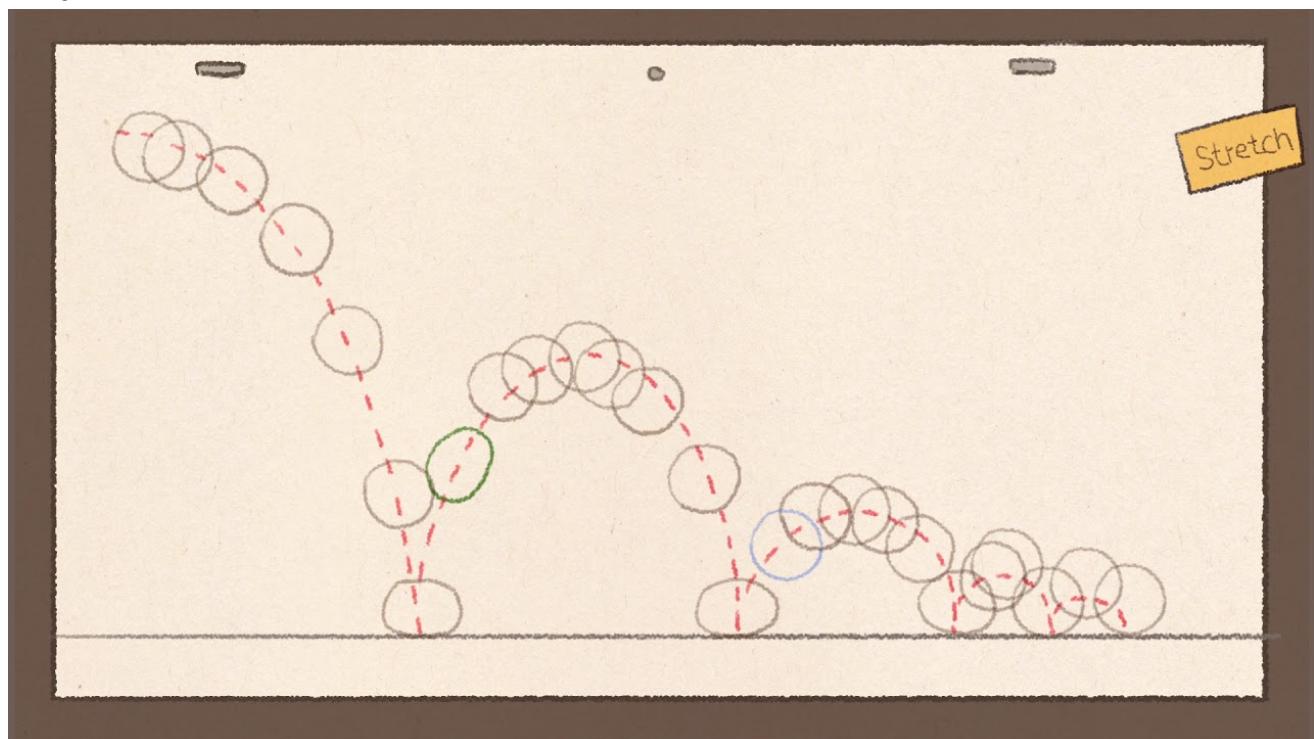


# What is Animation

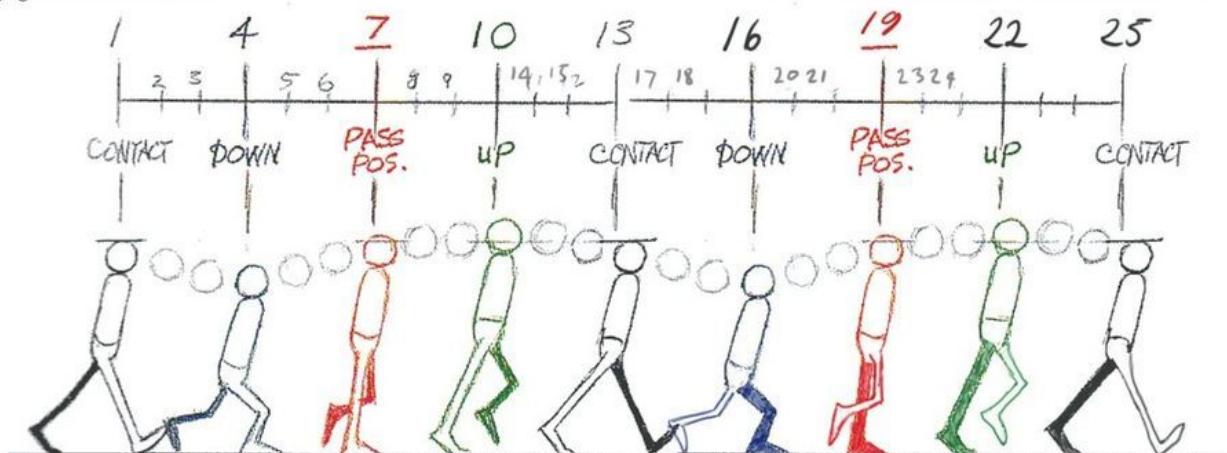
Animation is **the method by which still images are manipulated to create moving images.**

keyframe Animation



Copyright - Richard Williams

UCA Adapted by jon Hunt - Digital Skills 2 - 2010



read:

<disney 12 principles of animation>

动画师生存手册

**Skeletal Mesh Animation System**



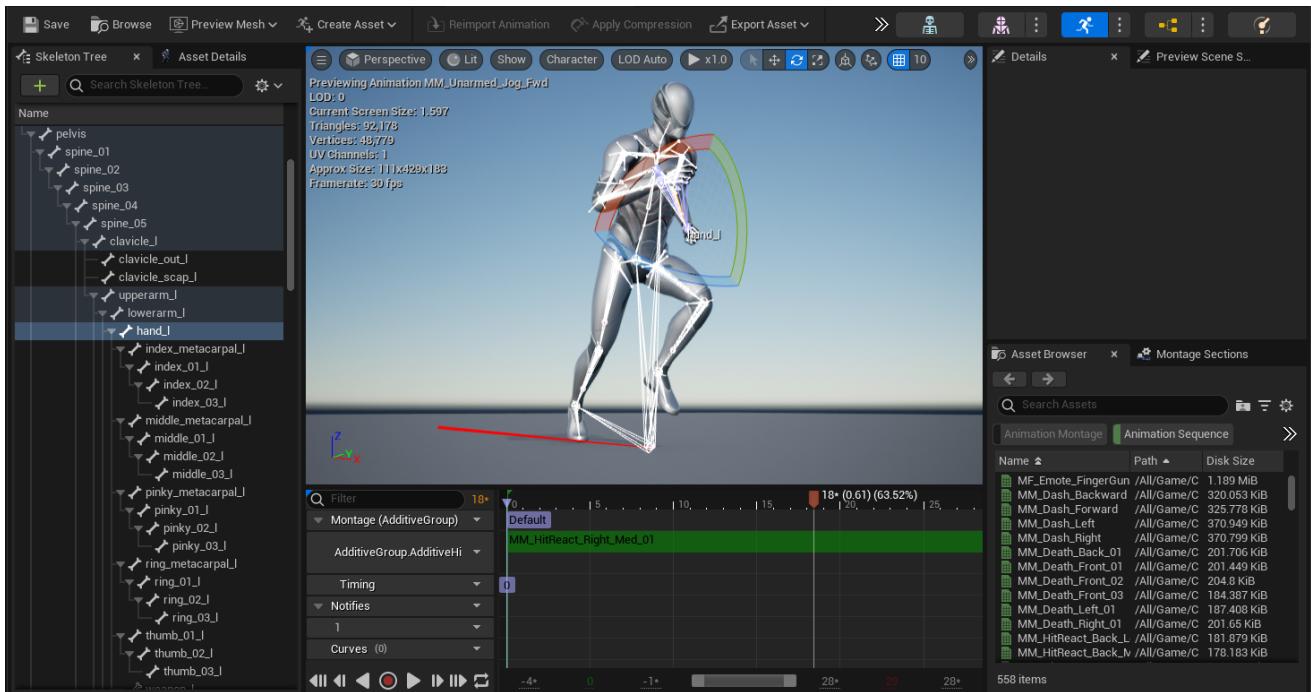
## What is **Skeletal/Skinned Mesh**

bind skeleton to models in DCC software.

Skinned Mesh Object File -> import to Unreal-> Skeletal Mesh Asset

Character animations in Unreal Engine are built on the foundation of a **Skeletal Mesh**

<https://docs.unrealengine.com/4.26/en-US/WorkingWithContent/Importing/FBX/SkeletalMeshes/>



## Import Animation Asset

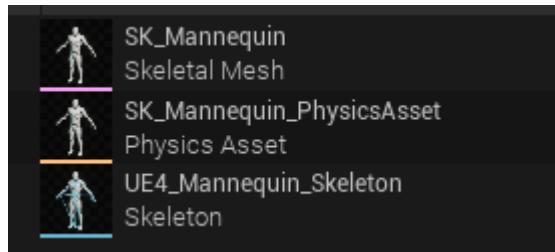
<https://docs.unrealengine.com/5.2/en-US/importing-assets-directly-into-unreal-engine/>

where to get Animation Assets?

<https://www.mixamo.com/>

Unreal Market Place

Animation Asset Types



Skeleton (create sockets, retargeting)

retargeting

**Animation Retargeting** is a feature that allows animations to be reused between characters that use the same skeleton asset but may have vastly different proportions.

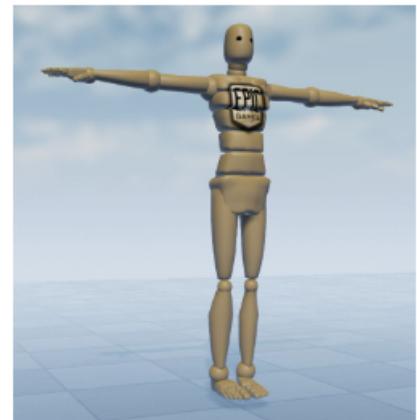
## base characters



Base Character

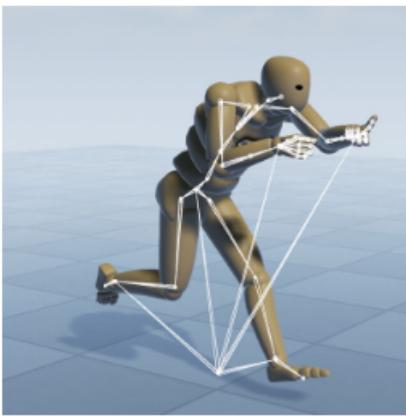


Short Stocky Character



Tall Skinny Character

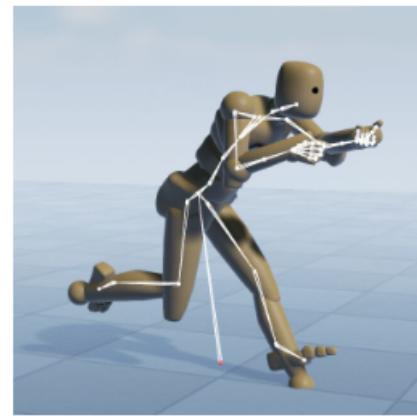
## before retargeting



Base Character

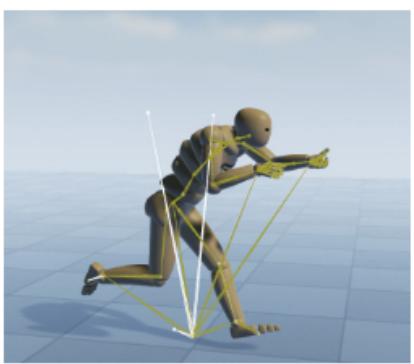


Short Stocky Character



Tall Skinny Character

## after retargeting



Base Character



Short Stocky Character



Tall Skinny Character

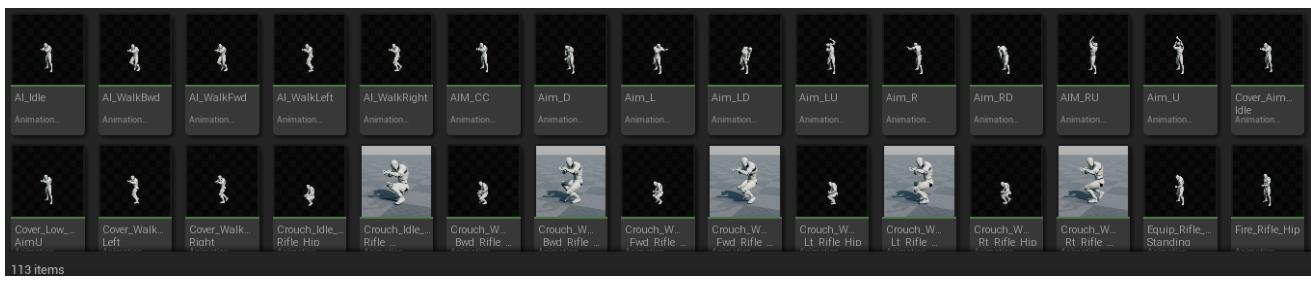


## Skeletal Mesh(set materials, assign physics asset)

### PhysicsAsset

### Animation Sequence

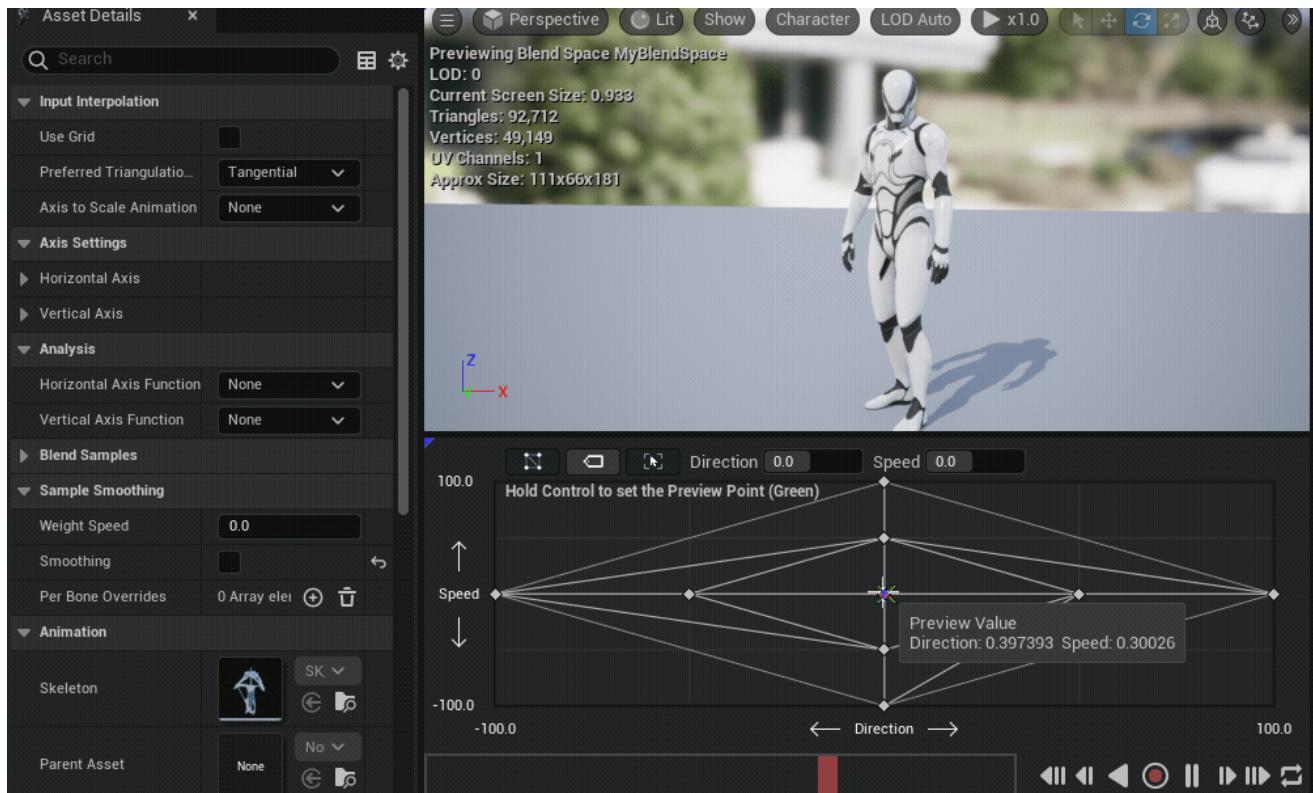
An Animation Sequence is an animation asset that contains animation data that can be played on a SkeletalMesh to animate a character.



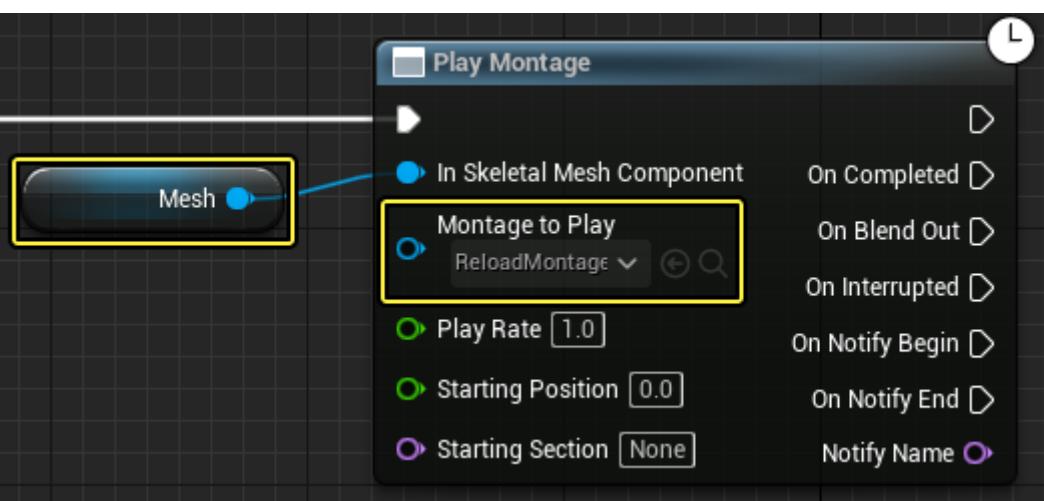
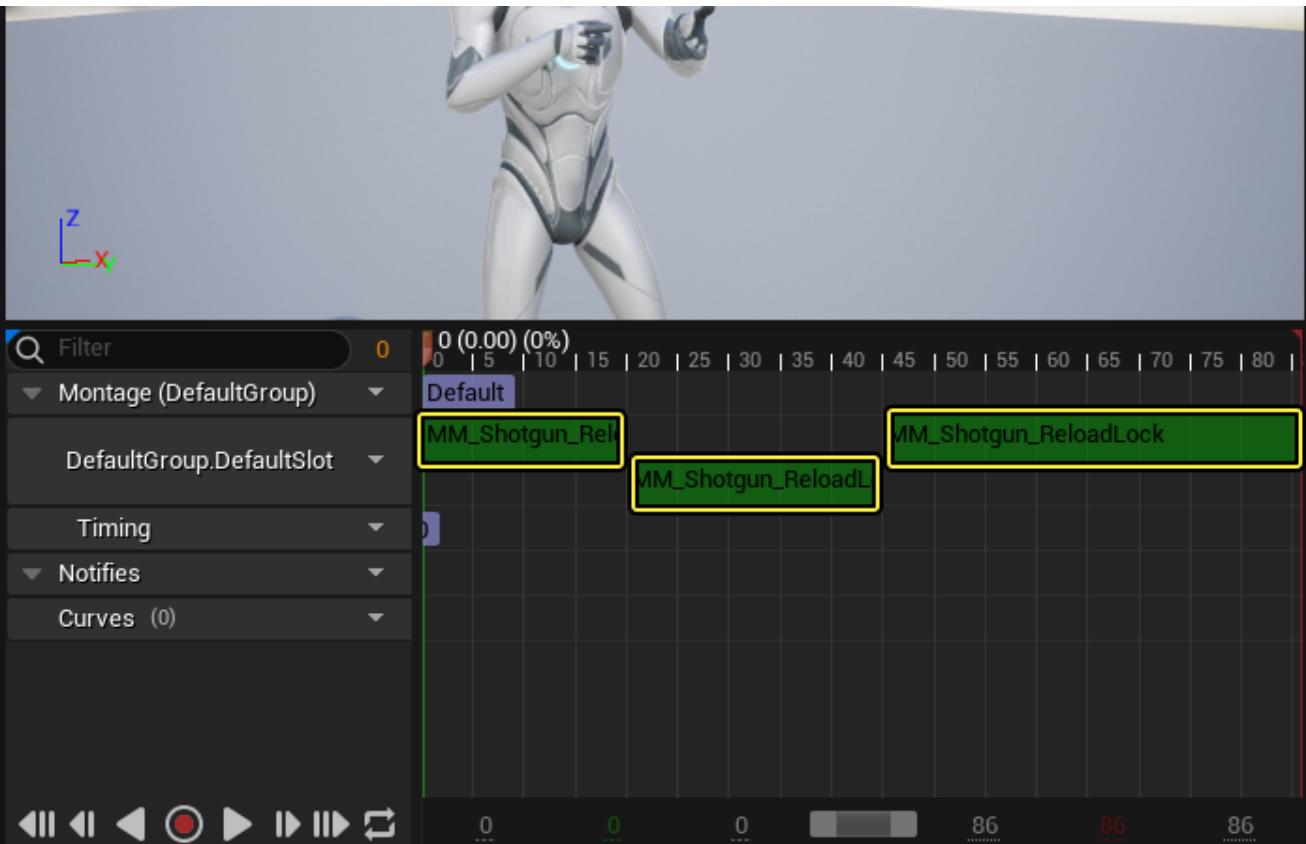
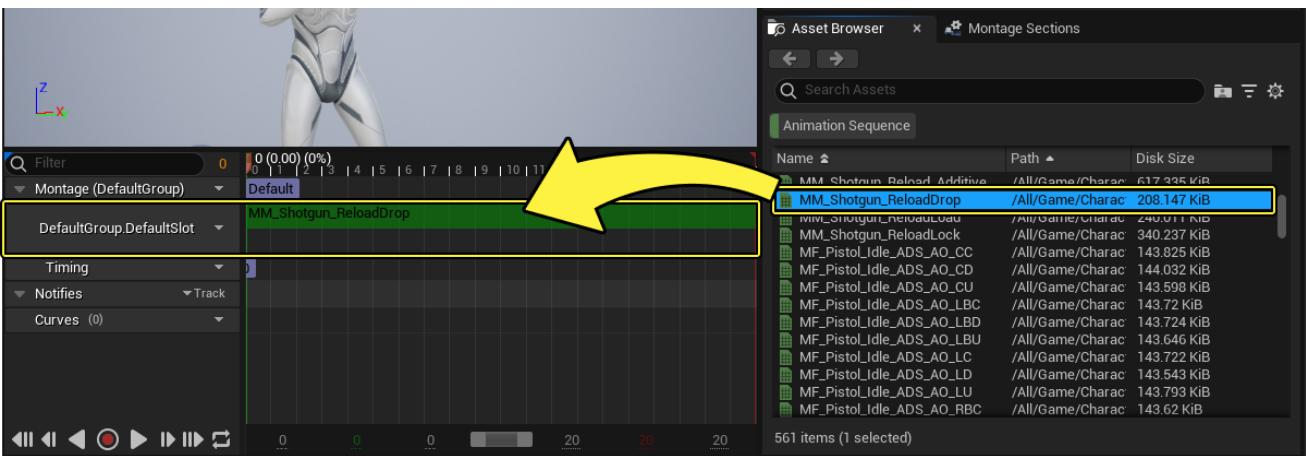
### BlendSpace

Blend Spaces are assets that allow multiple animations or poses to be blended by plotting them onto either a one or

## two-dimensional graph.

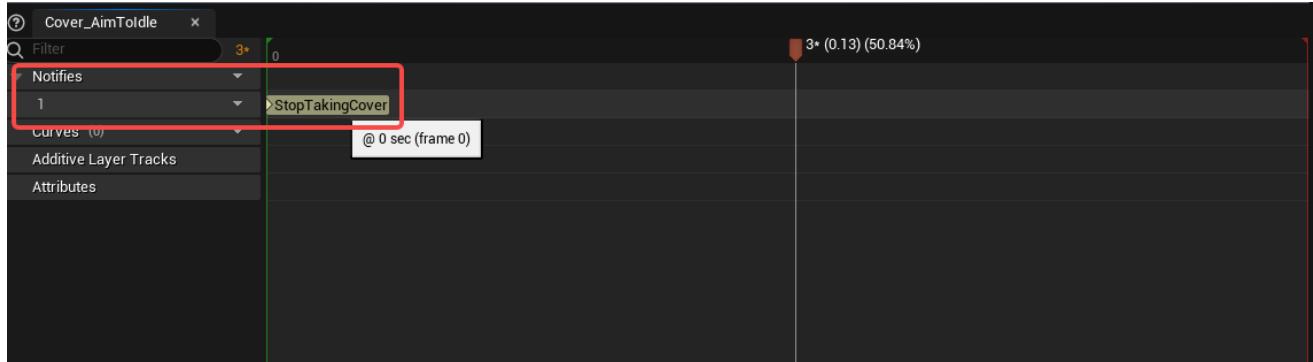


## Animation Montage



## Animation Notify

**Animation Notifications** (Animation Notifies or just Notifies) provide a way for you to create repeatable events synchronized to **Animation Sequences**.



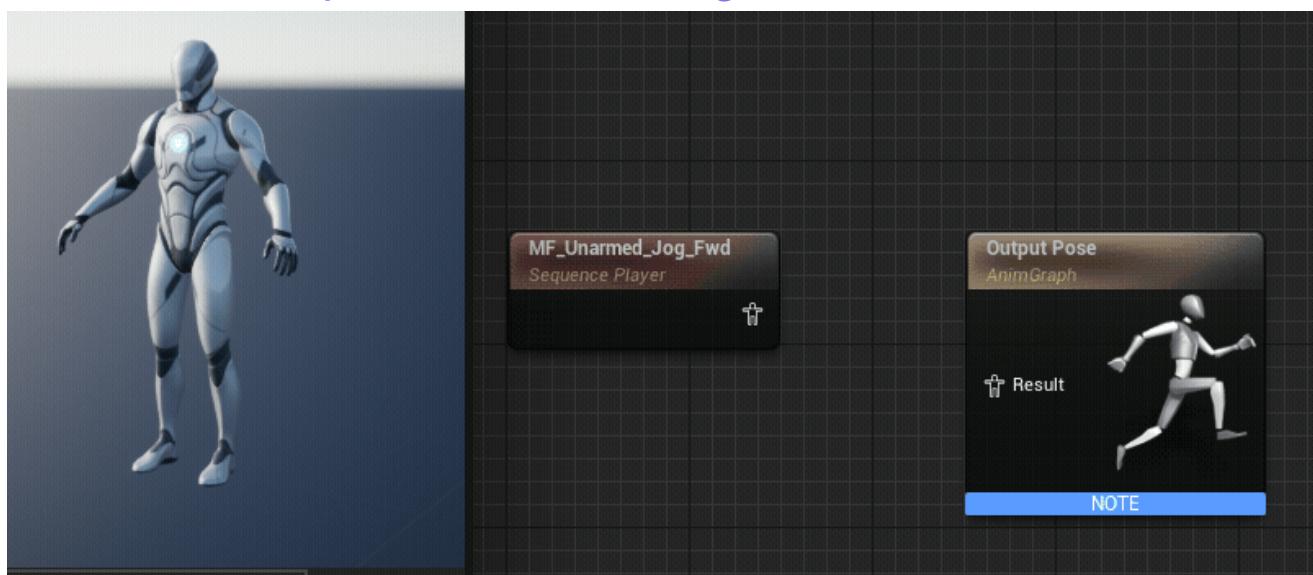
## Animation Blueprint

**Animation Blueprints** can be augmented to Skeletal Meshes to apply logic that governs animation behavior and interactions within levels.

Controls which animations plays at which time.

## AnimGraph

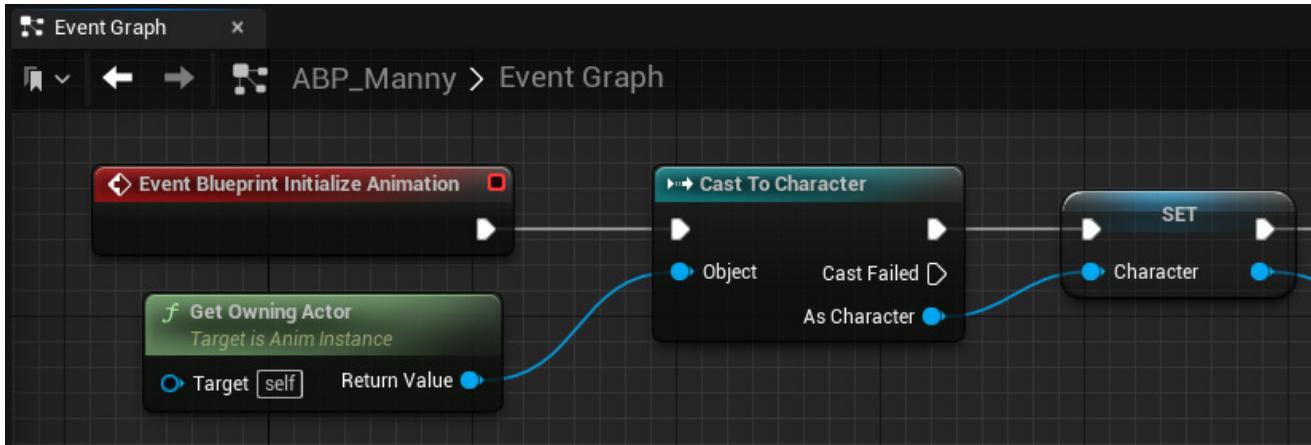
<https://docs.unrealengine.com/5.2/en-US/graphing-in-animation-blueprints-in-unreal-engine/>



<https://docs.unrealengine.com/5.2/en-US/animation-blueprint-nodes-in-unreal-engine/>

## EventGraph

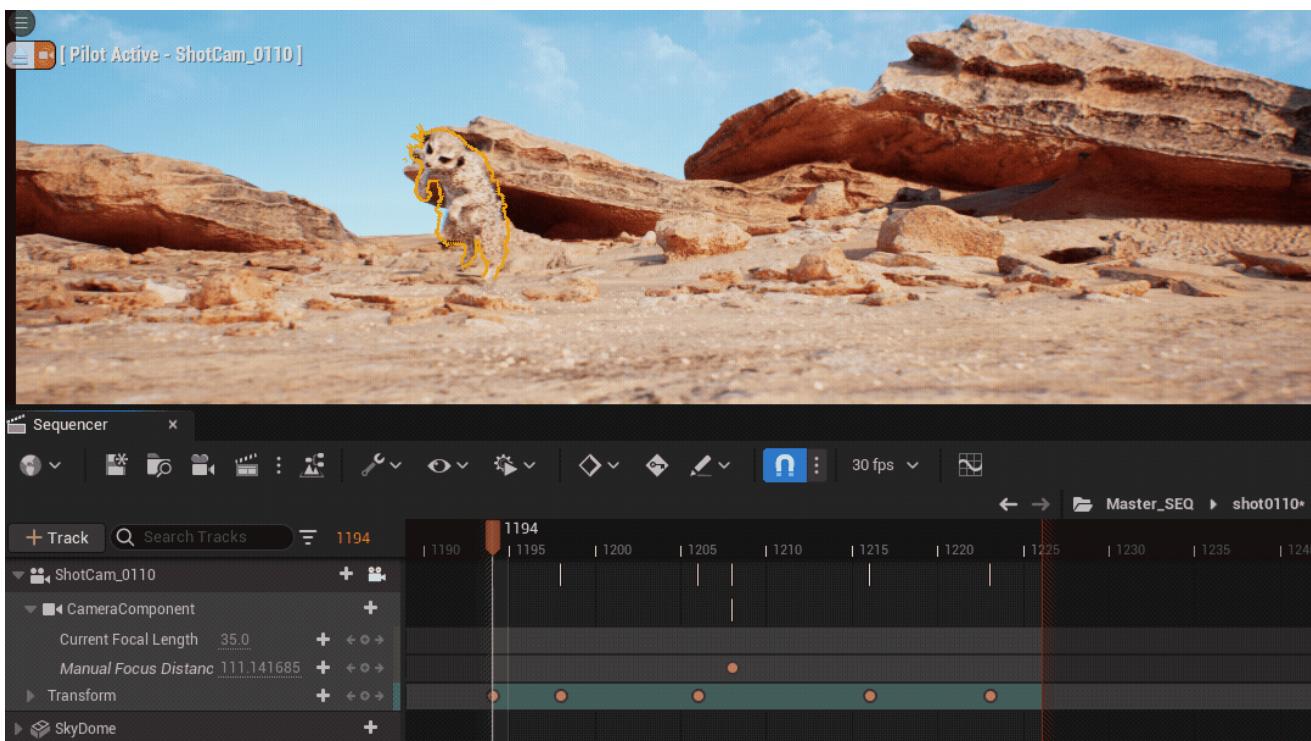
Event graph nodes are used to process incoming data that in turn is used to drive the pose data in the Anim Graph, such as triggering playback, activating or disabling animations functions, and updating animation data.



<https://docs.unrealengine.com/5.2/en-US/animation-blueprint-event-nodes-in-unreal-engine/>

## Level Sequence

**Sequencer** is Unreal Engine's cinematic toolset where you can directly animate characters, cameras, properties, and other Actors over time.



<https://docs.unrealengine.com/5.2/en-US/cinematics-and-movie-making-in-unreal-engine/>

## **Extends Topics**

control rig

Deformer Graph

Physics Based Animation

Motion Matching

## **Homeworks**