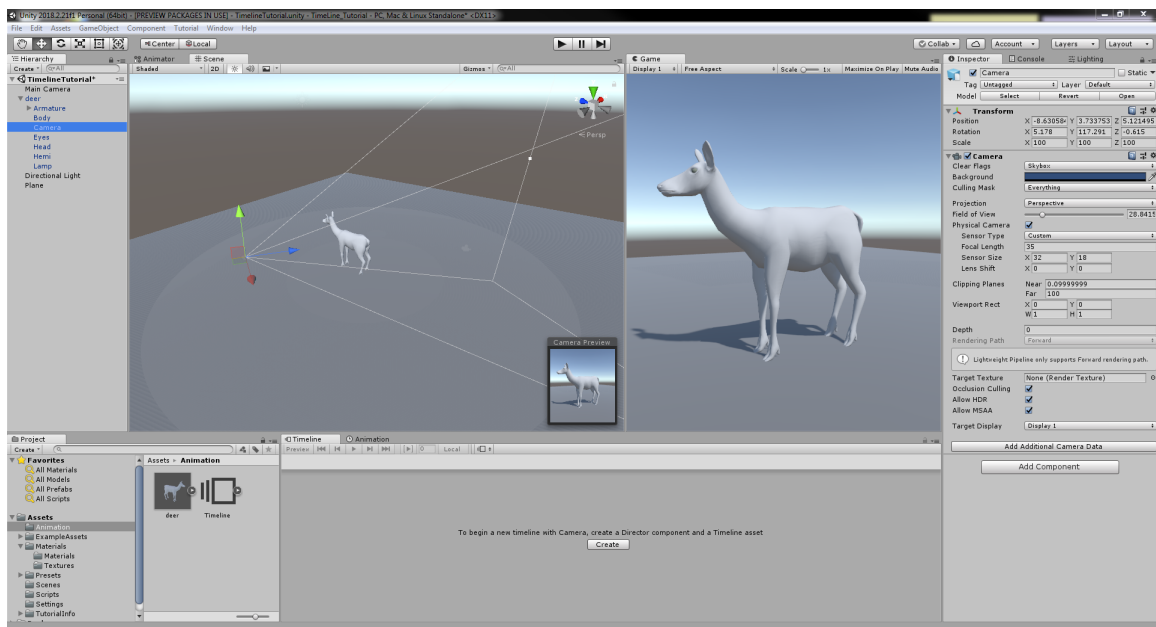


Animation and Timeline Tutorial

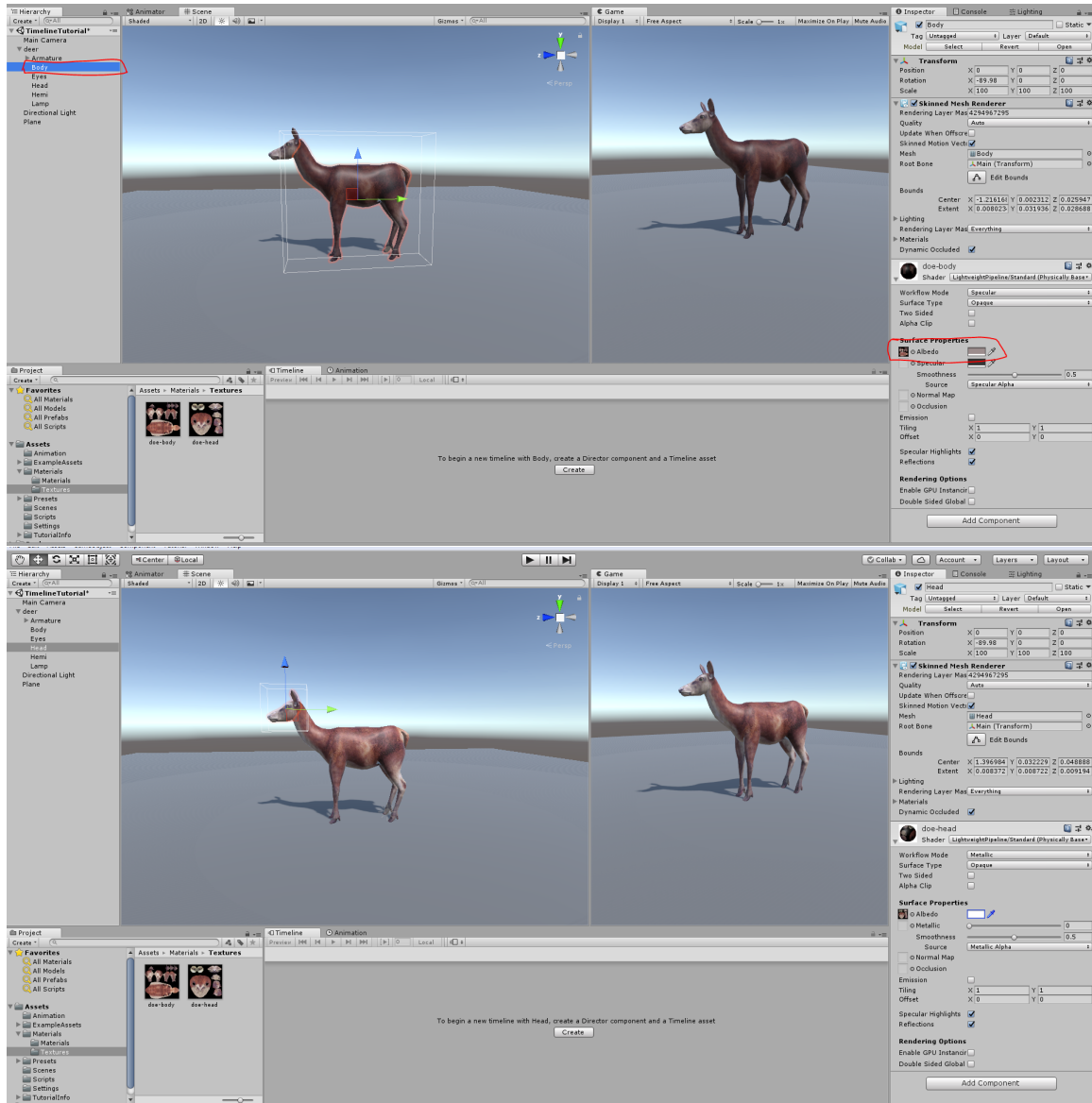
1 Preparation

1. General introduction: Timeline is a great tool for animation **without interactions**. It doesn't have the capability (or is not made to) make interactions, but it has a lot of attributes that animators found to be related and easy to use.
2. Completed Sample Build for reference: [Working Sample Build Vertical Direction Disabled](#) (Click to access)
Also located under Dropbox Animation Capstone - Untethered/VR/Spring 2019/Tutorials
3. Download the Animation Zip File: [Open Sourced Deer Animation FBX and Texture File](#) (Click to access)
4. Create a new Scene in your project file. Put the unzipped .fbx file under the Animation folder, and the texture under the Material folder. Then drag the deer fbx file to the scene. The deer object has a Camera attached to it. Delete it.



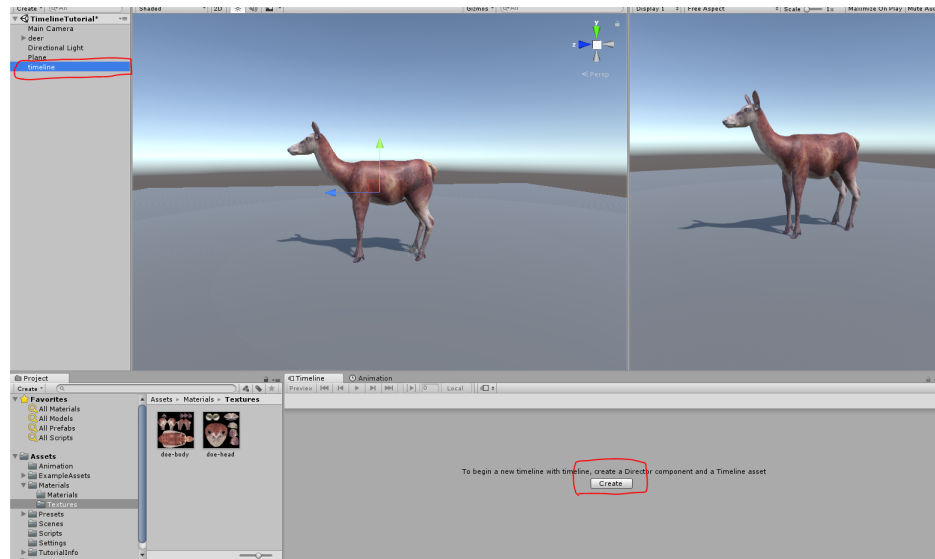
Animation and Timeline Tutorial

- Adjust the Main Camera to whatever direction that you would like to have. Then apply the doe-body texture to the body of the deer, and the doe-head texture to the head and eyes. The initial color of the material is pretty dark, we could adjust it by changing the Albedo of the material. Let's set them to white.



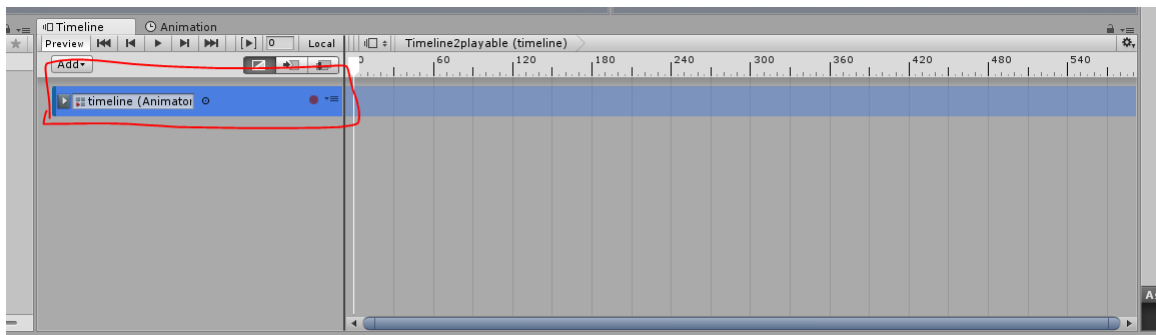
Animation and Timeline Tutorial

6. Create an Empty GameObject and name it timeline. Find the Timeline tab and create and store the playable object under the Animation folder. If you can't find the Timeline tab, you could find it under Window, Sequencing, Timeline from the top bar.



Although we are able to create timeline on any object, it is easier to find if we have an empty object for it. **If you copy the scene without reassign a new timeline, any adjustment you have on one timeline will affect the timelines in other scenes.**

7. Delete the initial empty timeline.

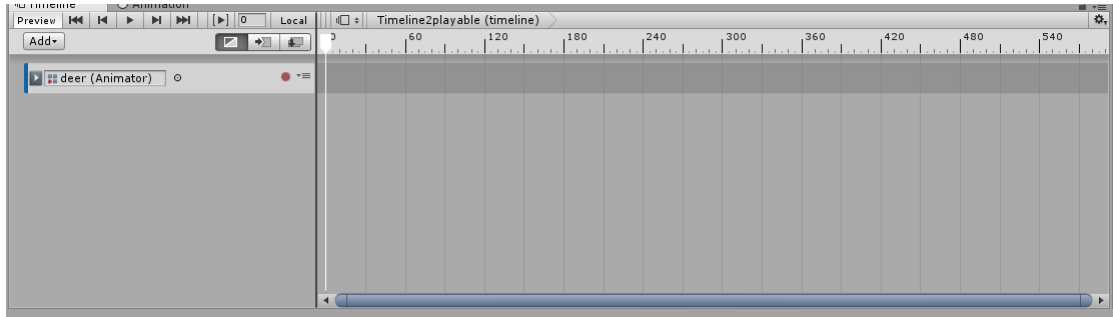


Animation and Timeline Tutorial

2 Placing Animation Clips on One GameObject

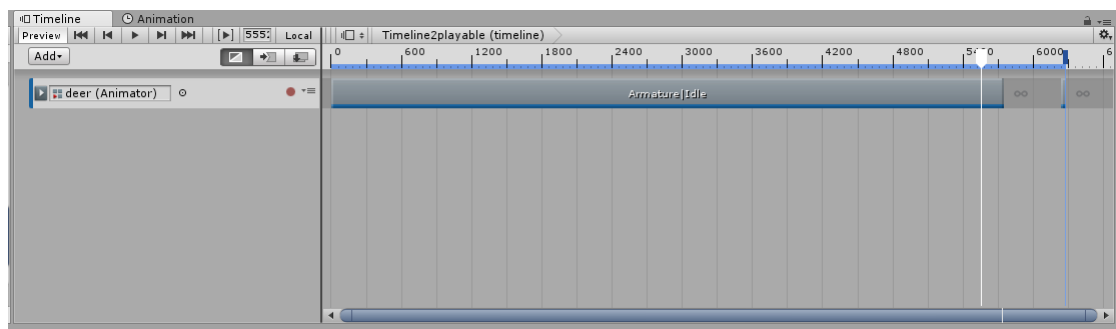
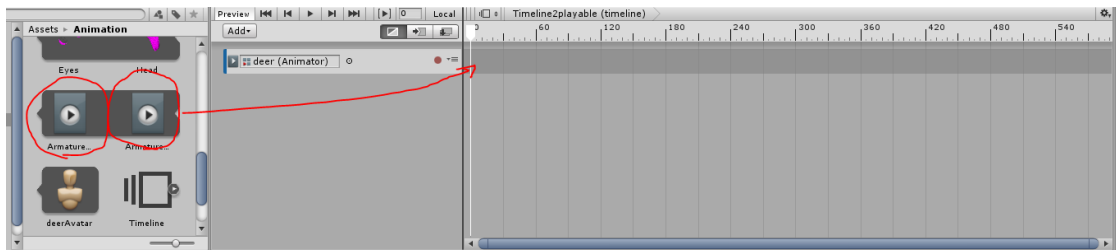
1. Create an Animation Track:

There are two ways to create one animation track. You could either drag the object from the **Hierarchy** and drop it under the **Timeline** tab while the timeline object is selected, and then select animation track. Or you could click on Add button under the **Timeline** tab to create an empty animation track and drag or select the game object. Either ways, the result should look like something below.



2. Apply the animation clips.

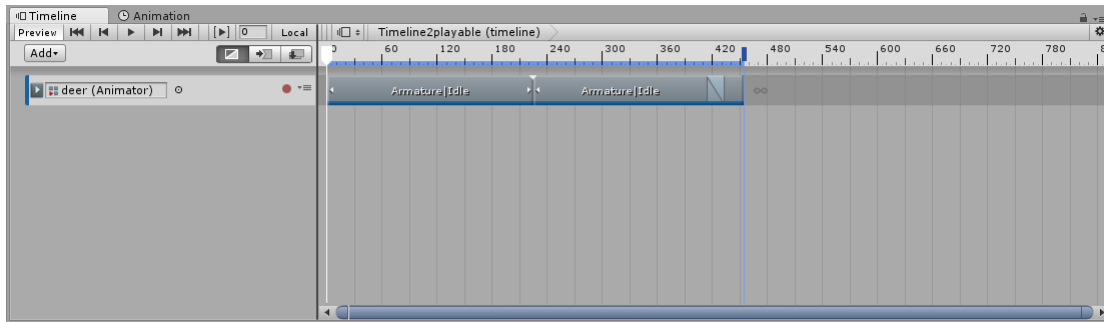
Go to the deer fbx, you would find two clips. One is idle and the other one is dead. Drag the clip file to the animation track. The taken down one is short and the idle is long. You may click on the play button to preview it, or use your mouse to slide through it, just like Maya and After Effect! When you click on one clip, the **Edit** option gives you many useful tools to use, so feel free to explore!



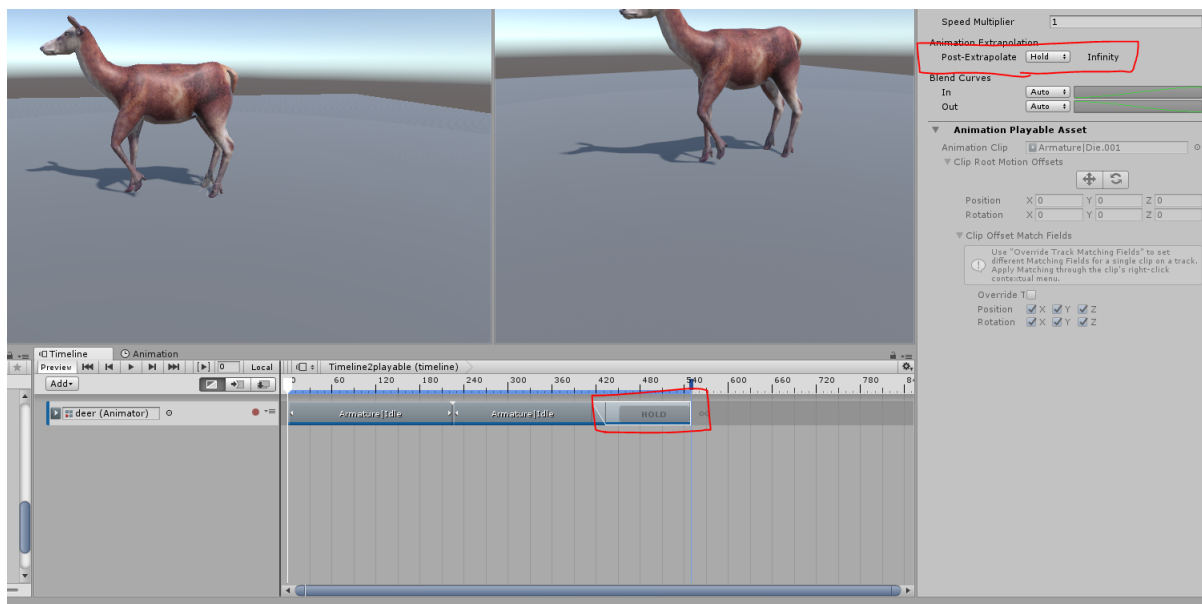
3. After you find part of the idle clip that you are interested, trim it and move it to the front. Then, move the taken down clip to the front and overlap with the idle clip. It will blend

Animation and Timeline Tutorial

the animation and create a transition. (If it is too hard to clip and drag, you make delete the short clip and drag it from the directory). Animation would look different based on how they overlap.



4. Post-Extrapolate of the clip defines how the clip behaves after it ends.
If you extend the clip by hand, it will hold on the last frame of the clip.

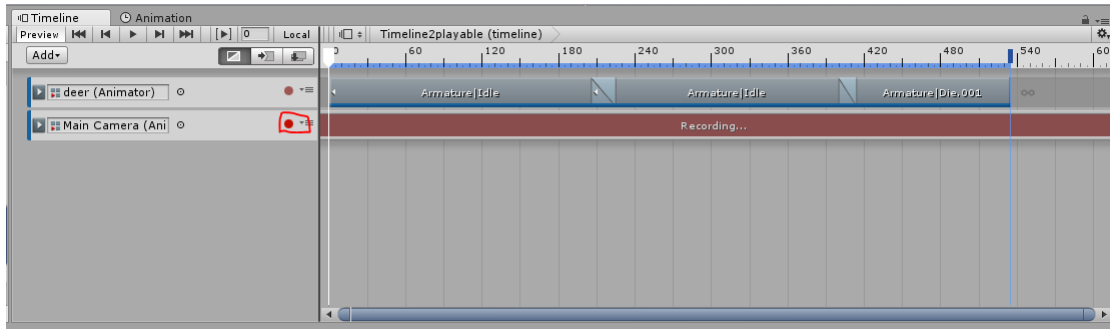


5. And that is how you apply animation clips on one GameObject.

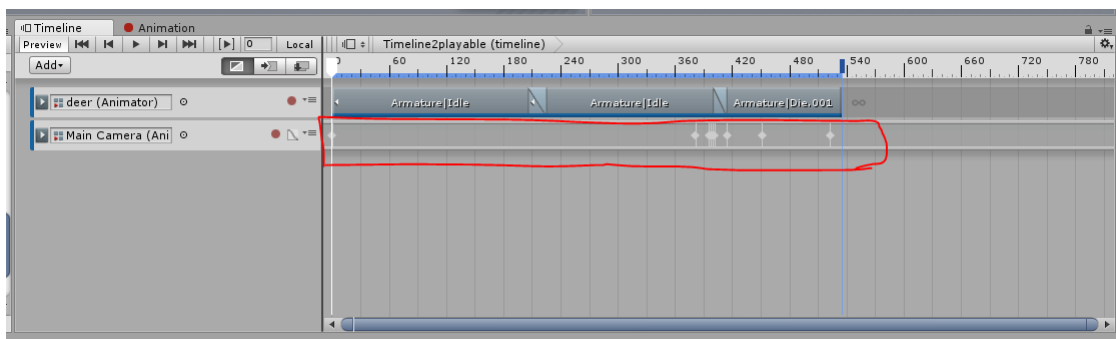
Animation and Timeline Tutorial

3 Recording Animation Using Timeline and Edit in Animation

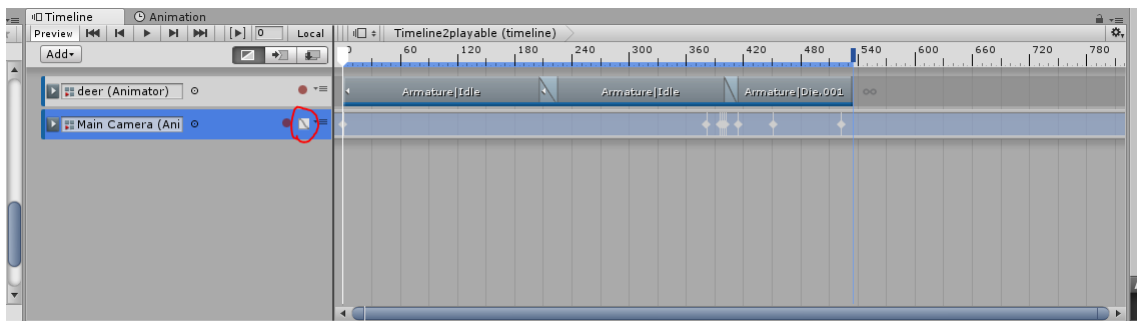
1. Lets add some animation to the camera. The record button on the **Timeline** allows us to record any changes on the attributes of one object. First, we drag the Main Camera into the Timeline. Then, click on the red dot close on that animation track. Red track indicates that it is recording your behavior.



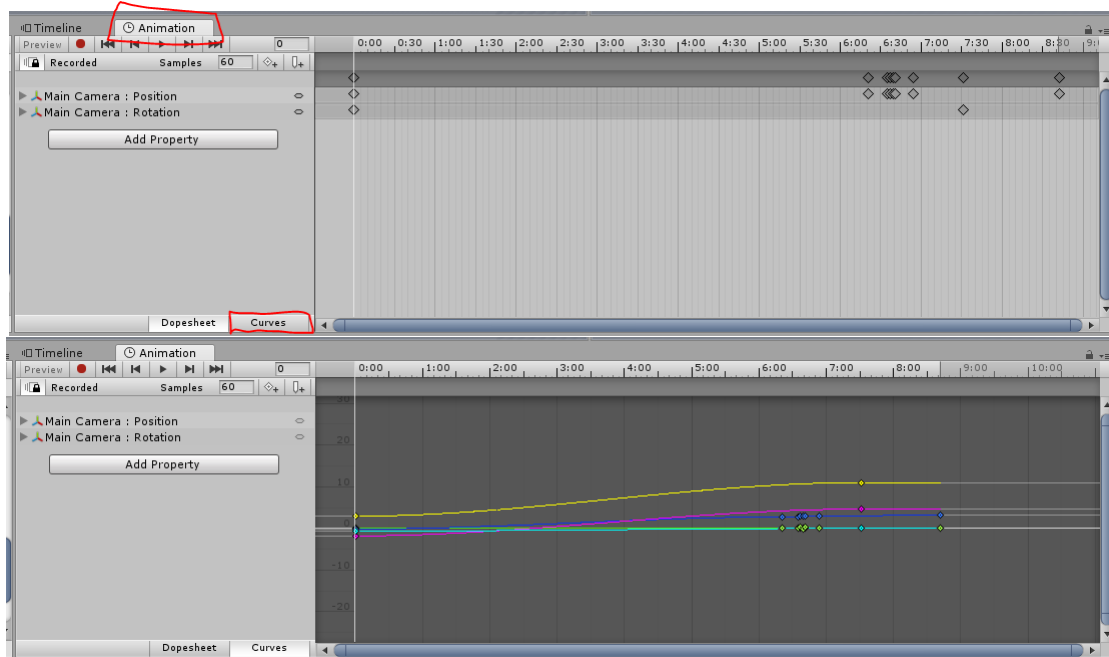
2. Change the transformation of the camera or whatever you like along the animation track. Anytime you make a change, a key frame will be added to the track.



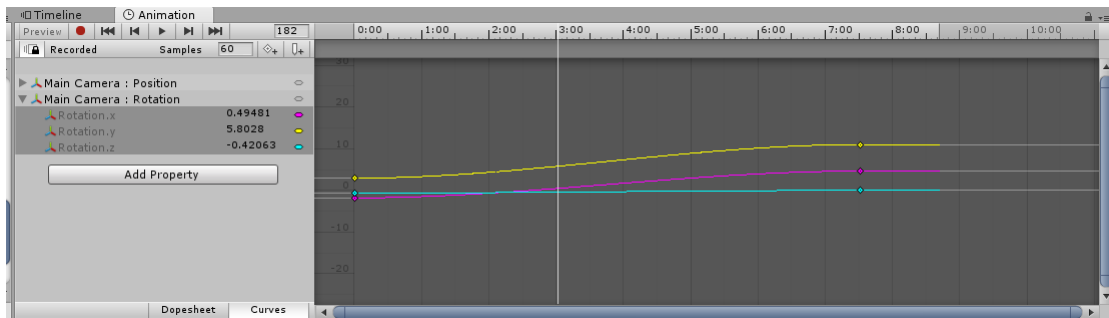
3. Sometimes the recording between key frames doesn't work as you expected. There are two ways to edit it. You could either click on the "curve-like" icon close to the recording button. Or you could double click on the track, and it would bring you to the **Animation** tab with Dopesheet and Curves. It looks very similar with the Graph Editor in Maya.



Animation and Timeline Tutorial

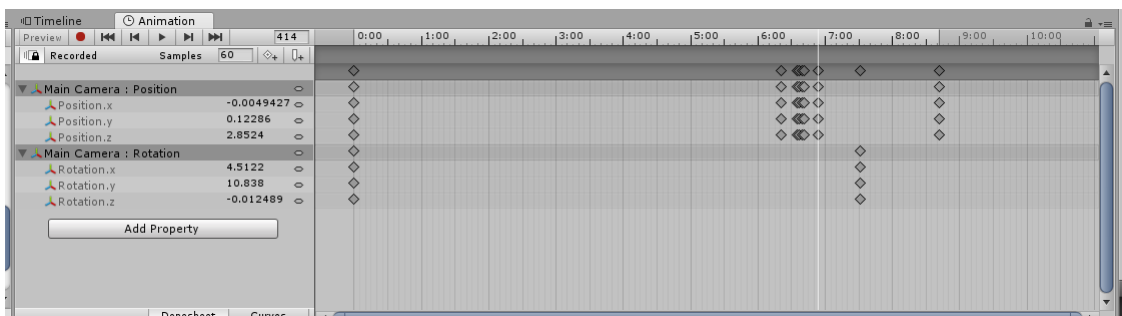


4. You could only highlight the lines that you would like to edit by selecting the attributes.



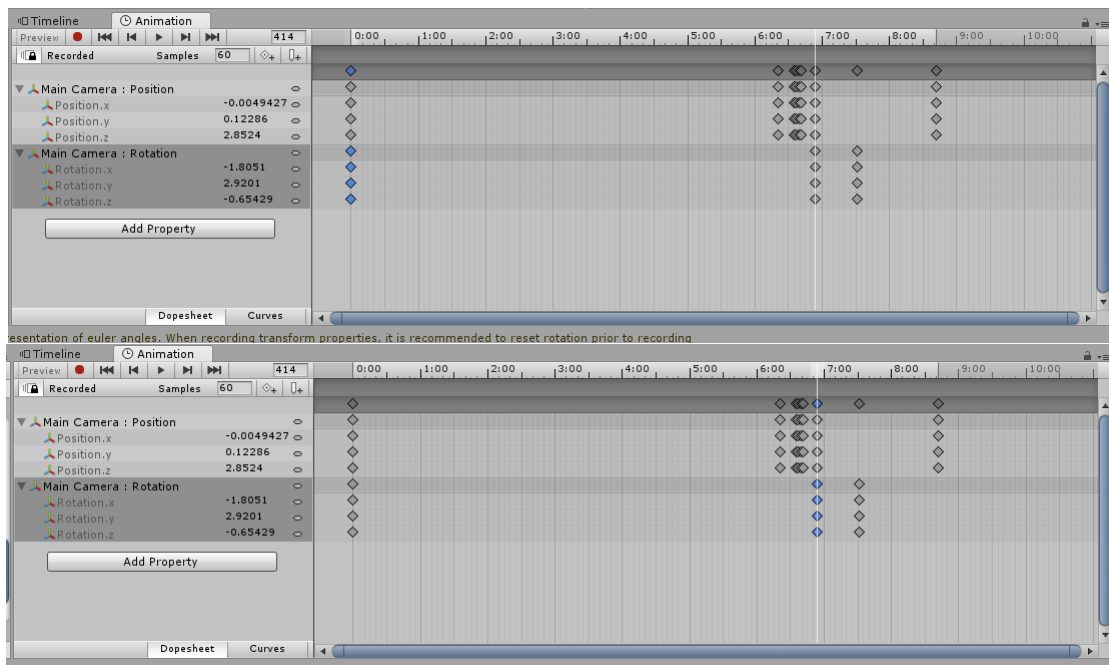
5. In my example, I don't want any rotation on the camera until the camera shake, so I need to add several key frames on the rotation. I could use the add-key button to add key frames, but I personally prefer use Dopesheet to edit key frames.

Alt + the carrot keys are the hot keys to switch between keys. **Carrot keys** are the hot keys to move along frames.

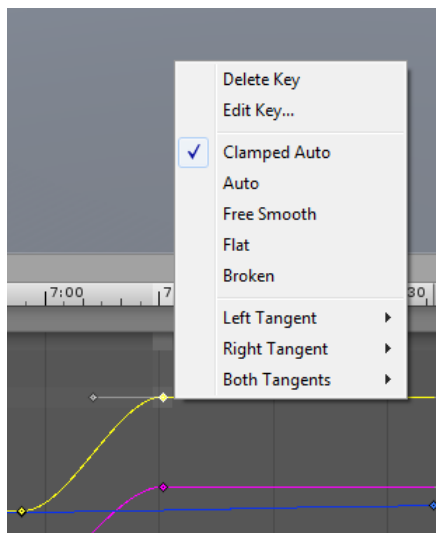


Animation and Timeline Tutorial

- To fix my issue, I copied the selected key from the front over to my cursor position by Ctrl+C and Ctrl+V. You could also change the timing easily by select and drag the key frames.



- To edit curves between auto, step, linear and so on, you right click on the key frames and select whatever you need.

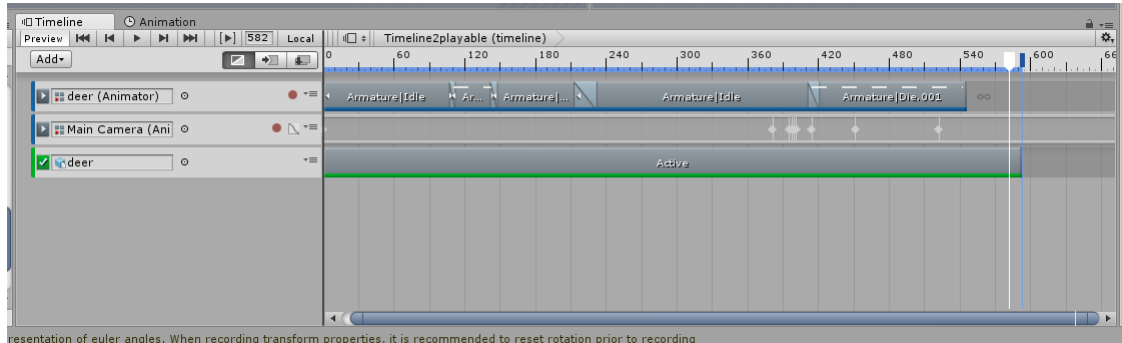


- You could animate a lot of objects using **Timeline**, such as the intensity of lights, attributes of materials, etc.
- If you want to, you could also change the key frames to clip track by right click and select **Convert to Clip Track**. The convert is one-way, so you can't convert a clip to key frames on the track.

Animation and Timeline Tutorial

4 Activation Track and Event Trigger

1. There is another special track called Activation Track that would activate and deactivate GameObjects based on frames.



2. If you have some function calls that you would like to make, you could click on the Animation clip and add event which would trigger the function call. The function script has to attached to the animated GameObject.

