2.02F Publishing Animated Videos

2.02 Develop Computer Animations

Publishing Animated Videos

- Publishing animations and animated videos involves the following steps:
  - Analyze and optimize the animation.
  - Choose an appropriate file type.
  - Choose the delivery method.
  - Publish the animation.

Step 1: Analyze and Optimize the Animation

Analyze Animations For Potential Problems

- Identify potential problems that may occur when downloading and playing a movie.
  - If the entire movie will be downloaded before it is played, determine which parts of the movie are taking the most time to download.
  - If the movie will be delivered through a streaming connection, look for ways to reduce or control the pauses during download and playback.

Optimize the Animation

- Animations should be optimized in order to:
  - Reduce the file size for quicker downloads.
  - Make the video or animation play more smoothly during playback.
  - Maintain sufficient quality for viewing.
- Videos can be optimized anytime or only when they are published.

Optimize the Animation (Continued)

- Optimizing animation involves fine-tuning compression settings.
- Optimize the sounds in the Library by compressing to MP3.

Step 2: Choose an Animation File Type

Animation File Types

- Animated GIF
- AVI
- MOV
- MPEG
- SWF

Animation File Types

Audio Video Interleave (AVI)
- Microsoft's animation and video format for computers running the Windows operating system.
- Does not compress animation as much as other formats.
- Will not play on all operating systems or in all players.

Graphics Interchange Format (GIF)
- Pronounced "jiff" or "gif"
- Animated GIFs can contain 2-D or 3-D images.
- They are used for cartoons, logos, graphics with transparent areas, and animations.
- GIF files are popular for the use on the Web because they:
  - Have small file sizes.
  - Do not require a special plug-in or player.
  - Are supported by most browsers

Animation File Types

Apple QuickTime Movie (MOV)
- Files can be either downloaded or streamed.
- Run on many different operating systems.
- Must be viewed in the QuickTime player which is a free download.

Moving Pictures Expert Group (MPEG)
- A very compressed video format.
- Files tend to be much smaller and better quality than other formats.
- Recommended for videos that will be downloaded instead of streamed because it does not require a specific player or plug-in.

Animation File Types

Shockwave Flash (SWF)
- Pronounced "swiff"
- File format for animation created with Adobe Flash.
- Files can contain text as well as both vector and raster graphics; also may include interactive actions written in ActionScript.
- Must be viewed in the Adobe Flash Player which is a free download.
- Popular format for the Web because:
  - File size is small.
  - Support streaming.

Step 3: Choose a Delivery Method

Delivery Methods

- Once videos have been analyzed and optimized to perform best in the intended medium, the next step is to publish.

- Delivery methods available for distributing animations:
  - As part of a Web page
  - On a CD-ROM or DVD.
  - As an executable file which bundles both the animation and the program to play in a single file.

Delivery Methods *(Continued)*

- When an animation or an executable file is distributed over the Internet, the entire file must be downloaded before the animation can play.

- Animations distributed as part of a web page can be either:
  - Streamed
  - Downloaded
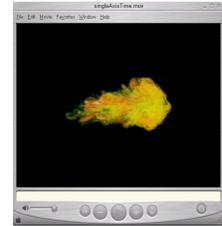
Streaming

Streaming is a technique for transferring audio and video files over the Internet as a continuous stream of data.

- The Streaming Process
  - Data is held in a temporary storage area called a buffer until it is played by the computer.
  - There will always be an initial delay while the first frame is buffered.

- Suppose an animation plays at 5 frames per second.
  - Each frame will play for 0.2 seconds.
  - If the first frame takes 0.3 seconds to download, the animation cannot start playing until after that time has elapsed.

Advantages and Disadvantages of Streaming

- **Advantages**
  - Quick Access - files can start playing as soon as a computer begins receiving the data rather than waiting for the complete file to download before playing.
  - Data is discarded as it is played so a complete copy of the file is not stored on the viewer's computer.
- **Disadvantages**
  - The viewer must be connected to the Internet to view the video.
  - The viewer's connection speed influences the quality of playback.
  - Files cannot be saved and viewed later.

Plug-ins and Players

- Plug-ins or players may be required to view an animation over the Internet.

- A plug-in is a program that works with the browser to expand its capabilities.
  - Examples:
    - Allow it to play video or audio files.
    - Allow it to open certain file types.

Plug-ins and Players

- A **standalone player** is a separate program that can play video and audio files without the browser software being open.
- Examples
  - Adobe Flash Player
  - QuickTime
  - RealPlayer
  - Windows Media Player

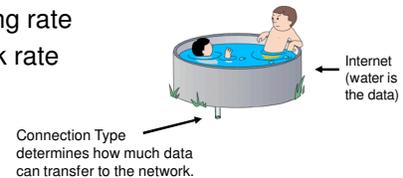## Step 4: Publish the Animation

Publish the Animation

- For animations distributed over the Internet:
  - Upload the file to the host computer.
  - Create a link to the file or embed it into the web page.
  - Test the animation in different browsers.
- For animations distributed on CDs or DVDs:
  - Burn the file onto the disk.
  - Finalize the disk.
  - Test the disk in several different CD or DVD players.

## *Factors that Influence the Delivery of Computer Animations*

Factors that influence the delivery of computer animations:

- Viewer's bandwidth, or connection speed.
- Streaming rate
- Playback rate

Internet (water is the data)

Connection Type determines how much data can transfer to the network.

Bandwidth

- The amount of data that can be transmitted over a network in a given amount of time.
- The speed at which data travels over a network depends on:
  - The type of Internet connection for the network.
  - The number of users using the network at that specific time.

The Internet

Data

Bandwidth

Your Computer

ISP
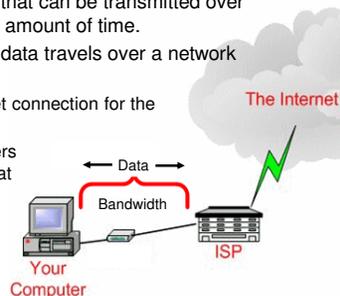
Streaming and Playback Rate

- **Streaming rate** is the rate in frames per second at which videos can be downloaded or transferred to a computer and is determined by:
  - The viewer's network connection speed.
  - The content of the video file being downloaded.
- **Playback rate** is the rate in frames per second at which the video plays.

Bandwidth and Streaming Rate

- If a lot of people are using the network at one time, less bandwidth will be available to download the data.
- This will cause the streaming rate to be slower.
- This means the playback rate will most likely be slower than the streaming rate.
- This will cause the playback to pause until more data is received.

Bandwidth and Streaming Rate

- If the streaming rate is slower than the playback rate, the video will pause until more data is received.

- It is a good idea to provide the video in different file sizes so viewers can choose the file size best suited for their connection type.
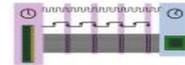
Review

Publishing Animated Videos

Analyze and optimize the animation.
- Analyze and optimize the animation.
- Choose an appropriate file type.
- Choose the delivery method.
- Publish the animation.

Review (Continued)

Animation File Types
- Animated GIF
- AVI
- MOV
- MPEG
- SWF

Plug-ins and Standalone Players
- Adobe Flash Player
- QuickTime
- RealPlayer
- Windows Media Player

Review (Continued)

Methods for publishing animated videos
- Website
- CD-ROM or DVD
- Executable file

Factors that influence the delivery and distribution of computer animations:
- Bandwidth
- Streaming rate
- Playback rate