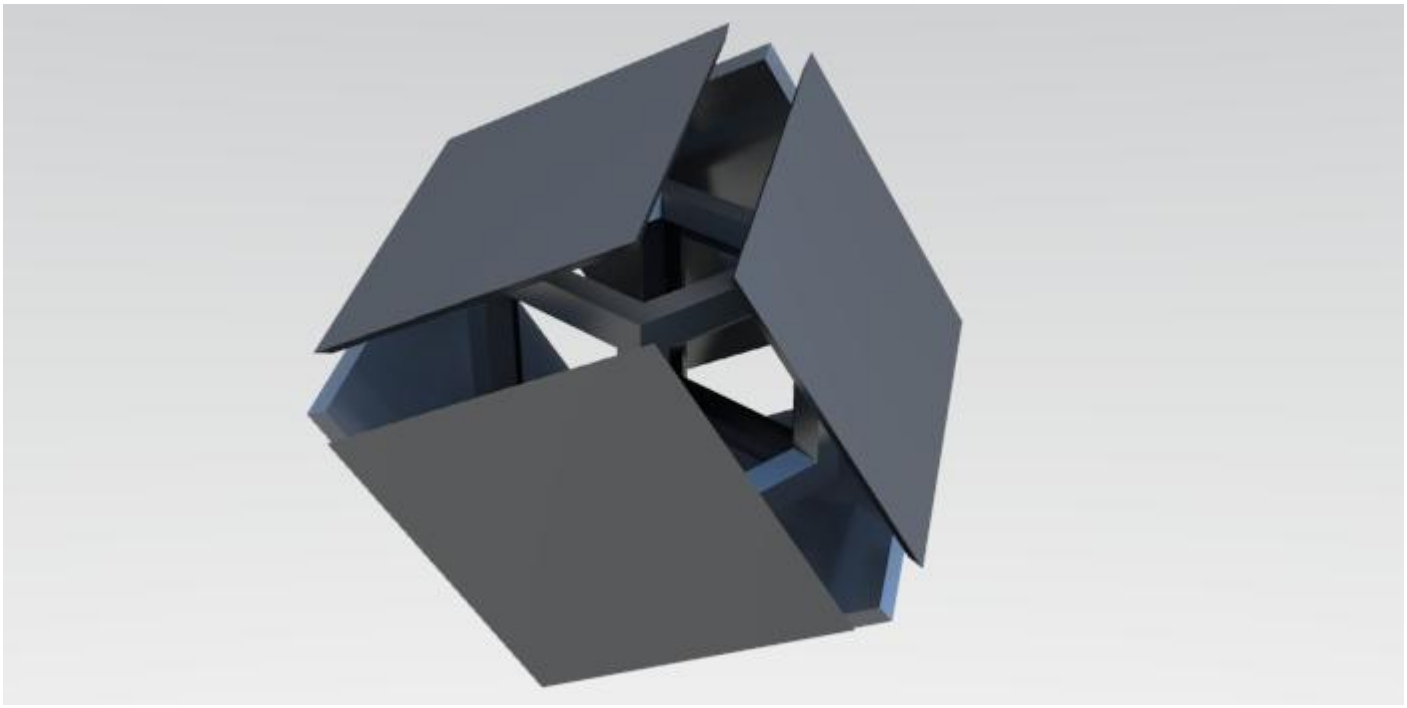
Action Editor Basics

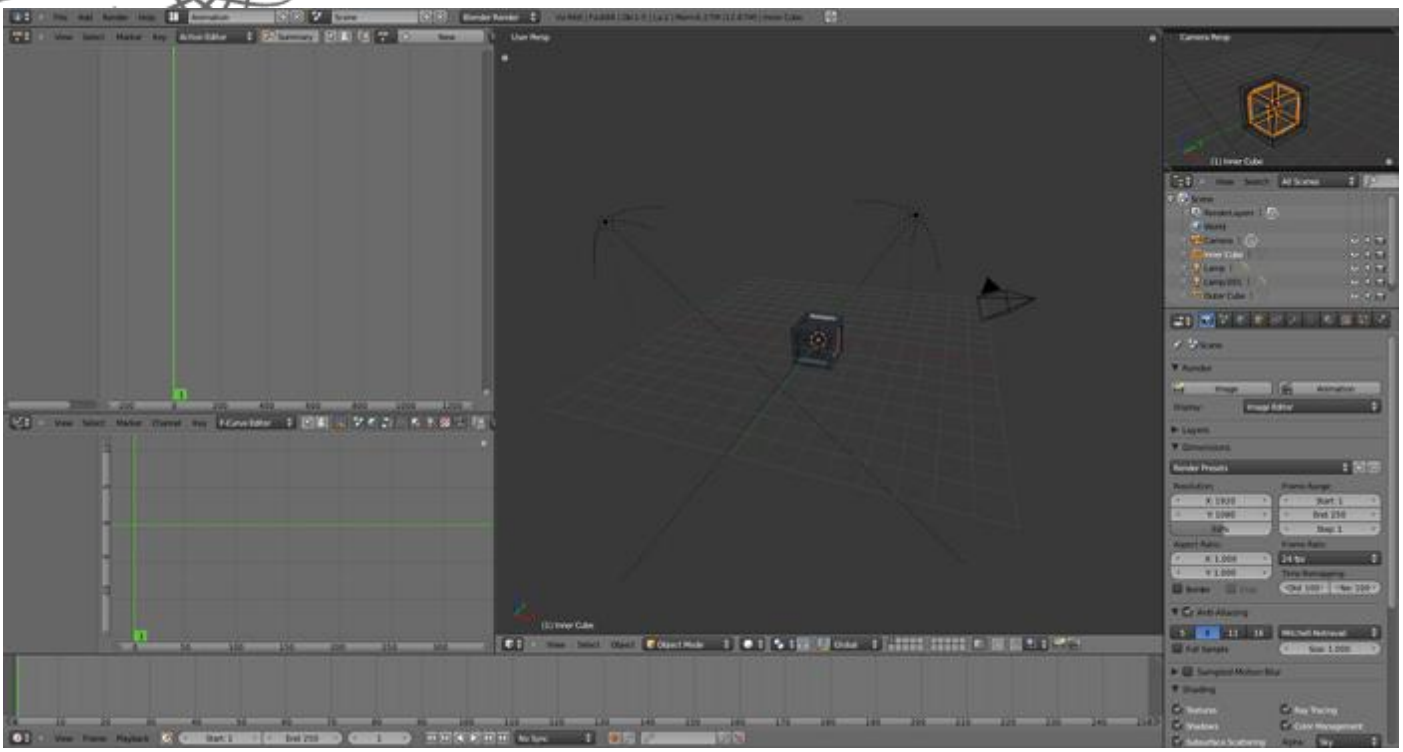
Dark Scarab Tutorials -- Blender 2.5



The action editor is very similar to the dopesheet from what I can tell. In fact, I would almost say it is exactly the same if it weren't for one key feature: the ability to save animations that you may or may not actually use in the final render. The dopesheet shows what animations are going to be rendered or used in the render while the action editor saves animations for a particular object. Action editor animations aren't actually in the final render unless you use it in the NLA editor. For instance, in the (video here) image above I used the action editor to make two very basic animations. One is an animation with the panels spinning inside the cube and one spinning on the outside of the cube. While it's a bit of overkill to use the action editor for such a simple animation, I am going to use it to show you how you can use the action editor for your own projects.

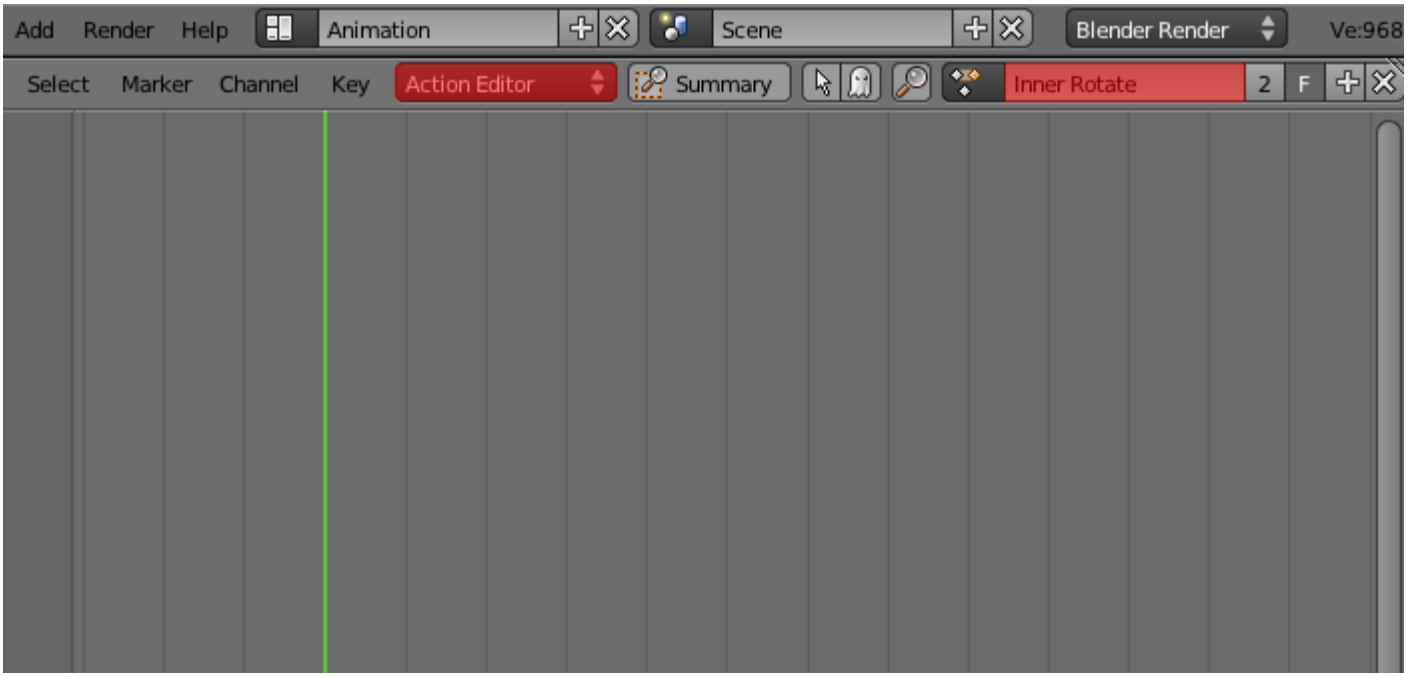
Rather than spend time trying to pull you through the steps of modeling in a tutorial that shouldn't be focusing on modeling, I have provided a blend file you can start out with. It's fairly simple. I took a cube, subdivided and chopped the middle of the faces out and scaled them in to make inner panels, which we are going to be animating. There is a basic material slapped on there as well, but it is not the same as in the image above (which uses mirror and some high settings) as I didn't want you to start rendering and get slammed if you have a slow computer. You could also animate your own objects when I go over how I animated the panels, so the download isn't absolutely necessary to follow along.

Blender should already be opened in the animation layout, but if not, you can do that now. Your screen should look a little something like this:



The first animation we are going to create is the spinning panels on the inside of the cube. Before we start animating, we need to go to the action editor. If it is not opened already, you can find it within the **Dopesheet** editor, in the dropdown next to the Summary button in the menu. In that dropdown you will want to select *Action Editor*. By default it is on *Dopesheet*.

Now we need to make sure that object that we are going to animate is selected. The action editor will save an animation to an object similar to the way you attach materials to an object. Once you have the inner panels selected, you should be able to find a button labeled *New* in the menu of the action editor window. Click on it. This creates a new action which I am going to rename *Inner Rotate.*

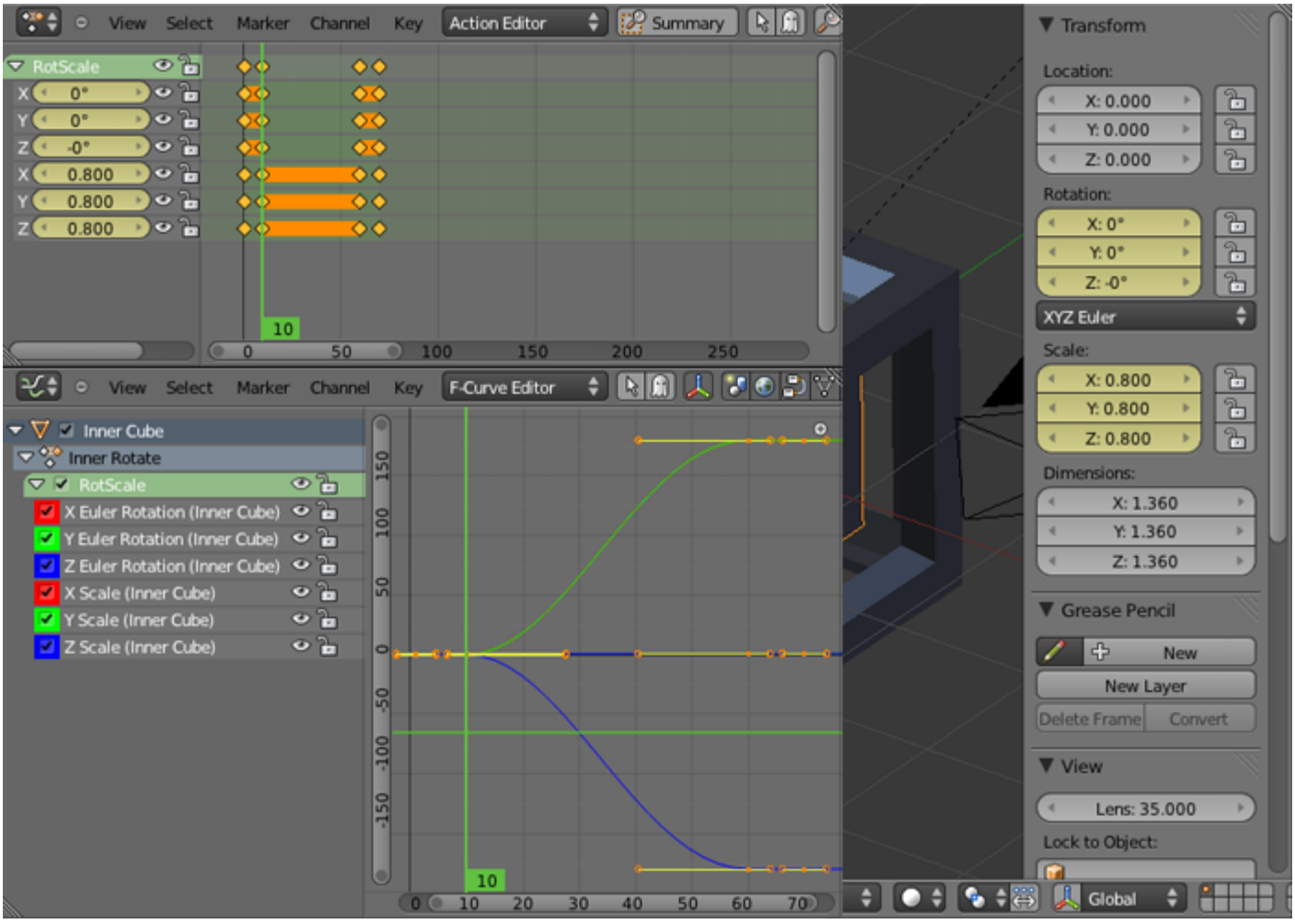


After that, we just animate like normal. As long as we have the *Inner Rotate* animation activated, Blender will save any keyframes to that animation. Make sure we are on frame 1 and let's insert our first keyframe. Inside the **3D View** window, press *I* and select *RotScale*. This will be our initial state for our cube, which will be the same initial state of our second animation.

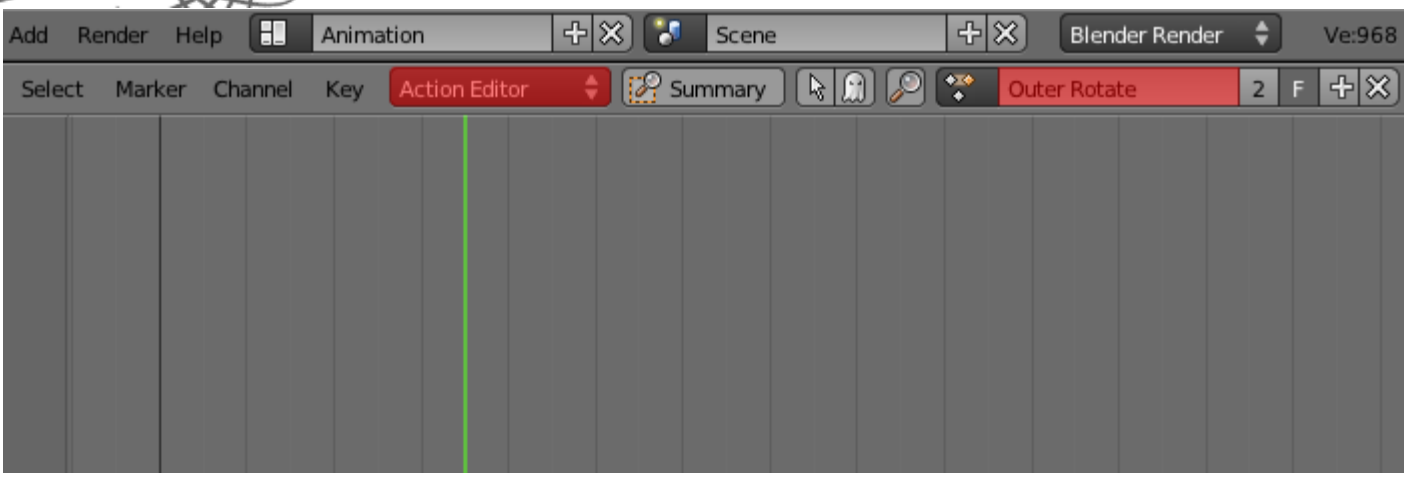
Now let's move to frame 10. For this keyframe, we will scale the inner panels down so that they shrink to the inside of the cube. With those inner panels selected, press *S* to scale and type in *0.8* to make the panels shrink to 80% its original size. Like before, press *I* to insert a keyframe and choose *RotScale* in the popup.

Then jump to frame 60. This time we are going to rotate our panels. Instead of manually rotating three times, we are going to open the **Properties** panel by pressing *N*, if it isn't open already. Then we will change the **Rotation** values (X, Y, and Z) to *180*, *180*, and *-180*. Then, again, press *I* in the **3D View** window and choose *RotScale*.

Finally, we go to frame 70. This time press *S* and enter *1.25* to scale our panels back up to their original size. And once again, insert another keyframe by pressing *I* and choosing *RotScale*. If you test your animation out now, you should see the panels shrink, spin around a bit, then grow back to its original size.

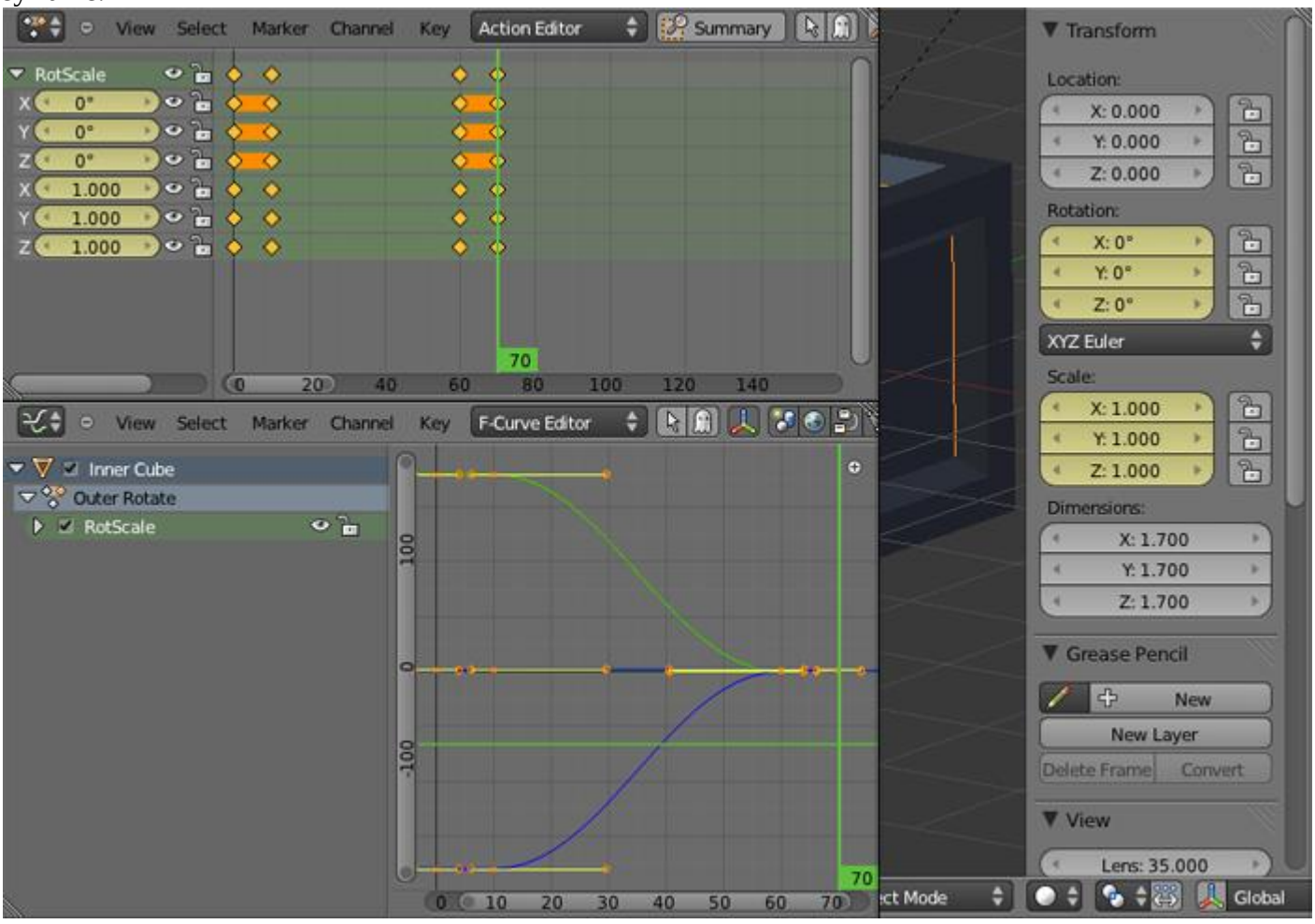


Our inner rotation is complete, so now we can do our outer rotation. Since we do not want to overwrite the animation we just created, we need to creation a new action in the action editor. Back where we created the new action and named it *Inner Rotate* make sure the option with the *F* is turned on. This is so that Blender will save the action even if it is not actively being used anywhere in Blender. Then press on the button with the 'x' on it. Now that we have a fresh action editor, press on the new button and rename our new action *Outer Rotate.* And you do not have to worry about *Inner Rotate*. This action still exists even after removing it from the editor.



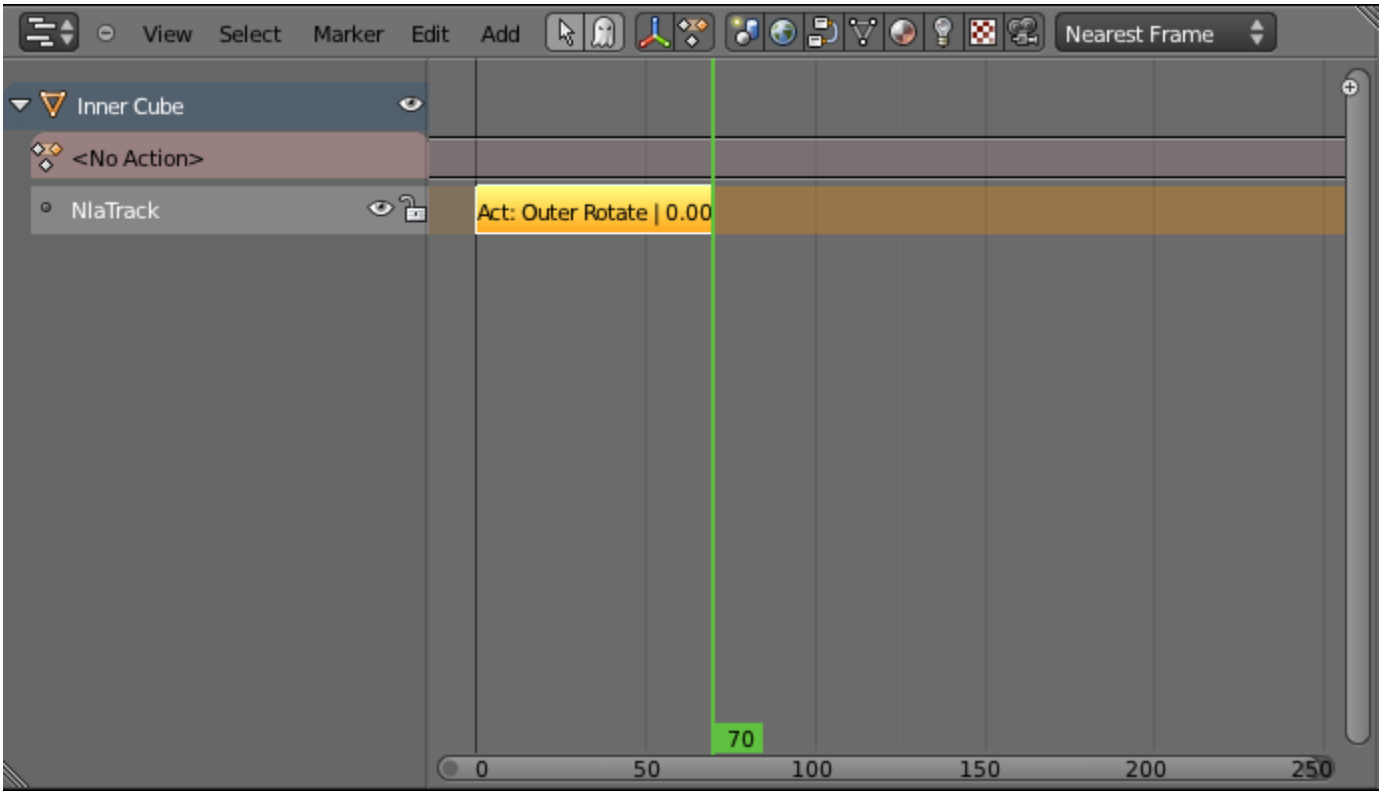
Back to animating we go. Make sure we are back to frame 1 and insert the initial keyframe by pressing *I* in the **3D View** and choosing *RotScale*. Then, like before, move to frame 10. This time, however, we are going to scale outwards rather than inwards. So after pressing *S* to scale, enter *2*. This makes the panels double their original size. Insert another *RotScale* keyframe by pressing *I.*

Now on frame 60, we will go back to the **Properties** panel. Under the **Rotation** setting change the X, Y, and Z values back to *0*, *0*, *0*. Once you have done that, press *I* again and, just as usual, choose *RotScale.* And lastly, on frame 70, scale our panels down by pressing *S* and entering *0.5*. Then enter the final *RotScale* keyframe.



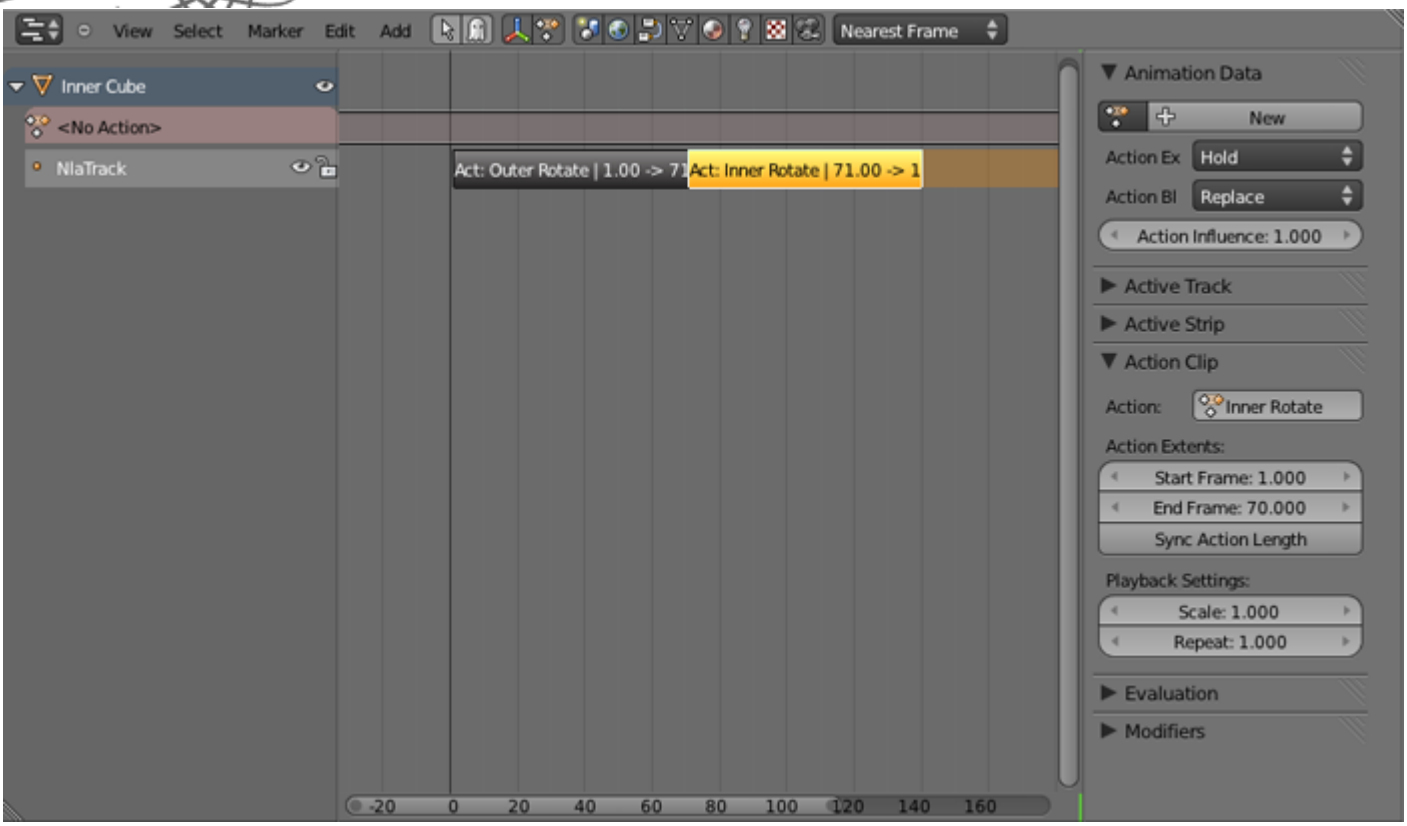
The NLA editor is what we use to take many different actions, just like the two we just made, and sequence them together to create the full rendered animation. To get to the NLA editor, go to the F-Curve Editor window in the lower left and click on the window selector popout. Somewhere in there you should find *NLA Editor*. In the window that appears, you should see that the *Inner Cube* (which are our panels) have already been put into the editor. This is because we have an action attached to it.

To enable the use of the animations we created, click on the little snowflake symbol to the right of the *Outer Rotate* action in the orange bar. You may notice that the action in the *Outer Rotate* action in the action editor disappears and a yellow strip representing the *Outer Rotate* action is automatically placed in the NLA Editor.

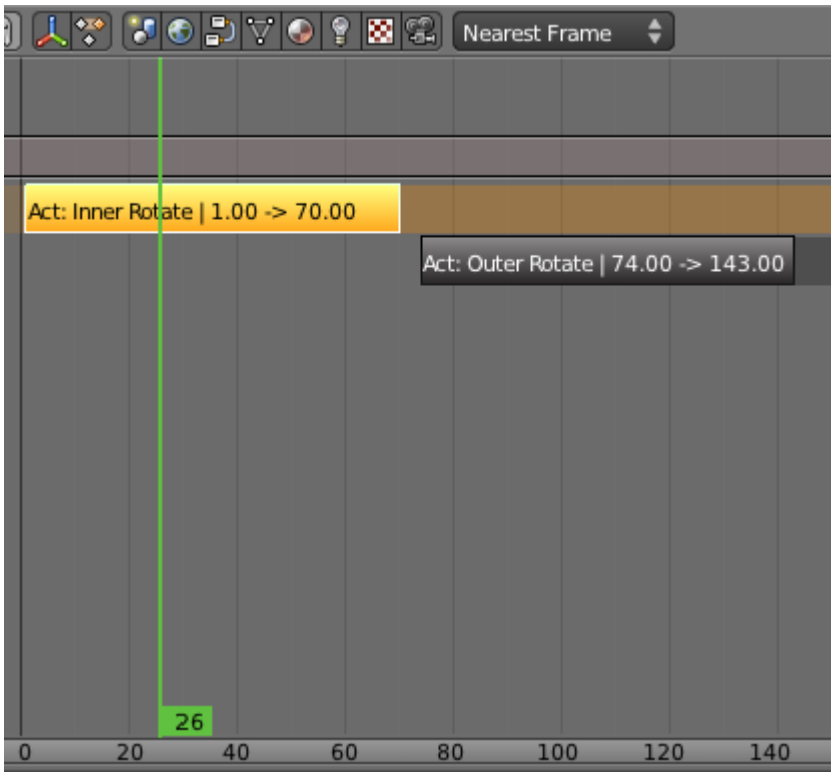


Playing the animation now will result in our panels running the *Outer Rotate* animation. But we want the *Inner Rotate* animation in there as well. To add any other actions you have created, press *Shift-A* and choose *Inner Rotate* in the popup. A new strip will appear at whichever frame you are on in the timeline. If you are in the middle of a strip, then a new track will be created to allow overlap. In this case, put the two strips on the same track, one right after the other. If you play the animation now you should see one play and then the other.

There are a few things you can do with your strips. For instance, it you want to make the action go slower or faster you can scale the strip by pressing *S*. You can also do this by extending the action by pressing *E*. Make sure your current frame is within the action for Extend to work properly and the side it extends from depends on where your mouse is compared to the time marker. One final fun fact I will point out is that you can make it repeat as many times as you like by changing the repeat value in the *Action Clip* section of the **Properties** panel, very good for looping animations.



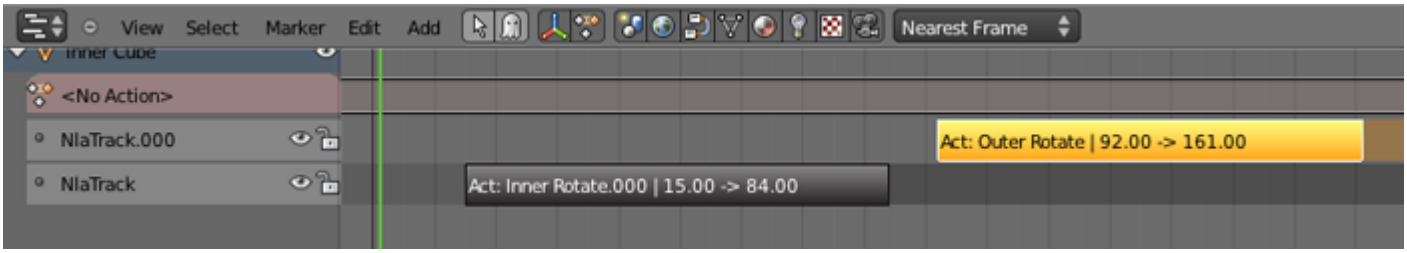
I want to make one final note before ending this tutorial. Put your strips on separate tracks, like shown in the image below and make sure they do not overlap.



When you play the animation, you might find that only one will play. What gives? Well, there are two possibilities.

The first is that you have set what I call the ‘dominant’ track. (I don’t know what the official term for it is). This is identified by the little dot on the left of the name of the track. If the dot it orange, then the track is the dominant track and that will be the only track for that object that will be played.

The second possibility, which occurs when there is no dominant track, is how the tracks are ordered. If you look at any of the action strips, you might notice that there is a stripe that continues after it, even though there is nothing going on there. Well, anything that starts under it will not run unless the track is dominant. So, instead of setting it up like the image from earlier, you put the left most action strip on the bottom track and the right strip on the top track and both will run. Why is it like this? I don’t know. I don’t claim to know everything about the NLA editor or the action editor, so I could be missing something, but that just seems to be how it works. First strip in the bottom left, last strip in the top right, if you want them all to run.



With that, you should have a basic understanding of how to create actions and then actually use them in your renders. Have fun!