LAB 10: BASIC ANIMATION IN 3DS MAX

12/12/2016
LAB OVERVIEW

This lab should acquaint you with

- Animation editing
- Rendering animation clips

Goals: In 3D Studio Max

1. Create a simple scene or load an existing one into max
2. Use animation controls to move or deform objects in the scene
   
   Suggested example: a box rolling along a plane

3. Render your animation to an AVI (this may take some time)

The following slides provide some more info to help with the lab.
STEP 1 CREATE SIMPLE SCENE (EXAMPLE)

You can choose your own scene to animate. The following is a very simple example of a rolling box.

To begin, create a plane and a box (see previous labs if you don’t know how to do this).
STEP 2. SIMPLE ANIMATION WITH AUTO KEY

1. Click on “Auto Key” in the bottom of the 3DS Max Interface
   - The frame slider bar should go red to indicate you are in auto key mode
2. Move the slider to a keyframe time
3. Transform any objects using translate, scale, rotate (OR change any parameter you want to animate using other inputs e.g. text input/sliders) – this is automatically saved as a key-frame. In the example case, move and rotate the box.
4. Repeat from Step 2 as often as required
5. Hit Auto Key to turn off auto keyframe mode
6. Hit the play button to preview your animation before rendering it
SIMPLE EXAMPLE

- Start Auto key

- Move frame slider to frame 25
  Move and rotate cube

- Move frame Slider to frame 50
  Move and rotate cube some more

- Stop Auto key
FURTHER TIPS

Changing the number of frames:
- Click on the “Time Configuration” button.
- Change “End Time” under Animation
- Click OK

Looping Animations
- Right-click on the slider to bring up the “Create Key” dialog
- Enter 0 (or your first frame) in “Source Time”
- Enter your last frame in “Destination Time”
- Click OK (this copies the key frame from source to destination)

See if you can copy frames to move the box to its original position and create a continuously looping animation
Click on the Mini Curve Editor (at the left of the animation slider) to access an interface for advanced editing of parameters that change during animation.

There will be curve associated with changeable parameters for every object (e.g. the X position of an object, the rotation of an object etc..). Each can be edited as a spline.
STEP 3. RENDERING ANIMATIONS

Hit F10 or click on the **Render Setup** button

Under the “Common” tab

In the “Common Parameters” rollout

- Select the Frame Range (number of frames you want to render)
- Select an Output Size (choose carefully, this could take a while)
- Select a filename under Render Output and choose *.avi as the filetype
  - This should prompt you for a format – choose MJPEG for now. Click OK.
- Click Render
FURTHER WORK

You can animate just about anything in max that takes parametric input:

- Object transformations
  - Camera positions, directions
  - Light position, directions
  - Articulated object joints

- Object deformations
  - Space Warps
  - Free form deformations
  - Camera / Light Settings

More on this in coming lectures/labs
ADVANCED EXAMPLE: BLOBBY

Use AutoKey and Space Warp to animate a "walking blob"

- Create a plane and "Chamfer Box" (cube with rounded edges: in Create->Geometry->Extended Primitives)
- Create a Bend Space-Warp
  - This is in Create Panel -> Space Warps -> Modifier Based
- Bind the space-warp to the Chamfer Box
  - Click on Bind to Space Warp: Then Click and drag a line from the Bend SpaceWarp to the Chamfer Box
- Animate
  - Start Auto Key
  - Move to a key frame (e.g. frame 20)
  - Increase the angle of the bend so that the cube is a bit skewed.
  - Click on Bend Spacewarp, in Modifier tab change the “Angle”
  - At the same time move the blob forward and rotate it towards the bent side
  - Move to the next key frame
  - Bend the box the other way (negative bend)
  - Move the blob forward and rotate it to the newly bent side
  - Repeat as required
  - Stop Autokey
- Render the animation