Overview

To streamline some time and effort on part of the coders and to make implementation more approachable a framework has been developed for *Advanced 3D Art & Production (COSC 420)*. This package will help break down how to export your creations from Maya to Unity and how to make use of the framework.

Note: A number of students are using 3D programs beside Maya. Though the export process from the program may differ the Unity steps should be the same. Please refer to your specific programs process for exporting to Unity & other game engines.

Importing the Interview Package

The first step will be to set up a new Unity environment that uses the custom made package. Here we'll be going over importing the package and drawing attention to the elements used in the export process.

1: Start a Unity Project

I recommend using Unity Hub as it gives you the best control over Unity Version and neatly compiles all Unity projects. You can save your project anywhere on your local harddrive and use any Project Name that makes sense to you.
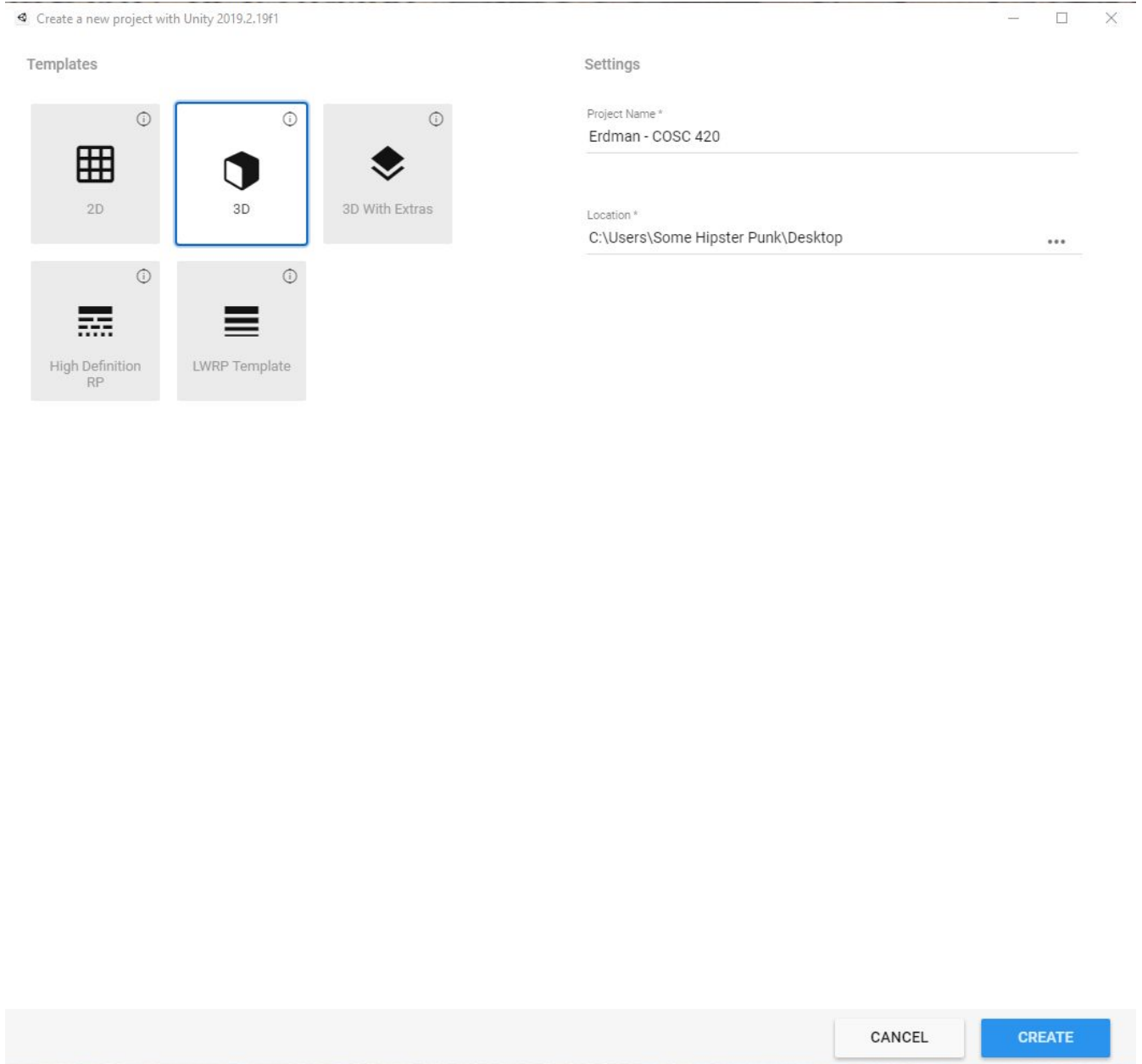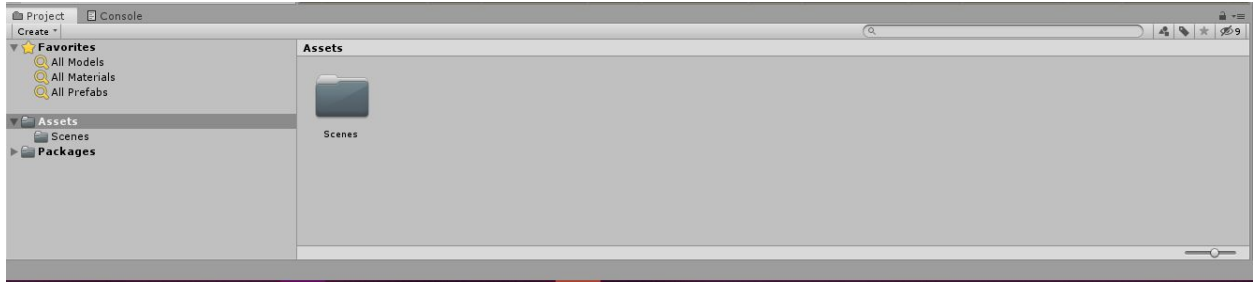
Above: I saved my project to my desktop and titled it with my lastname - course number.
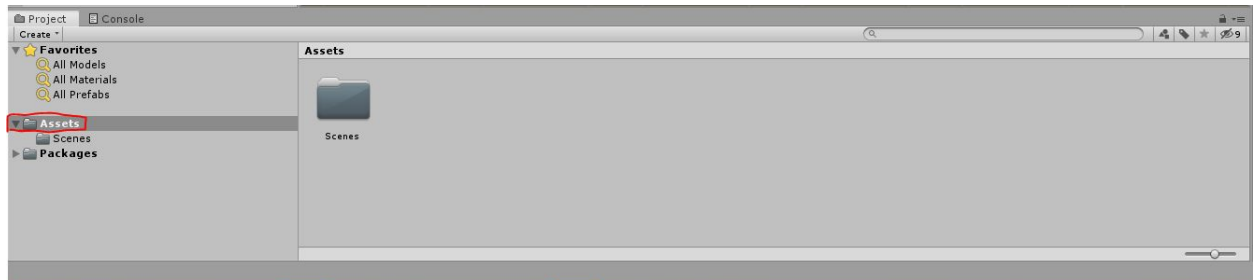
2: Import the Framework

Once your project has loaded the first step is to import the custom package. A link to the project has been provided by Professor Sujan.
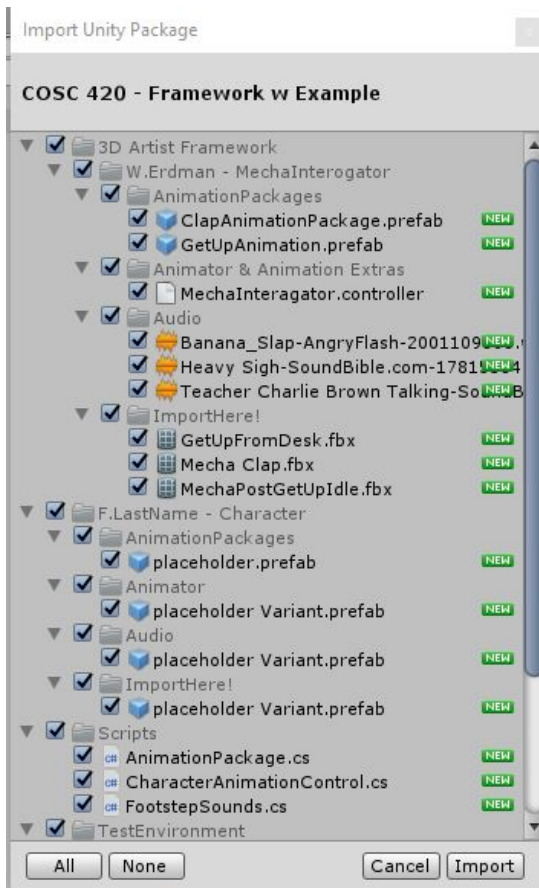
https://drive.google.com/file/d/1KAhnX1MiFOajhXjiVtkFTsFHi0DssrE5/view?usp=sharing

*Above: the Project tab usually located at the bottom of the Unity workspace.*

1. Right-Click on the head **Assets** folder.
2. From the list click on **Import Package.**
   a. Select **Custom Package**
3. Navigate to where you saved the Unity Package and select the Package

You should then get a prompt that shows the individual pieces of the package. Make sure everything is checked before clicking on **Import.**
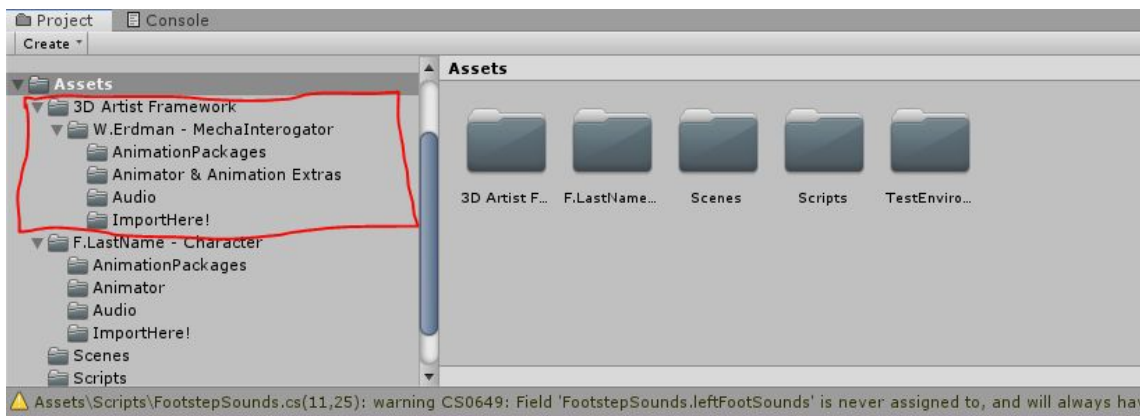
Once done importing all the relevant folders and their corresponding files should show up in your project.
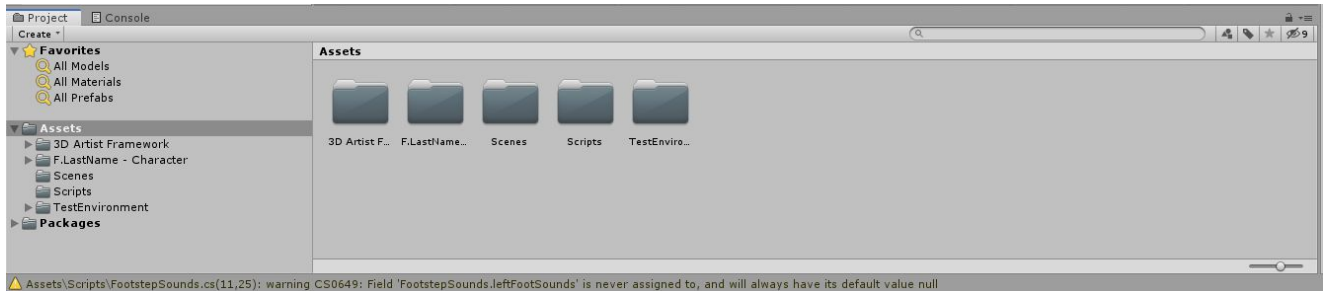
Above: Successful Package import

2: Personalizing Your Workspace

Once you've imported the Project you can spend some time familiarizing yourself with the folder system you'll be using.

What you see above circled in red is a completed example. You can delete/ignore this hierarchy. It's there as a proof of concept and for anyone who might be aided in learning by having a completed example to pick apart.
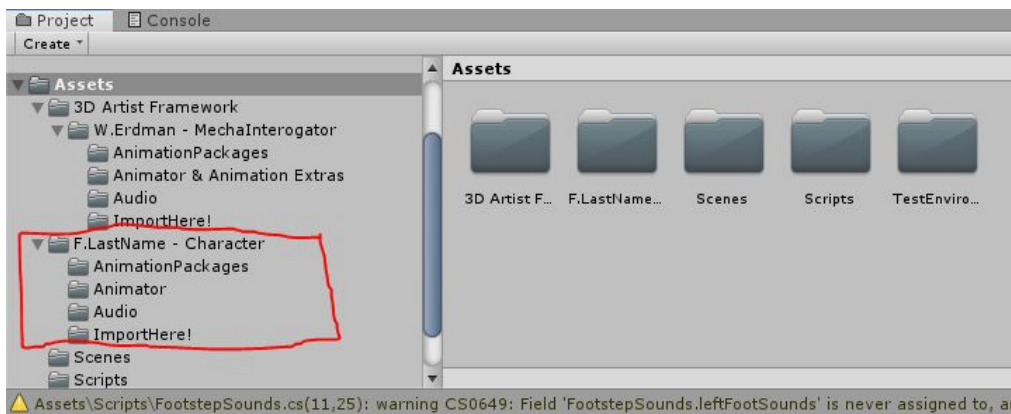
A blank folder hierarchy is provided for use by 3D artists. You'll see it labeled as **F.LastName - Character.** This is to become your personal folder set. You can start by renaming the folder set First-Initial.Last-Name - Character. You'll notice it comes with a number of folders. There's only two we have to be concerned about right now.

Audio: This is the folder you'll save all your audio files into.

ImportHere!: This is the folder used to save your character model and animation sets (we'll be getting into that in a minute.)

3: Exporting from Maya

Now we're going over to Maya and opening our character project. The first thing we're going to do is export our model to Unity. We'll get to animation next. So you have your model finished. Go to **File > Send to Unity > All**. The first window prompt is asking for where to save the export file to. This is where you want to navigate to where you saved your Unity project. Under the project folder is a folder for **Assets.** Under that directory should be the folder you changed to your **F.LastName - Character**. Then under that option is the **ImportHere!** folder we discussed earlier. Select that folder and you'll be given a second prompt.
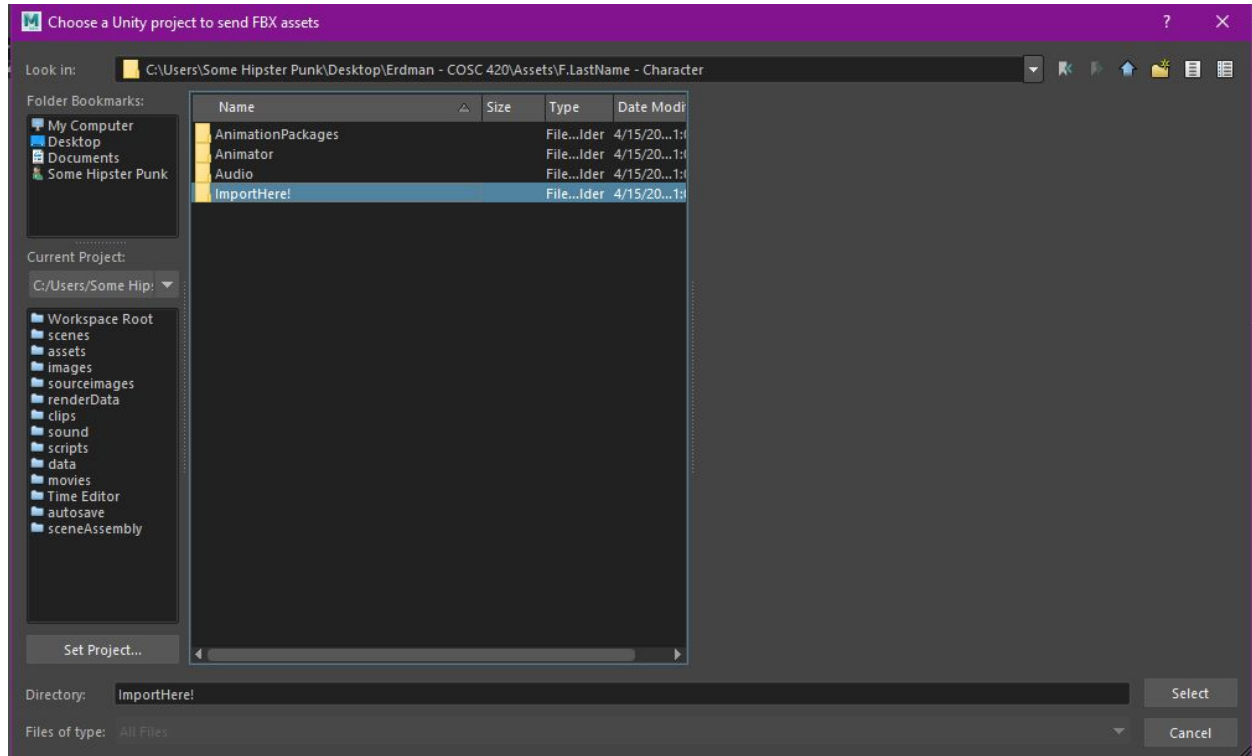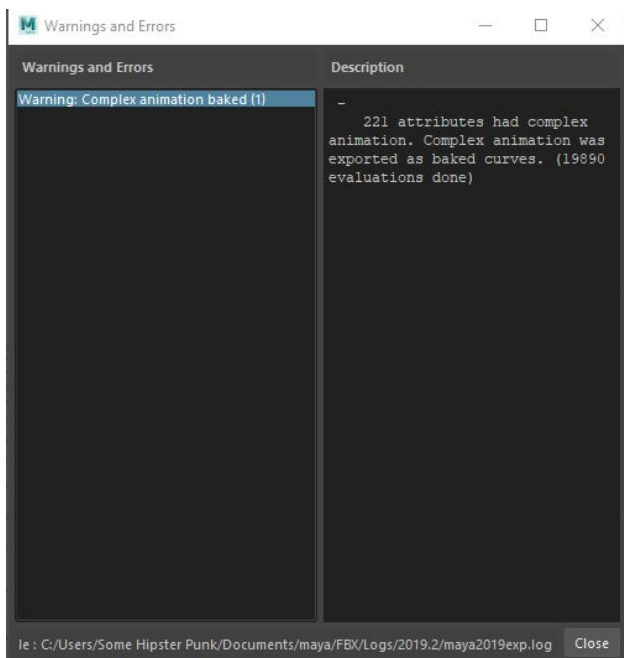

Above: Selecting export destination.

For just exporting your character all you need to do next is name your file.
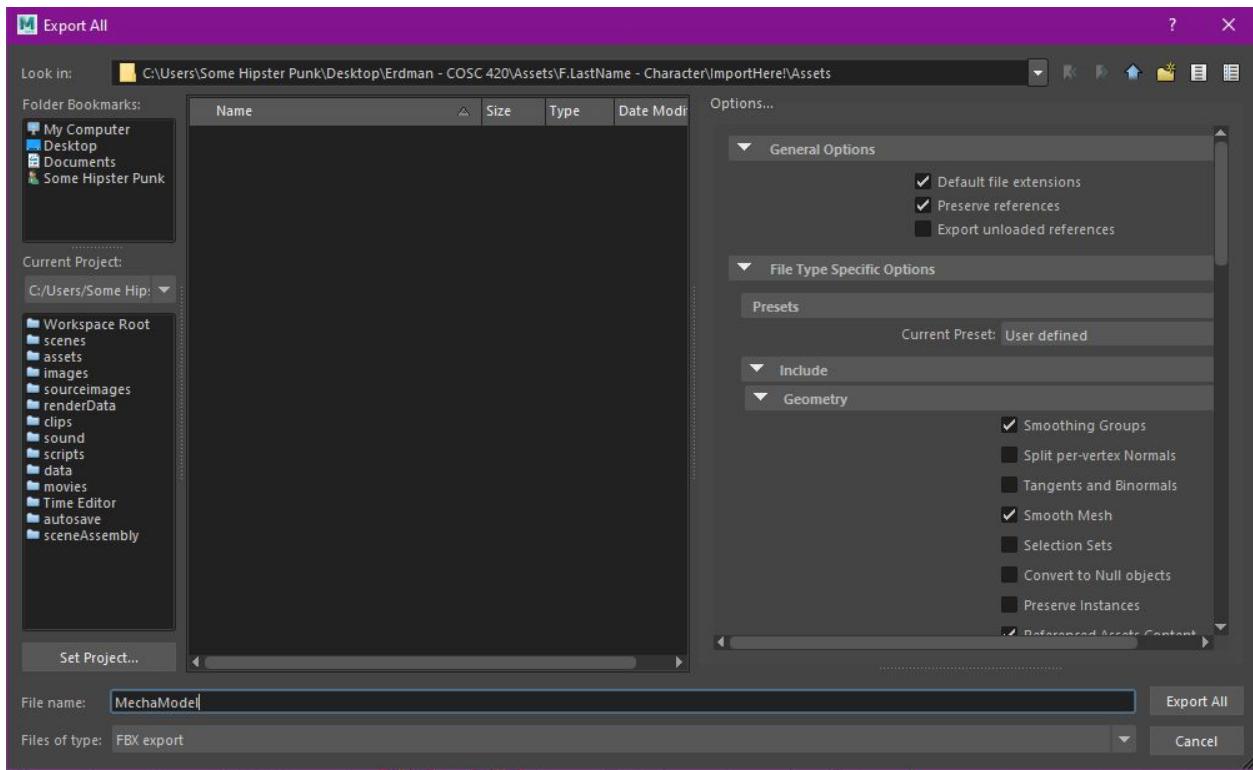

Above: exporting Maya file to the Unity project.

You might get a warning! If you have any type of animation you might get this warning about animations exported as baked curves. This is fine and you can just hit **Close.** IF you receive any other type of error there might be an actual problem with your file or export.

Not deleting your history or freezing your transform before rigging your character can cause issues here and may require you to rerig your model.
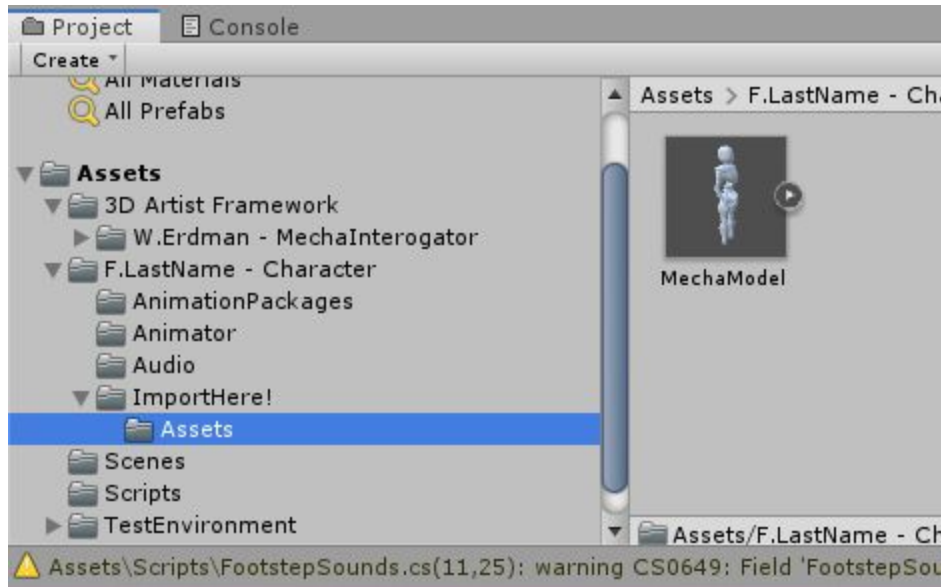
To see if your export was successful you can go back to your Unity project. You might get a folder titled **Assets** under your import folder, this is to be expected based on how you exported.

You can see your model package in the preview and can open it in the inspector.
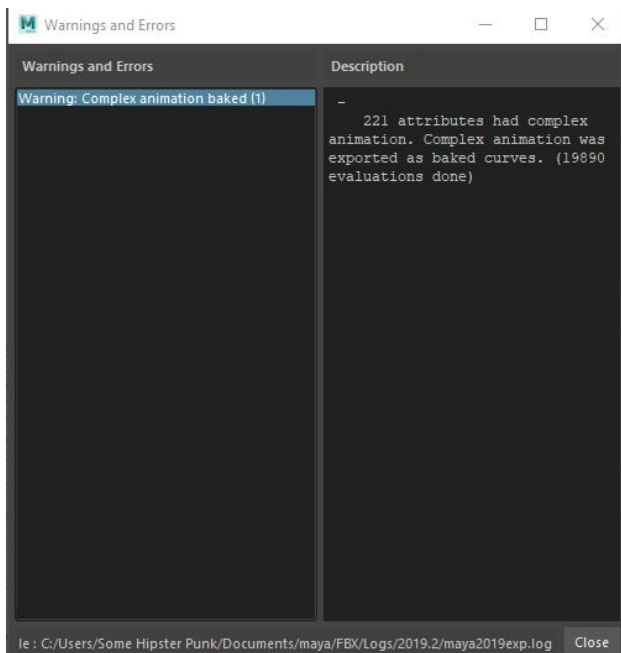
4: Exporting Animations

Now if you have your model animated in Maya the process to bring over animations is very much the same. Get back to the export screen following the first part for exporting from Maya till you're back at the screen where you title your export.

Scroll down on the options till you see headers for **Animation** and **Bake Animation.**
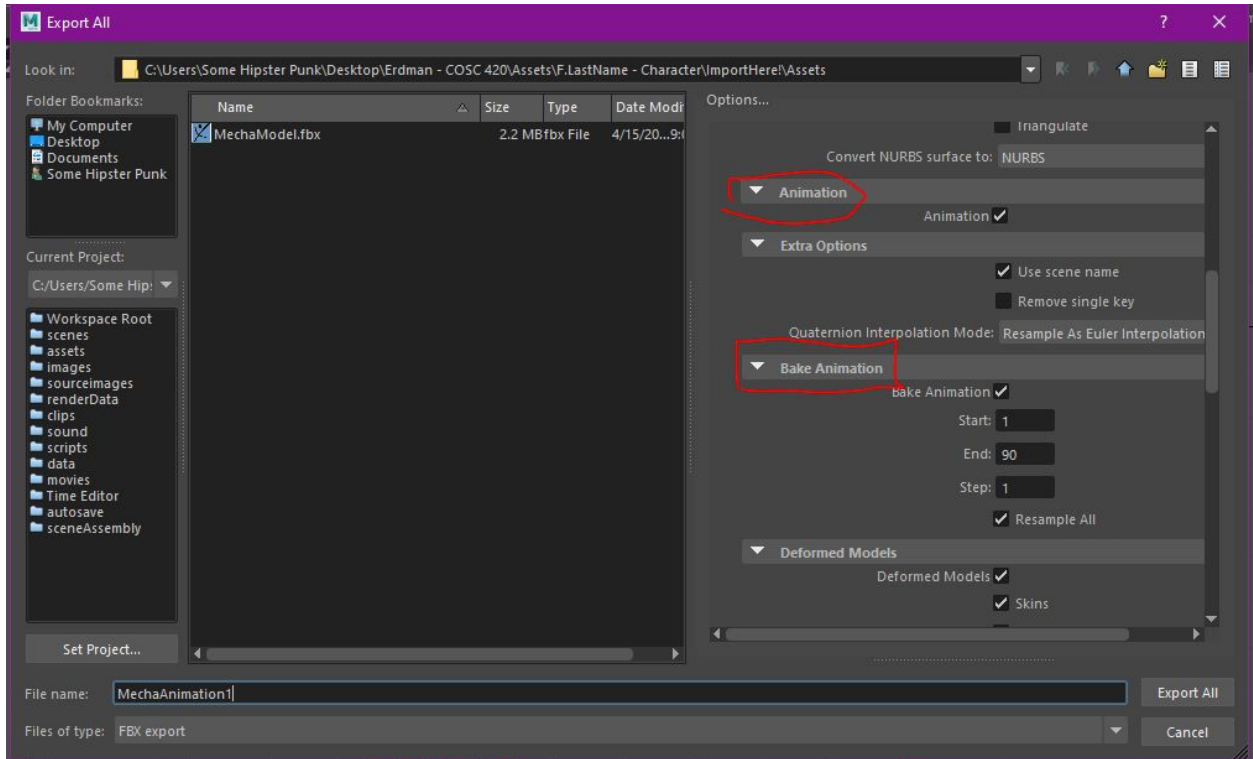
*Above: Export window focusing on Animation and Bake Animation options*

Make sure you have the option for **Animation** checked as true as well as the **Bake Animation** option. Under **Bake Animation** you can also set how much of the timeline to export. If your animation is only 24 frames you'll want to change your **End:** option to reflect that and set it to 24. Come up with **NEW** name and export the file.


You might get a warning! If you have any type of animation you might get this warning about animations exported as baked curves. This is fine and you can just hit **Close.** IF you receive any other type of error there might be an actual problem with your file or export.

Not deleting your history or freezing your transform before rigging your character can cause issues here and may require you to rerig your model.

You can again test to make sure your animation exported by going back to Unity. There should be a second imported package.
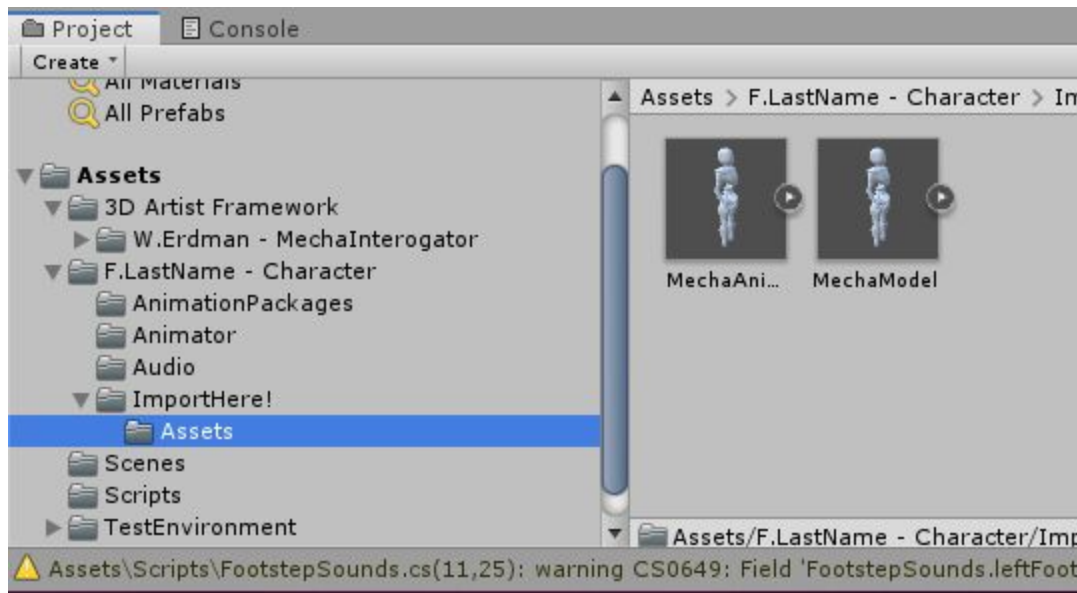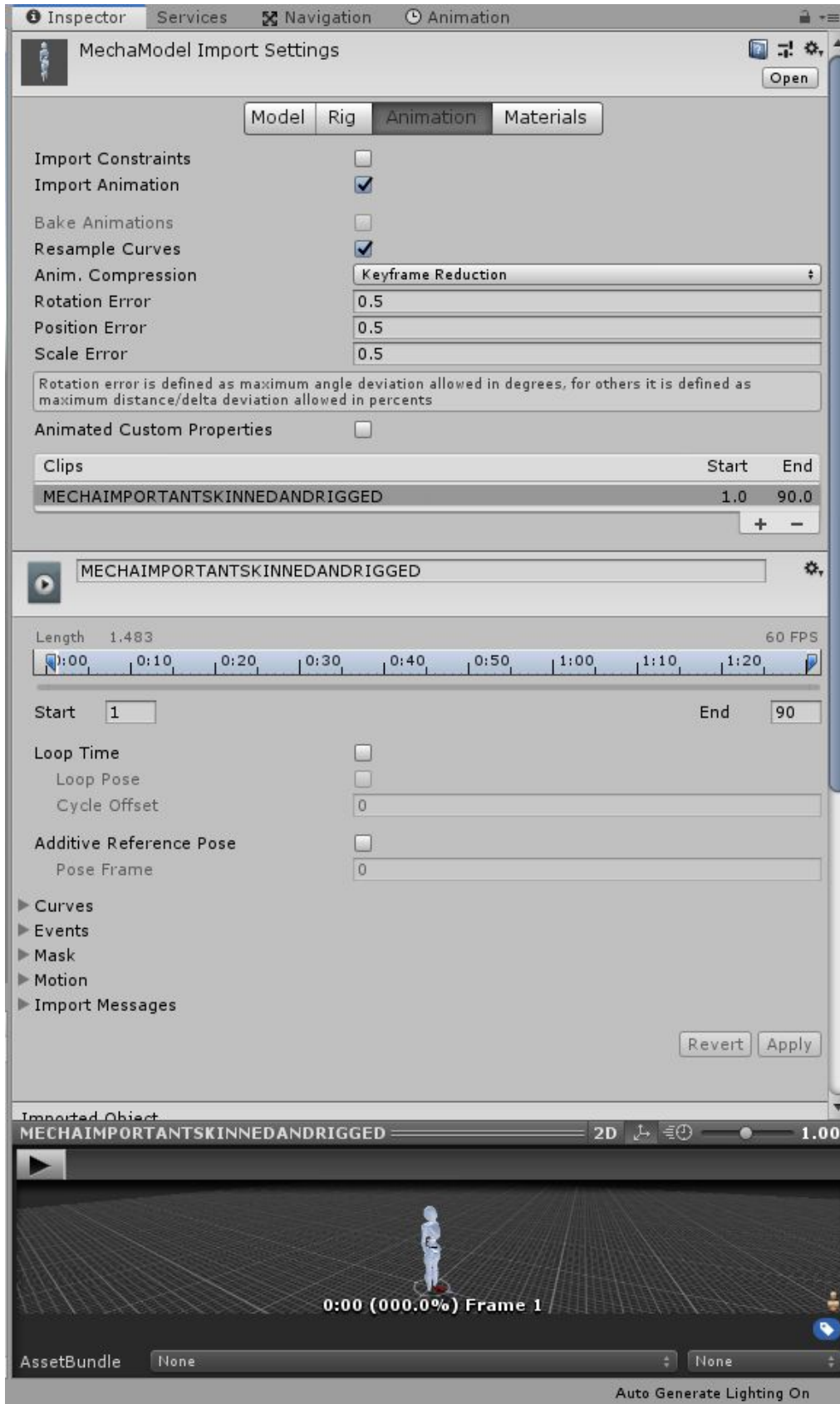

If you click on the arrow to the right hand side you'll be able to see all the elements in the package including model and the animation.
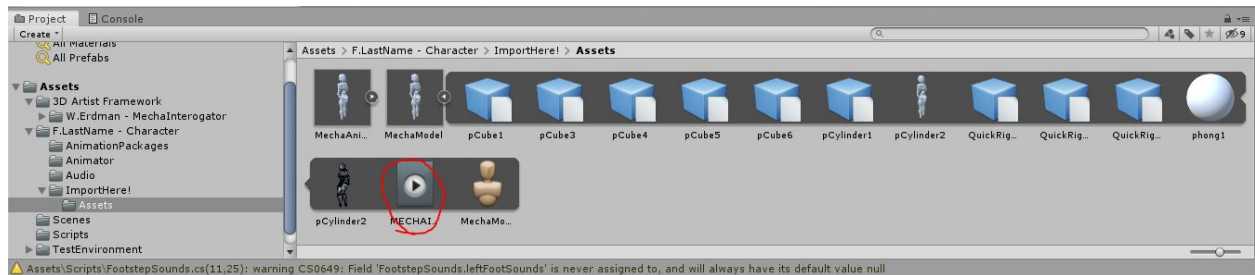
Above: Expanded package view with animation file highlighted.

Click on the package (the main file containing all the various elements and you'll get some options in the *Inspector.*

We'll get into the **Model** option more a little later, but if you want to see your animation select the **Animation** tab and then toward the bottom hit the play button and you should see your animation play in the small preview window.

You can resize the preview window if you want to get a better view.

4: Scaling Your Model

It's likely that when you first drag your model into the Unity scene that you'll discover your model is either much larger or (like mine) miniscule. So this next step is going to be getting your model to a size that will work throughout the entire project.
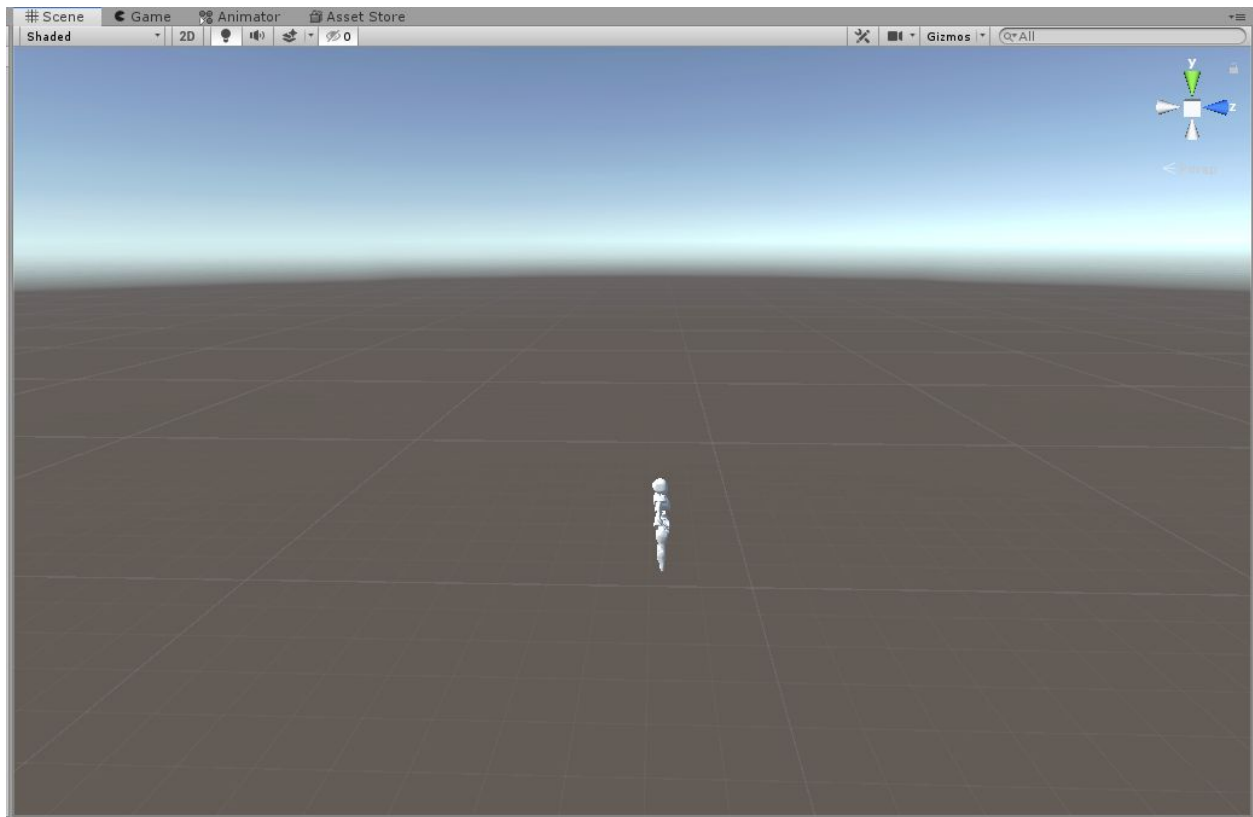
To start scaling our model we want to make sure we have a good perspective and the right measuring tools.
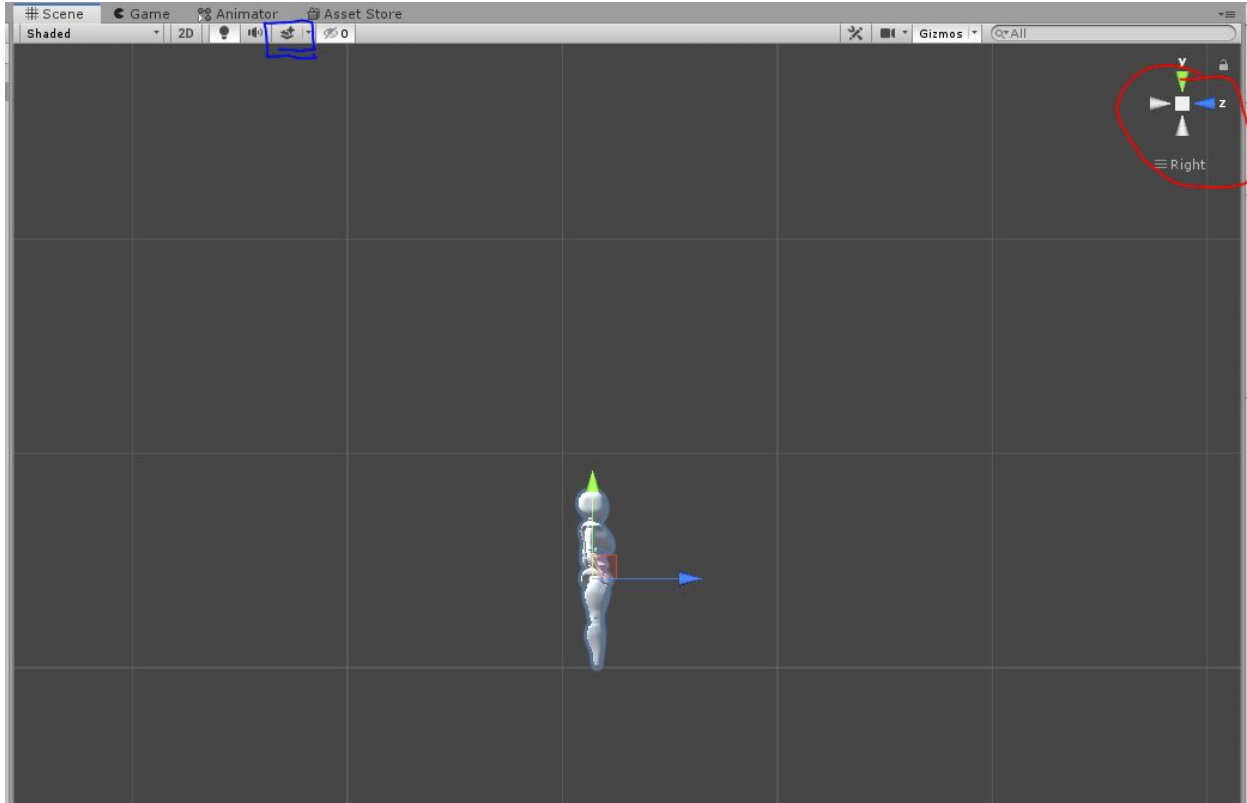
Above: Perspective option circled in red and Skybox option in blue

Start by turning off the Skybox. Hit the button at the top of your screen (circle in blue in above picture) till the Skybox goes away. Next you can hit your perspective tool in the upper right corner of the scene window. Use the perspective option to get to a solid sideview with the scale grid in the background.

Each of the solid square outlines in the background equals 1m (3ft.) This will help you determine if your character is too small or too large. I start by making sure my character's feet are lined up with the bottom line of a box to properly judge height. Next we finally get to tweaking the size. This is where we go back to the model in **Inspector** and to the **Model** tab we pointed out back in the animation importing.

Note: Depending on your setup the guiding squares in the background might only be a portion of an actual Unity unit (1u = 1m = 3ft.) You may have to scroll further out or change your settings to get an actual Unity unit represented by the grid. You can always test by creating a simple cube and leaving it at a scale of 1, 1, 1.
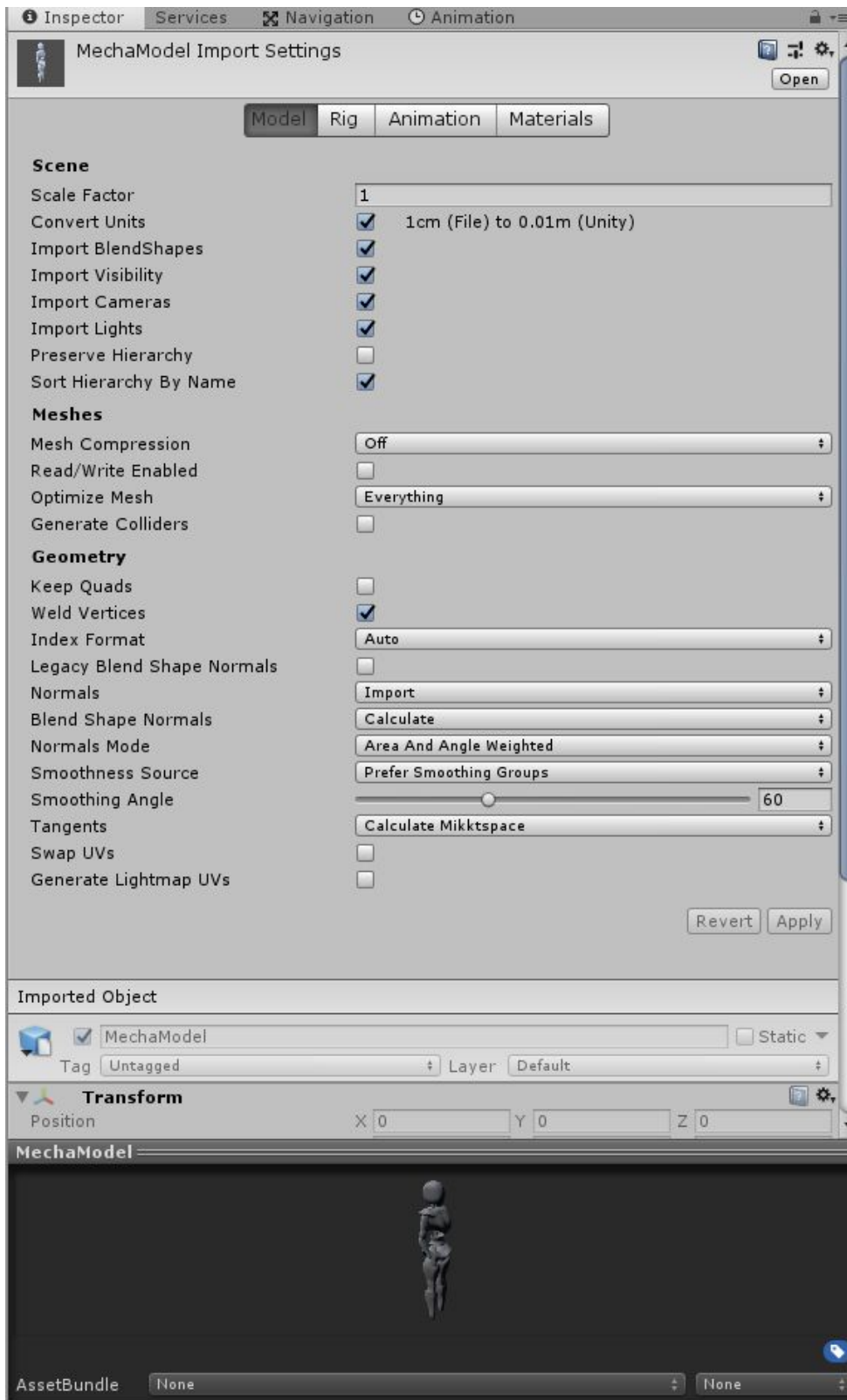
The first option is one titled **Scale Factor;** this is how you will be changing the character scale.

**DO NOT** use the scale tool in the scene to resize your model.

Change the number in scale factor till your character is the desired size. The larger the number the bigger your model will become, smaller the number the smaller they will become. (If you have a model too large you'll probably start using decimal numbers like 0.5 or 0.3.)
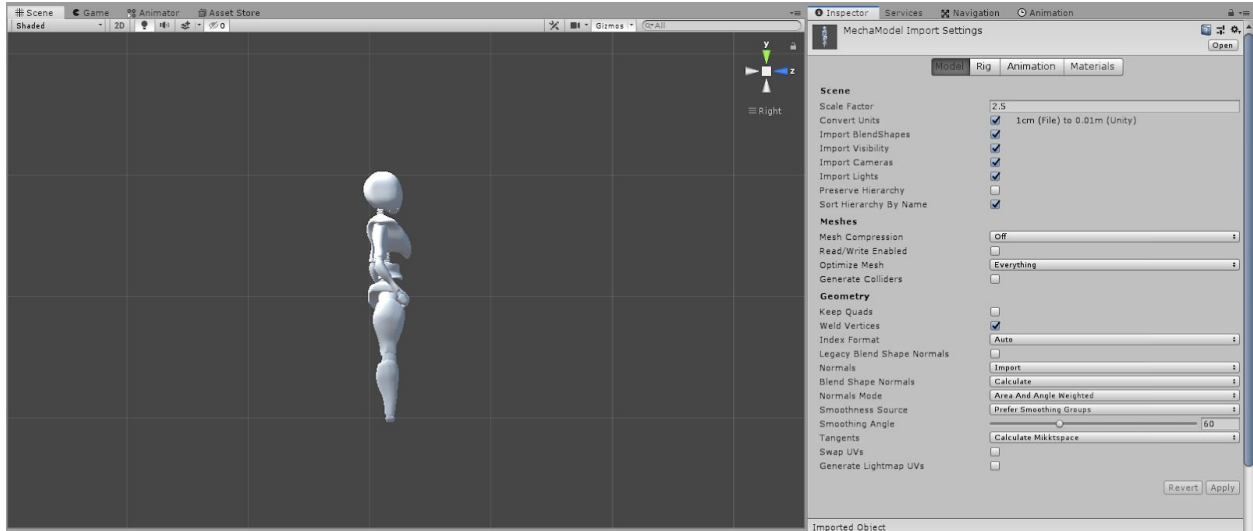
*Above: a character at 6 feet after changing **Scale Factor** to 2.5*

5: Adding An Animator

Next to finish the initial setup we need to make an Animator for our character. Under your personal directory you'll notice a folder name **Animator.** Navigate to that folder. Once the folder is open right click to get an option menu. Go to **Create,** and under **Create** should be an option for **Animator Controller.** Name the animator something unique, best practice would be to incorporate your character name/title in the name of the animator.
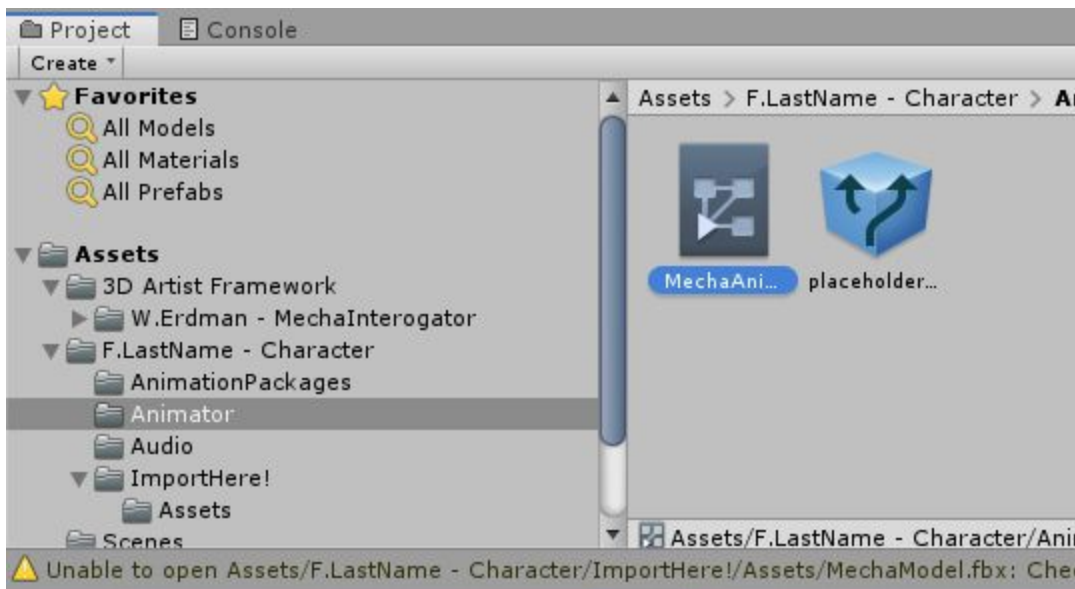
Above: Animator in the directory

Now we just have to attach the controller. If you select your character in the **Scene Hierarchy** you'll get an **Animator** option in the inspector.
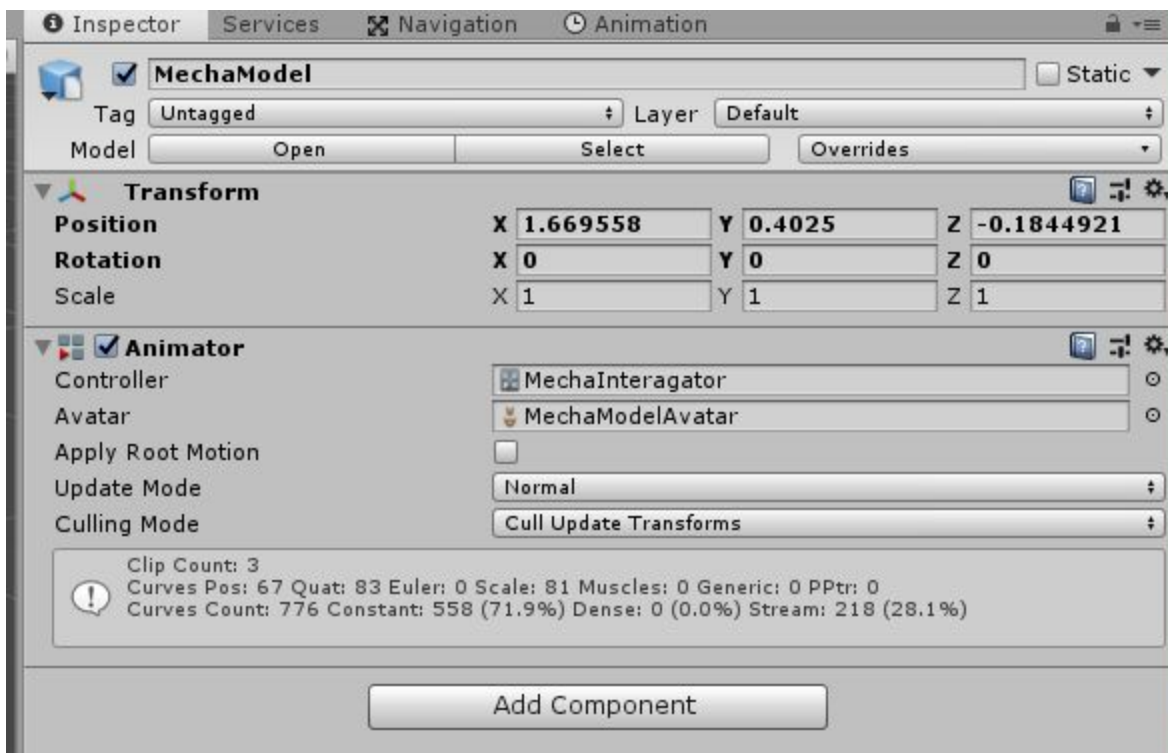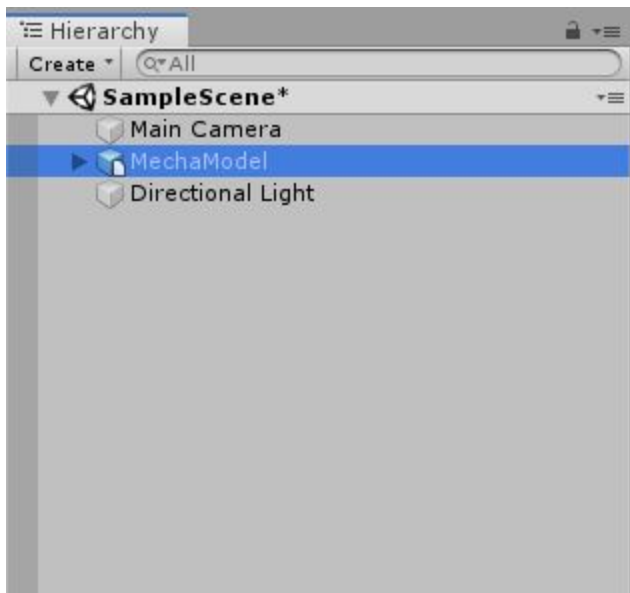
Top: Scene Directory selecting character. Bottom: Inspector of chracter.

Next should be as simple as dragging your **Animator** from the folder into the **Controller** slot under the **Animator** component in the **Inspector.**

6+: Coming Soon

Instructions on adding animations. How to create animation packages. Programmer instructions on how to use Scene Master.