

## **CSCI 171 : 10 : Concepts and Applications of Computer Graphics : Spring 2007**

Credits: 3.0 CRN: 24317

The George Washington University

Department of Computer Science

Room: 4- Floor Computer Lab, Room 402, Tompkins Hall

Class Hours: Thursday 6:30 – 9:00 PM

### **Create a Soundtrack**

1. Open up Quicktime from the dock (it's the blue 'Q' at the bottom of the screen or in the Applications folder)
2. File > New Audio Recording. Turn up the volume slider if you don't see the green audio signal bars as you speak.
3. Record the poem distributed in class, or substitute your own poem, of equal or shorter length. Make sure it is suitable for looping
4. Save your recording as an .aif file in your Project/sound folder.
5. Resize your Maya window and drag the sound file onto the Time Slider in Maya
6. You should now hear the sound playing in Maya when you click the play area to the right of the Time Slider. If there is no sound, go to Maya>Preferences and select Timeline, then choose Real-time in the Playback speed pull down.
7. While we're in the Preferences, go to Preferences>Settings and change Time to NTSC 30fps (this matches video we'll import later)

### **Animate a Bobblehead**

1. Create > Polygon Primitive > Sphere.
2. Right-click on the sphere to go to Face mode and select and delete the bottom couple of rows of faces.
3. Go to Create > Locator to create a null object.
4. In the Outliner (Window>Saved Layouts>Persp/Outliner) select the Sphere and MMB (middle mouse button) drag the sphere on top of the locator.
5. You have now made the Sphere a "child" of the Locator. You will be animating the 'parent' locator only, so that you can later easily replace the sphere with a new model and keep the animation we're doing today.
6. Click on the locator – IMPORTANT, make sure to click on the locator, it should turn blue in the Outliner and both the sphere and locator will be green in the perspective view.
7. Hit 'Ctrl-A' a few times until you see the Channel box on the right side of the screen. It should say locator at the top, and list all the coordinates below.
8. Click on the Channel box where it says Rotate X, making the words Rotate X highlighted in blue. This means this channel is selected.
9. Now, Right-click on the words Rotate X and select Key Selected in the menu. This sets a keyframe on the current frame for this channel.
10. We want to create a new key at the end of the animation that is the same as it is at the beginning, to do this you need to expand the number of frames to match your soundtrack.
11. In the Timeline slider, at the far right are 3 sets of numbers, showing frame info. Change the bottom left to 500, for starters. This lengthens the timeline to 500 frames and you should see where your sound file is ending or keeps going. Change the number until you see the whole sound file. If you are a math whiz, multiply the time of your soundtrack by 30 (fps we set above) to get the total number of frames for your animation.
12. Move the time slider to the end of your animation and again set a key on Rotate X
13. Now, it's simply a matter of setting keys to match increases or decreases in volume as seen on the timeline

### **Setting Keys**

1. While the Rotate X is still selected, go to just before the first frame where the sound goes up. MMB drag left and right to rotate it on the X axis. Right click on Rotate X to Key Selected and set a keyframe.
2. Move the Time slider forward to a high point in the sound, MMB drag left-to-right to and set another key.
3. Now, to speed things up, let's turn on Automatic key framing. At the very bottom right of the screen, look for a little Key icon and turn it on.
4. Move the time slider to the next low point and MMB to angle it down. Immediately move the time slider to a high point and MMB to angle it up. You'll see that keyframes are set every time you move the object.
5. Repeat for the length of the soundtrack, playing back occasionally to see your animation.

### **Notes**

- For a time-accurate preview animation, right click on the timeline and select Playblast. A weird application called Fcheck will open and play a rendered version.
- Automatic keyframing only creates keys on tracks that currently have at least ONE keyframe. This is handy so you don't get keyframes all over the place on every parameter.
- Don't forget to TURN OFF auto keyframing. Setting a bunch of unwanted keyframes can mess a project.
- Advanced Users – Open Windows>Animation Editors> Graph Editor while the locator is selected to refine timing using curves

## *The Unknown*

by d. h. rumsfeld

As we know,  
There are known knowns.  
There are things we know we know.  
We also know  
There are known unknowns.  
That is to say,  
We know there are some things  
We do not know.  
But there are also unknown unknowns,  
The ones we don't know  
We don't know.