Footsteps sounds with BP setup

In this manual I describe every detail of this asset.
If you have any questions about it, you will find answers here.

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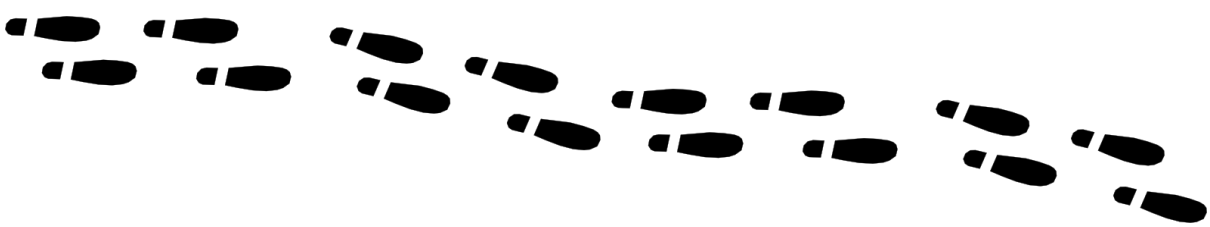


Overview:

This asset contain **footsteps**, **rattle** and **jump grunts** sounds. It can be used in every game with bipedal characters. Equipment rattle sounds are supplied in **Stereo** and **Mono** versions, so they can be used on the player character (stereo, non-spatialized) or any pawn (mono, with spatialization and attenuation). There are 8 different samples of footstep sounds depending on floor type (Concrete, Grass, Ground, Gravel, Wood, Snow, Water, Metal). Each floor type has 6 different footsteps that are played randomly. The equipment rattle also has 6 different samples that play randomly. There are jumping up and landing voice/breath sounds, also with 4 different samples. All sounds are Audio Components placed on a character (or pawn) BP and triggered from its Animation BP. The volume of the sounds is connected to the speed of character so when the character runs his footsteps and rattle sounds are slightly louder than when he walks. Every Material is assigned to a Physical Material and each footstep checks what physical material is assigned to the floor that the character is walking on to select the correct sound. So when you paint grass in your level, and the correct Physical Material is assigned to it, then your character will always make grass footsteps sounds when he steps on it.

Content:

Audio Waves:

(44.1 kHz, 16 bit)

1. **Footsteps**

Each type of footstep has 6 different samples that are played at random. These are only available in mono to allow for spatialization.

- concrete
- grass
- metal
- wood
- snow
- gravel
- water
- ground

2. **Equipment rattle.**

There are 6 different rattle samples to play randomly. Equipment rattle sounds are available in **Stereo** for player character and **Mono** for other characters.

3. **Jump_Voice_Start** and **Jump_Voice_End**

There are 4 different Jump_Voice_Start and Jump_Voice_End samples chosen randomly. Jump Voice sounds are supplied in **Mono**.

Sound Cues:

- Footsteps
- Rattle_Mono
- Rattle_Stereo
- Foot_Jump
- Jump_Voice_End
- Jump_Voice_Start
- Rattle_Jump_Mono
- Rattle_Jump_Stereo

Blueprints:

Character_BP (Here you can change the volume of sounds depending on character speed)

Character_Animation_BP (Here you can setup AnimNotifies on animation sequences to trigger proper sounds)

Assets:

MySoundAttenuation

Materials:

Concrete, Grass, Ground, Gravel, Wood, Snow, Water, Metal

Physical Materials:

Concrete, Grass, Ground, Gravel, Wood, Snow, Water, Metal

DESCRIPTION:

Path of connections:

Audio waves ⇒ SoundCues ⇒ CharacterBP ⇒ AnimationBP ⇒ Phisical Materials ⇒ Materials

CharacterBP || V Attenuation Settings

AnimationBP || V Animation Sequences

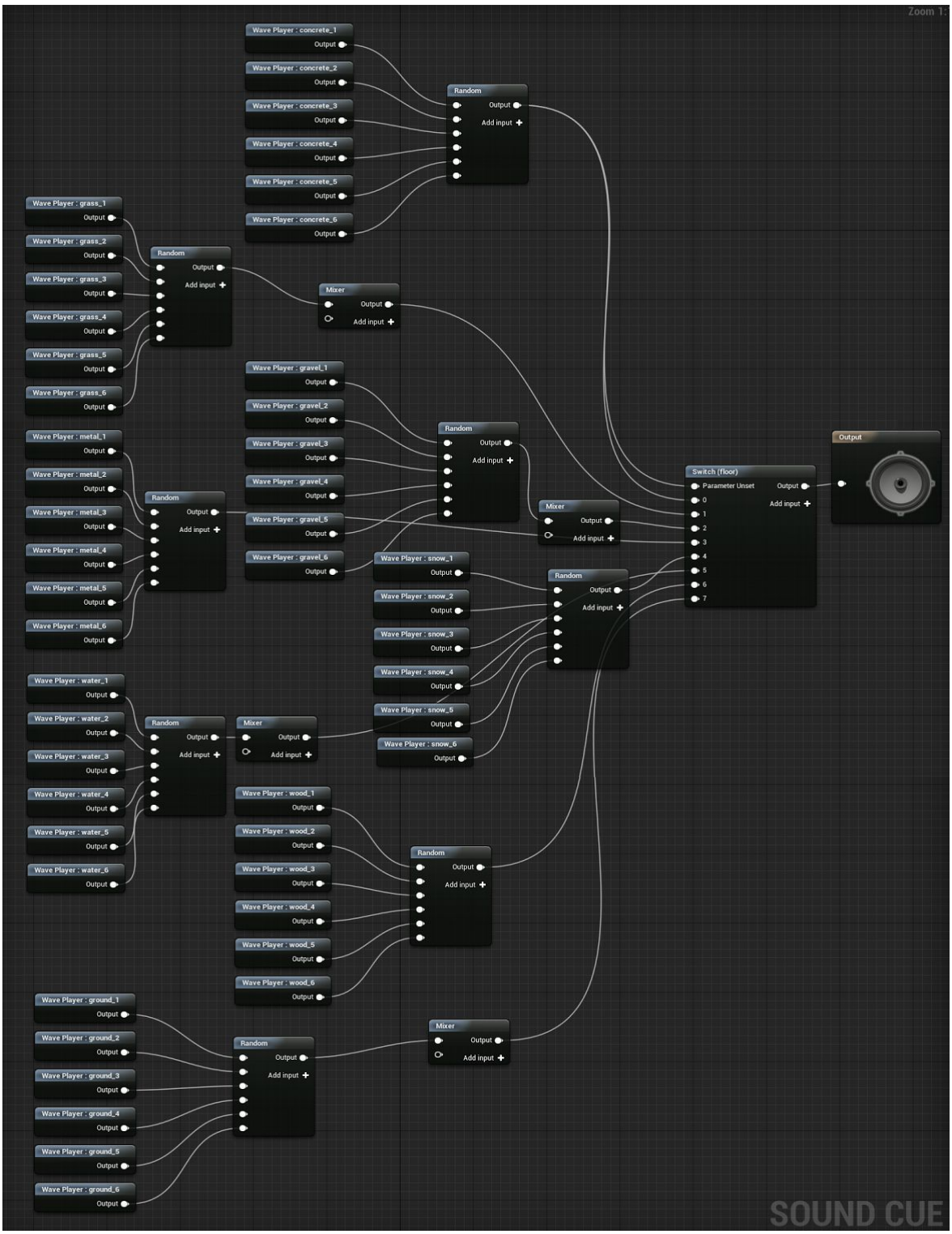
Audio Waves:

Spatialization can be used only with MONO files. So when you want add sounds to a Pawn with Spatialization you have to use MONO, not STEREO files. Footsteps and Voice jumping sounds are only available in MONO versions so it can be used both in Player's Character or Other Character. Equipment Rattle sounds are supplied in MONO and STEREO Versions.

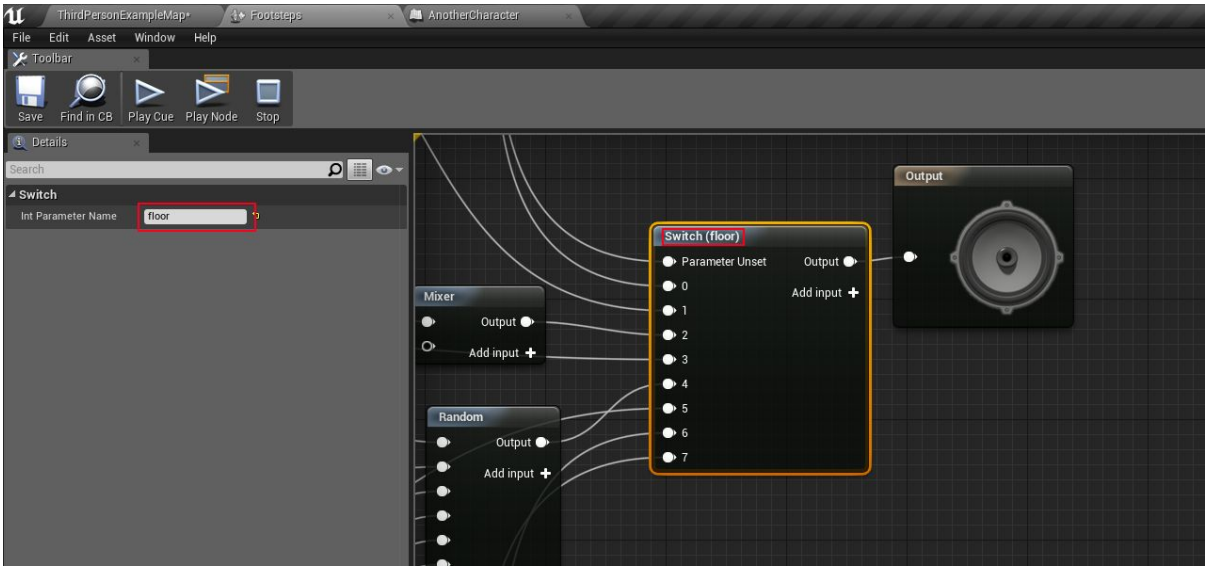
All waves are put into SoundCues, so in this setup every sound is played via SoundCues. There are two Rattle SoundCues: The first is with Mono waves and second is with Stereo. The rest of the SoundCues use only Mono waves.

Sound Cues:

Footstep Sound Cue (there is only MONO version)
Footsteps Sound Cue has every 8 floor types with 6 different floor samples each. There are **Random** nodes to play different footstep sample each time character hit the floor. There are **Mixer** nodes to tweak the sound volume of each floor.

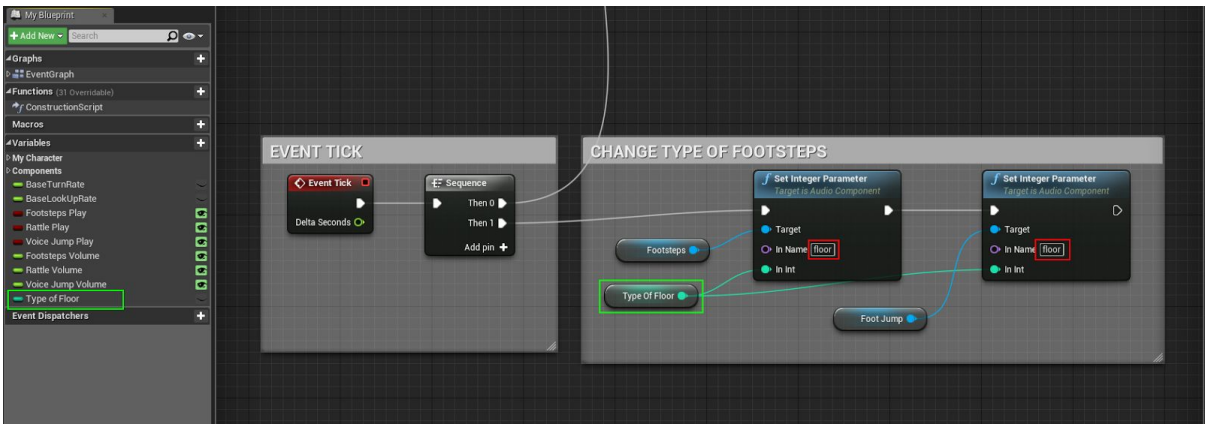


In Footsteps_SoundCue there is **Switch** node with parameter named **“floor”** to choose type of floors.

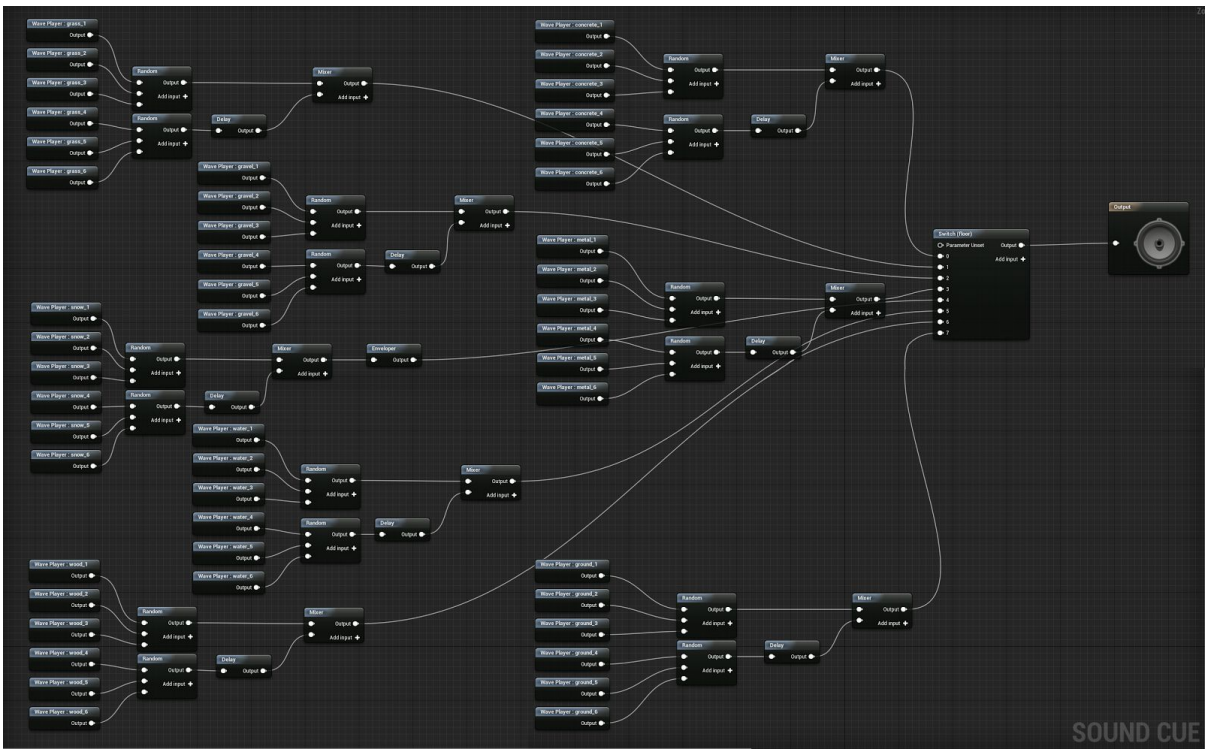


This **Switch** node is connected to the **Character_BP**, where it gets the Integer parameter value.

In the **Character_BP** there is a **Set Integer Parameter Node** with the name **“floor”**. You need to have an Integer variable named **“Type of floor”** on your character. It is set in the Anim_BP.

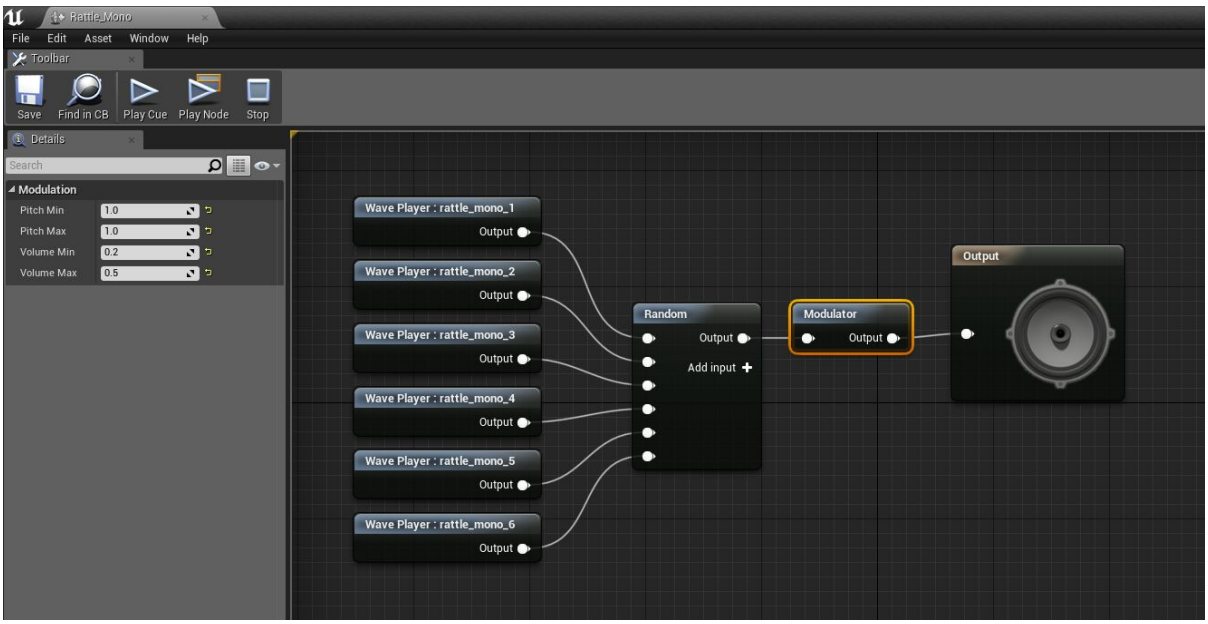


Foot_Jump SoundCue is set up the same way as **Footsteps SoundCue**. Jumping up and landing use the same SoundCue. It uses the same footstep sound waves as footsteps SoundCue. It also has a **Delay** Node that plays two footstep sounds immediately after one another to simulate the sound of two feet jumping up and landing.



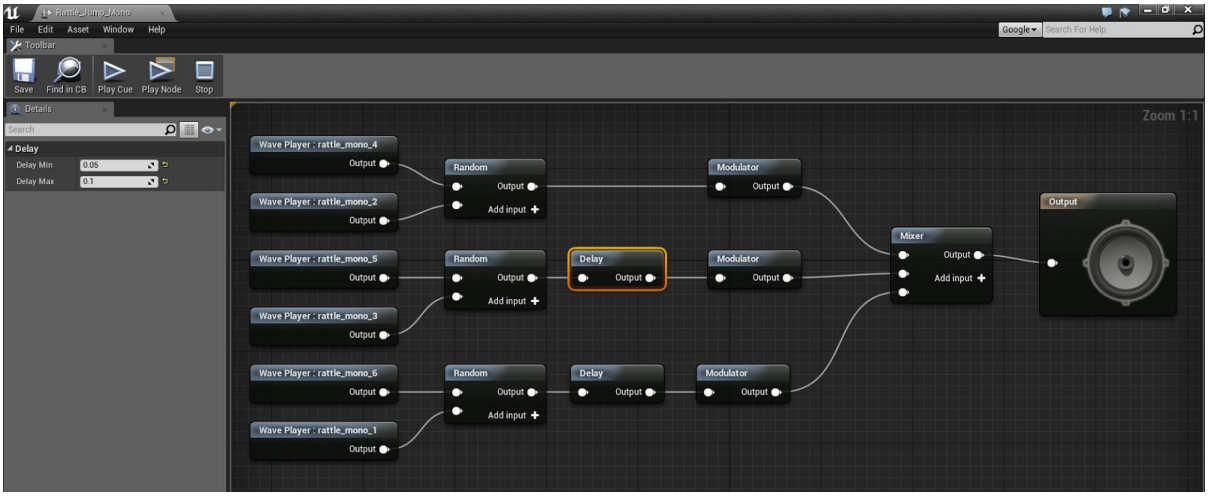
Rattle_Mono and **Rattle_Stereo SoundCue**

The Rattle SoundCue has **Random** node to play rattle sounds randomly each time the Character hits the ground. It also has a **Modulator** Node that changes the volume of the Rattle sounds randomly (values are between 0.2 and 0.5) I would not recommend using Pitch Modulation, which could provide even more randomization, but at the cost of distorting the pitch of the sounds. Six different samples should provide enough randomization.



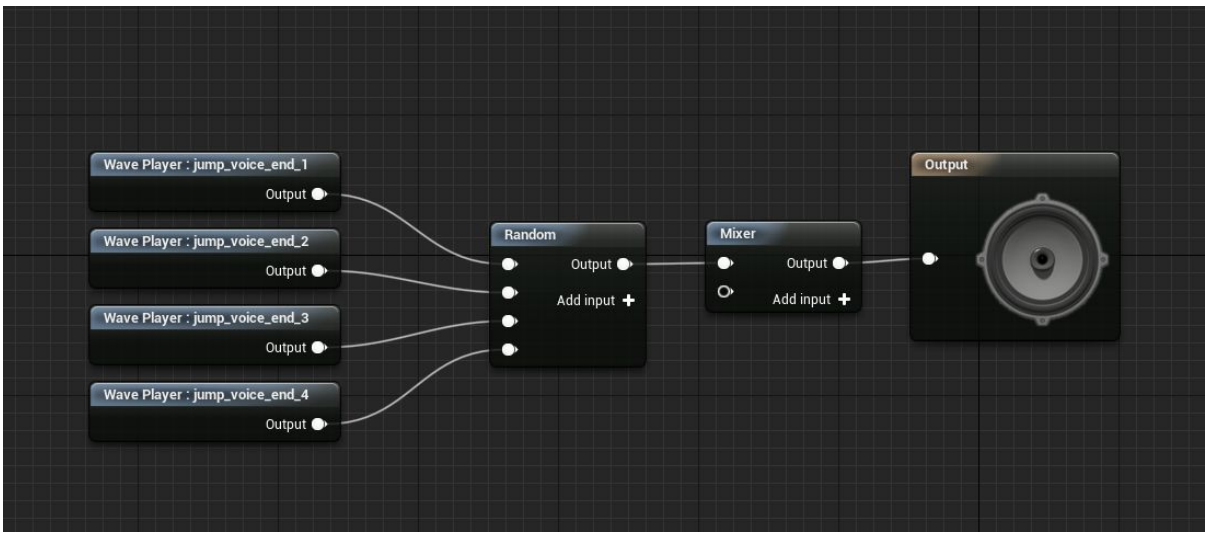
Rattle_Jump_Mono and **Rattle_Jump_Stereo Sound Cue**

Rattle_Jump Sound Cue is a **mix** of 3 **random** rattle sounds played with random **Delays** between them (0.1 - 0.05)



Jump_Voice_Start and **Jump_Voice_End Sound Cue**

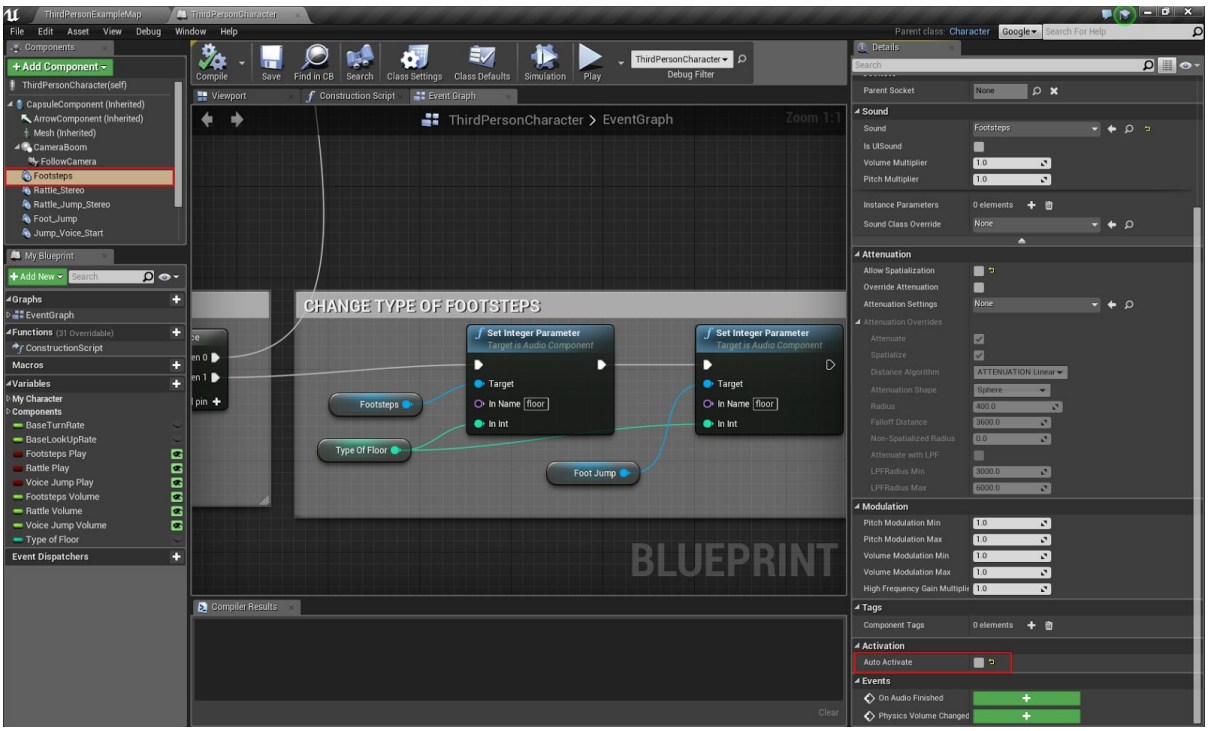
Jump Voice Sound Cue has 4 different voice samples chosen at **Random**, and it also has a mixer to tweak the volume of Jump Voice sounds.



Blueprints:

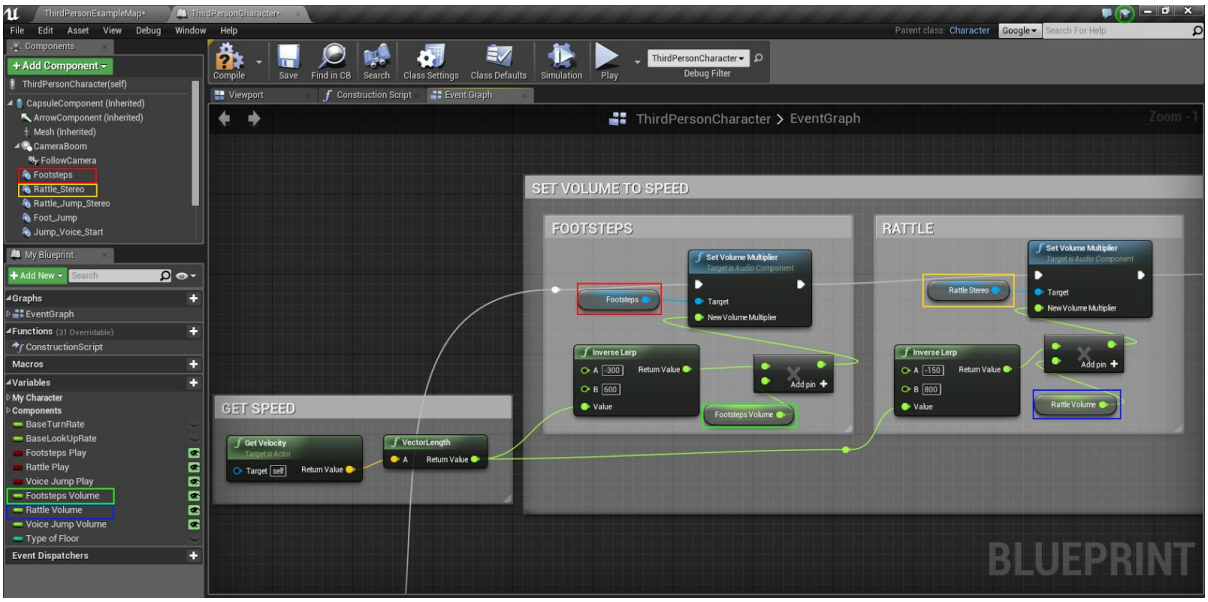
CharacterBP:

All sounds are added as components to the CharacterBP with **Auto-Activation** disabled**.**



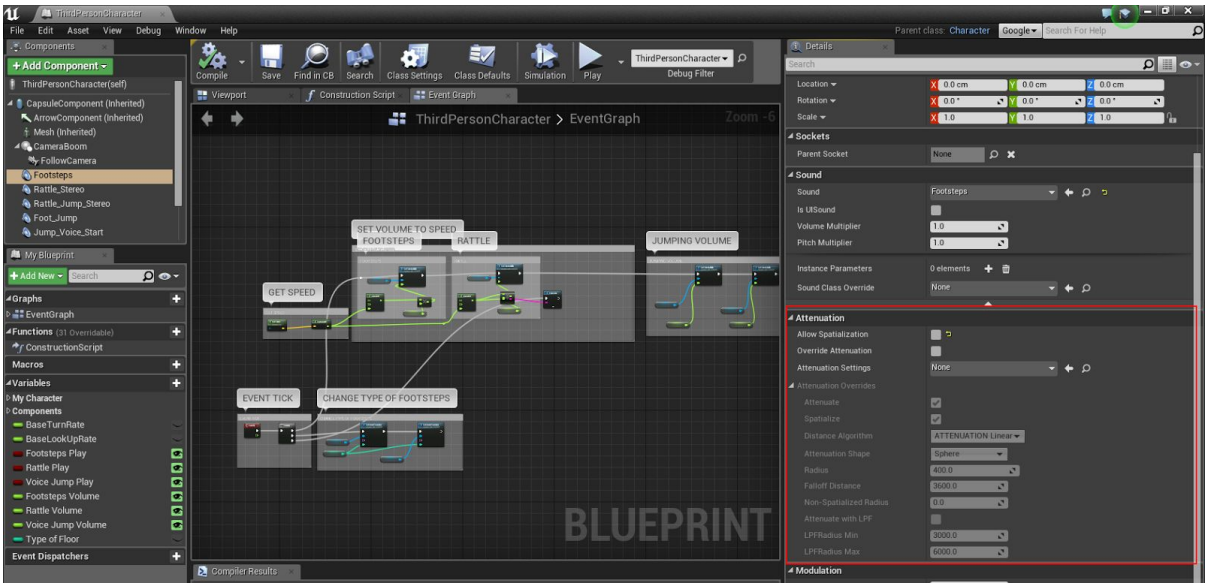
The volume of the **Footsteps** and **Rattle Audio Component** is connected to the speed of the character. The velocity of the character is connected to an Inverse Lerp node in range: In case of Footsteps (A: -300, B: 600) and in case of Rattle (A: -150, B: 800). When a character walks slowly, the volume of Footsteps and Rattle is lower than when it runs fast. The volume difference between slow walk and fast run is bigger in case of Rattle than Footsteps. You can manipulate the volume or the difference by changing values A and B in the Inverse Lerp. The best way to test this is to plug a Print String node into the InverseLerp output and watch the value (the higher the value, the louder the sound). In case of the Footsteps, this value is multiplied by the **Footsteps Volume** float with a default value of “1”, which is a Public variable so you can manipulate the volume of each sound in real time.

There is also a public **Rattle Volume** float variable that works the same way. Foot_Jump, Rattle_Jump and Voice_Jump sounds are not connected to character speed, so they are always the same volume. They are also public float variables, so you can change their volumes in real time.

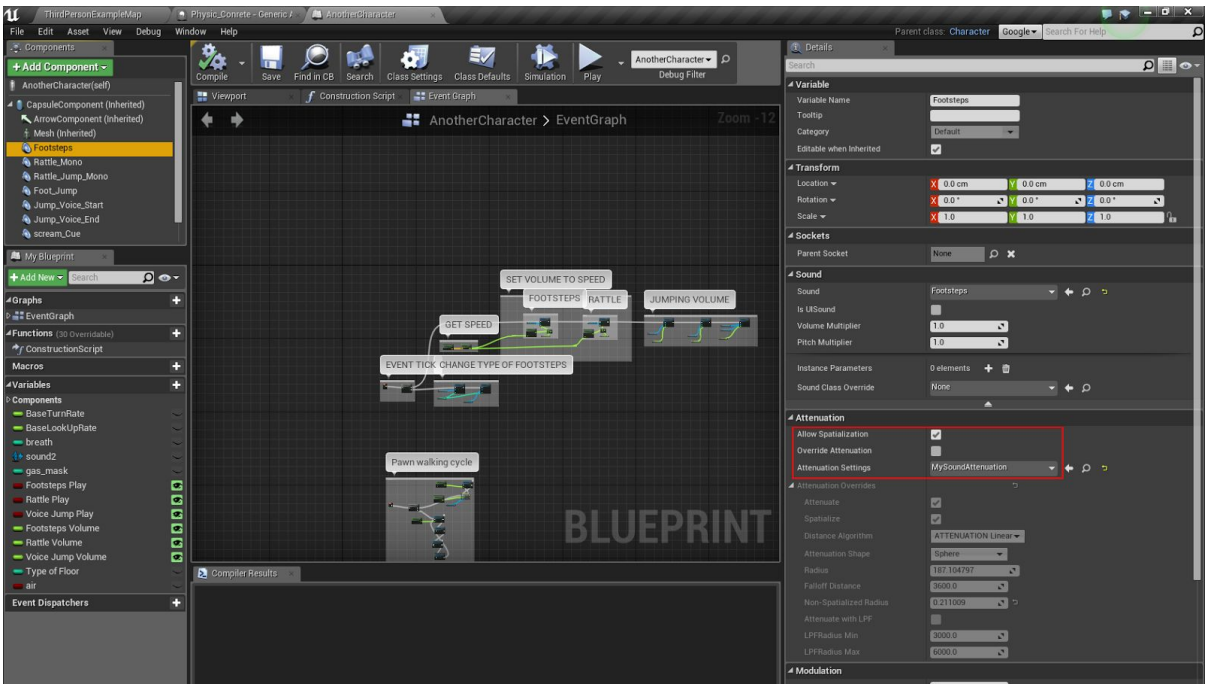


Difference between Player's Character and Other Character Sounds

If you use character sounds on your player character, you can use stereo files because you will not need attenuation and spatialization. In a first person or third person game, you always hear your player character's sounds from both speakers and at the same volume level. So in this case you have to switch off attenuation and spatialization settings.

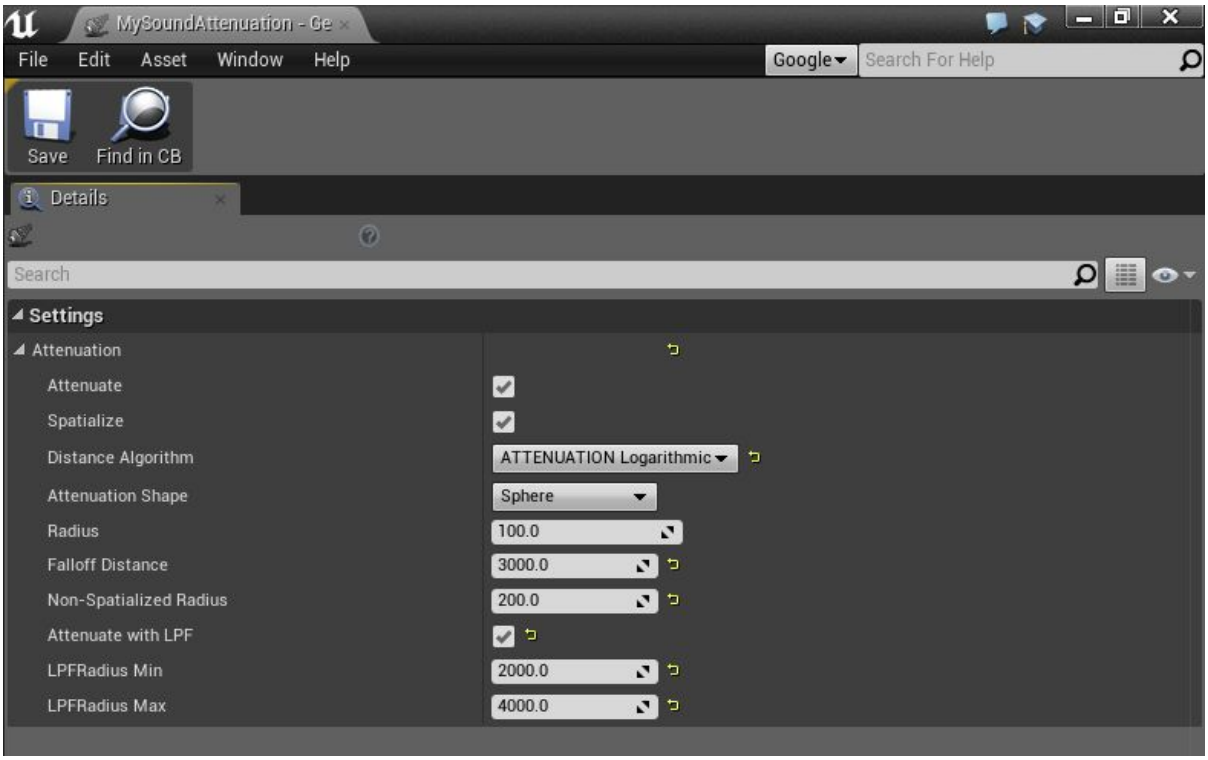


In the case of Other Character you need to use only mono files, in order to enable attenuation and spatialization. In this asset, only the Rattle sounds are supplied as both Mono and Stereo versions. In Other Character you have to set **Allow Spatialization** to **true** and use the **MySoundAttenuation** asset on every sound of the character.



Attenuation Settings:

The **MySoundAttenuation** asset is supplied so you can apply this to every sound of the Other Character. You can use this to tweak the volume at a distance and the spatialization amounts to be sure that every sound has the same settings.



Animation:

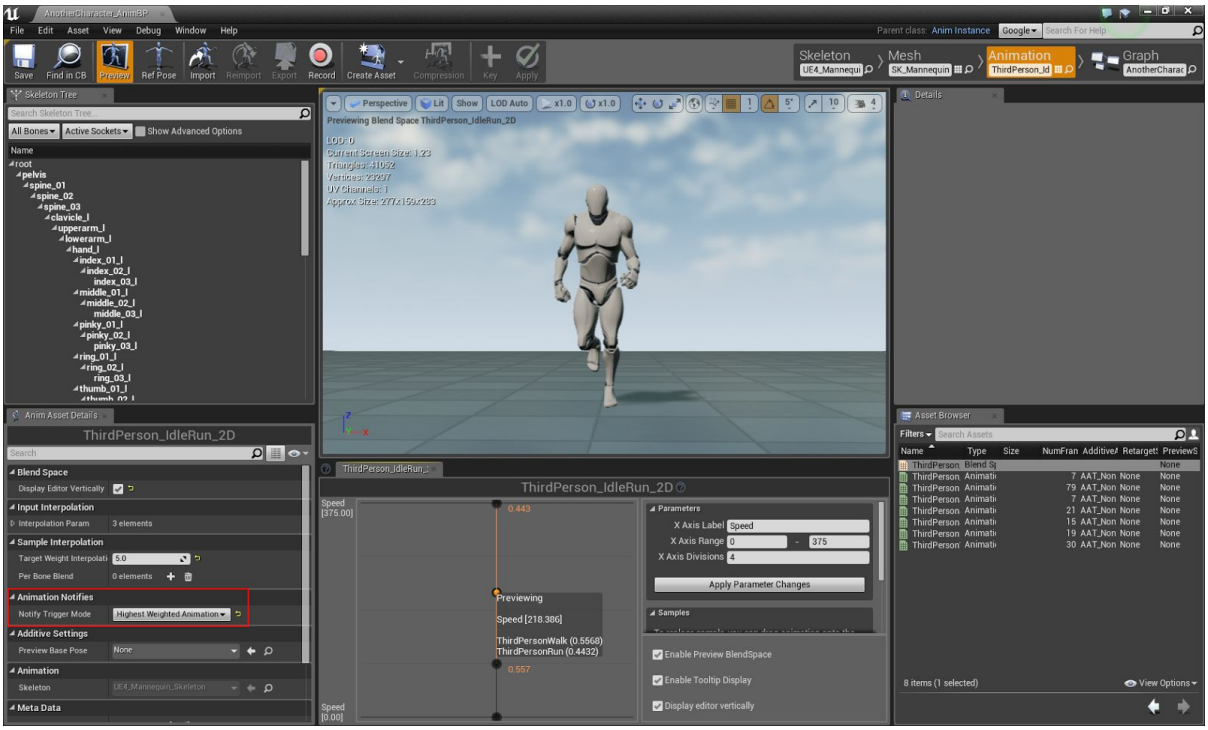
Animation Sequences:

There are 3 different **Custom Notifies** on animation sequences:

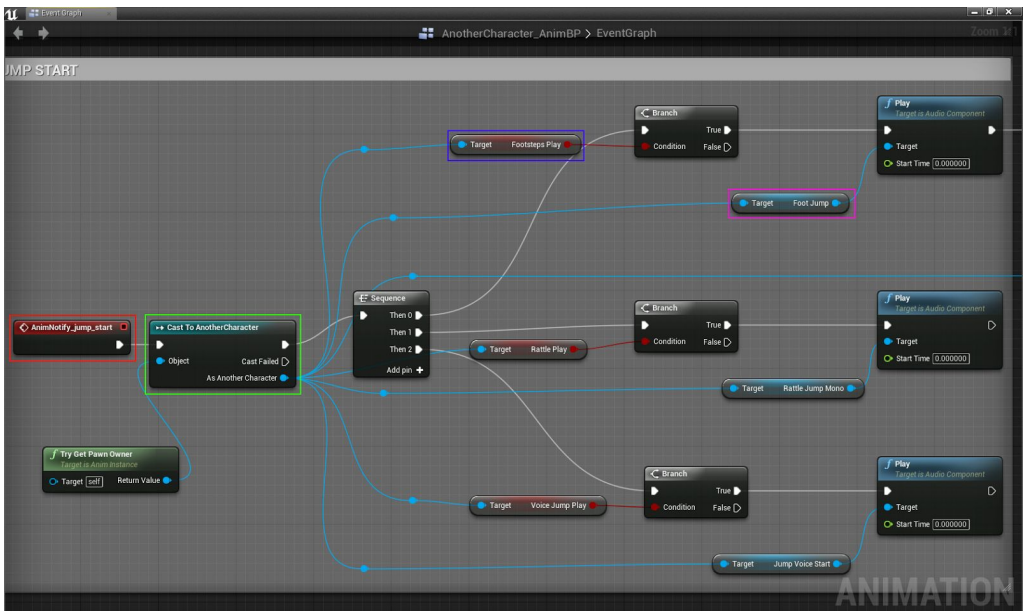
- step (on walk and run sequence)
- jump_start (on jump_start sequence)
- jump_end (on jump_end sequence)

Animation_BP

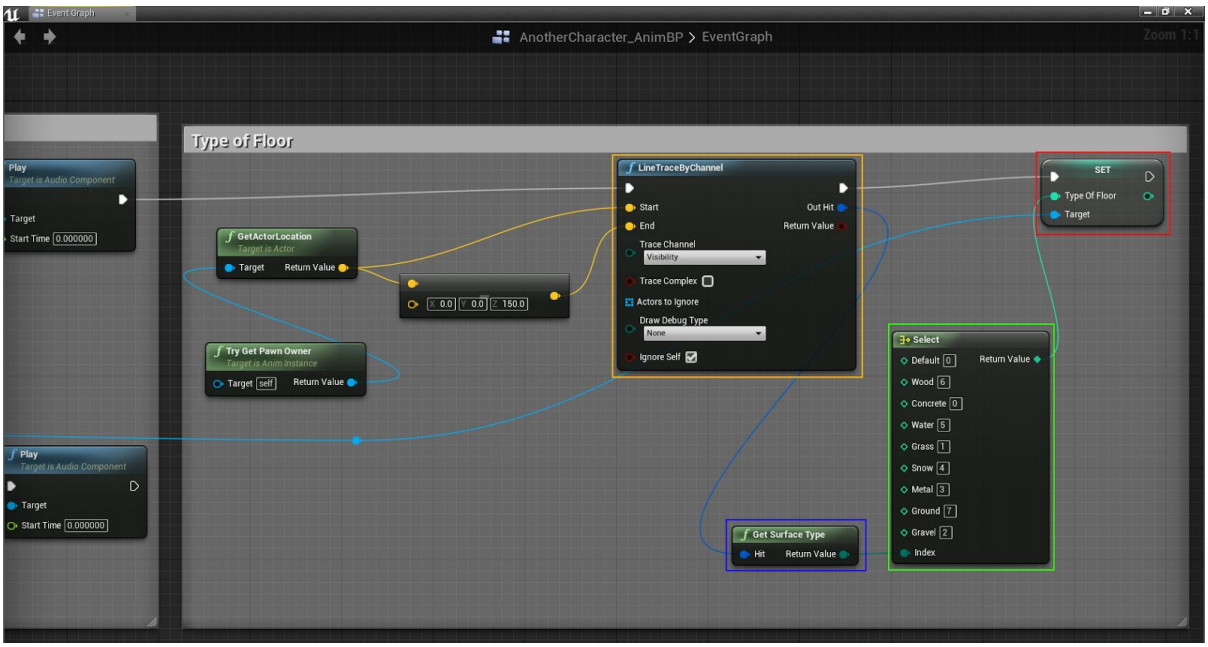
In the **IdleRun_2D** Blendspace you have to set **Notify Trigger Mode** to: **Highest Weighted Animation.** So footstep notifies placed on **walk** and **run** sequence trigger only once when animations are blending.



Custom Notifies are **Events** in the **Anim_BP** used to trigger AudioComponents via **"Cast To"** node in **Character_BP**. There is also a branch with a public Character_BP **Boolean** to enable or disable all character sounds in real time.

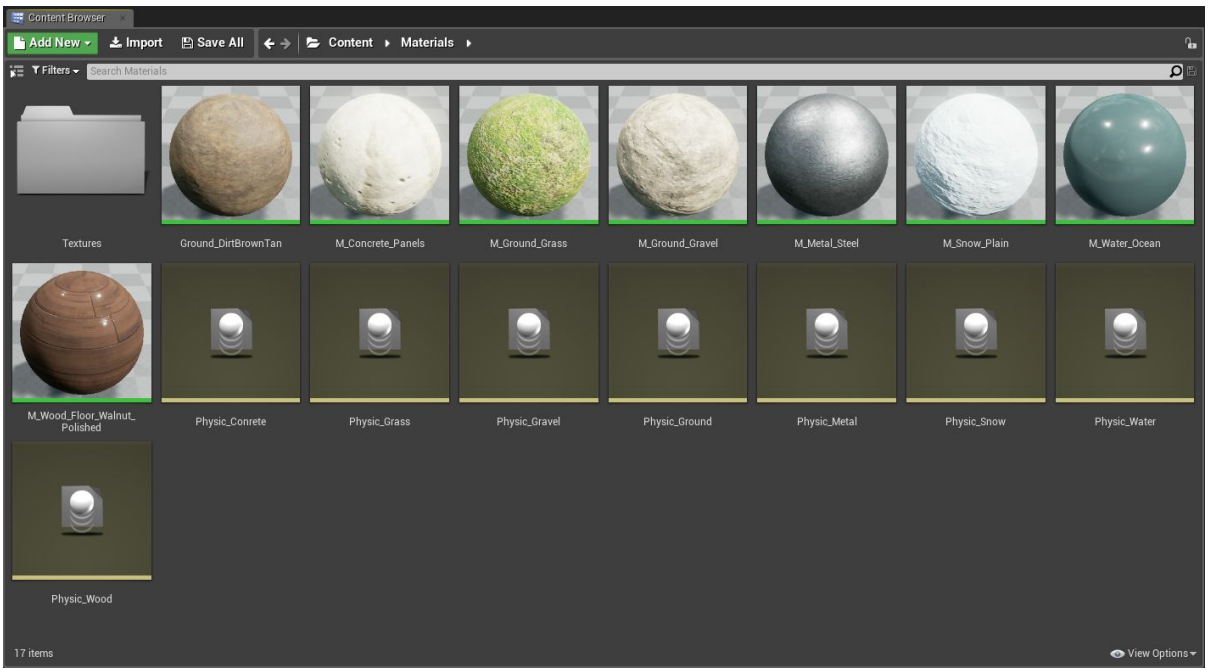


The selection of the correct floor sound is made through a **“LineTraceByChannel”** Node. It gets the surface type every time the player steps on it. Then it sets the Integer **“TypeOfFloor”** in the CharacterBP to a **number value** which is associated with the **correct floor type.**

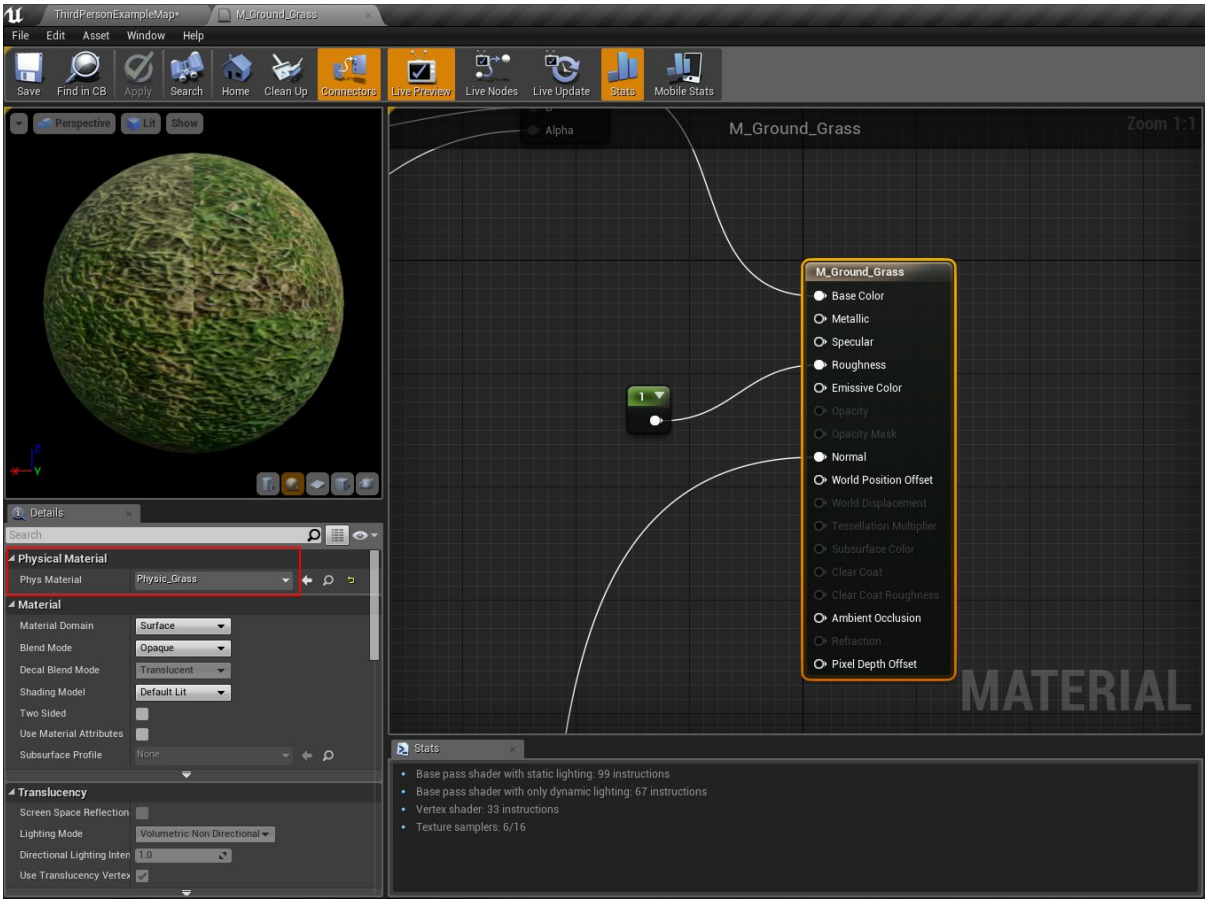


Materials and Physical Materials:

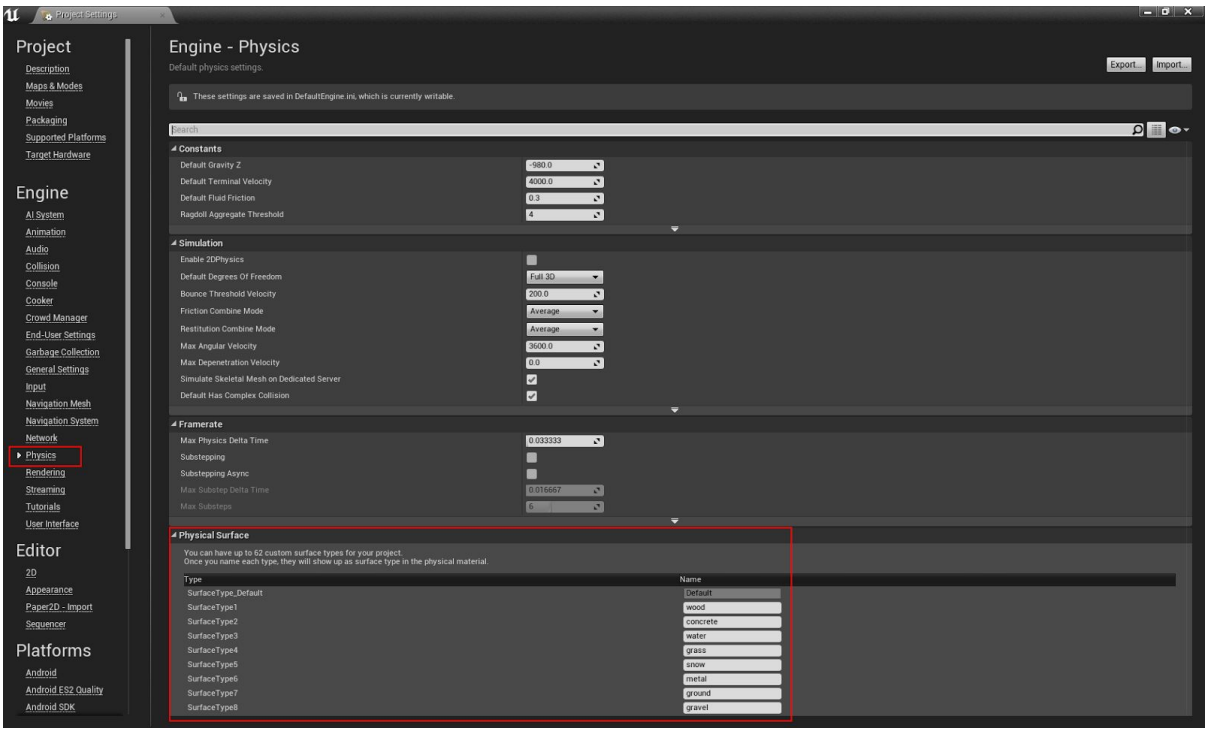
Every Material has its own Physical Material.



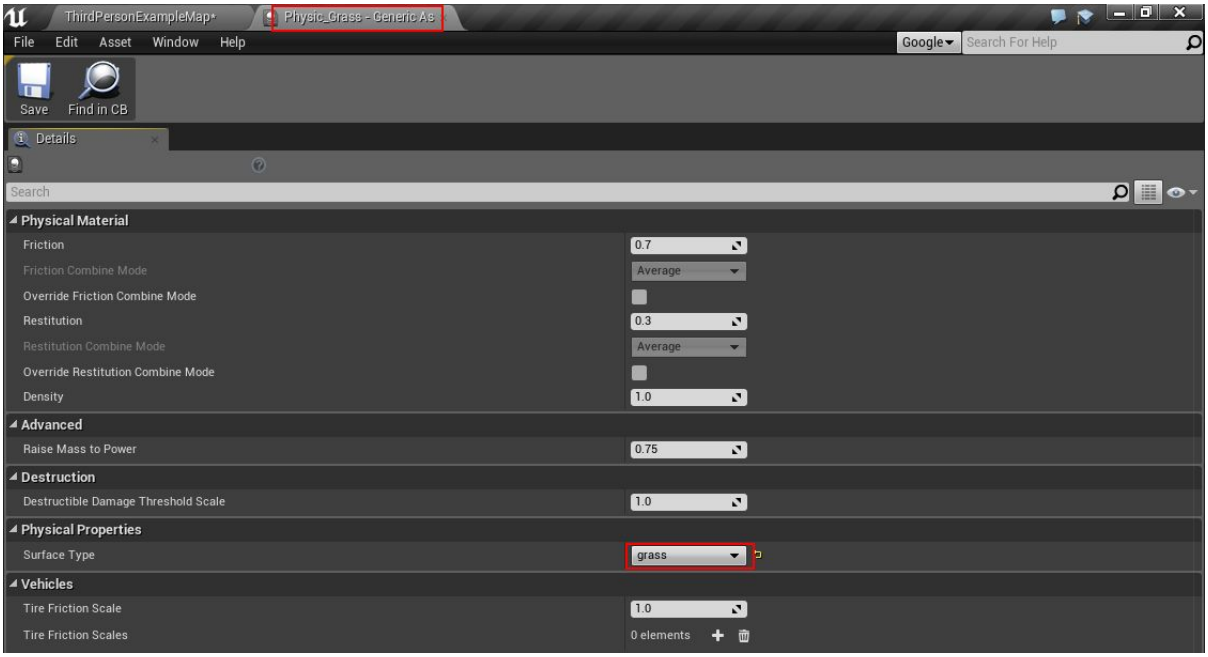
In your own Materials, you have to pick the correct Physical Material here:



In Project Settings you have to specify Type of Surface.



Then in Physical Materials, you have to choose the type of floor.



If you have any more questions or problems you can ask me on skype:
ae-kamol