

Unreal Engine 4 Character Creation Documentation

This Documentation assumes you have a basic knowledge of node editors, and variable types within the Unreal Engine and serves as a foundation in the creation of playable characters with imported Motion Capture data through the use of explicitly Visual Blueprinting

For information regarding this, please review the sections regarding UI Overview and Variable Types found within the “Unreal Engine Massive Tutorial”

<https://www.youtube.com/watch?v=QMsFxzYzFJ8&list=PLGvfHSgImk4aUuVJnlg1FB55-TzhBWqIQ&index=1>

Importing Your Character (Chapter 1)

Navigate to your Content Browser and Designate the root folder destination for FBX Import.



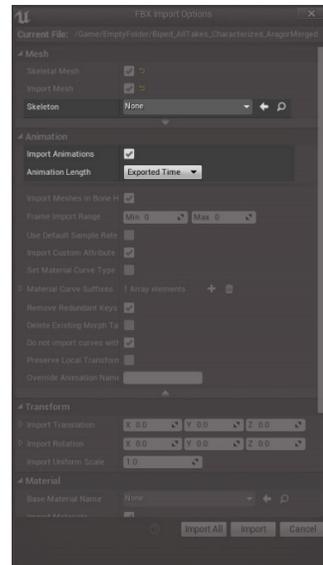
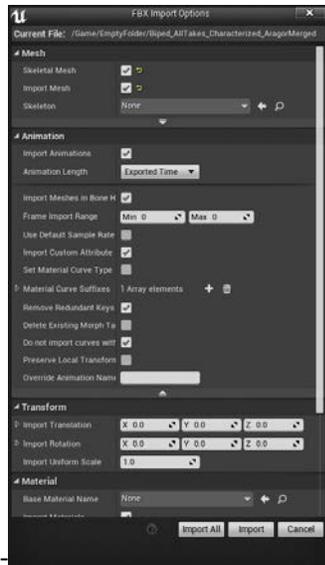
Navigate to the Import Button



After Selecting your FBX with the Animations attached, Import Options will be shown;

We will choose yes to **“Import Animations”**

Furthermore, if your Skeletal Mesh is already imported, you may select it at the top to import solely the animations and assign a preexisting mesh to the newly imported animation data

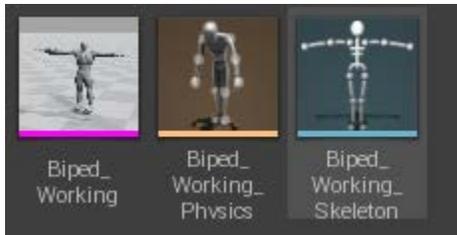


Upon Importing your content browser will include the following; from left to right these assets are:

Skeletal Mesh: The physical Mesh of your imported Character

Physics Generation: It's physic's properties

Skeleton: It's animated Skeleton



Furthermore, this will be followed by every imported animation take;

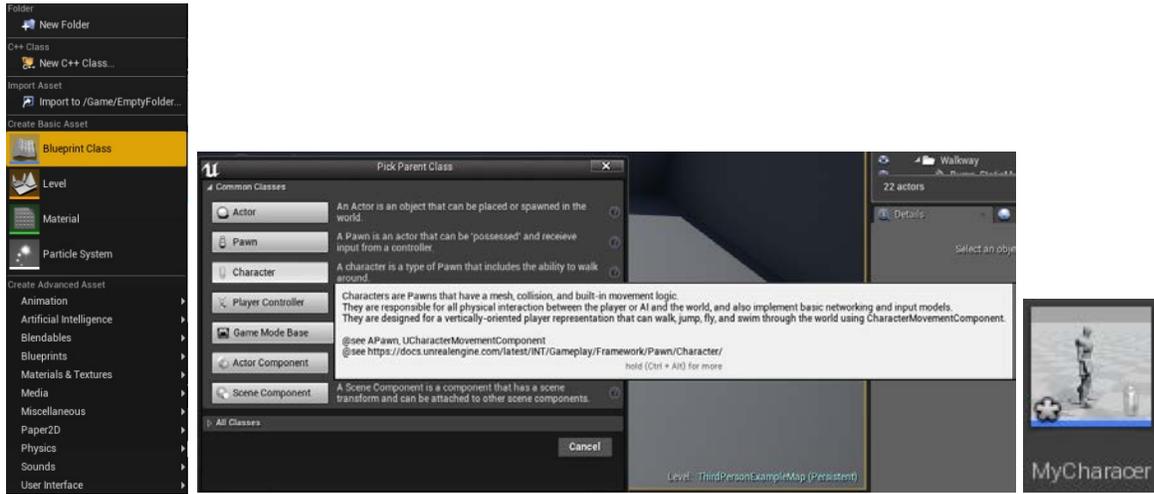


My Character is imported; NOW WHAT? (Chapter 2)

Within your Content Browser, Right Click and Create a New **BluePrint Class** Assets

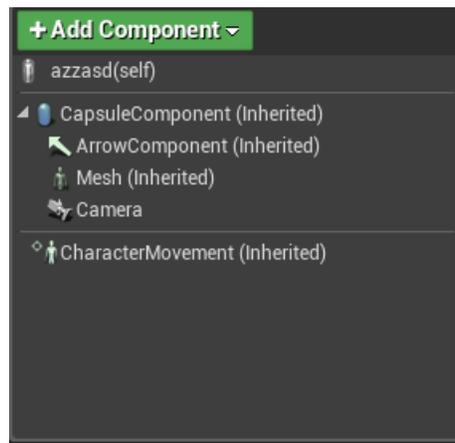
These form as a base template for the most common assets found within Unreal Engine

On the Following screen let's choose **"Character"**, this creates a PlayerCharacterBlueprint

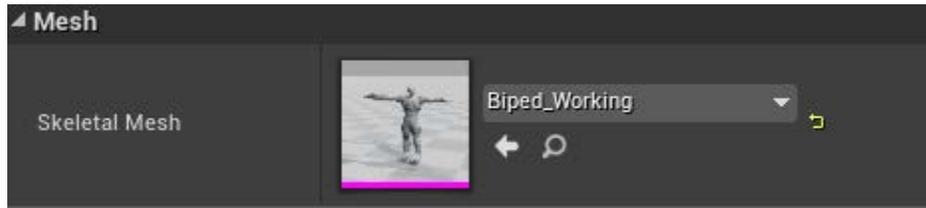


Double Click the Character Blueprint to Open up the Character Blueprint Editor.

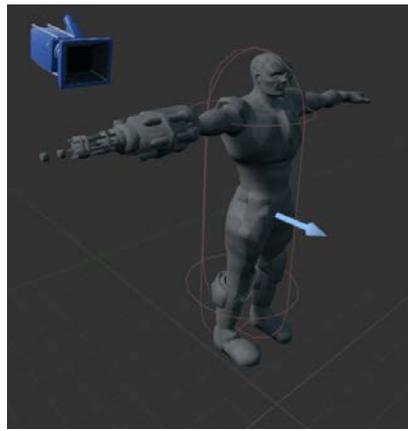
Navigate to **Add Component** and add a **Camera**. Position this camera accordingly to your character perspective



Click on Mesh (Inherited) and add the Mesh Component created with your FBX Import.



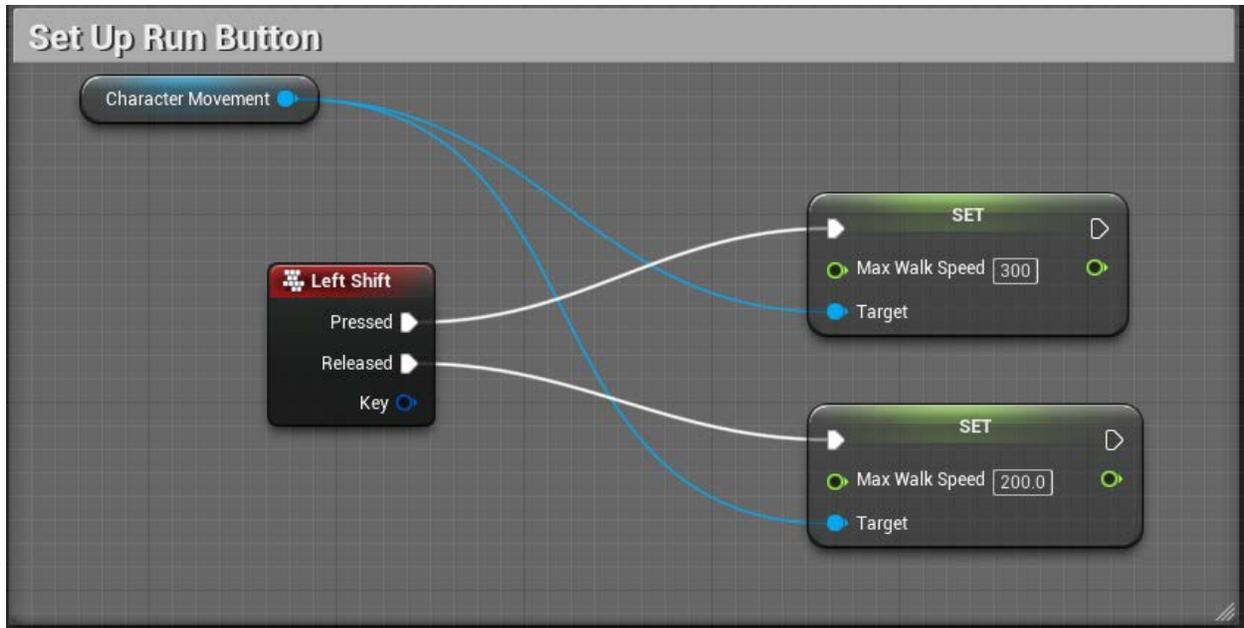
Your Character Editor should look like the following



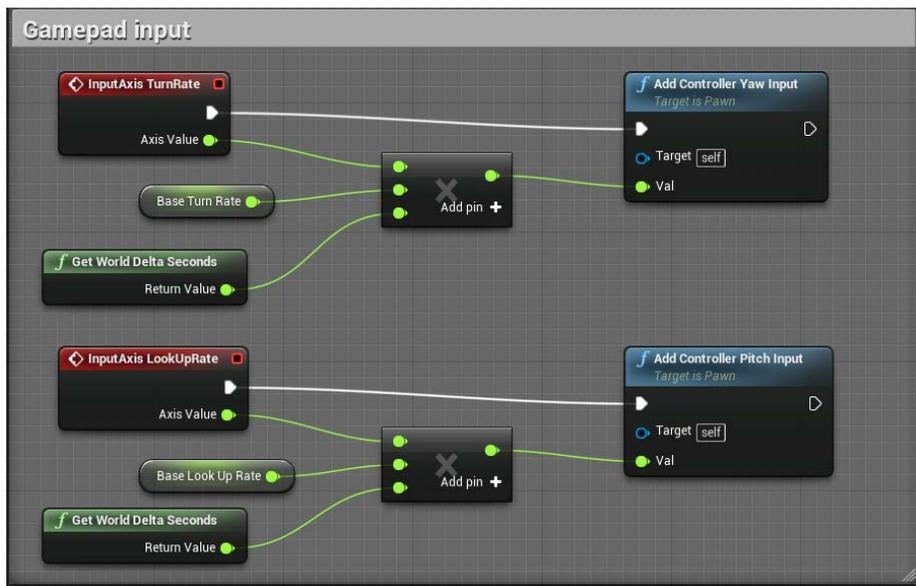
Navigate to the Event Graph,



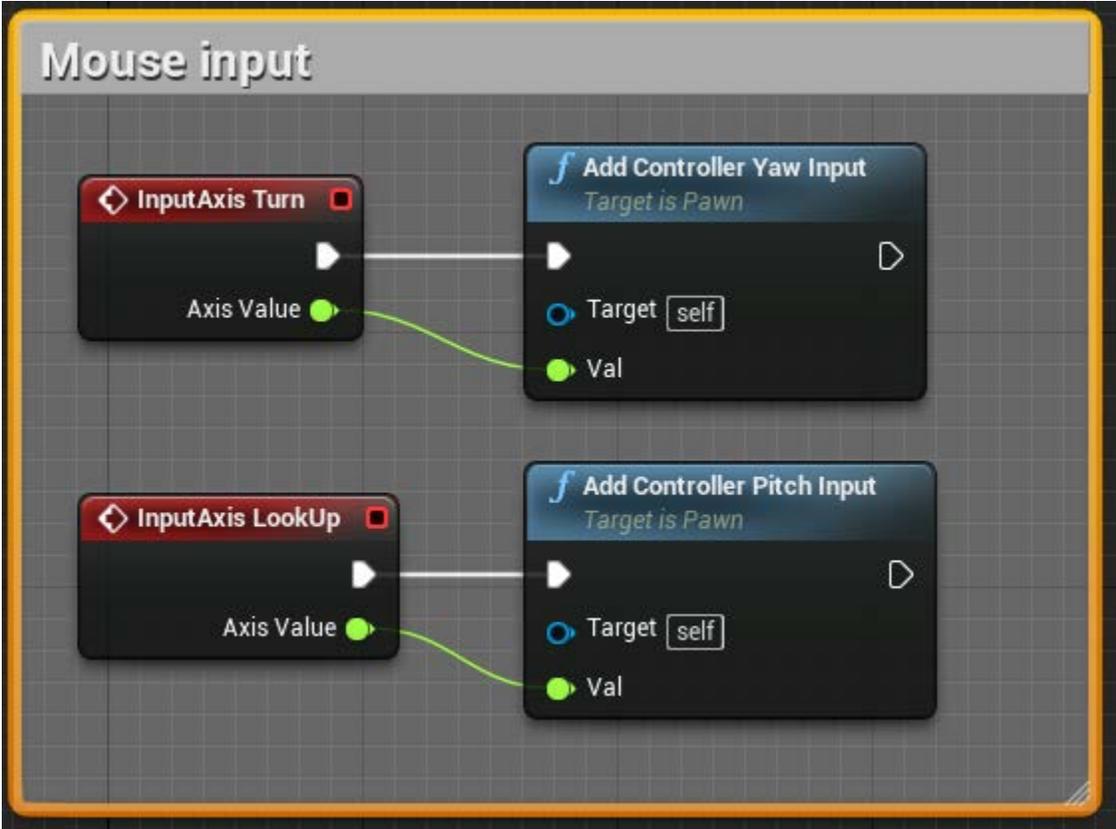
And Create the following Node's, the underlying grey boxes are created with the C key and stand for "Comments"



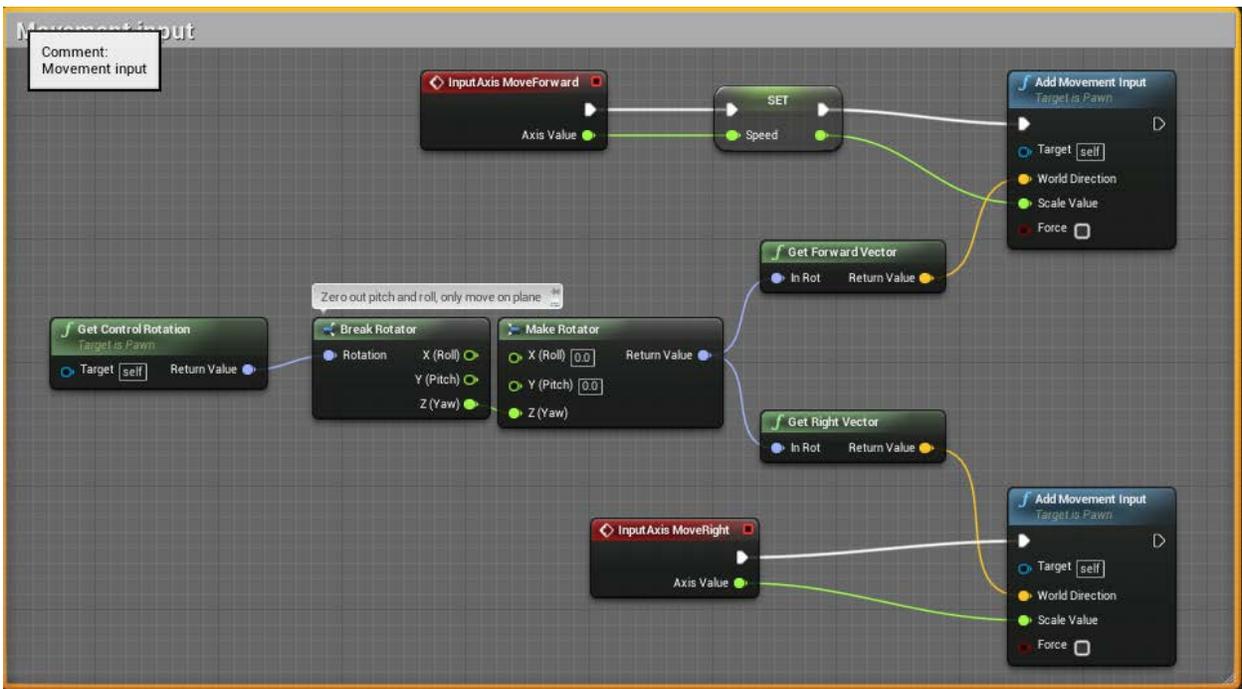
This creates the possibility to use Left Shift to distinguish your character input between Walk and Run.



This allows for your game controller to be used to look both left and right, as well as up and down.



This is a repeat of the code shown before, however for the purposes of Mouse Input

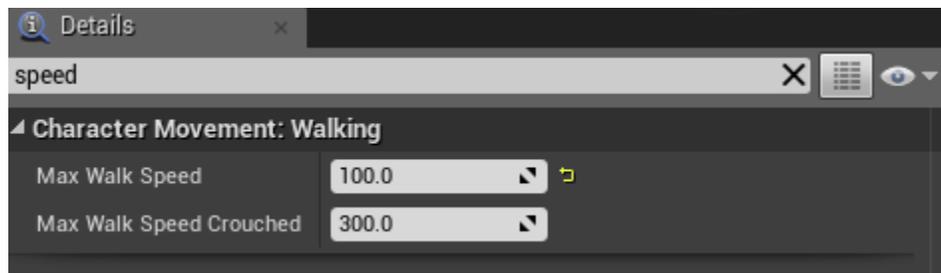


Here we define the movement input, as well as set the Variable of "Speed" to later be used

within our animation blend sequence. This variable allows our blend sequence to identify which section of the blend it is currently selecting, based on our input velocity of our character

Variables may be created on the left-hand side under the “Variables” Tab

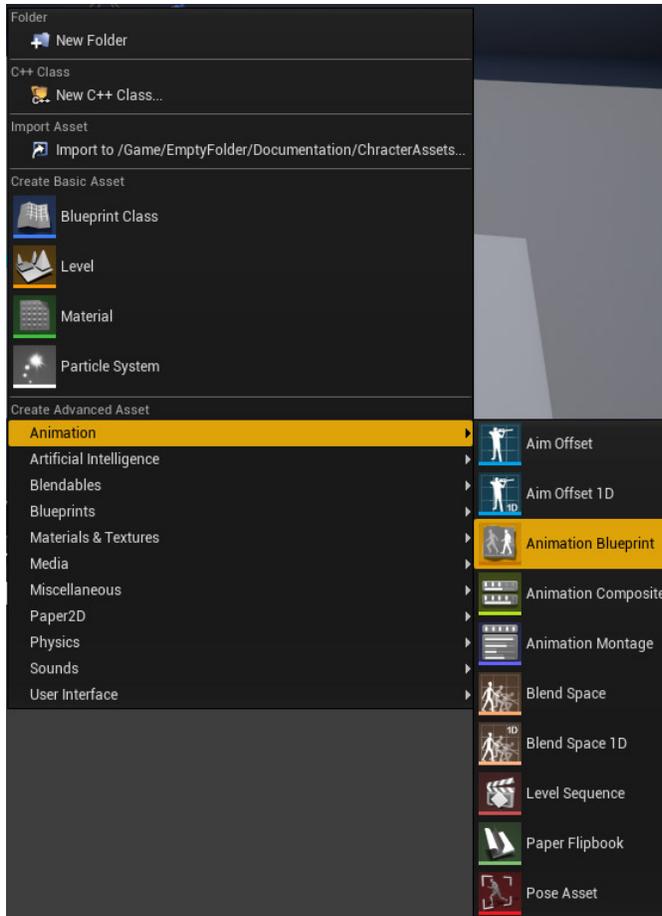
Navigate back to the viewport listings (I.E. Camera, Add Component, Mesh(Inherited Section)) and under Character Movement search for “Speed”. Set the Max Walk Speed and Max Walk Speed Crouched to 300 (We will currently use this as the Run Speed)



Alright! Our initial Character Setup is complete, now, let's assign its animations

[Animate that Ish \(Chapter 3\)](#)

Navigate back to your Content Browser Right Click, Proceed to Animation and create an Animation Blueprint.



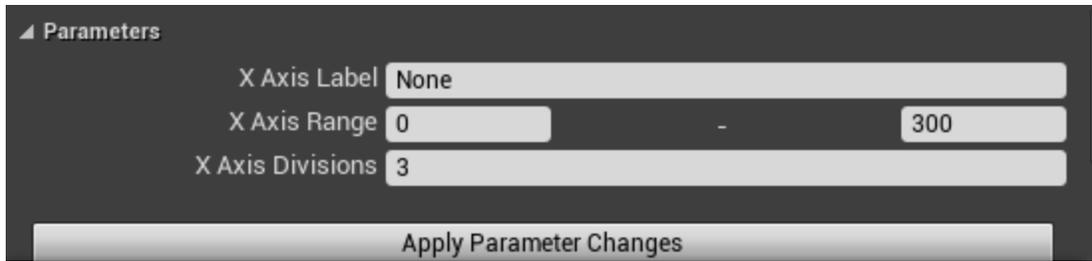
Within the same menu, also create an Animation BlendSpace1D

Double click the BlendSpace to Open up the 1D Blend Space Editor



The Blend Space area, where we will setup our blend spaces.

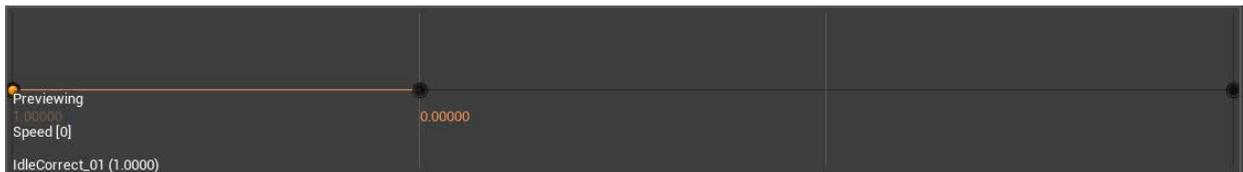
Our Parameters for our Blend Space, here we will set the divisions to the 3 (Idle, Walk, Run) and our X Axis (Our Speed) from 0-300



On the right you can view each animation assigned to the skeletal mesh in which you chose in the creation of the blend space.

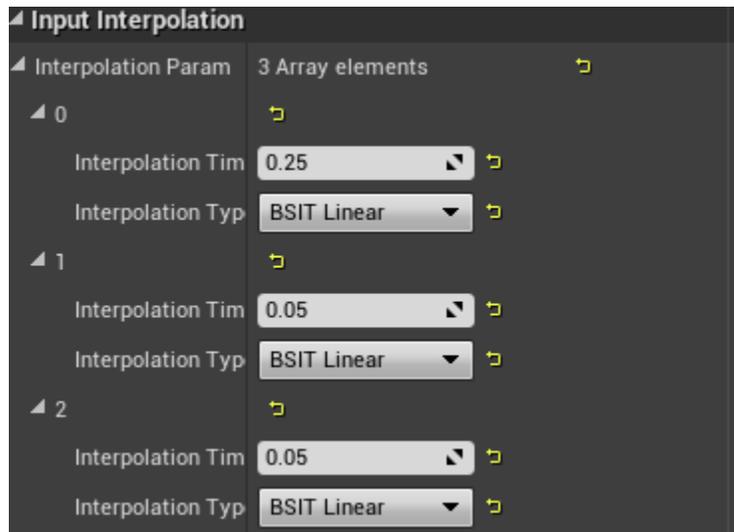
Name	Path
WalkCycleCorrect_01	/Game
WalkRunBlend	/Game
BlendSpace1D	/Game/EmptyFolder/[
CrouchWalk	/Game/EmptyFolder/[
Full_01_crouchwalk_2_x2d	/Game/EmptyFolder/[
Full_01_idle_1_x2d	/Game/EmptyFolder/[
Full_01_idle_2_x2d	/Game/EmptyFolder/[
Full_01_run_1_x2d	/Game/EmptyFolder/[
Full_01_run_2_x2d	/Game/EmptyFolder/[
Full_01_walk_1_x2d	/Game/EmptyFolder/[
IdleCorrect_01	/Game/EmptyFolder/[
RunCycleCorrect_01	/Game/EmptyFolder/[
WalkCycle_01	/Game/EmptyFolder/[
WalkCycleCorrect_01	/Game/EmptyFolder/[

Drag and Drop your Animations into the blend space with the left most circle being your idle, the middle being your walk and the right being your run

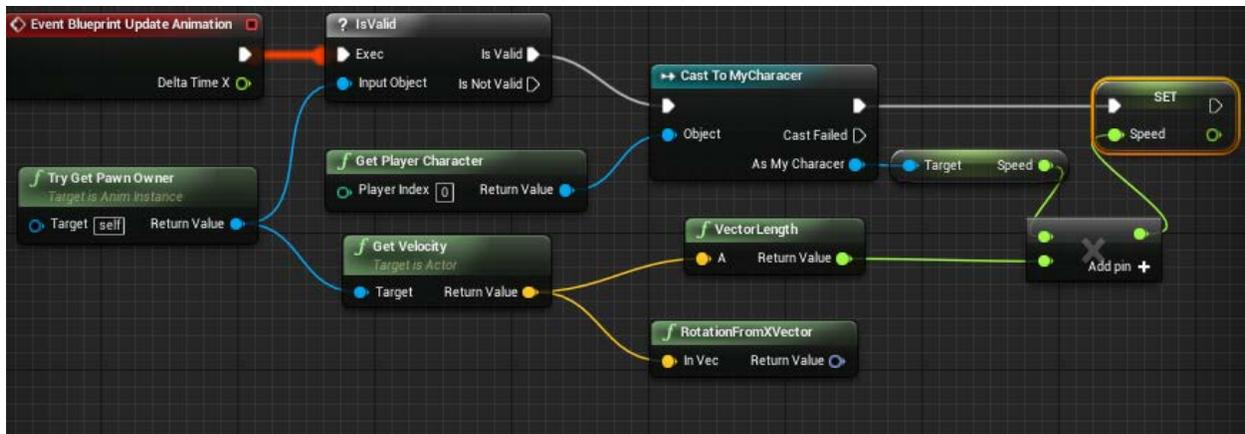


You can hover your mouse in between these locations to see the interactivity of the animation blending.

On the Left side of the BlendSpace, is Input Interpolation, essentially smoothing values to create a curve and reduce jitteriness between the animation blend layers. These can be played with as you see fit, or done without if you are satisfied with your result.

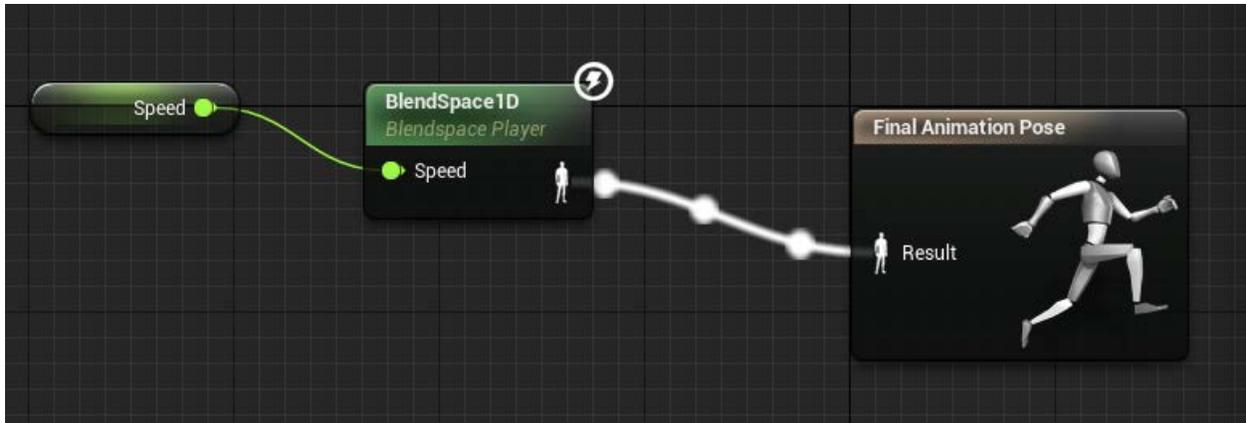


Navigate to your animation blueprint created earlier and within the event graph create the following nodes.



This note updates the animation blueprint with the variable for speed we set earlier with the character input information.

Within the animation Graph drag and drop your BlendSpace, and attach the Speed Variable to the Speed Input. Hook this to the final animation Pose.



Close the Animation Blueprint.

Navigate back to Character Blueprint Class and click on Mesh(Inherited) again, navigate to the animation tab on the right and chose your animation blueprint as the animation mode for your character.

