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This documentation is based on the latest released version.  
Last Documentation Update: 07/26/2022

### **VERSION**

1.0 (UE 4.26 - 5.0)

If you have problems with the system or find bugs, please contact me over my discord channel.

<https://discord.gg/UuV7btx63G>

Kind regards,

*Marius.*

# 1 Introduction

## 1.1. Hello there

Welcome to my **Simple Destruction System** and thank you for your purchase.

I developed this system for **beginners**, but **advanced users** can also benefit from it.

I know the struggle with Unreal Engine all too well. **Collisions and destruction can quickly drive you insane...**

In this system I would like to help you to achieve the desired goal with **just Blueprint Actors**.

I don't do Components to implement into your project.

I make the Blueprints Logic in **single Actors** and the **Third Person Character Blueprint**.

This should teach you how to learn the system and not how to copy Components and don't know how they work.

For beginners it could be quite hard to know how Components work. My Systems are built **as easily as possible**. If you like to improve the code and make them more complex, just go ahead and use my system as an easy start.

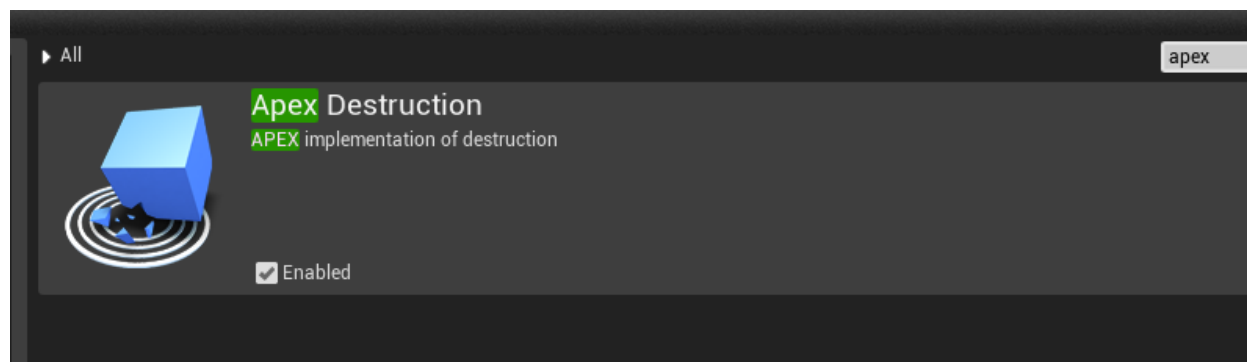
**In any case, have fun developing.**

## 1.2. Setup your Project

If you have a **new project** you can **simply copy the desired Blueprints into your project**.

Or learn with this project how to build them.

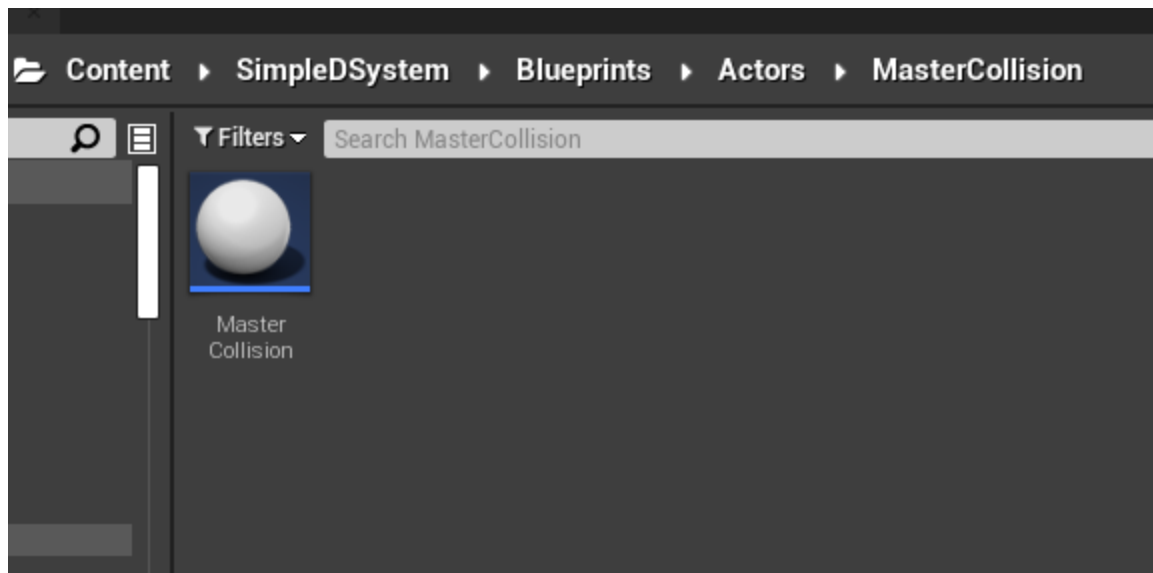
But first of all, if you want to use the destruction unreal gives you, activate the **Apex Destruction Plugin** in your Project. For Unreal Engine 5 they changed it to **Chaos Destruction**.



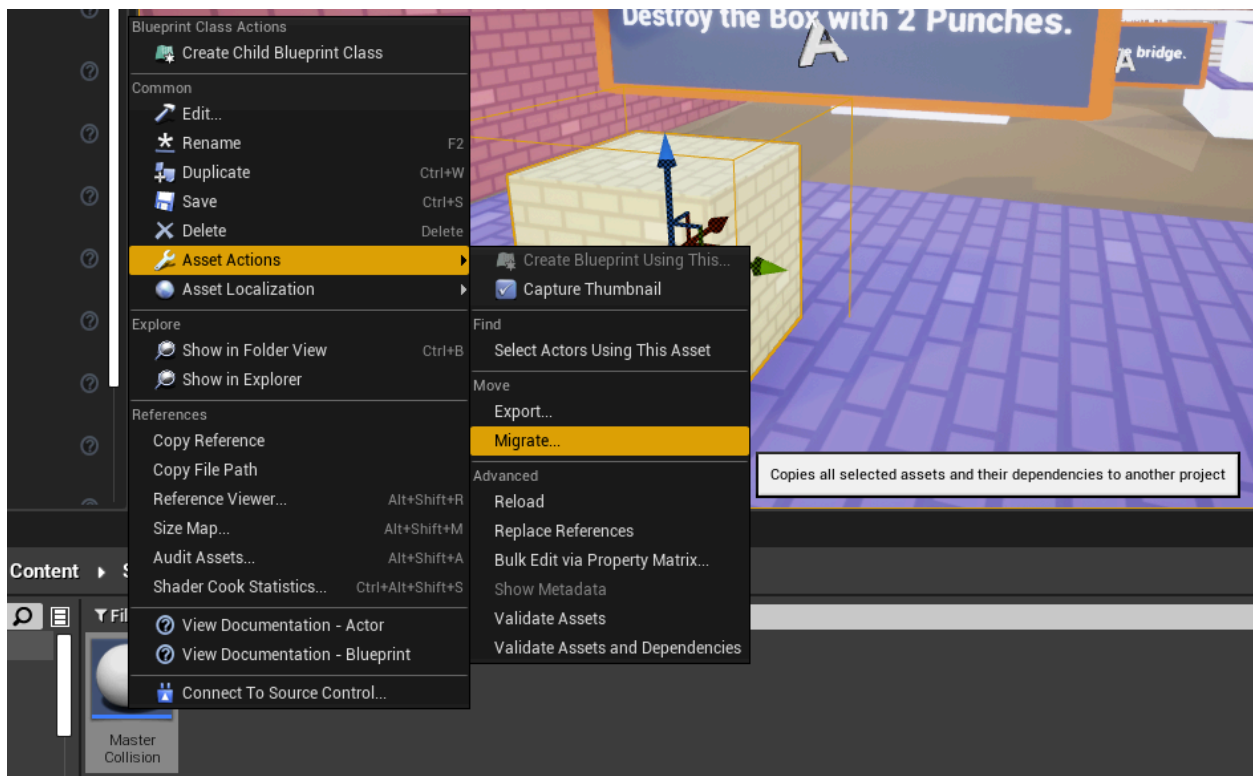
## 1.3. Migrate to your Project

### Step 1

I use a Blueprint Actor as a [Master Collision](#) for the [Destructible Actors](#).

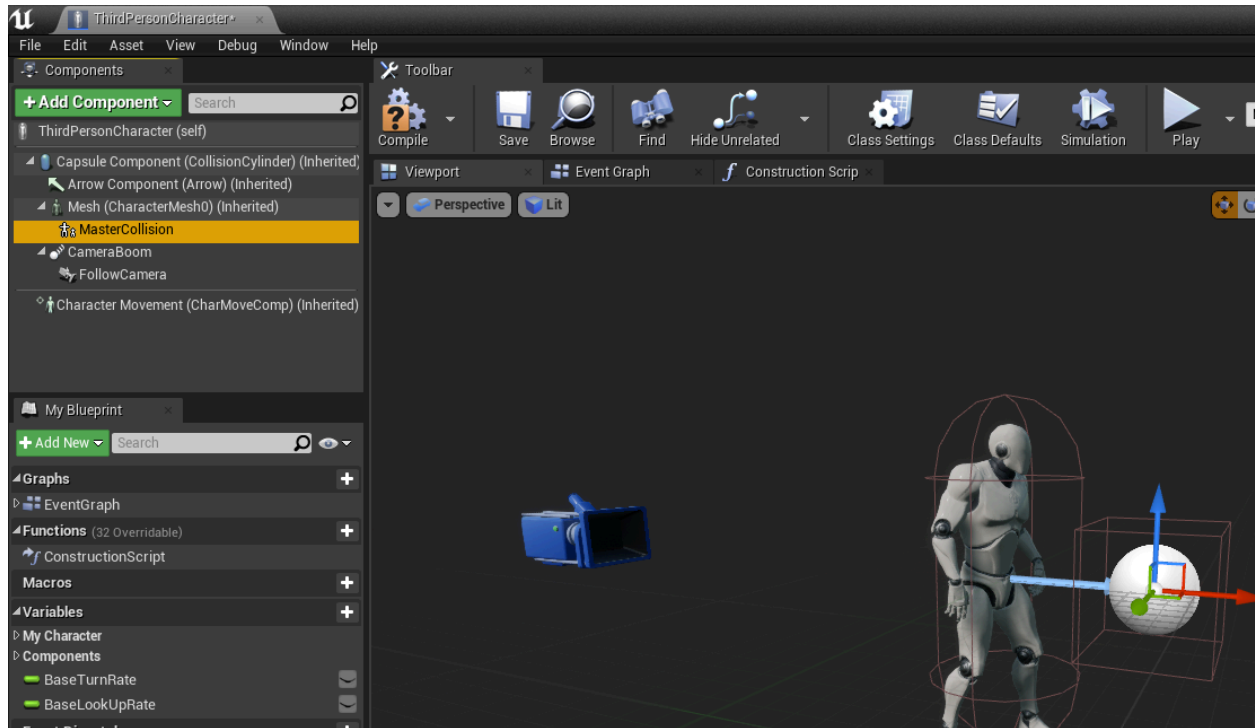


**Migrate** the Blueprint to your project content folder.

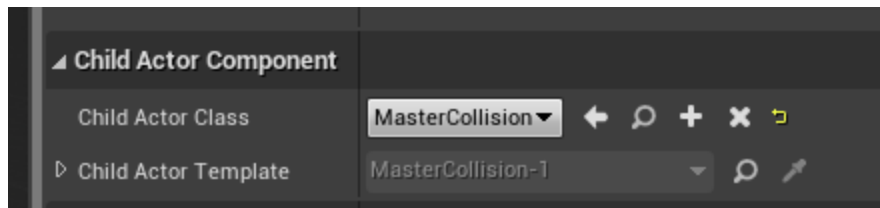


## Step 2

Attach the [master collision](#) to your character. Drag and drop them onto your mesh.



Or click add component, [child actor](#), and on the right details panel choose your Blueprint.

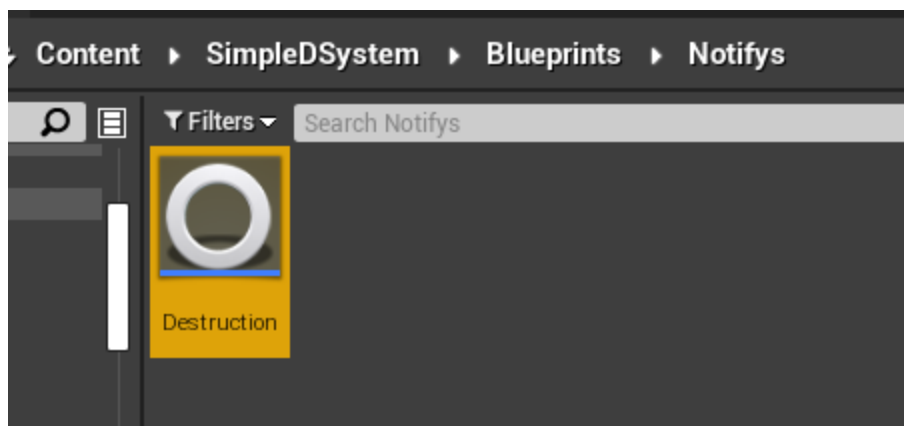


Drag the collision box in front of your character.

## Step 2

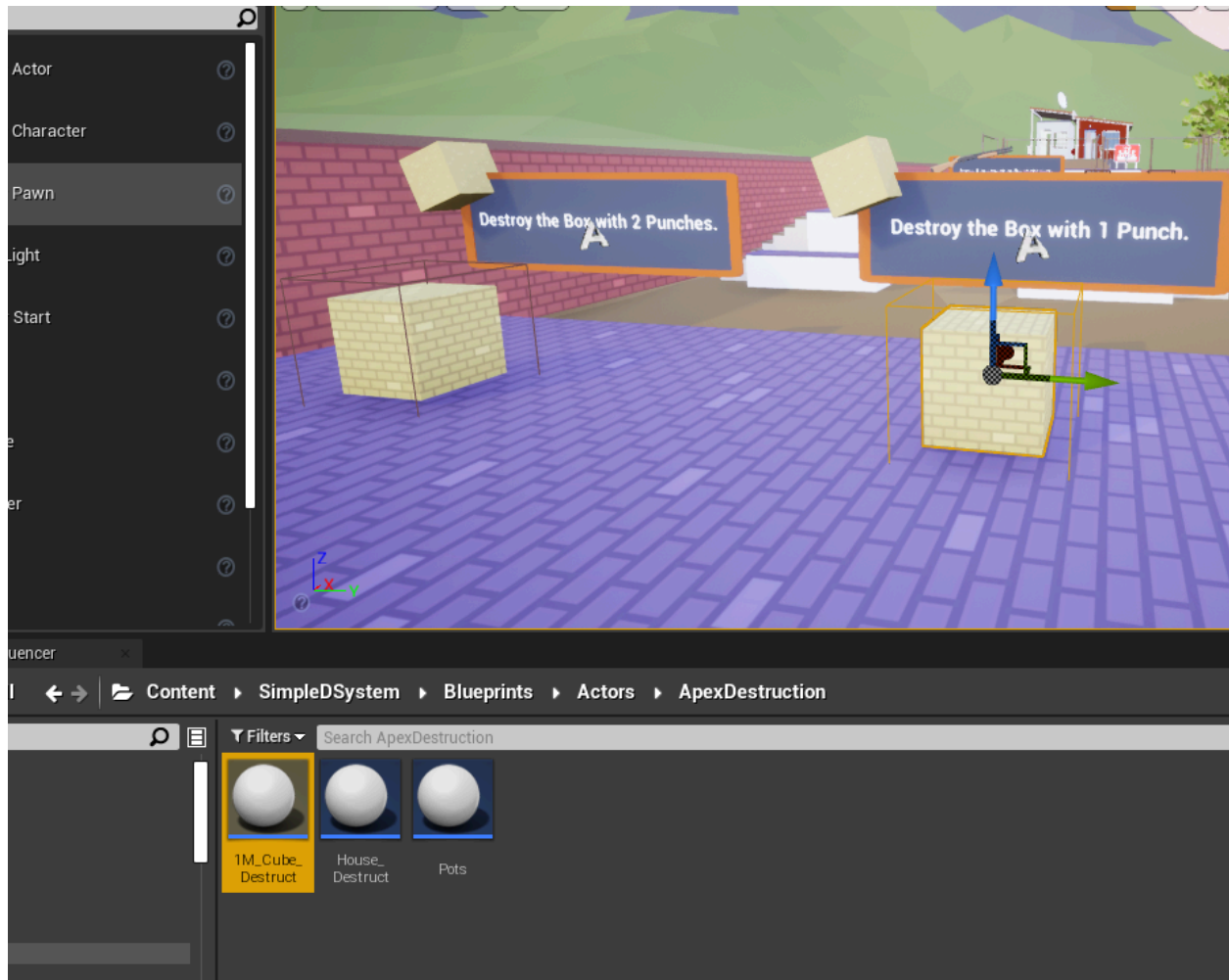
Migrate the [Notify \(Blueprint for your animations\)](#) the same way.

If he asks to [overwrite something](#), click yes all.



### Step 3

Migrate a Blueprint Actor like the [destruction cube](#) the same way.



Done. You can do that with the [other Actors as well](#). Check out in the **How to Use** section [how to make these Actors work together](#).

**WARNING: DON'T MIGRATE ANIMATIONS FROM THIS PROJECT TO YOURS**

Use the export option and the import instead. Otherwise he will create another UE4 Mannequin in your project!

## 2 How to Use

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### 2.1. Information

I made [two methods](#) for this. One with [Apex Destruction/Chaos Destruction\(UE5\)](#) and one with [Physical Destruction](#).

You can choose what your mesh looks like and which method suits you.

And of course you can create actors yourself with this.

The Methods are easy to understand. Sure, I don't make them complex with hit traces, interfaces and class specification, but if you are reading this right now, you come for the basics, to learn/use and not how to make this difficult for you.

In the Update Section I am planning to make you an intermediate method based on the basic ones where you can work with interfaces and components. This will provide a learning experience and to master the full potential of Blueprints for this. But slow down. Just start with the basics.

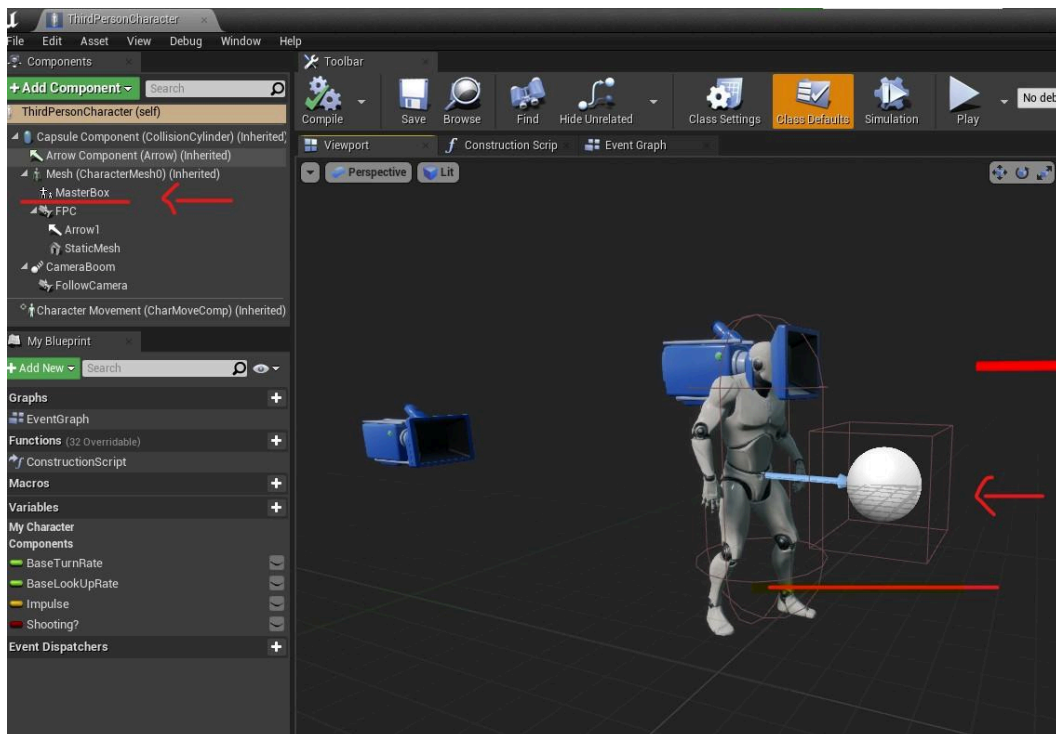
## 2.2. Basic Setup and Use

If you have taken the steps in [1.2](#) and [1.3](#) you can start right here.  
Or you use this project to start with.

So, you want to **destroy something with your animations?**

This works with [3 Actors](#).

The master collision attached to your character, to overlap with actors.

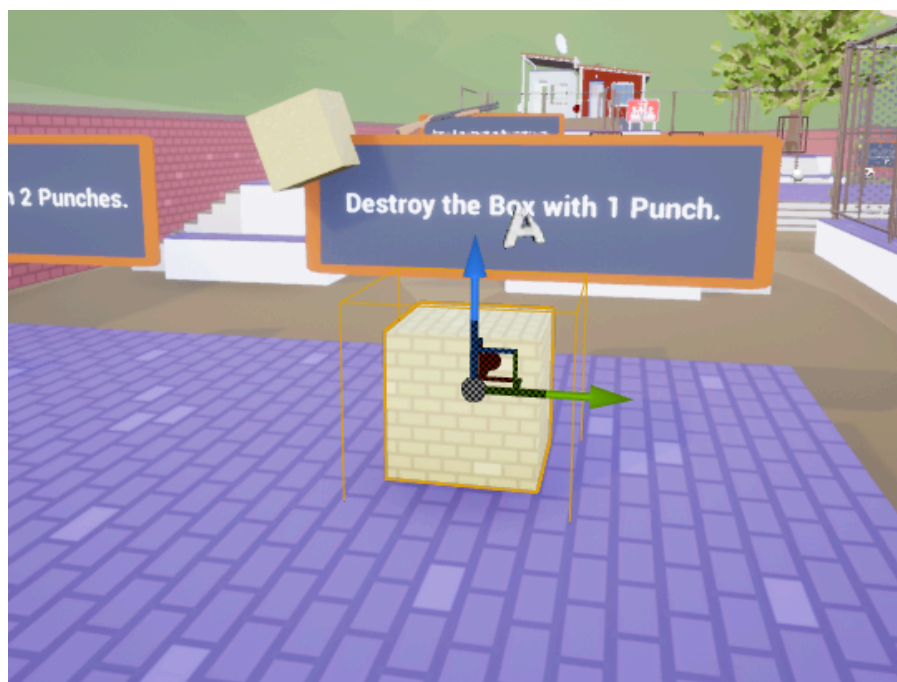




The notify for the master collision, to time the destruction point in the animation.



The Actor who gets destroyed.





In the notify you can see how the master collision works. The collision overlap activates at the point you choose in the animation.

You can use the notify in any animation you like, but it should be an animation montage.

For that, go into your animation montage, right click under Notifies, notify states and choose destruction. That is our notify.

Place them as you like, but think about which time of your animation the actor should be destroyed.

The actors have a small health variable to make them hit several times. I make them instance editable so you can change the health of the actors in their details panel after you drag them into the level.

You can use this for the Apex/Chaos Destruction Actors and for the Physic Destruction Actors.

This works for the actors I gave you in this project. The collision for the destructible meshes or physic meshes are adjusted ready.

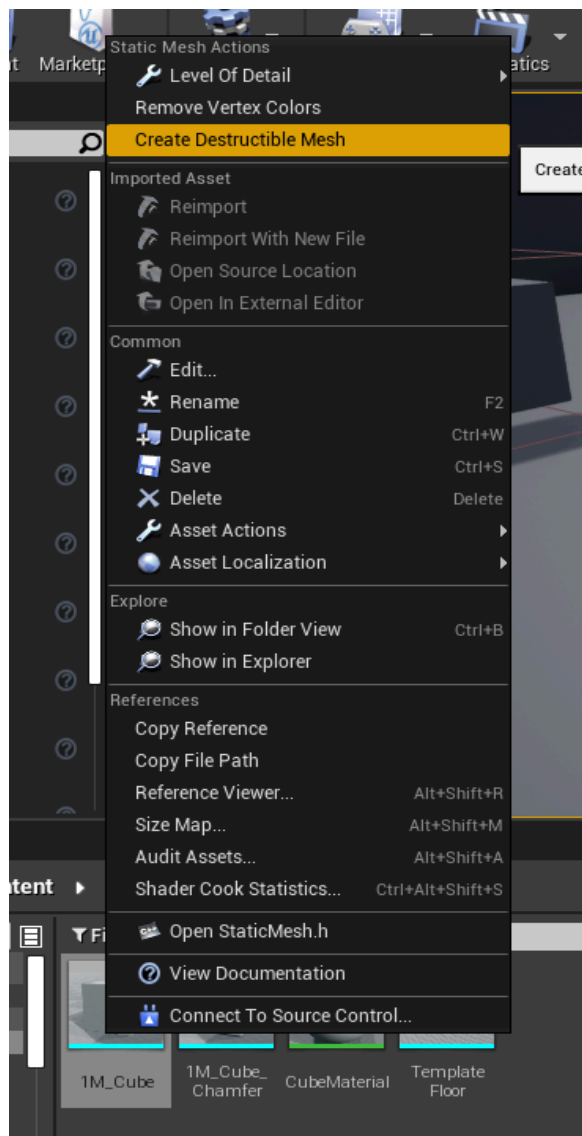
But what if you want to make a new one? Check out the next step.

## 2.3. Create a New One

### Apex/Chaos Destruction Method

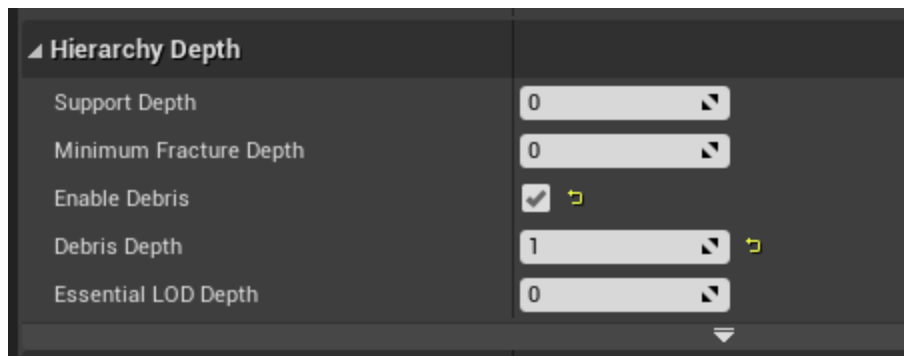
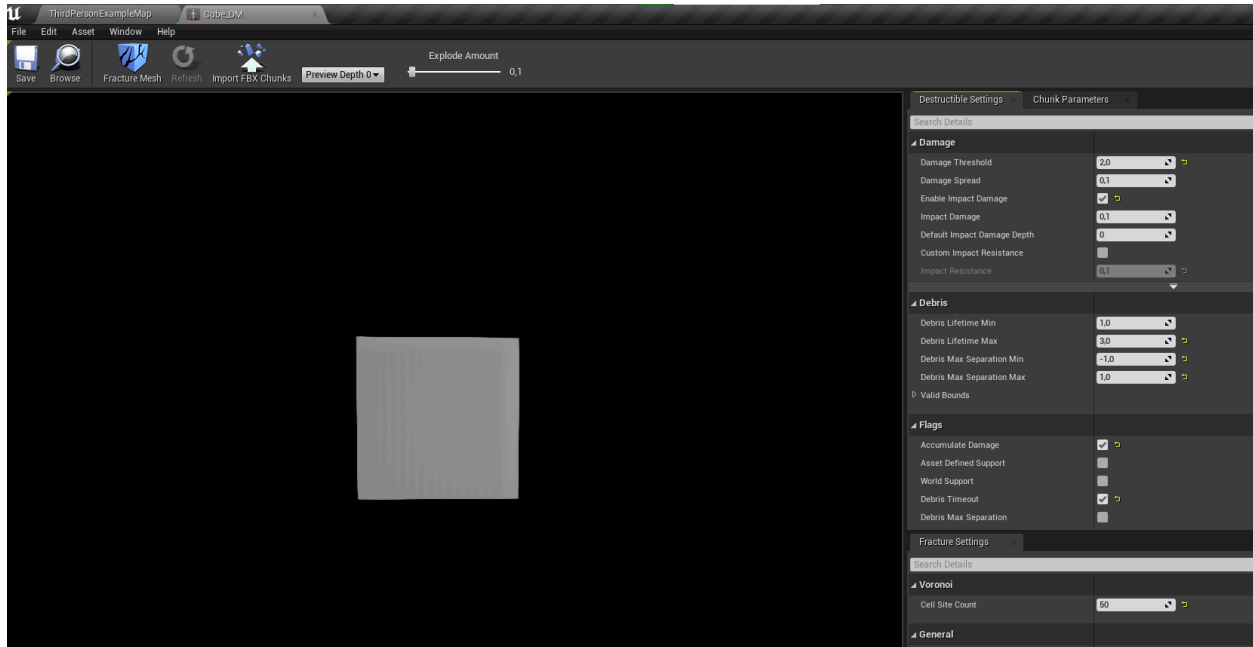
#### Step 1

Choose your [Static Mesh](#) and make a [Destructible Mesh](#). For Unreal Engine 5 use the new [Unreal Fracture System](#) under [Modes](#).



## Step 2

Name your **Destructible Mesh** and set the Values for basic Destruction and Debris.  
For Unreal Engine 5 just fracture your Mesh with the Options you like.



Use these values as a base. You can use this for very simple objects that just collide like the bridge in my project.

**Don't forget to fracture Mesh. And if your Mesh is too dark, use SHIFT + L + PRESS LFT MOUSE to adjust the lighting.**

### Step 3

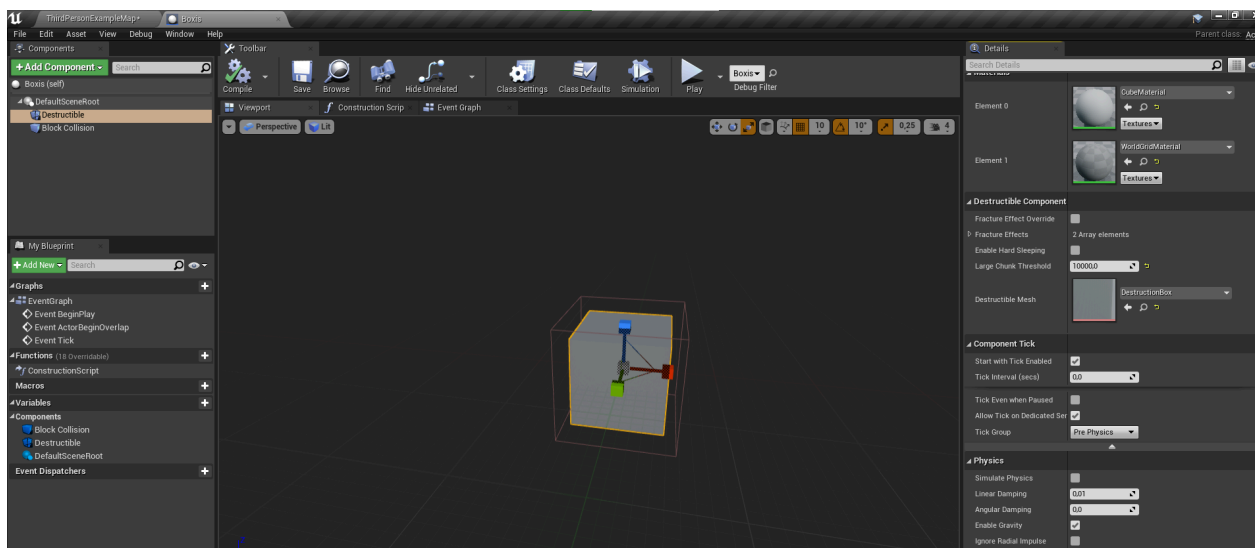
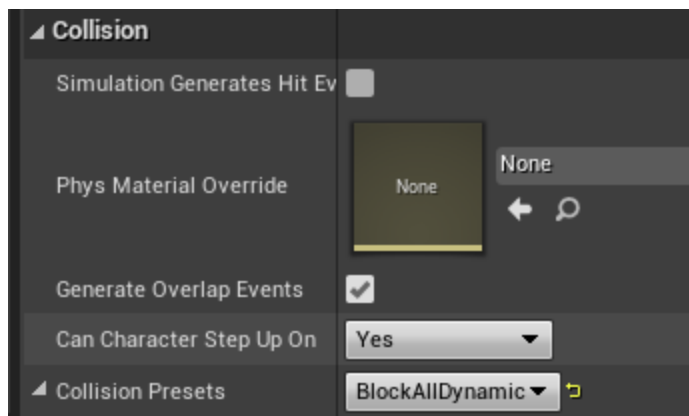
Now we have all we need to build a [Blueprint Actor](#) who gets destroyed with our animation.

Create a new [Blueprint Actor](#) and add [Destructible Component/ Geometry Collection \(UE5\)](#) and a [Box Collision](#).

Choose your created [Destructible Mesh](#) in the Details Panel on the right and use a high value (10.000) for the Large Chunk Threshold (if you do not want the chunks to collide with your character).

For the [Box Collision](#) make them around your Mesh so you can step on your Mesh and don't destroy it early with your own character collision.

The Physics for the Box Collision.



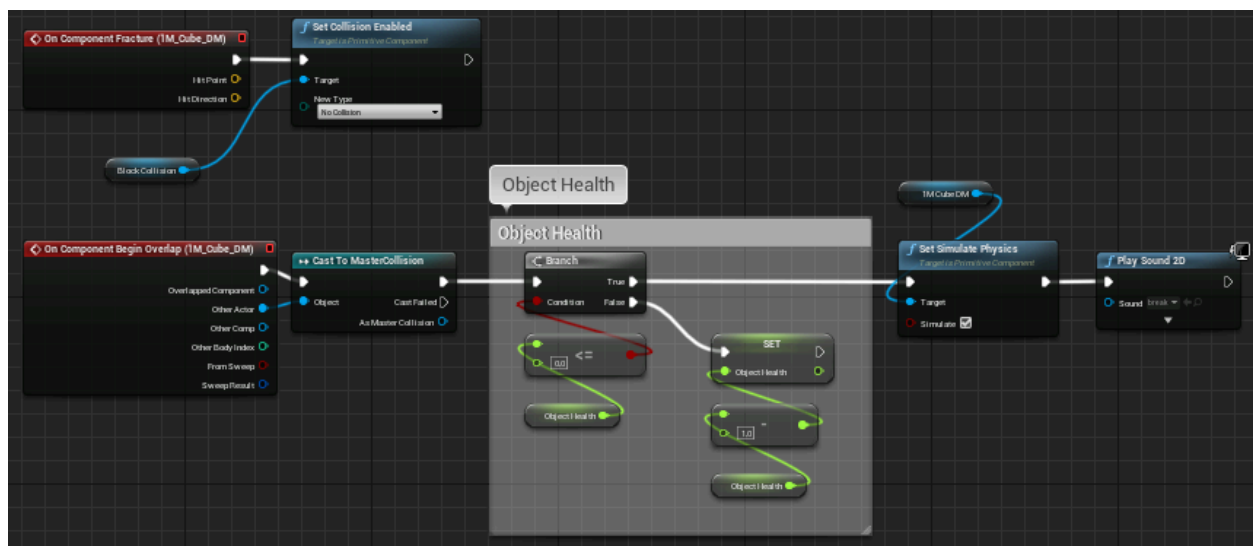
**Important: If you don't see your Mesh in the Blueprint Actor just drag the Blueprint Actor into your Level and close and re open the Blueprint Actor. This is a weird bug I have encountered and I could fix it with this.**

Now some Blueprint Magic.

Click on the **Box Collision** for the **Begin Overlap** (Details Panel bottom) with our cast to **Master Collision Box**, maybe some **health** (if you want to hit multiple times), set the **physics** off (this triggers the destruction of the destructible mesh) and a **small sound effect** (if you like).

After the **Destructible Mesh** gets fractured the **Box Collision** can be set to no collision (for you don't want to step on an invisible collision afterwards). **You can skip this if you destroy your actor after a few seconds anyway.**

Click for this **On Component Fracture** in the Details Panel Bottom of your Destructible Mesh.

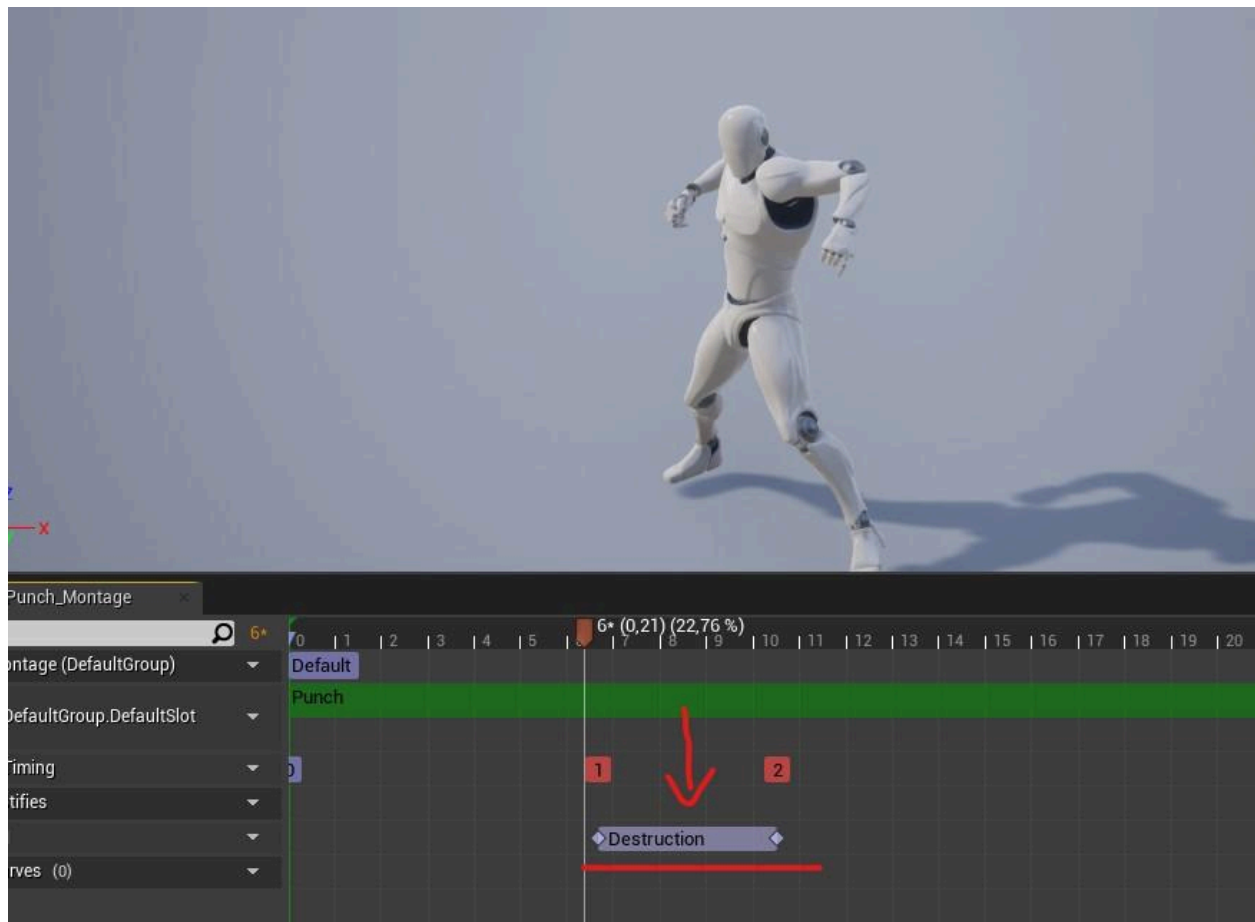


If you like, you can destroy the actor afterwards, check how long your debris is and adjust a Delay with a Destroy actor.

#### Step 4

Now check on which time of your animation the Blueprint Actor should get destroyed.

As I wrote in 2.2 Basic Setup and Use, you can use the Master Collision in your Character. The Master Collision triggers a notify (destruction) that you can drag into your animation montage.



Right click, notify states, Destruction.

## Physical Destruction Method

### Step 1

This is an easy one.

It's nearly the same as the [Apex Destruction Method](#). Just watch the [Blueprint for the Physics Destruction Actors](#) I provide in the project.

Easy Overlap with our Master Collision and Physics set off.



## 2.4. Other Examples

If you may have already seen, I put some [projectile mechanics](#) and [destruction triggers](#) in the project. These Actors are built on the two Methods I showed you.

If you inspect their Blueprints you can see how they are made off.

## 2.5. Future Content and Updates

For the Updates in 2022 I plan to make a more intermediate Method for this System based on the beginner methods.

And more Content Examples like in other Games like The Legend of Zelda and Super Mario 64.

Stay Tuned.