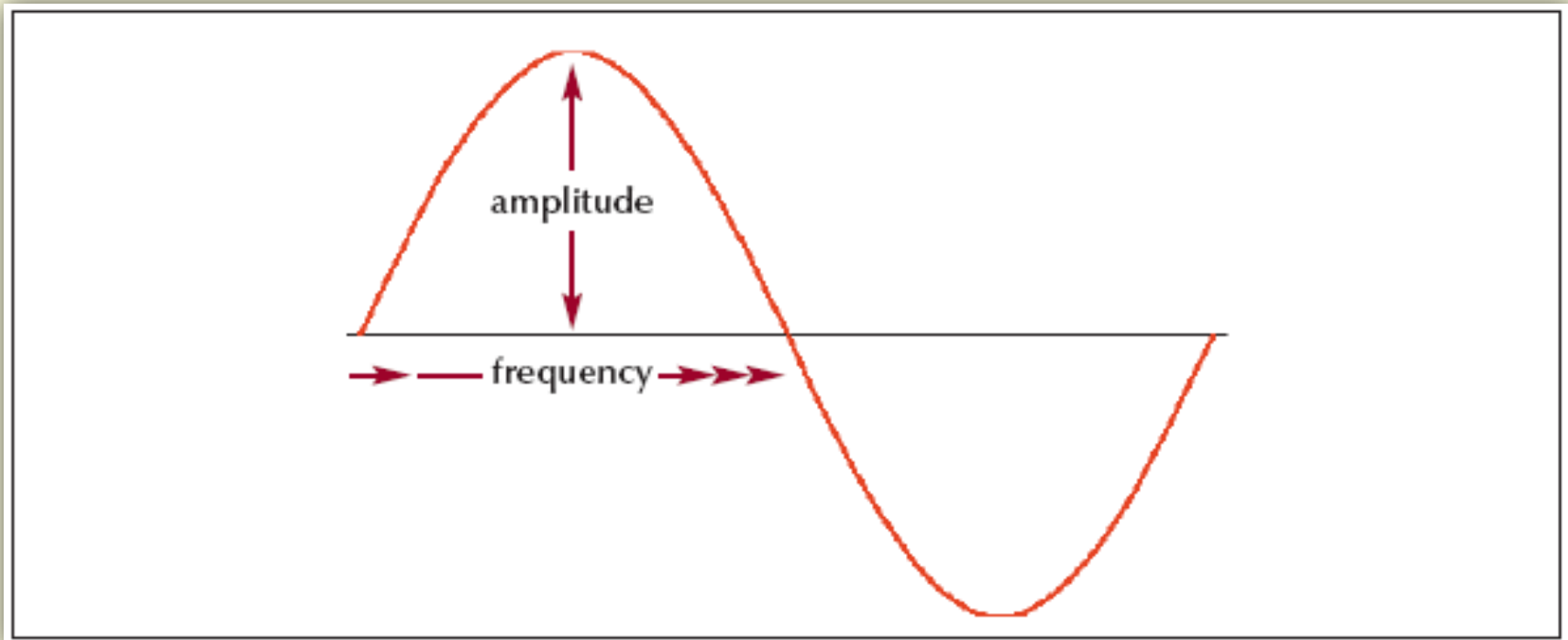
# Exploring Digital Audio

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- Before adding sound to your Web site, we first explore issues related to digital audio
- Every sound wave is composed of two components:
  - **Amplitude**- the height of the wave
    - Relates to sound's volume
      - The higher the amplitude, the louder the volume
  - **Frequency**- the speed at which the sound wave moves
    - Relates to sound's pitch
      - The higher the frequency, the higher the pitch



# Exploring Digital Audio





# Exploring Digital Audio

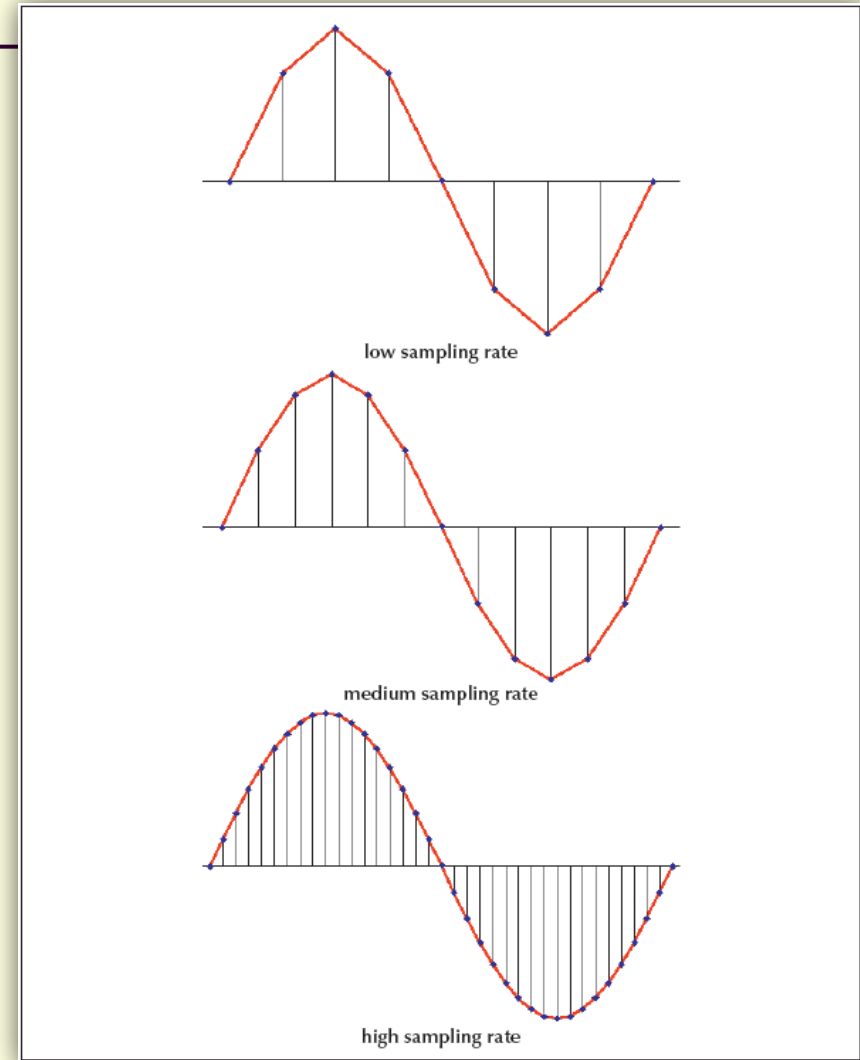
---

- You hear sounds as a continuously varying signal, made by the vibrations the sound makes on your eardrum
  - This sound must be converted into small pieces (or bits) of information, allowing us to store it digitally as a computer file
- **Digital** recording measures the sound's amplitude at discrete moments in time
  - Each measurement is called a **sample**
    - Samples per second taken is called the **sampling rate**



# Exploring Digital Audio

- Sampling rates:
  - Higher sampling rate means more samples are taken per second
  - Result is a digital recording that closely matches the original
- Tradeoff:
  - High sampling rate results in a much larger sound file





# Exploring Digital Audio

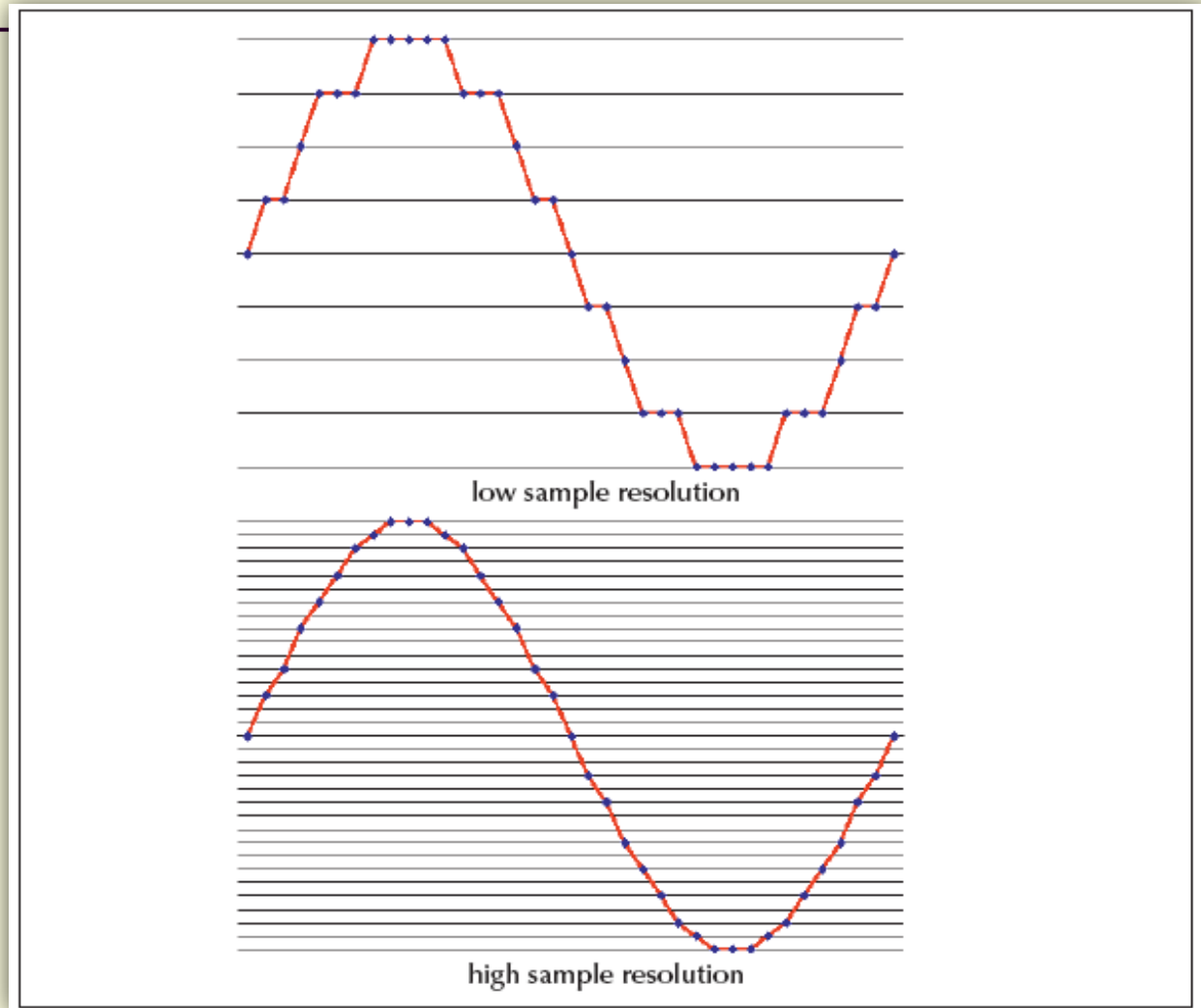
---

- **Sampling resolution** (also called **bit depth**) indicates the precision in measuring the sound within each sample.
  - 8-bit, 16-bit, and 32-bit are common values
    - Higher the value, better quality of sound
    - But also a larger file
    - Sound files of 16-bit usually have a good balance between sound quality and file size
- **Number of sound channels:**
  - Monaural (single channel), Stereo (two channel), or even more channels



# Exploring Digital Audio

- Sample resolution:





# Exploring Digital Audio

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- **File size** of audio clips:
  - Directly related to the sampling rate, the sample resolution, and the number of channels
  - This total size is expressed as the bitrate, which is number of bits required for each second of sound
    - For CDs, the bitrate is found by multiplying the sampling rate by the sample resolution and then by the number of channels
    - Resulting in a bitrate value of around 1411 Kbps
      - Too high and unnecessary for Web purposes
  - As a result, sound files used on the web often employ some type of file compression



# Exploring Digital Audio

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## ■ **File compression:**

- Reduces the size of an audio file but sometimes at the expense of sound quality
- Most common file compression: MP3
  - MP3 achieves near-CD quality sound at bitrates of 192 to 320 Kbps
  - Only minor sound degradation occurs, yet the file size is a small fraction of the original
  
- There are several other common audio file formats, as shown on the next page...



# Exploring Digital Audio

## ■ Common file formats on the Web

Format	Description
AIFF/AIFC	Audio Interchange File Format. AIFF was developed by Apple for use on the Macintosh operating system. AIFF sound files can be either 8 bit or 16 bit, can be mono or stereo, and can be recorded at several different sampling rates.
AU	Also called mlaw (mu-law) format. One of the oldest sound formats, it is primarily used on UNIX workstations. AU sound files have 8-bit sample resolutions, use a sampling rate of 8 kHz, and are recorded in mono.
MIDI	Musical Instrument Digital Interface. MIDI files cannot be used for general sound recording, like other sound formats, but are limited to synthesizers and music files. The MIDI format represents sound by recording each note's pitch, length, and volume. MIDI files tend to be much smaller in size than other sound formats.
MP3	The most popular format for downloading and storing music, MP3 compresses sound files to roughly one-tenth the size of uncompressed files while maintaining good audio quality.
RealAudio	A popular sound format on the Web, RealAudio files are designed for real-time playing over low- to high-bandwidth connections. RealAudio files tend to be much smaller than AU or WAV files, but the sound quality is usually not as good.
SND	The SND format is used primarily on the Macintosh operating system for creating system sounds. This format is not widely supported on the Web.
WAV	WAV is the standard audio format for Windows PCs and is commonly used for storing uncompressed CD-quality sound files. In its uncompressed format, a WAV file will require about 10 megabytes per minute of sound; however, compression algorithms are available to reduce the file size.
WMA	Windows Media Audio is a proprietary audio format developed by Microsoft to compete with MP3s, offering near or better levels of compression than MP3s.



# Tutorial 7 Website

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- Adding audio to the Web site:
  - Maxine has a 30-second MP3 clip of the Royal Wedding, and she's named it `overture.mp3`
  - The file is a monaural recording with a sample rate of 44 kHz and a bitrate of 96 Kbps
  - And she's chosen to embed this audio file into the Web page
  
- So now we have to study how to use embedded objects...



# Working with Embedded Objects

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- Most browsers support two elements for embedding objects within a Web page:
  - The embed element
    - This is the older approach, but it is not part of the W3C specifications and will be rejected by strict applications of XHTML.
  - The object element
    - To be in compliance with W3C specs, you should use the object element
  
- Because both elements are common, we'll go over both



# Working with Embedded Objects

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- The object element:

- Syntax:

- `<object attributes>`

- `parameters`

- `</object>`

- where attributes are the attributes that define the object and parameters are values that determine how the embedded object is rendered and played within the browser

- Can be used for almost any type of content

- Sound and video clips, graphic images, PDF files, and even the content of other Web pages



# Working with Embedded Objects

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- Object Data Sources and MIME Types

- To specify the source of the content, you add the data attribute:

```
<object data="url"> ... </object>
```

- where url is the filename and location of the object file

- Example:

- The following code specifies `overture.mp3` as the objects data source:

```
<object data="overture.mp3"> ... </object>
```



# Working with Embedded Objects

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- Object Data Sources and MIME Types
  - The object element can be used with a wide variety of data types
  - So you must indicate the type of object by adding the type attribute:  

```
<object data="url" type="MIME type"> ...  
</object>
```
  - where MIME type describes the type of data contained in the object
    - One common MIME type we've used is text/css
    - Another MIME type is audio/mpeg, used for MP3 files



# Working with Embedded Objects

- Sound file MIME types:

Format	File Extension	MIME Type
AIFC	aifc	audio/x-aiff
AIFF	aif	audio/x-aiff
AIFF	aiff	audio/x-aiff
AU	au	audio/basic
MIDI	mid	audio/mid
MIDI	rmi	audio/mid
MP3	mp3	audio/mpeg
MP3	mp3	audio/x-mpeg
RealAudio	ra	audio/x-pn-realaudio
RealAudio	ram	audio/x-pn-realaudio
SND	snd	audio/basic
WAV	wav	audio/wav
WAV	wav	audio/x-wav



# Tutorial 7 Website

- Adding audio to the Web site:
  - We now add the 30-second overture.mp3 file with a MIME type of audio/mpeg

```
<div class="boxContent">
  <h2>Listen Up</h2>

  <p style="text-align: center">
    <object data="overture.mp3" type="audio/mpeg">
  </p>

  <p>The music for <i>Royal wedding</i> was composed by Burton Lane,
  who is best known for his work in <i>Finian's Rainbow </i>(1947)
  and his Grammy Award-winning <i>On a Clear Day You Can See
  Forever </i>(1965). Lane's greatest musical accomplishment may
  very well be his discovery of an 11-year-old singing phenom named
  Frances Gumm, whom the world now knows better as Judy Garland.</p>
</div>
```

MIME type of an MP3 sound file

MP3 sound file



# Tutorial 7 Website

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- Adding audio to the Web site:
  - The code we just entered tells the browser the source and type of the object
  - But it doesn't dictate how the sound clip should be rendered, played, or even displayed
  - Some of that is determined by the plug-in used by the browser
  - But we can add explicit instructions to control how the plug-in will operate and interact with the sound file



# Working with Embedded Objects











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- Setting the Object Width and Height
  - Embedded sound clips are displayed with controls that allow the user to start, pause, rewind, and control the volume
    - You can define how these controls appear by setting the size of the clip using the width and height attributes:  
**width="value" height="value"**
      - where the width and height attributes set the size of the control in pixels
      - Note: these attributes are required for XHTML code
      - For sound clips, height should be at least 25 pixels
      - The width determines how many buttons are displayed, as shown on the following graphic



# Working with Embedded Objects

- Plug-in controls under different width values

Plug-in	Width	Description	Image
QuickTime Player	17px	Displays only the play button	
	33px	Adds the popup menu button	
	49px	Adds a volume control	
	74px	Adds a progress bar	
	106px	Adds fast-forward and reverse buttons	
	150px	Extends the length of the progress bar	
Windows Media Player	42px	Displays only the play button	
	66px	Adds the stop button	
	164px	Adds fast-forward and reverse buttons	
	279px	Adds a volume control	



# Tutorial 7 Website

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- Setting the object width and height
  - We set the height to 25 pixels and the width to 280 pixels to ensure all of the sound control buttons appear on the Web page

```
<p style="text-align: center">  
  <object data="overture.mp3" type="audio/mpeg"  
    width="280" height="25">  
  </object>  
</p>
```

- Now we have to define how users interact with those controls...



# Working with Embedded Objects

## ■ Working with Parameters

- **Parameters** define the appearance and behavior of embedded objects
- These parameters are defined by adding the parameter elements within the object element:

```
<object attributes>  
  <param name="name1" value="value1" />  
  <param name="name2" value="value2" />  
  <param name="name3" value="value3" />  
  ...  
</object>
```

- where name1, name2, name3, etc. are parameter names, and value1, value2, value3, etc. are the values of each parameter



# Working with Embedded Objects

## ■ Working with Parameters

- One parameter common to most plug-ins for embedded sounds is the src parameter
  - It defines the source of the sound file

```
<object attributes>  
  <param name="src" value="overture.mp3" />  
</object>
```

- Note: the source parameter seems awfully similar to the data attribute
  - Indeed, it is!
  - However, it is required for some browsers (IE)
  - So you must use it in addition to the data attribute



# Working with Embedded Objects

## ■ Parameters for QuickTime and Windows Media Player

Plug-in	Parameter	Description	Value(s)
QuickTime Player	autoplay	Starts playing the clip automatically when the page loads	true   false
	bgcolor	Sets the background color for the space allotted to the object	#rrggbb   color name
	controller	Specifies whether or not to show the object controls	true   false
	endtime	Specifies the time in the clip at which playback ends	hh:mm:ss
	href	Specifies a page to load when the user clicks on the object	url
	loop	Plays the clip in a continuous loop, forward, backward, or both ( <i>palindrome</i> )	true   false   <i>palindrome</i>
	src	The source of the clip	url
	starttime	Specifies the time in the clip at which playback begins	hh:mm:ss
	volume	Sets the initial audio volume	0 - 255
Windows Media Player	autostart	Starts playing the clip automatically when the page loads	true   false
	filename	The source of the clip	url
	mute	Specifies whether or not the clip should be initially muted	true   false
	selectionstart	Specifies the time in the clip at which playback begins	seconds
	selectionstop	Specifies the time in the clip at which playback ends	seconds
	playcount	Specifies the number of times the clip will play	integer
	showcontrols	Specifies whether or not to show the object controls	true   false
	volume	Sets the initial audio volume	-10,000 - 0



# Working with Embedded Objects

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## ■ Working with Parameters

- Example: say you want the sound clip to play automatically when the page is opened
  - If the browser uses the QuickTime plug-in, you use:  
`<param name="autoplay" value="true" />`
  - But for Windows Media Player, the parameter is slightly different:  
`<param name="autostart" value="true" />`
- If you are unsure which plug-in the browser will use, you should include both parameter values in your HTML code



# Tutorial 7 Website

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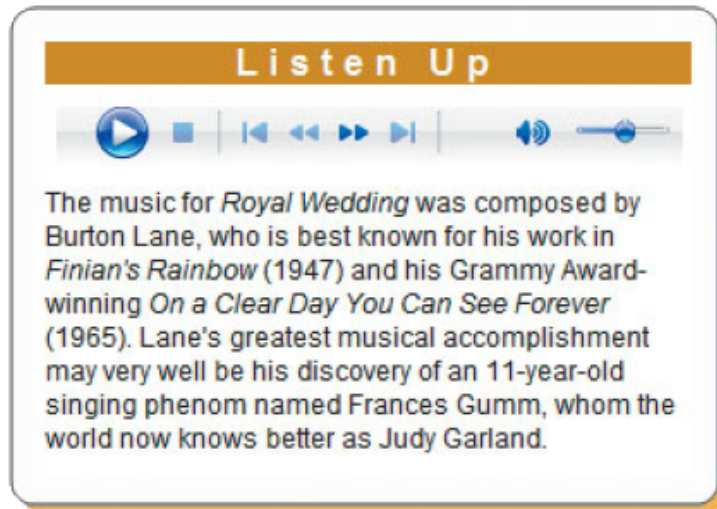
- Adding parameter values
  - Maxine wants the controls displayed, but she doesn't want the clip to play automatically
  - We add parameter elements for both plug-ins:

```
<object data="overture.mp3" type="audio/mpeg"
width="280" height="25">
  <param name="src" value="overture.mp3" />
  <param name="autoplay" value="false" />
  <param name="autostart" value="false" />
  <param name="controller" value="true" />
  <param name="showcontrols" value="true" />
</object>
```



# Tutorial 7 Website – Result

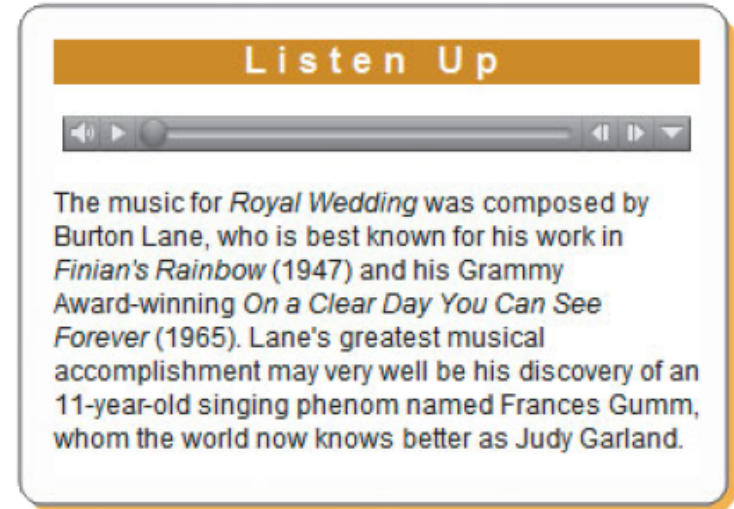
## Plug-ins for the overture.mp3 plug-in



**Listen Up**

The music for *Royal Wedding* was composed by Burton Lane, who is best known for his work in *Finian's Rainbow* (1947) and his Grammy Award-winning *On a Clear Day You Can See Forever* (1965). Lane's greatest musical accomplishment may very well be his discovery of an 11-year-old singing phenom named Frances Gumm, whom the world now knows better as Judy Garland.

sound clip with Windows Media Player



**Listen Up**

The music for *Royal Wedding* was composed by Burton Lane, who is best known for his work in *Finian's Rainbow* (1947) and his Grammy Award-winning *On a Clear Day You Can See Forever* (1965). Lane's greatest musical accomplishment may very well be his discovery of an 11-year-old singing phenom named Frances Gumm, whom the world now knows better as Judy Garland.

sound clip with QuickTime Player



# Tutorial 7 Website

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- Maxine is happy!
  - However, she doesn't like that some users will see the QuickTime plug-in while others will see the Windows Media Player plug-in
    - She wants it consistent
  - Since QuickTime is available for both Windows and Macs, she wants us to specify that particular plug-in
  
- Which brings us to ActiveX Components...



# Working with ActiveX Components

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- Different browsers support embedded media in different ways
  - Internet Explorer uses a technology called **ActiveX**, which allows components to run from within a variety of Windows programs
  - There are literally thousands of ActiveX components available to the programmer and end user
  - The problem: only designed for Windows



# Working with ActiveX Components

- The classid Attribute
  - Each ActiveX control is identified by a **class id**
  - The classid is determined by the manufacturer of the ActiveX control
  - Here are several common classid values:

ActiveX Control	Class ID
Flash Shockwave Player	D27CDB6E-AE6D-11cf-96B8-444553540000
QuickTime Player	02BF25D5-8C17-4B23-BC80-D3488ABDDC6B
RealAudio Player	CFCDA03-8BE4-11cf-B84B-0020AFBBCCFA
Windows Media Player	6BF52A52-394A-11d3-B153-00C04F79FAA6
Java applet	8AD9C840-044E-11D1-B3E9-00805F499D93



# Working with ActiveX Components

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- The classid Attribute
  - To insert a specific ActiveX component into your Web page, add the classid attribute:
  - classid="clsid:id"
    - to the <object> tag, where id is the class id of the ActiveX control
  - Example: to insert the ActiveX control for the QuickTime Player, you add:
    - `classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"`
    - Note: you must enter the entire class id string with no omissions, spaces, or errors



# Working with ActiveX Components

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- The codebase Attribute
  - You may specify an ActiveX control or plug-in that the browser does not recognize
    - The browser will usually leave a space where the embedded object should have appeared
  - Solution: provide the browser with information about where to download the plug-in or control
  - You add the codebase attribute:  
`codebase="url"`
    - to the <object> tag, where url is the filename and location of the program



# Working with ActiveX Components

## ■ The codebase Attribute

- Example: embed an object using the ActiveX version of QuickTime, you would use:

```
<object classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"  
        codebase="http://www.apple.com/qtactivex/qtplugin.cab">  
  
    parameters  
  
</object>
```

- So when IE encounters this object, it first attempts to insert the ActiveX QuickTime control
- If it can't find QuickTime, it will try to access the installation files from the URL specified in the codebase attribute



# Tutorial 7 Website

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- Adding classid and codebase attributes:
  - Maxine wants both attributes added to the `<object>` tag:

```
<object data="overture.mp3" type="audio/mpeg"
  classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
  codebase="http://www.apple.com/qtactivex/qtplugin.cab"
  width="280" height="25">
  <param name="src" value="overture.mp3" />
  <param name="autoplay" value="false" />
  <param name="autostart" value="false" />
  <param name="controller" value="true" />
  <param name="showcontrols" value="true" />
</object>
```



# Working with ActiveX Components

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- Problem with ActiveX components:
  - We just successfully embedded the ActiveX QuickTime controls for the IE
  - But, we did so at the expense of removing it from other browsers!
    - Huh?
    - Remember, ActiveX controls are only designed for IE; other browsers do not support them.
    - But worse, when other browsers encounter the classid attribute, they're unable to process the <object> tag
    - So these other browsers end up ignoring the embedded object altogether!



# IE Conditional Comments

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- A possible solution: IE conditional comments
  - Unfortunately, and as you've seen, IE often implements HTML and CSS differently than other browsers
  - Sometimes the easiest way to get around this is to run one set of code for IE and one set of code for other browsers
  - To do this, we use IE's conditional comment
    - Allows us to run different code for different versions of IE as well as for different browsers



# IE Conditional Comments

- IE conditional comments

- Syntax:

- ```
<!--[if condition IE version]><!-->
```

- ```
HTML code
```

- ```
<!--<![endif]-->
```

- where condition is a condition that is either true or false, version is the version number of an IE browser, and HTML code is the code that will be run if the condition is true
      - This allows us to run code specific for IE browsers or specific for non-IE browsers



# IE Conditional Comments

- IE conditional comments

- To run code only for IE browsers, use:

```
<!--[if IE]><!-->
```

HTML code

```
<!--<![endif]-->
```

- If a non-IE browser encounters this code, it will interpret the whole structure as one long HTML comment and will not attempt to parse any of it

- To run code only for non-IE browsers, use:

```
<!--[if !IE]><!-->
```

HTML code

```
<!--<![endif]-->
```

The **!IE** means  
“not Internet Explorer”



# IE Conditional Comments

- Writing code for IE and non-IE browsers:

Internet Explorer will run the code for the ActiveX QuickTime component

```
<!--[if IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
    codebase="http://www.apple.com/qtactivex/qtplugin.cab"
    width="280" height="25">
<!--<![endif]-->

<!--[if !IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    width="280" height="25">
<!--<![endif]-->

  <param name="src" value="overture.mp3" />
  <param name="autoplay" value="false" />
  <param name="autostart" value="false" />
  <param name="controller" value="true" />
  <param name="showcontrols" value="true" />
</object>
```



# IE Conditional Comments

- Writing code for IE and non-IE browsers:

Non-IE browsers will run the standard code for the embedded MP3 sound clip

```
<!--[if IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
    codebase="http://www.apple.com/qtactivex/qtplugin.cab"
    width="280" height="25">
<!--<![endif]-->

<!--[if !IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    width="280" height="25">
<!--<![endif]-->

  <param name="src" value="overture.mp3" />
  <param name="autoplay" value="false" />
  <param name="autostart" value="false" />
  <param name="controller" value="true" />
  <param name="showcontrols" value="true" />
</object>
```



# Creating Background Sound

- Sometimes you may want background music that plays automatically (with no controls shown...so it's essentially hidden)
- The parameters for Windows Media Player:

```
<param name="autostart" value="true" />  
<param name="showcontrols" value="false" />
```

- The parameters for QuickTime:

```
<param name="autoplay" value="true" />  
<param name="hidden" value="true" />
```



# Creating Background Sound

---

- Perhaps you want the background music to play continuously (constantly repeating):

- The parameters for Windows Media Player:

```
<param name="playcount" value="0" />
```

- The parameters for QuickTime:

```
<param name="loop" value="true" />
```



# Brief Interlude: FAIL Pics





# Exploring Digital Video

---

- Digital video is very common the Web
  - Can be recorded using digital cameras, digital camcorders, cell phones, and from other devices
  - When creating video clips for distribution on the Web, you must determine what size and type of video will work best when played back over the viewer's internet connection
  - The goal is to create video that:
    1. will be easily playable by the most people
    2. Has a smooth playback making it easy to watch



# Exploring Digital Video

---

- Data Rates and Video Quality
  - Video files are composed of a series of single images called **frames**
    - shown in rapid succession creating the illusion of movement
    - Most frames follow the standard width-to-height ration (or aspect ratio) of 4:3 or 16:9
  - The number of frames shown in a period of time is the **frame rate**, expressed as frames per second
    - Higher frame rates usually (but not always) result in smoother video. DVDs are usually 24 fps, while videos used for the Web are commonly 10 to 15 fps



# Exploring Digital Video

---

- Data Rates and Video Quality
  - Reducing the frame rate decreases the file size
    - Which is a good thing!
  - Another more important factor is the data rate
    - the amount of data that has to be processed by the video player each second to play the video clip
    - The size of the frame, the frame rate, and the bit rate of any audio, attached to the video, are factored into the calculation of the data rate
  - So the question becomes, what data rate should you aim for when making videos?



# Exploring Digital Video

---

- Data Rates and Video Quality
  - The “best” data rate depends on the viewer’s connection (meaning, “best” is relative)
  - Most user’s these days have high-speed connections
    - You can often get away with a high data rate of up to 400 Kbps
    - But if your viewer’s are using a slower connection, the video will pause and be choppy
  - Reducing the data rate:
    - Reduce the frame size, frame rate, and use new video codecs that allow for greater file compression



# Video File formats

Format	Filename Extension	MIME Type	Description
AVI	.avi	video/x-msvideo	Audio/Video Interleaved. AVI is a common video file format developed by Microsoft for use with Windows. It is not always possible to play AVI files on non-Windows computers unless special software has been installed on the computer.
Flash Video	.flv	video/x-flv	FLV is a proprietary file format developed by Adobe to deliver video over the Internet using the popular Adobe Flash Player. It is the preferred file format for online video sites such as YouTube and Google Video.
MPEG	.mpg, .mpeg, .mp3	video/mpeg	Moving Pictures Group. The MPEG format allows for high compression of the video file, resulting in a smaller file size. MPEG files have good support across various browsers and operating systems but tend to be much larger than flash videos.
QuickTime	.mov	video/quicktime	QuickTime is a video format developed by Apple Computer for Windows and Apple computers. Like MPEG, QuickTime employs a compression algorithm that can result in smaller file sizes. QuickTime files require QuickTime Player, available for either Windows or the Macintosh.
RealVideo	.rm, .rv	application/ vnd.rn-realmedia	RealVideo is a video format developed by RealNetworks for transmitting live video over the Internet at both low and high bandwidths. It uses a variety of data compression techniques and requires the installation of the RealPlayer media player.
Shockwave Flash	.swf	application/ x-shockwave-flash	SWF is a proprietary file format developed by Adobe to deliver multimedia and vector graphics on the Web. An SWF file can contain animations, video, audio, interactive scripts, and control buttons. SWF files can be played using Adobe Flash Player either as a browser plug-in or a stand-alone player.
Windows Media	.wmv	video/x-ms-wmv	Developed by Microsoft, WMV is a popular video format for creating streaming video on the Web. The WMV format offers good compression and video quality, but is primarily designed for Windows users.



# Exploring Digital Video

---

## ■ Media Players

- Four standard media players used on the Web:
  - Windows Media Player, QuickTime, Flash, RealPlayer
- You want to make sure your viewers have the best chance of viewing your videos!
  - Windows Media Player comes preinstalled on Windows computers, and QuickTime is preinstalled on Macs
  - Flash comes preinstalled on **both** operating systems
  - Market surveys indicate that almost 99% of Internet viewers have access to Adobe Flash player
- So we need to know how to work with Flash...



# Working with Flash

---

- Two main file formats involved in creating a Flash video:
  - flv or Flash Video format
    - Contains the video clip that will be displayed by the Adobe Flash Player, which is usually created by converting video from another format such as avi or mpeg
  - swf or Shockwave Flash file
    - flv files are stored inside swf files
    - Contains the video, audio, animations, interactive scripts, program controls, and other features that provide real-time interactive animation for the viewer



# Working with Flash

---

- Embedding a Flash Player
  - You use the same techniques used to embed audio files
  - You simply use the object element
    - And you make one object element for IE browsers and one object element for non-IE browsers
    - And we use the IE conditional comments



# Tutorial 7 Website

---

- Embedding the Flash player
  - Maxine has the video clip with the filename `rwdance.swf`
  - The clip has a frame size of 280x210 pixels and a frame rate of 25 fps
  - She set the data rate at 500 Kbps, which she can lower at a later time if needed
  
- Here's the code...



# Tutorial 7 Website

```
<div class="boxContent">
  <h2>In Focus</h2>

  <p>The high point of <i>Royal wedding</i> is the "Ceiling Dance" in
  which Fred Astaire appears to literally dance on the ceiling and walls
  of his hotel room. The effect was accomplished by putting the whole set
  inside of a 20-foot diameter rotating cage. As the cage turned, Astaire
  would seamlessly dance across the four sides of the box, creating the
  illusion of weightlessness. The same technique would later be used
  to simulate a zero gravity environment in <i>2001: A Space
  Odyssey</i>.</p>

  <p style="text-align: center">

  <!--[if IE]><!-->
    <object data="rwdance.swf" type="application/x-shockwave-flash"
      classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000"
      codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=9,0,115,0"
      width="280" height="239">
  <!--<![endif]>-->

  <!--[if !IE]><!-->
    <object data="rwdance.swf" type="application/x-shockwave-flash"
      width="280" height="239">
  <!--<![endif]>-->

    <param name="movie" value="rwdance.swf" />
  </object>

  </p>
</div>
```




# Tutorial 7 Website – Result

The embedded video clip from *Royal Wedding*

**In Focus**

The high point of *Royal Wedding* is the "Ceiling Dance" in which Fred Astaire appears to literally dance on the ceiling and walls of his hotel room. The effect was accomplished by putting the whole set inside of a 20-foot diameter rotating cage. As the cage turned, Astaire would seamlessly dance across the four sides of the box, creating the illusion of weightlessness. The same technique would later be used to simulate a zero gravity environment in *2001: A Space Odyssey*.



logo overlay

customized Flash Player controls



# Working with Flash

---

## ■ Flash Parameters

- Maxine's embedded clip only had one parameter, which identified the swf file
- Flash supports many other parameters that give control over the appearance and behavior of the Flash file
- The following is a list of other Flash attributes and parameters...



# Flash Parameters

Parameter	Description	Value(s)
bgcolor	Sets the background color of the Flash player	#rrggbb   <i>color name</i>
flashvar	Contains text values that are passed to the Flash player as variables to control the behavior and content of the movie	<i>text</i>
id	Identifies the embedded Flash movie so that it can be referenced	<i>text</i>
loop	Plays the movie in a continuous loop	true   false
menu	Displays the full Flash pop-up when the user right-clicks the movie	true   false
name	Names the embedded Flash movie so that it can be referenced	<i>text</i>
play	Starts playing the movie automatically when the page loads	true   false
quality	Sets the playback quality of the movie; low values favor playback speed over quality; high values favor display quality over playback speed	low   autolow   autohigh   medium   high   best
scale	Defines how the movie clip is scaled within the defined space; a value of showall makes the entire clip visible in the specified area without distortion; a value of noborder scales the movie to fill the specified area, without distortion but possibly with some cropping; a value of exactfit makes the entire movie visible in the specified area without trying to preserve the original aspect ratio	showall   noborder   exactfit
wmode	Sets the appearance of the Flash player against the page background; a value of window causes the movie to play within its own window on the page; a value of opaque hides everything on the page behind the clip; a value of transparent allows the page background to show through transparent colors in the movie	window   opaque   transparent



# Tutorial 7 Website

- Adding parameters to the Flash Player
  - Maxine wants the playback quality set to high
  - She wants to change the menu settings so that viewers will only see the brief/smaller version of the pop-up menu (instead of the full version)
    - This is a common practice so that viewers cannot change the playback settings

```
<!--[if !IE]><!-->  
  <object data="rwdance.swf" type="application/x-shockwave-flash"  
    width="280" height="239">  
<!--<![endif]-->  
  
  <param name="movie" value="rwdance.swf" />  
  <param name="quality" value="high" />  
  <param name="menu" value="false" />  
</object>
```



# Exploring QuickTime Video

- We can embed QuickTime videos in a similar fashion:

```
<p style="text-align: center">
<!--[if IE]><!-->
  <object data="rwdance.mov" type="video/quicktime"
    classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
    codebase="http://www.apple.com/qtactivex/qtplugin.cab"
    width="280" height="239">
<!--<![endif]-->

<!--[if !IE]><!-->
  <object data="rwdance.mov" type="video/quicktime"
    width="280" height="239">
<!--<![endif]-->

  <param name="src" value="rwdance.mov" />
  <param name="autoplay" value="false" />
  <param name="controller" value="true" />
</object>
</p>
```

- See page 442 for a list of QuickTime parameters




# Exploring QuickTime Video

- Result:
  - Notice the controls are now the standard QuickTime controls
  - Instead of the custom ones used by Maxine in her Flash video

**In Focus**

The high point of *Royal Wedding* is the "Ceiling Dance" in which Fred Astaire appears to literally dance on the ceiling and walls of his hotel room. The effect was accomplished by putting the whole set inside of a 20-foot diameter rotating cage. As the cage turned, Astaire would seamlessly dance across the four sides of the box, creating the illusion of weightlessness. The same technique would later be used to simulate a zero gravity environment in *2001: A Space Odyssey*.





# Exploring Windows Media Player

- We can embed Windows Media Player videos in a similar fashion as well:

```
<p style="text-align: center">
<!--[if IE]><!-->
  <object data="rwdance.wmv" type="video/x-ms-wmv"
    classid="clsid:6BF52A52-394A-11d3-B153-00C04F79FAA6"
    codebase="http://activex.microsoft.com/activex/controls/mpplayer/en/nsmp2inf.cab#Version=6,4,5,715"
    width="280" height="245" >
<!--<![endif]-->
<!--[if !IE]><!-->
  <object data="rwdance.wmv" type="video/x-ms-wmv"
    width="280" height="245" >
<!--<![endif]-->

  <param name="url" value="rwdance.wmv" />
  <param name="autostart" value="false" />
  <param name="showcontrols" value="true" />
</object>
</p>
```


- See page 445 for a list of Media Player parameters



# Exploring Windows Media Player

**In Focus**

The high point of *Royal Wedding* is the "Ceiling Dance" in which Fred Astaire appears to literally dance on the ceiling and walls of his hotel room. The effect was accomplished by putting the whole set inside of a 20-foot diameter rotating cage. As the cage turned, Astaire would seamlessly dance across the four sides of the box, creating the illusion of weightlessness. The same technique would later be used to simulate a zero gravity environment in *2001: A Space Odyssey*.



Windows Media Player



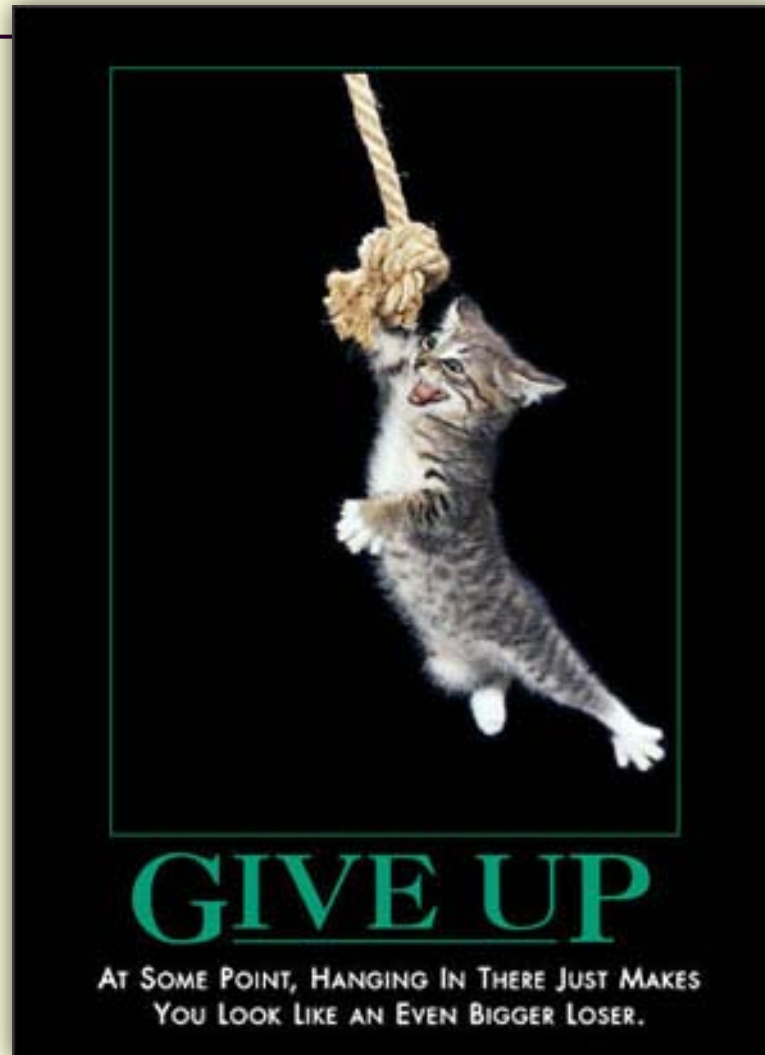
# Tutorial 7: Working with Multimedia

---

**WASN'T  
THAT  
FANTASTIC!**



# Daily Demotivator



# Tutorial 7: Working with Multimedia



Computer Science Department  
University of Central Florida

*COP 3175 – Internet Applications*



# Introducing the embed Element

---

- Other ways of inserting multimedia content
  - The <object> tag represents the W3C standard for inserting multimedia content
    - However, it may not be supported by older browsers
  - To ensure compatibility (and to make your pages backwards compatible), you should also use the embed element (along with the object tag)
  - Syntax:
    - `<embed src="url" attributes></embed>`
      - where url is the source of the multimedia content and attributes are the attributes that define that content and how it is rendered by the browser



# Introducing the embed Element

Attributes of the embed element

Attribute	Description	Value(s)
align	Specifies the horizontal alignment of the embedded element	absbottom   absmiddle   baseline   bottom   left   middle   right   texttop   top
alt	Specifies alternate text to be displayed in place of the embedded element	<i>text</i>
classid	Provides the classid for an ActiveX object or Java applet inserted as an embedded element	<i>text</i>
code	The location of class file used with embedded Java applets	<i>url</i>
codebase	The location of a Java applet class file if it differs from the location of the Web page	<i>url</i>
height	The height of the embedded element in pixels	<i>value</i>
id	Provides the id of the embedded element	<i>text</i>
name	Provides the name of the embedded element	<i>text</i>
pluginspage	Provides the location of a document containing instructions for installing the plug-in if it is not already installed	<i>url</i>
pluginurl	Provides the location of an installation file for installing the plug-in specified by the embedded element	<i>url</i>
src	The source of the media file used by the embedded element	<i>url</i>
type	The MIME type of the embedded element	<i>mime-type</i>
width	The width of the embedded element in pixels	<i>value</i>



# Introducing the embed Element

---

- The embed element:
  - To insert a swf file using the <embed> tag, use:

```
<embed src="file.swf" type="application/x-shockwave-flash"
  pluginspage="http://www.macromedia.com/go/getflashplayer"
  width="value" height="value">
</embed>
```

- Note:
  - The pluginspage attribute provides a url for browsers that do not have the Shockwave Flash plugin



# Introducing the embed Element

---

- The embed element:
  - To embed tag to insert the QuickTime player is:

```
<embed src="file.mov" type="video/quicktime"  
       pluginspage="http://www.apple.com/quicktime/download"  
       width="value" height="value">  
</embed>
```

- And for Windows Media Player:

```
<embed src="file.wmv" type="video/x-ms-wmv"  
       pluginspage="http://www.microsoft.com/Windows/MediaPlayer"  
       width="value" height="value">  
</embed>
```



# Introducing the embed Element

- The embed element:

- Note:

- The embed element does not support the <param> tag
    - So instead of adding the player attributes as <param> tags nested inside the <embed> tag, you add them as attributes of the actual <embed> tag

- Example:

```
<embed src="rwdance.mov" type="video/quicktime"  
  pluginspage="http://www.apple.com/quicktime/download"  
  width="280" height="239"  
  autoplay="false" controller="true" scale="0.7"  
  bgcolor="#FOBC4C">  
</embed>
```



# Nesting Embedded Objects

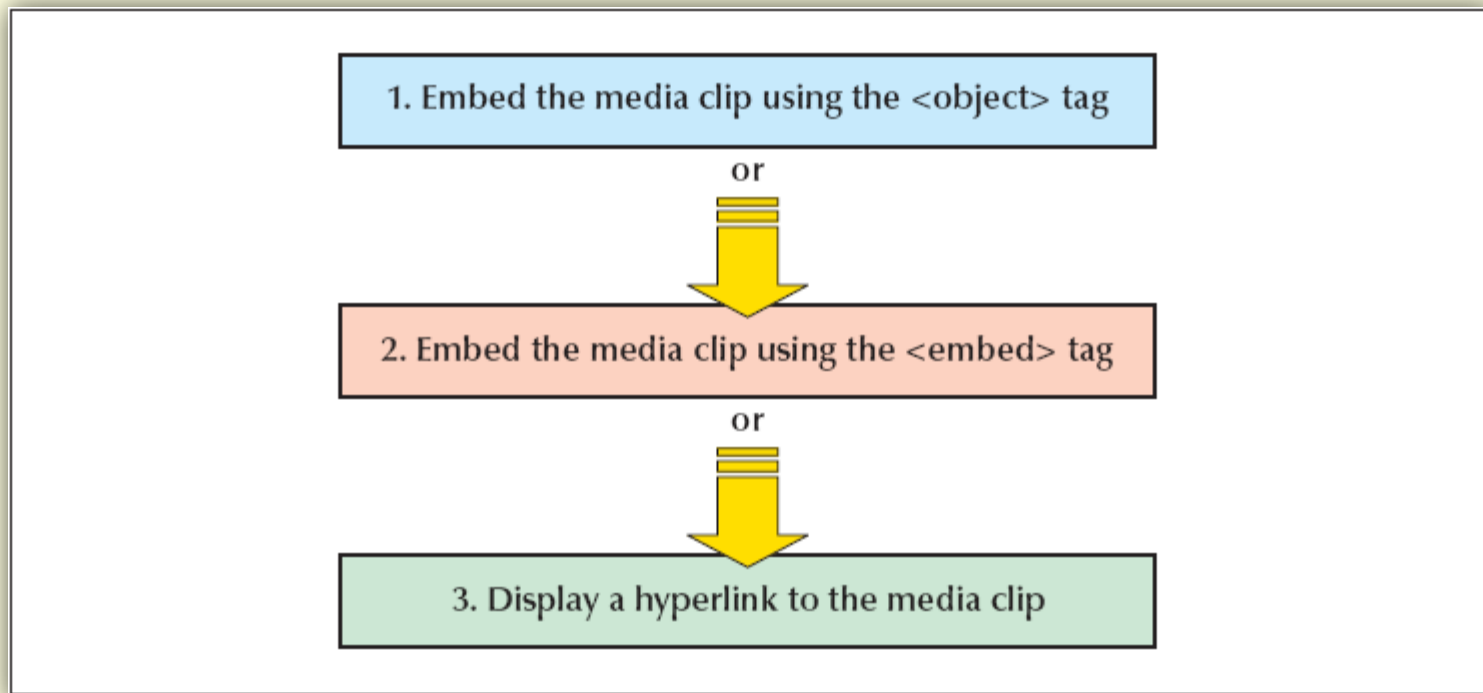
---

- Goal: provide support for as many browser configurations as possible
  - Some users may have an older browser
    - And can only use the <embed> tag
  - Other users might have newer browsers
    - And would use the object tag
  - And still, other users may have disabled these features altogether
  - We need to accommodate the various situations
    - One solution was using conditional comments
  - Another solution: Nesting media objects



# Nesting Embedded Objects

- Order of nesting:
  - Do these in the order shown





# Nesting Embedded Objects

- Order of nesting:

- Syntax:

```
<object data="url" attributes>  
  <embed src="url" attributes>  
    <a href="url">Link to media clip</a>  
  </embed>  
</object>
```

- Notes:

- Browsers will first look at the object tag
    - If the object tag is supported, the browser will ignore all other elements nested within the <object> tag except <param tags> ...so <embed> and <a> tags are ignored



# Nesting Embedded Objects

- Order of nesting:

- Syntax:

```
<object data="url" attributes>  
  <embed src="url" attributes>  
    <a href="url">Link to media clip</a>  
  </embed>  
</object>
```

- Notes:

- If a browser cannot work with the <object> tag, it will ignore it and look to the <embed> tag
    - Finally, if the browser cannot work with the <embed> tag, it will ignore it and simply display the hypertext link



# Nesting Embedded Objects

- Order of nesting:
  - Example:
    - The following shows how to insert a QuickTime movie first as an ActiveX control, then as an embedded object using the `<embed>` tag, and finally as a link:

display as an ActiveX control

```
<object data="video.mov" type="video/quicktime"
classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
codebase="http://www.apple.com/qtactivex/qtplugin.cab"
width="320" height="260">
```

```
<param name="src" value="video.mov" />
<param name="autoplay" value="false" />
```

display using the `<embed>` tag

```
<embed src="video.mov" type="video/quicktime"
pluginspage="http://www.apple.com/quicktime/download"
width="320" height="260" autoplay="false">
```

display as a hypertext link

```
Click to <a href="video.mov">download</a> the movie clip.
```

```
</embed>
```

```
</object>
```



# Tutorial 7 Website

## Object nesting for the overture.mp3 file

```
<!--[if IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
    codebase="http://www.apple.com/qtactivex/qtplugin.cab"
    width="280" height="25">
<!--<![endif]-->

<!--[if !IE]><!-->
  <object data="overture.mp3" type="audio/mpeg"
    width="280" height="25">
<!--<![endif]-->

  <param name="src" value="overture.mp3" />
  <param name="autoplay" value="false" />
  <param name="autostart" value="false" />
  <param name="controller" value="true" />
  <param name="showcontrols" value="true" />

  <embed src="overture.mp3" type="audio/mpeg"
    width="280" height="25"
    autoplay="false" autostart="false"
    controller="true" showcontrols="true">

    Click to <a href="overture.mp3">download</a> the movie overture.

  </embed>
</object>
```

the <embed> tag will be used by browsers that do not support the <object> tag

browsers that do not support embedded MP3 files will still display a hypertext link to the file

Note that the attributes of the embed element duplicate the parameters and parameter values used for the object element.



# Tutorial 7 Website

## Object nesting for the rwdance.swf file

```
<!--[if IE]><!-->
  <object data="rwdance.swf" type="application/x-shockwave-flash"
    classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000"
    codebase="http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=9,0,115,0"
    width="280" height="239">
<!--<![endif]-->

<!--[if !IE]><!-->
  <object data="rwdance.swf" type="application/x-shockwave-flash"
    width="280" height="239">
<!--<![endif]-->

  <param name="movie" value="rwdance.swf" />
  <param name="quality" value="high" />
  <param name="menu" value="false" />

  <embed src="rwdance.swf" type="application/x-shockwave-flash"
    width="280" height="239"
    movie="rwdance.swf" quality="high" menu="false">

    To view the movie clip, install Adobe Flash.

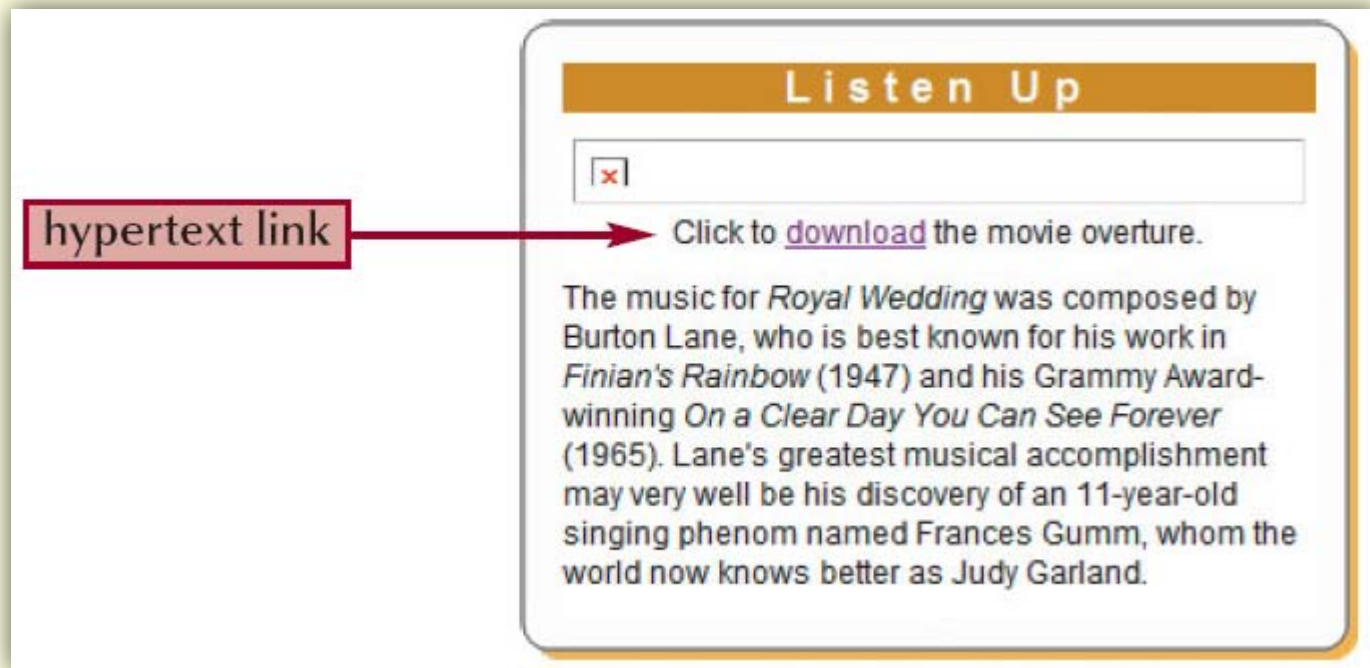
  </embed>
</object>
```

browsers that do not support Flash will display a message suggesting that Flash be installed



# Tutorial 7 Website – Result

- The Web page with disabled plug-ins:





# Tutorial 7 Website – Result

- The Web page with disabled plug-ins:

**In Focus**

The high point of *Royal Wedding* is the "Ceiling Dance" in which Fred Astaire appears to literally dance on the ceiling and walls of his hotel room. The effect was accomplished by putting the whole set inside of a 20-foot diameter rotating cage. As the cage turned, Astaire would seamlessly dance across the four sides of the box, creating the illusion of weightlessness. The same technique would later be used to simulate a zero gravity environment in *2001: A Space Odyssey*.

embedded object still occupies space on the Web page

message about Flash

To view the movie clip, install Adobe Flash.



# Tutorial 7 Website

---

- Scrolling Text:
  - Maxine wants to include the cast for a movie
    - The current cast list is short
    - She wants it expanded to include more of the actors, as well as directors, producers, and writers
  - The problem:
    - Doing so results in a LOOONG list that ruins the layout
  - Solution:
    - Maxine wants a scrolling list...kinda like on a movie
  
- Java to the rescue!



# Introducing Java

---

- What is Java?
  - Java is a programming language used to write Java programs
  - Each Java program works with a Java Virtual Machine (JVM)
  - A JVM is a software program that runs the Java code and returns the result to the user's computer
  - What's the benefit of a JVM?
    - JVMs can be created for different operating systems
    - This allows a Java program to run on any operating system, which means Java is platform-independent



# Introducing Java

---

- What is Java?
  - A Java program is not a stand-alone application
  - It runs in conjunction with a hosting program
    - Such as a Web browser
  - Think of the hosting program as a “mini” application, or applet
- Web pages with applets:
  - When a user connects to a Web page with a Java applet, the applet is downloaded from the server
  - The applet then runs within the user’s browser



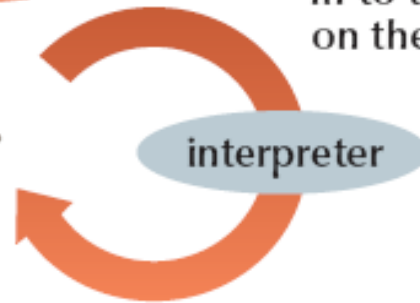
# Applets and Java Virtual Machines

1. The user's Web browser downloads the Web page and an applet from the Web server.



2. The Java Virtual Machine built in to the browser runs the applet on the user's computer.

interpreter





# Working with Java Applets

---

- Details on Applets
  - **Applets** are embedded within Web pages just like sound and video clips are embedded
  - Applets run within an **applet window**
    - which can be resized and positioned within the page
  - Several libraries of Java applets are available
    - Some are free, and others cost money
    - Examples include stock market tickers, games, etc.
  - A Java program is stored in an executable file called a **class file**
    - Some applets require several class files to run properly



# Working with Java Applets

## ■ Details on Applets

- Java applets are embedded with the <object> tag
- Syntax:

```
<object classid="id" type="application/x-java-applet"  
  width="value" height="value">  
  parameters  
</object>
```

- where id is the class id of the Java applet, the width and height attributes define the dimensions of the applet window, and parameters are the parameters associated with the applet



# Working with Java Applets

---

## ■ Details on Applets

### ■ IE vs non-IE:

- Unfortunately, IE and non-IE browsers differ in the class id values they use for Java.
- So, once again, you, the developer, have to take care of this
- You use IE conditional comments to address it
- See page 455 for more details



# Tutorial 7 Website

---

- Embedding the Java Applet
  - Maxine located a Java applet to display scrolling text
    - The name of the class file is CreditRoll.class
  - We need to embed this applet into the Web page both as an ActiveX object for IE and as a plug-in for non-IE browsers



# Tutorial 7 Website

```
<div class="boxContent">
  <h2>Cast</h2>
  <p style="text-align: center">

  <!--[if IE]><!-->
    <object classid="clsid:8AD9C840-044E-11D1-B3E9-00805F499D93"
      type="application/x-java-applet"
      width="260" height="130">
      <param name="code" value="CreditRoll.class" />
  <!--<![endif]-->

  <!--[if !IE]><!-->
    <object classid="java:CreditRoll.class"
      type="application/x-java-applet"
      width="260" height="130">

    Tom Bowen ... Fred Astaire<br />
    Ellen Bowen ... Jane Powell<br />
    Lord John Brindale ... Peter Lawford<br />
    Anne Ashmond ... Sarah Churchill<br />
    Irving Klinger ... Keenan wynn<br />
    Edgar Klinger ... Keenan wynn<br />
    James Ashmond ... Albert Sharpe

  </object>

</p>
</div>
```

<object> tag for IE

<object> tag for non-IE browsers

browsers that don't support Java will still display the abbreviated cast list



# Working with Java Applets

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- Inserting Java Parameters
  - Like all objects, Java applets have parameters that you can specify
  - The CreditRoll applet has several parameters
    - Define the text being scrolled
    - The speed of the scrolling
    - The font style
    - Background style
    - and more...
- The following table lists the parameters for this applet



# Working with Java Applets

## ■ Parameters of the CreditRoll.class applet

Parameter	Description
bgcolor	The background color of the applet window, expressed as a hexadecimal color value
fadezone	The text in the applet window fades in and out as it scrolls; this parameter sets the size of the area in which the text fades (in pixels)
textcolor	The color value of the text in the applet window
font	The font used for the scrolling text in the applet window
textx	Each line of text in the applet window requires a separate text $x$ parameter, where $x$ is the line number; for example, the parameter text1 sets the text for the first line in the applet window, text2 sets the text for the second line in the applet window, and so forth
url	Specifies the Web page that is opened if the applet window is clicked
repeat	Specifies whether the text in the applet window is repeated; setting this parameter's value to yes causes the text to scroll continuously
speed	The speed at which the text scrolls, expressed in milliseconds between each movement
vspace	The space between each line of text, in pixels
fontsize	The point size of the text in the applet window



# Tutorial 7 Website

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- Adding parameters to the Java applet
  - Maxine wants the credit roll to appear in a 14-point white font on a brown background
  - She wants a speed set to 100
    - which is 100 milliseconds between each movement of text
  - She wants 3 pixels of space between each line of text
  - She wants a fadezone value of 20 pixels
  - And she wants it to run continuously



# Tutorial 7 Website

```
<!--[if !IE]><!-->  
<object classid="java:CreditRoll.class"  
  type="application/x-java-applet"  
  width="260" height="130">  
<!--<![endif]-->
```

```
<param name="fontsize" value="14" />  
<param name="bgcolor" value="CE9314" />  
<param name="textcolor" value="FFFFFF" />
```

parameters to set the  
font size and style

```
<param name="speed" value="100" />  
<param name="vspace" value="3" />  
<param name="fadezone" value="20" />
```

parameters to control  
the scrolling speed

```
<param name="repeat" value="yes" />
```

parameters to set  
repeated scrolling

```
Tom Bowen ... Fred Astaire<br />  
Ellen Bowen ... Jane Powell<br />  
Lord John Brindale ... Peter Lawford<br />  
Anne Ashmond ... Sarah Churchill<br />  
Irving Klinger ... Keenan wynn<br />  
Edgar Klinger ... Keenan wynn<br />  
James Ashmond ... Albert Sharpe
```

```
</object>
```



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- Adding parameters to the Java applet
  - Now we have to specify the scrolling text
  - The text is entered into parameters named textx
    - where x is the number of the line in the credit roll
  - The CreditRoll applet also supports a parameter named url
    - simply adds a link to the credit roll, which opens a new page when a user clicks the applet window
  - Maxine wants us to link over to the Internet Movie Database describing the movie “Royal Wedding”



# Tutorial 7 Website

```
<param name="repeat" value="yes" />

<param name="text1" value="Royal wedding" />
<param name="text2" value="Produced by: Arthur Freed" />
<param name="text3" value="Directed by: Stanley Donen" />
<param name="text4" value="Written by: Alan Jay Lerner" />
<param name="text5" value="Original Music by: Burton Lane" />
<param name="text6" value="---- o ----" />
<param name="text7" value="" />
<param name="text8" value="Fred Astaire ... Tom Bowen" />
<param name="text9" value="Jane Powell ... Ellen Bowen" />
<param name="text10" value="Peter Lawford ... Lord John Brindale" />
<param name="text11" value="Sarah Churchill ... Anne Ashmond" />
<param name="text12" value="Keenan wynn ... Irving Klinger" />
<param name="text13" value="Keenan wynn ... Edgar Klinger" />
<param name="text14" value="Albert Sharpe ... James Ashmond" />
<param name="text15" value="Eddie ... Wilson Benge" />
<param name="text16" value="Charles Gordon ... Francis Bethencourt" />
<param name="text17" value="Dick ... William Cabanne" />
<param name="text18" value="Harry ... Jimmy Fairfax" />
<param name="text19" value="Billy ... John Hedloe" />

<param name="url" value="http://www.imdb.com/title/tt0043983" />
```

marquee text

url of the  
scrolling  
marquee

```
Tom Bowen ... Fred Astaire<br />
Ellen Bowen ... Jane Powell<br />
Lord John Brindale ... Peter Lawford<br />
Anne Ashmond ... Sarah Churchill<br />
Irving Klinger ... Keenan wynn<br />
Edgar Klinger ... Keenan wynn<br />
James Ashmond ... Albert Sharpe

</object>
```



# Tutorial 7 Website

```
<!--[if IE]><!-->
  <object classid="clsid:8AD9C840-044E-11D1-B3E9-00805F499D93"
    codebase="http://java.sun.com/update/1.6.0./jinstall-6-windows-i586.cab"
    type="application/x-java-applet"
    width="260" height="130">
    <param name="code" value="CreditRoll.class" />
  <!--<![endif]-->
```

```
Tom Bowen ... Fred Astaire<br />
Ellen Bowen ... Jane Powell<br />
Lord John Brindale ... Peter Lawford<br />
Anne Ashmond ... Sarah Churchill<br />
Irving Klinger ... Keenan wynn<br />
Edgar Klinger ... Keenan wynn<br />
James Ashmond ... Albert Sharpe

<br /><br />
To view a scrolling marquee, get the latest
<a href="http://java.sun.com/products/plugin/downloads">
  Java Plug-in.
</a>

</object>
```



# Brief Interlude: FAIL Pics





# Embedding Other Objects

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- Any type of content can be embedded using the `<object>` tag
  - This was actually the original vision of the object element...to act as a general container for any content not directly inserted into HTML code
  - We'll look at inserting:
    - Inline images as objects
    - Embedding an HTML file as an object within another HTML file



# Embedding Other Objects

- Inserting Inline Images

- Using the <object> tag to insert images
- Advantage:
  - You can apply markup tags for the alternate text
  - Example, given this <img>:

```

```

- We can use this <object> tag instead:

```
<object data="jplogo.jpg" type="image/jpeg" width="300" height="200">  
  <h1>Jumbo Popcorn</h1>  
</object>
```



# Embedding Other Objects

## ■ Inserting Inline Images

- Using the <object> tag to insert images
- Another advantage:
  - You can provide the user with different formats of the same image in case one isn't supported

```
<object data="jplogo.png" type="image/png">  
  <object data="jplogo.jpg" type="image/jpeg">  
    <h1>Jumbo Popcorn</h1>  
  </object>  
</object>
```

- The browsers first tries to display the png.
- If not supported, it tries to display the jpeg
- Finally, if that doesn't work, text is displayed as an h1



# Embedding Other Objects

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- Embedding an HTML file
  - Web pages themselves can be embedded as objects
  - Syntax:

```
<object data="url" type="text/html" width="value" height="value">  
</object>
```

- where url is the URL of the HTML file to be embedded
- When you embed a Web page, that file is displayed within the dimensions specified by the width and height attributes
  - Scrollbars are added automatically



# Embedding Web Pages

A Web site for lovers of classic films



## Jumbo Popcorn

Home Movies Actors Directors Genres My Picks Links

### Royal Wedding on the Web



Log in / create account

article discussion edit this page

### Royal Wedding

From Wikipedia, the free encyclopedia

**Royal Wedding**



Fred Astaire and Jane Powell in *Royal Wedding*

**Directed by** Stanley Donen  
**Produced by** Arthur Freed  
**Written by** Alan Jay Lerner  
**Starring** Fred Astaire, Jane Powell, Peter Lawford, Sarah Churchill  
**Distributed by** MGM  
**Release date** March 8, 1951 (U.S. release)  
**Running time** 93 min.  
**Language** English

navigation: Main Page, Contents, Featured content, Current events, Random article

interaction: About Wikipedia, Community portal, Recent changes, Contact Wikipedia, Donate to Wikipedia, Help

search: [input] [Go] [Search]

toolbox: What links here, Related changes, Upload file, Special pages, Printable version

weight loss, cabbage soup diet, low carb diet, diet plan, medifast 2x fast, lose weight

HOME MOVIES DVD

## Apollo guide Review

INTELLIGENT REVIEWS ON

Summary Review DVD Stars

### Royal Wedding

**Apollo Score:**  68

**Summary**

Fred Astaire and Jane Powell star as a brother and sister dance team who each



Wikipedia Apollo Movie Reviews



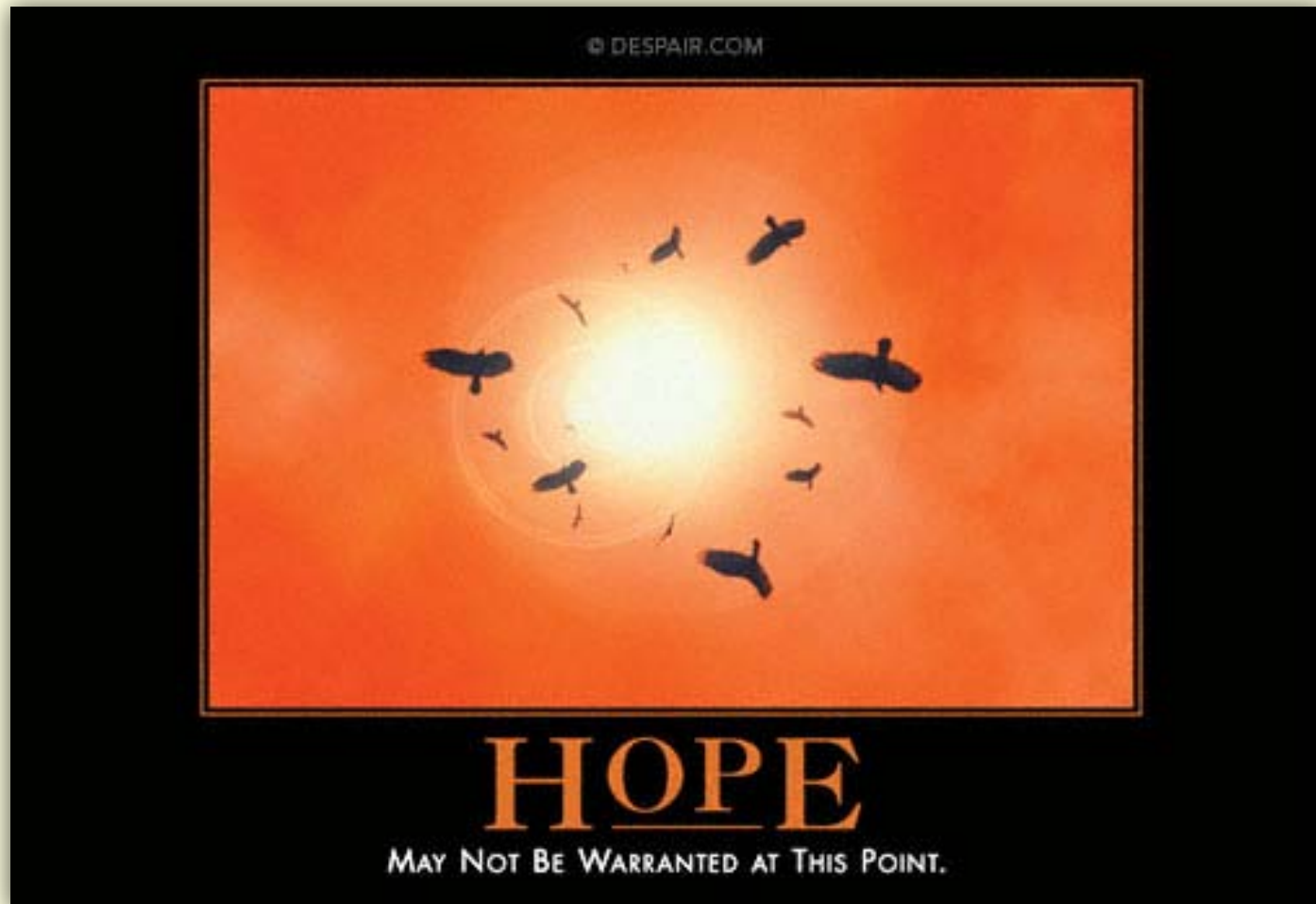
# Tutorial 7: Working with Multimedia

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**WASN'T  
THAT  
FASCINATING!**



# Daily Demotivator



# Tutorial 7: Working with Multimedia



Computer Science Department  
University of Central Florida

*COP 3175 – Internet Applications*