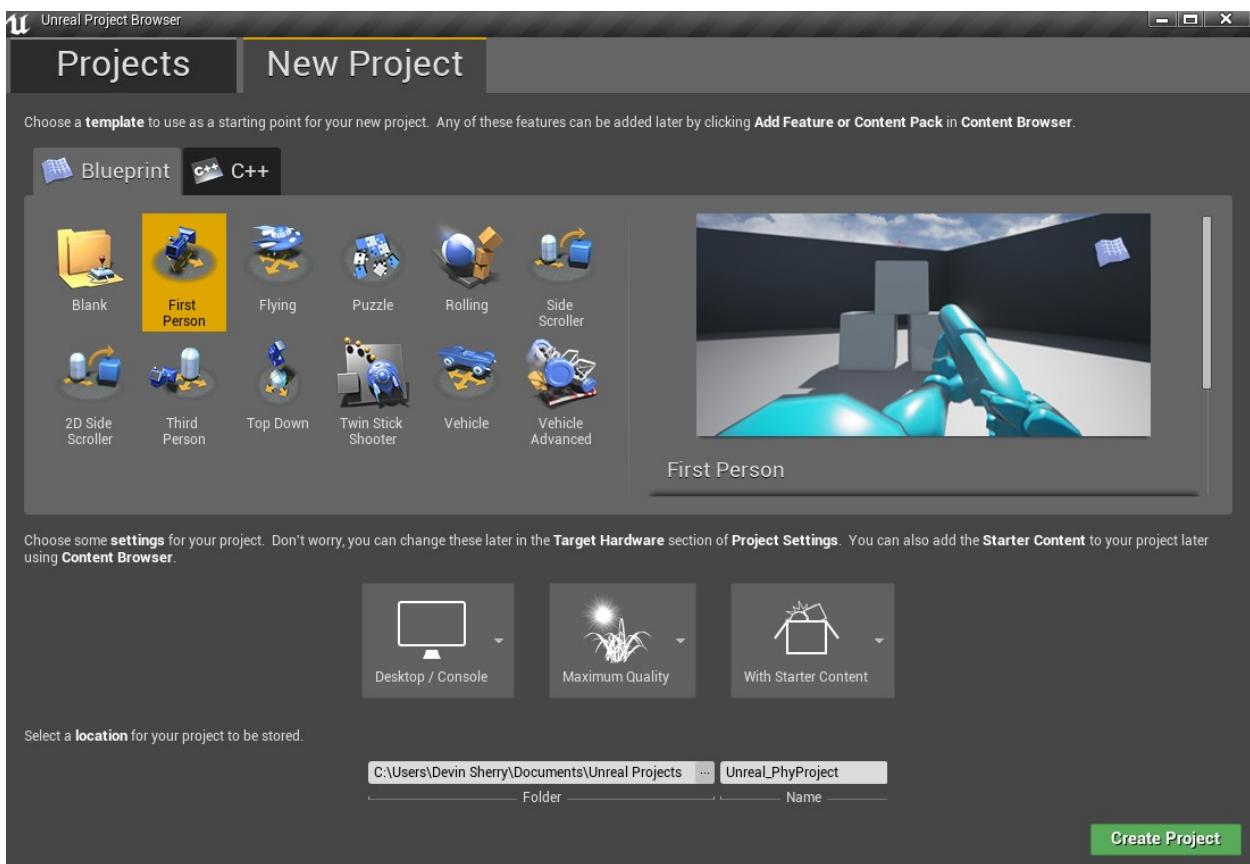
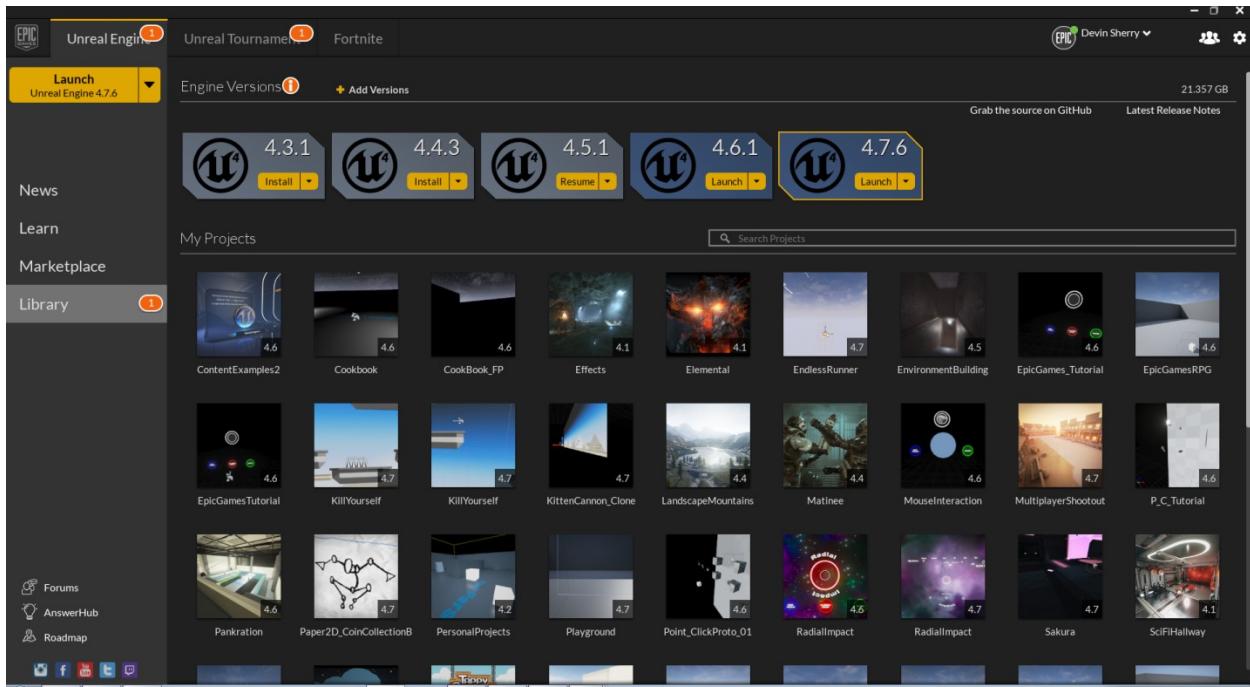
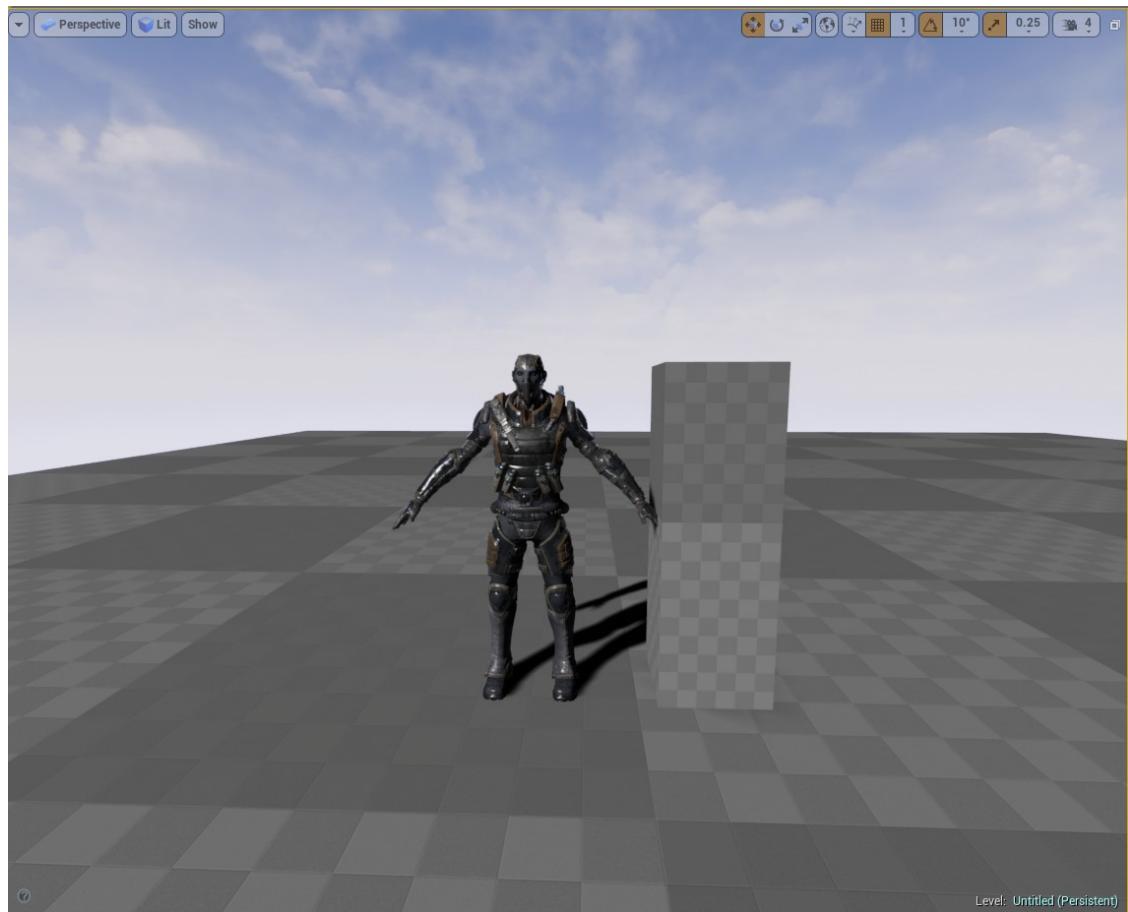
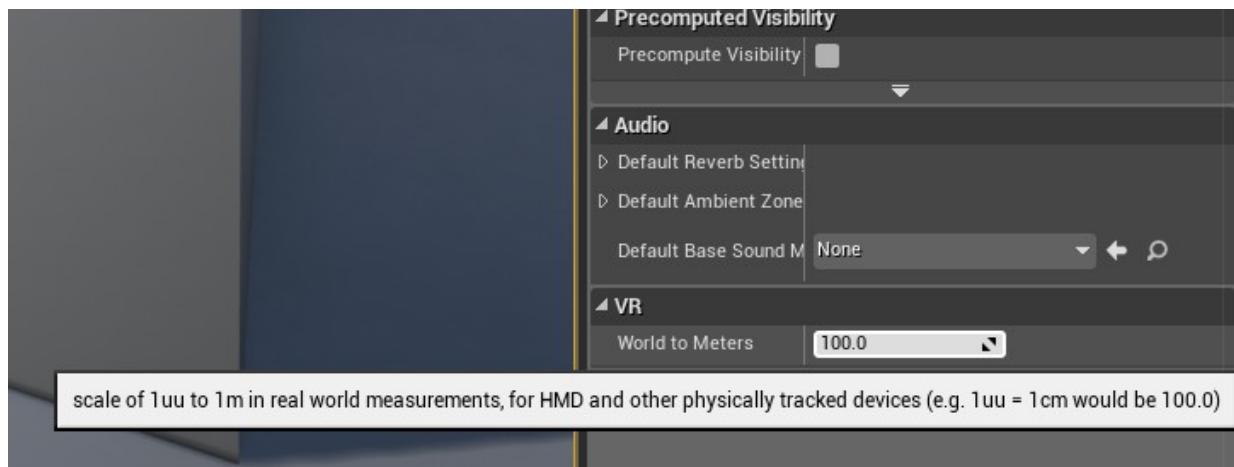


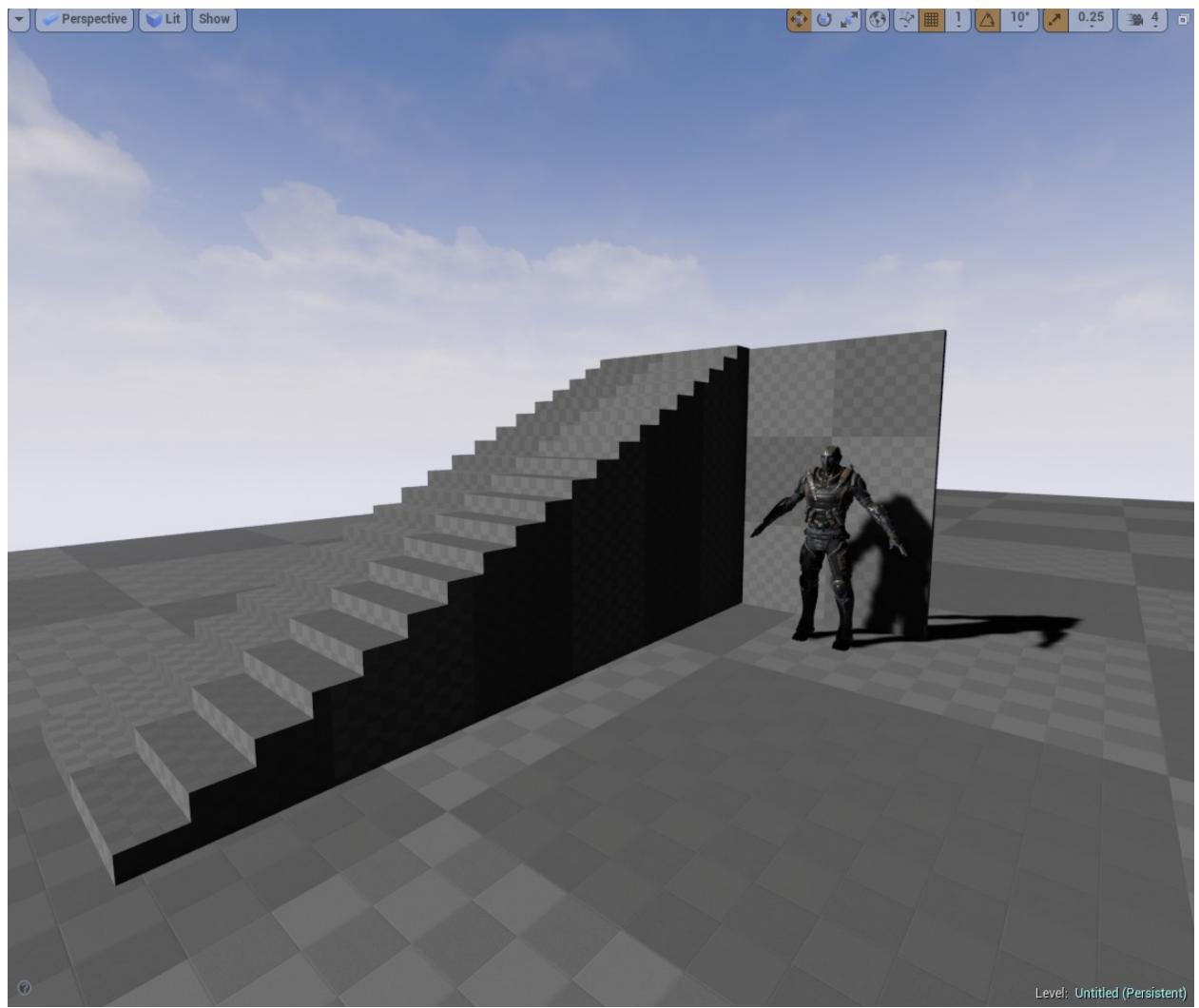
CHAPTER 1

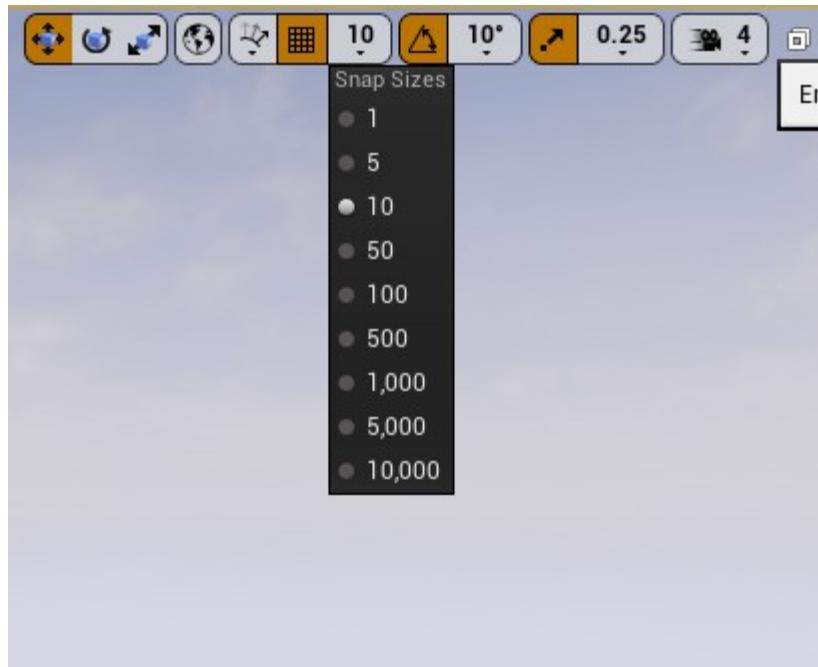
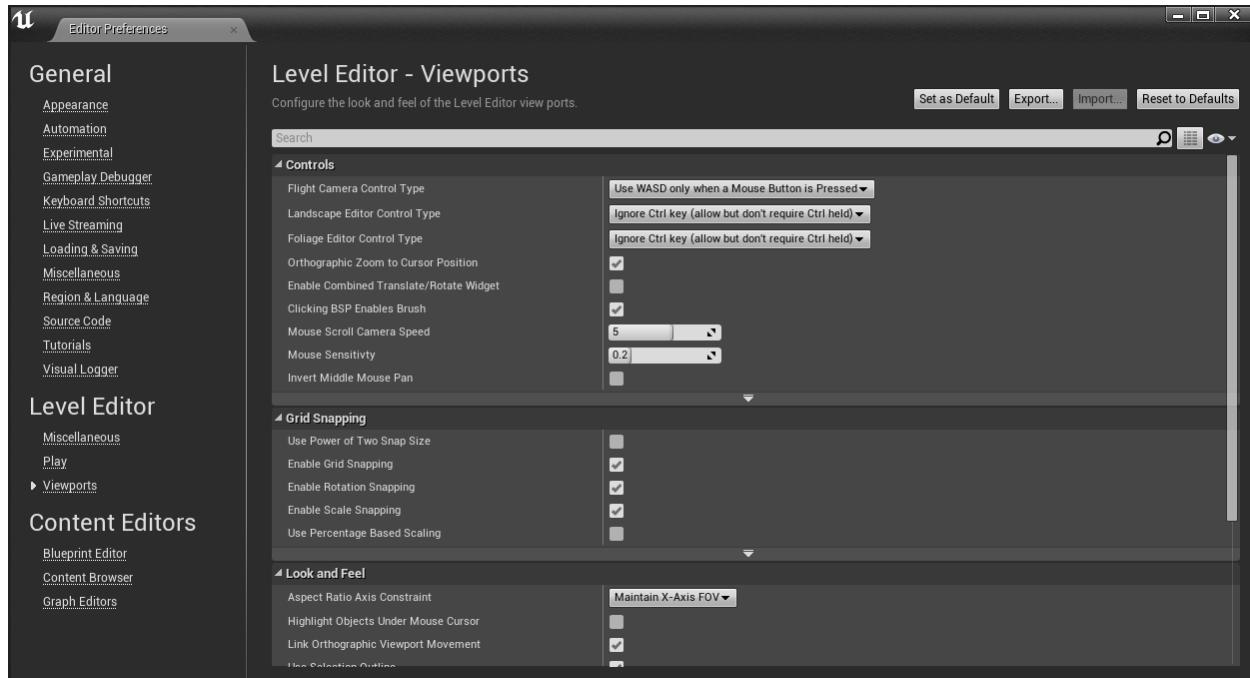


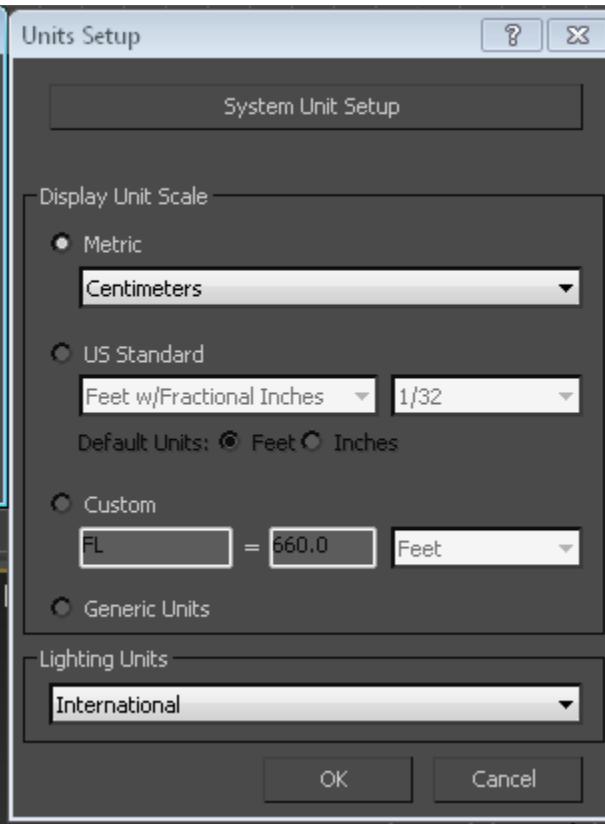
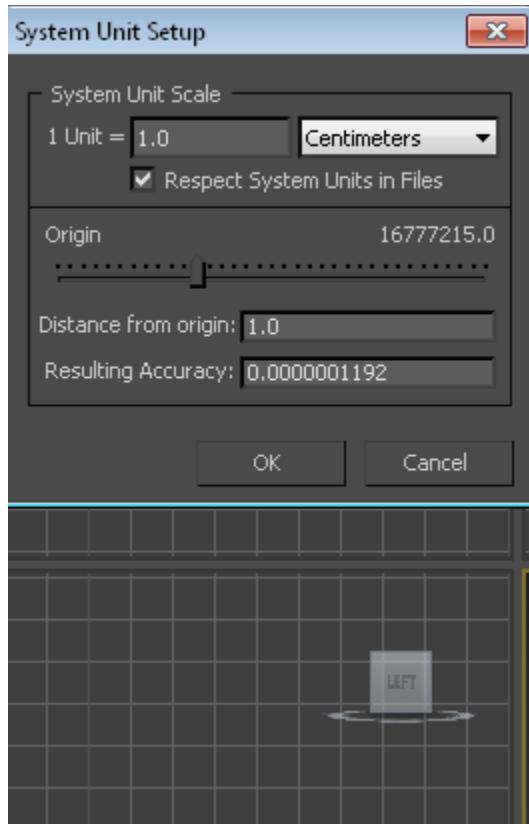


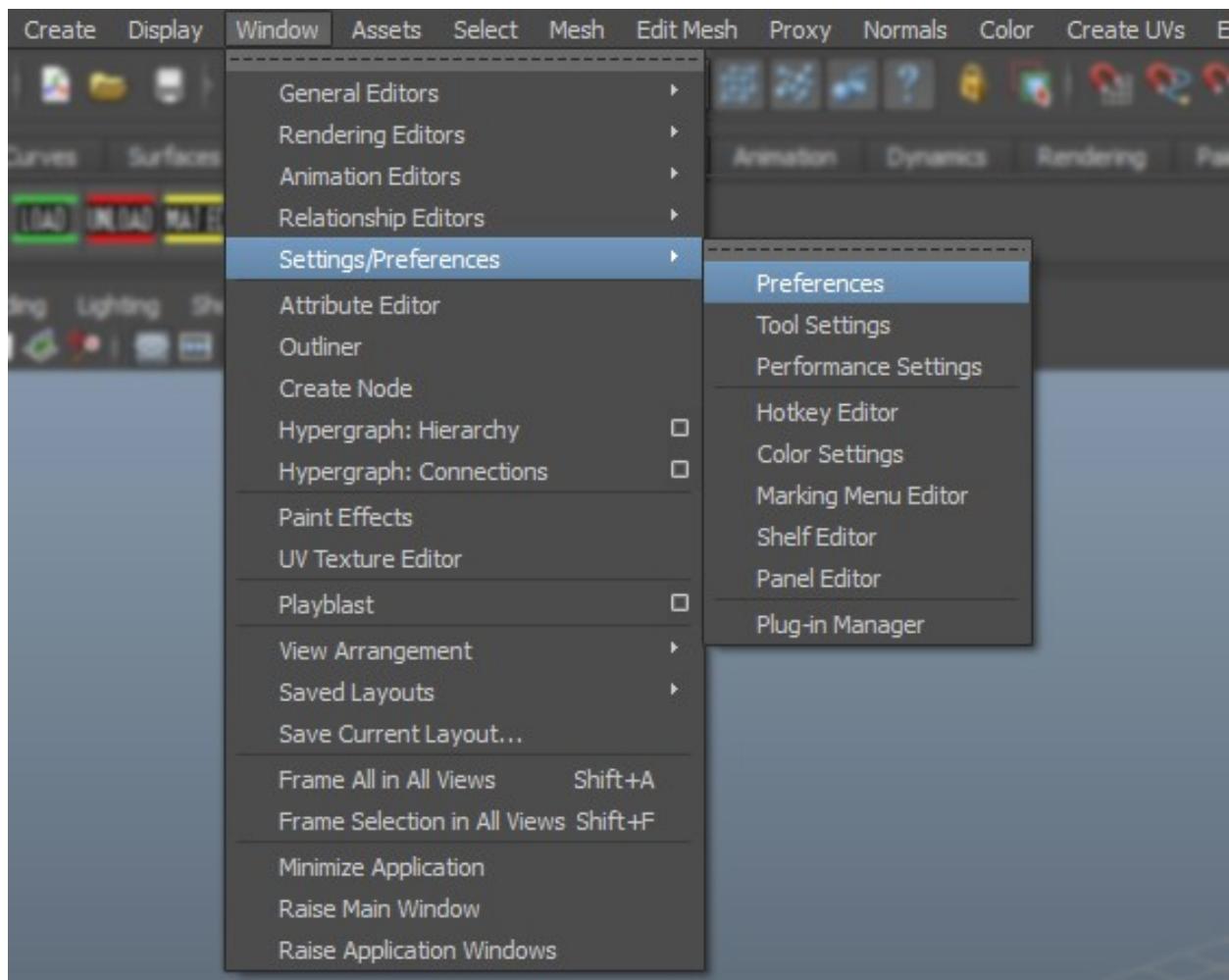


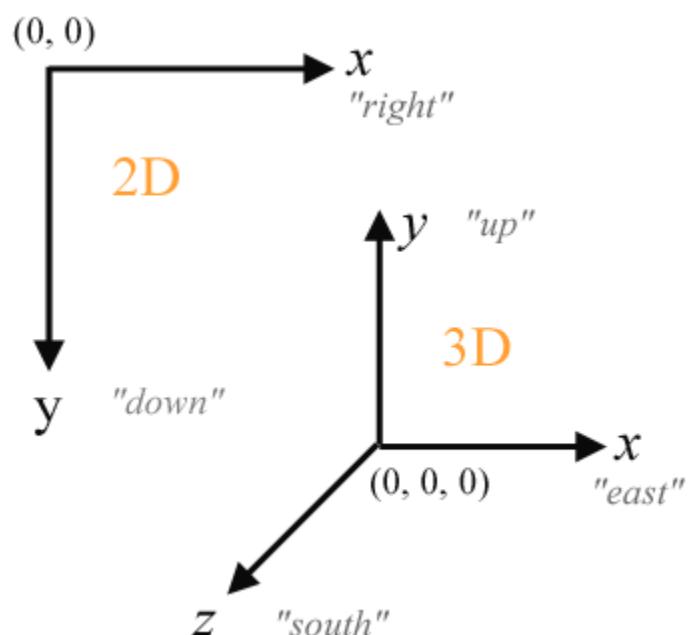
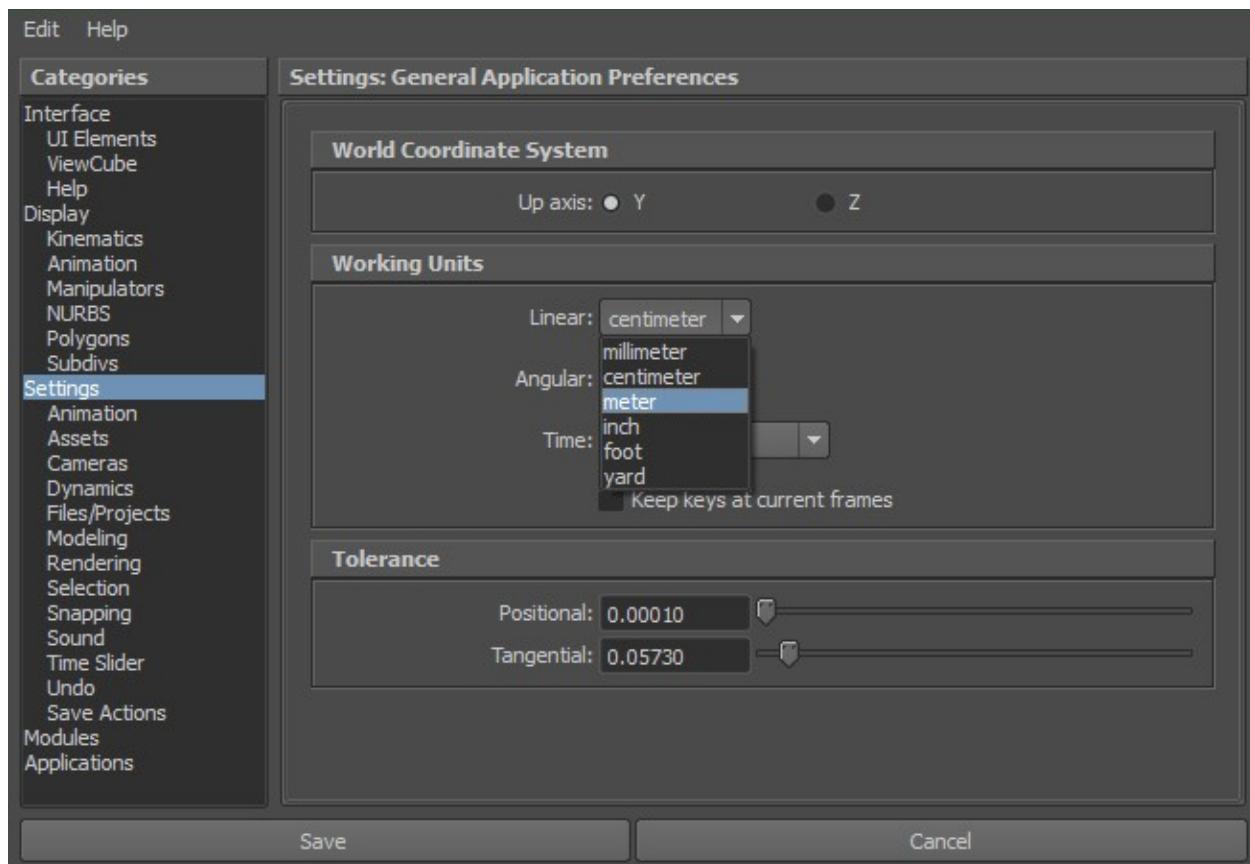


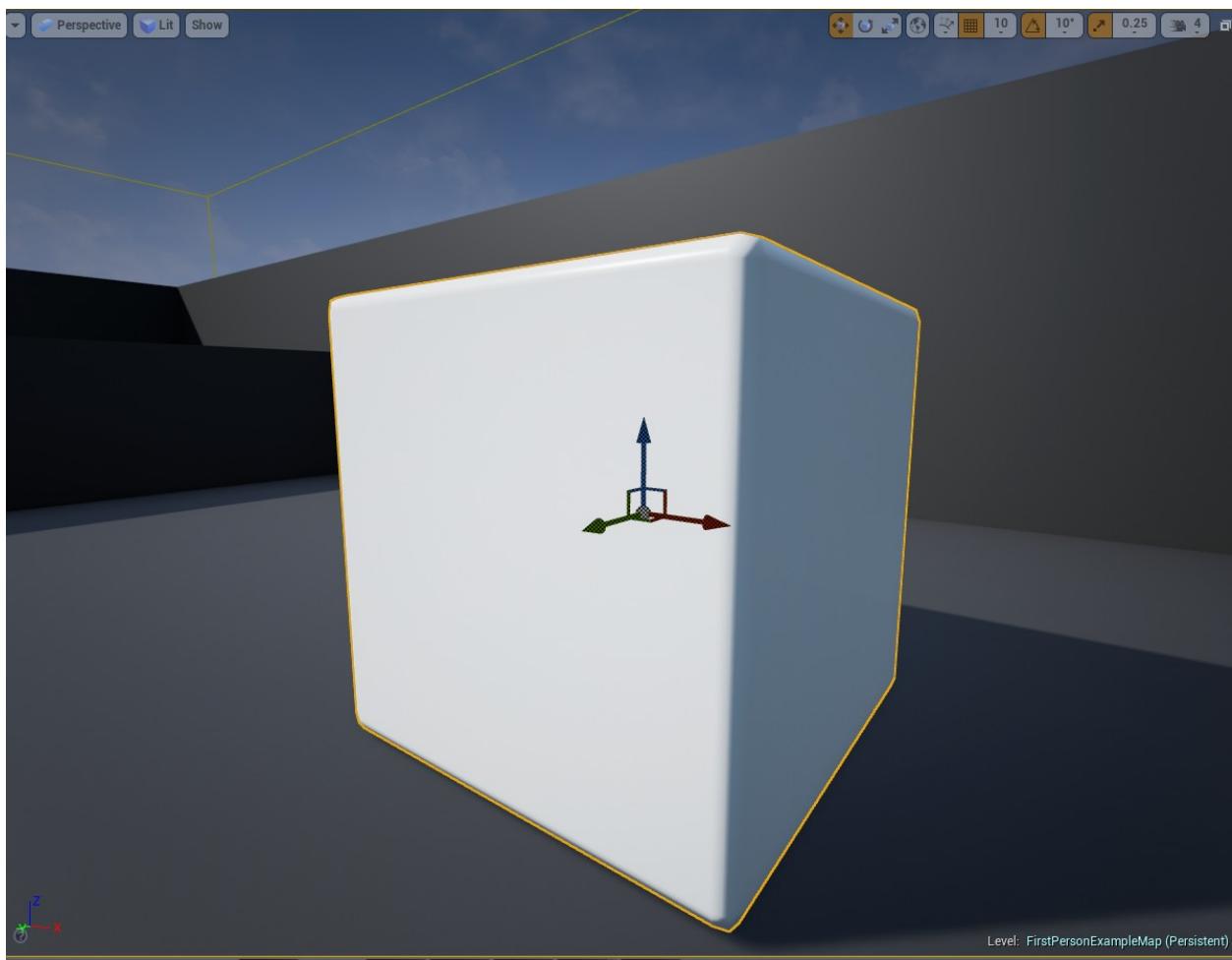


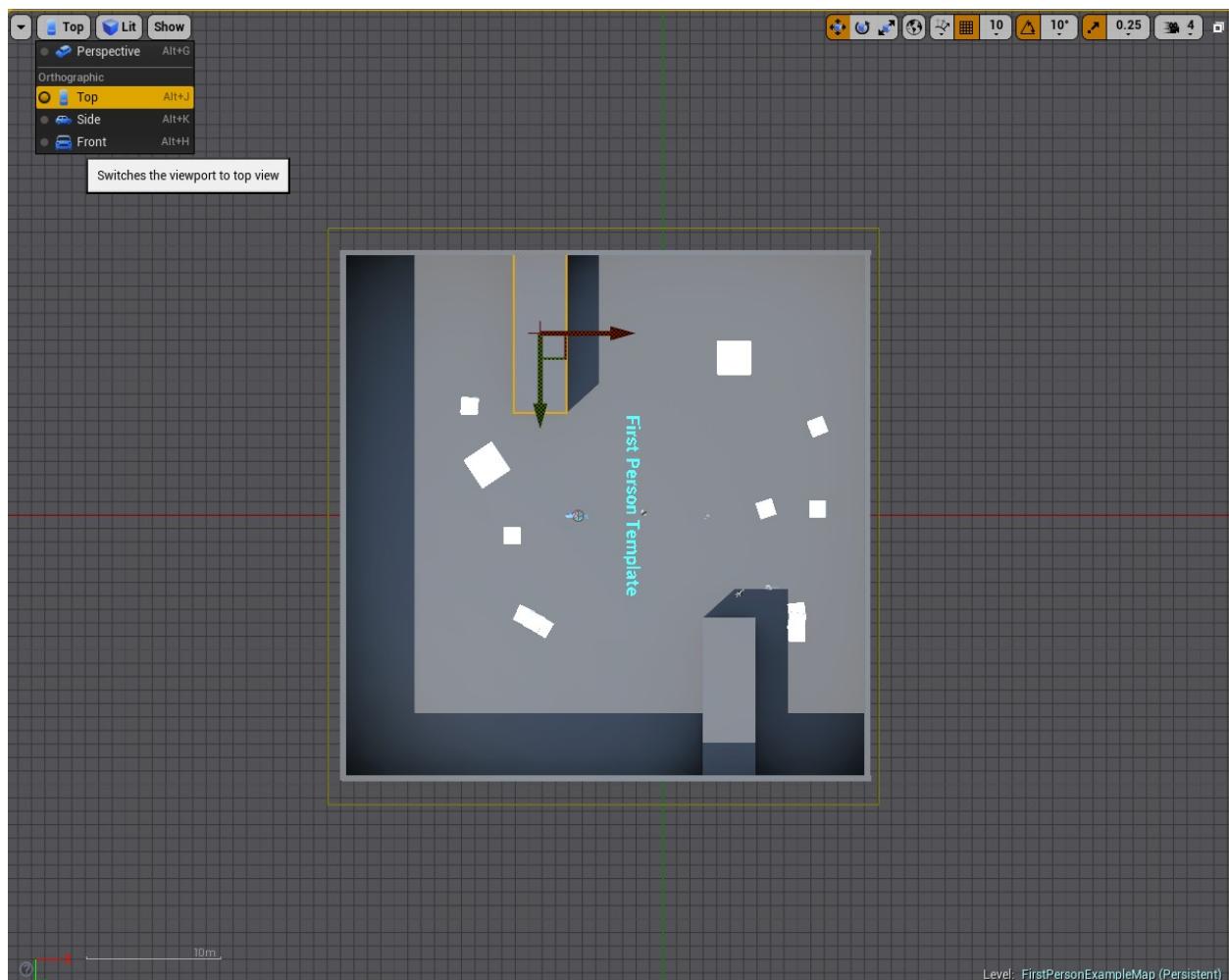


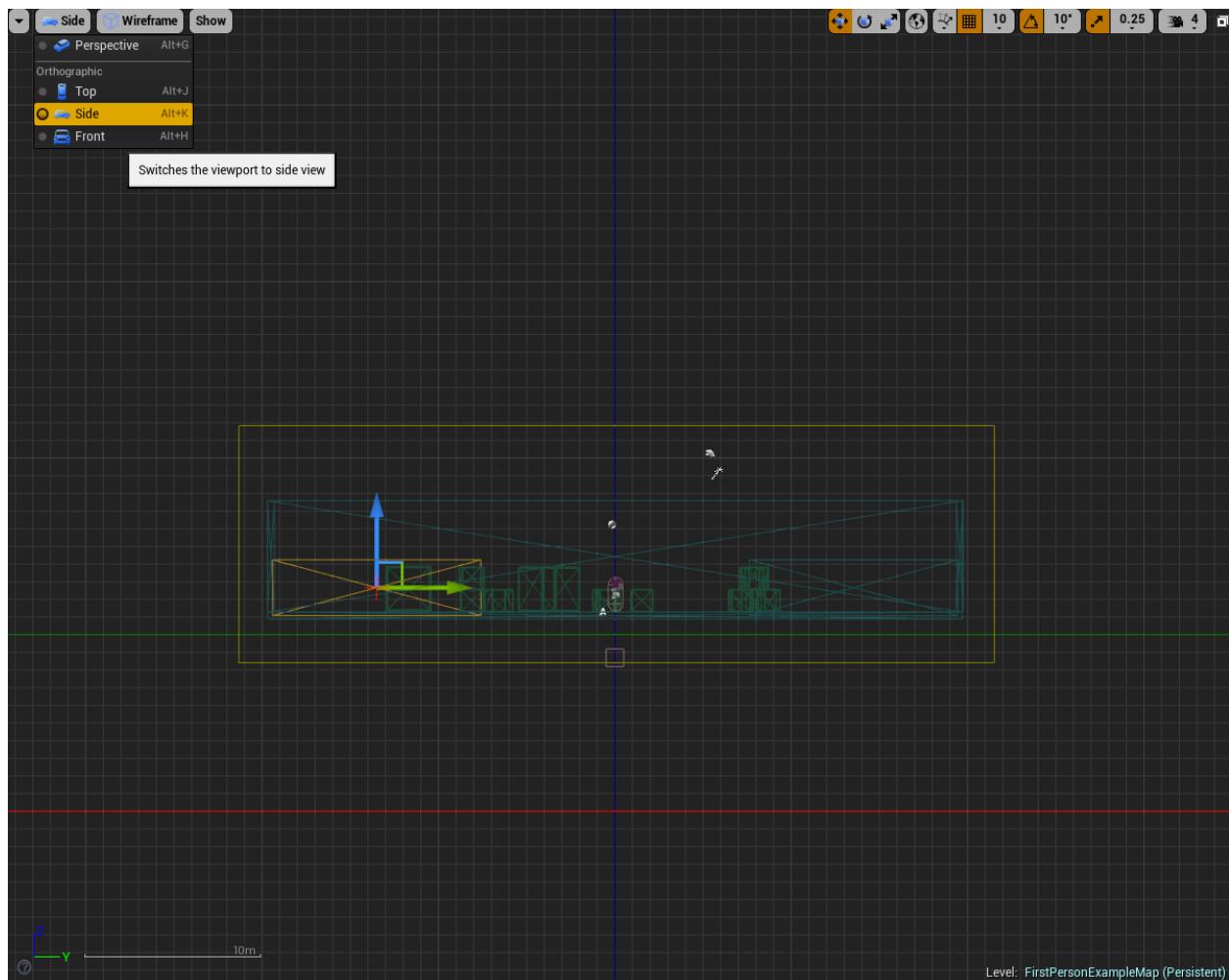


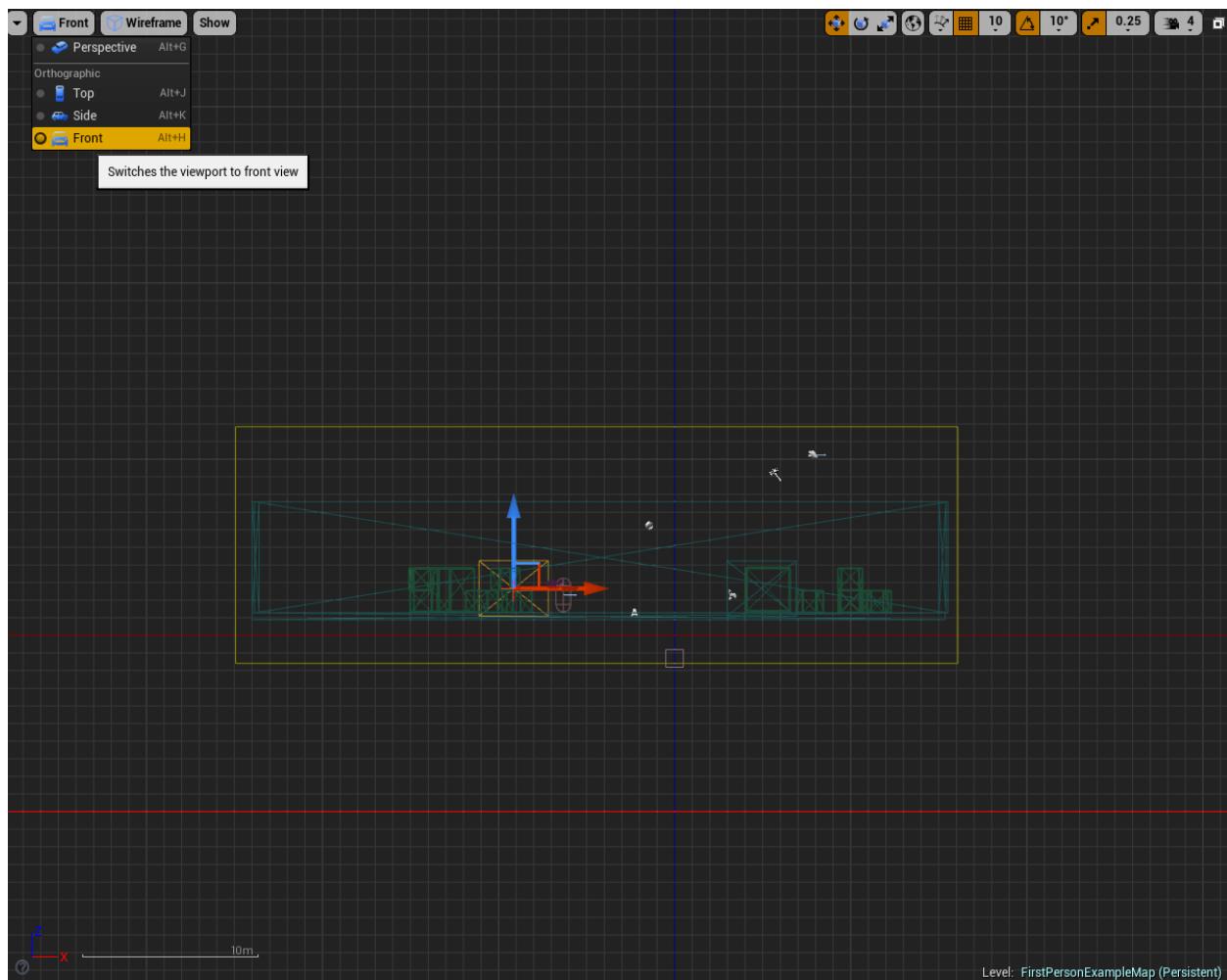


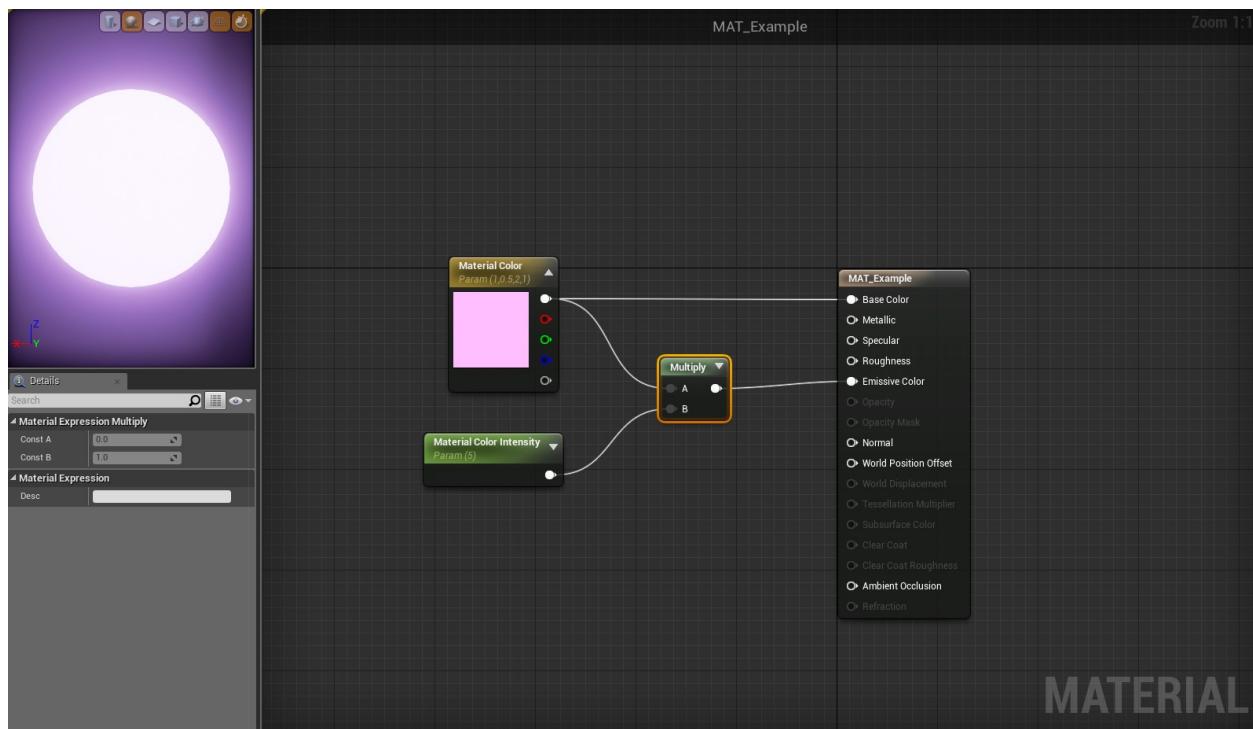




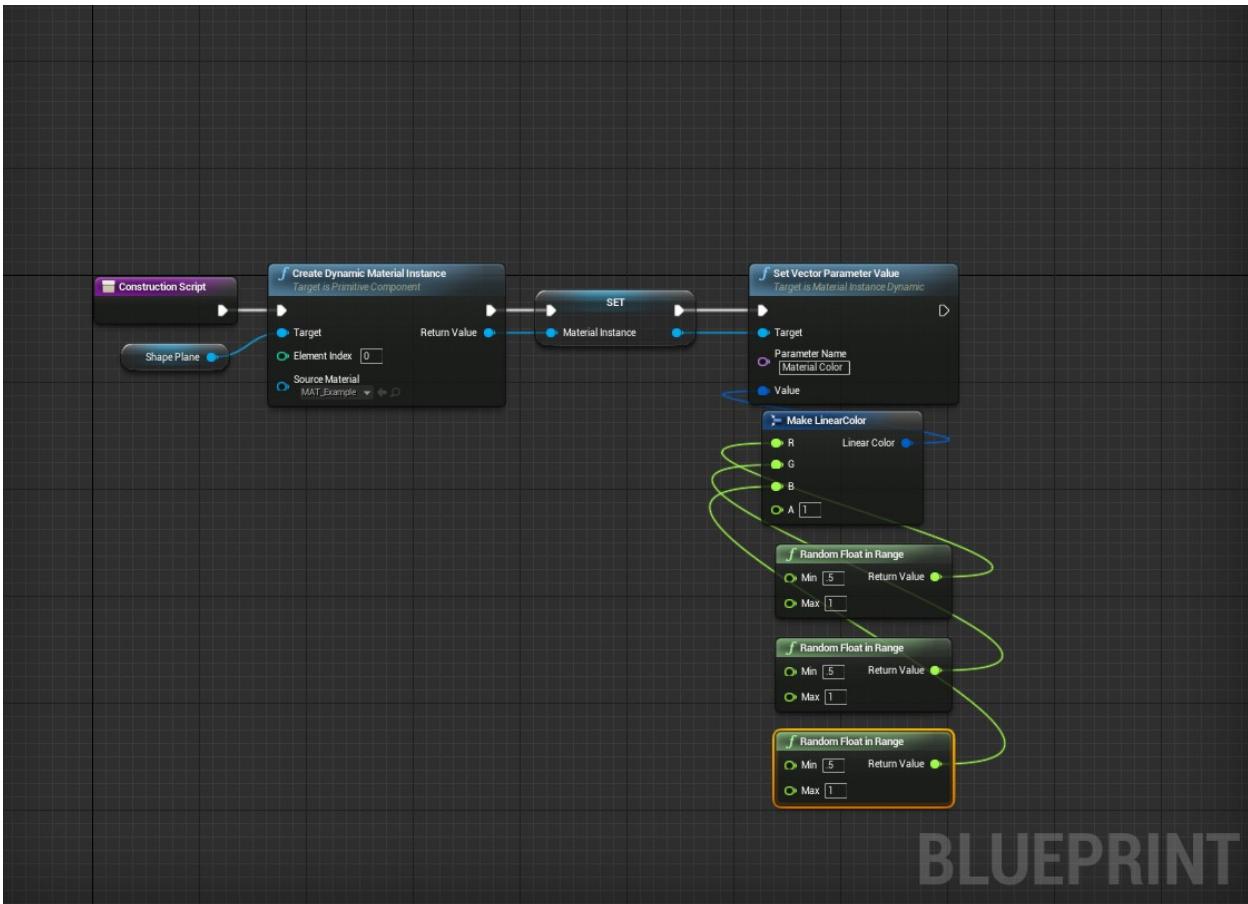




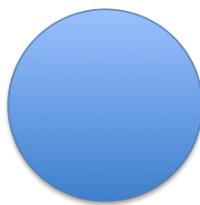






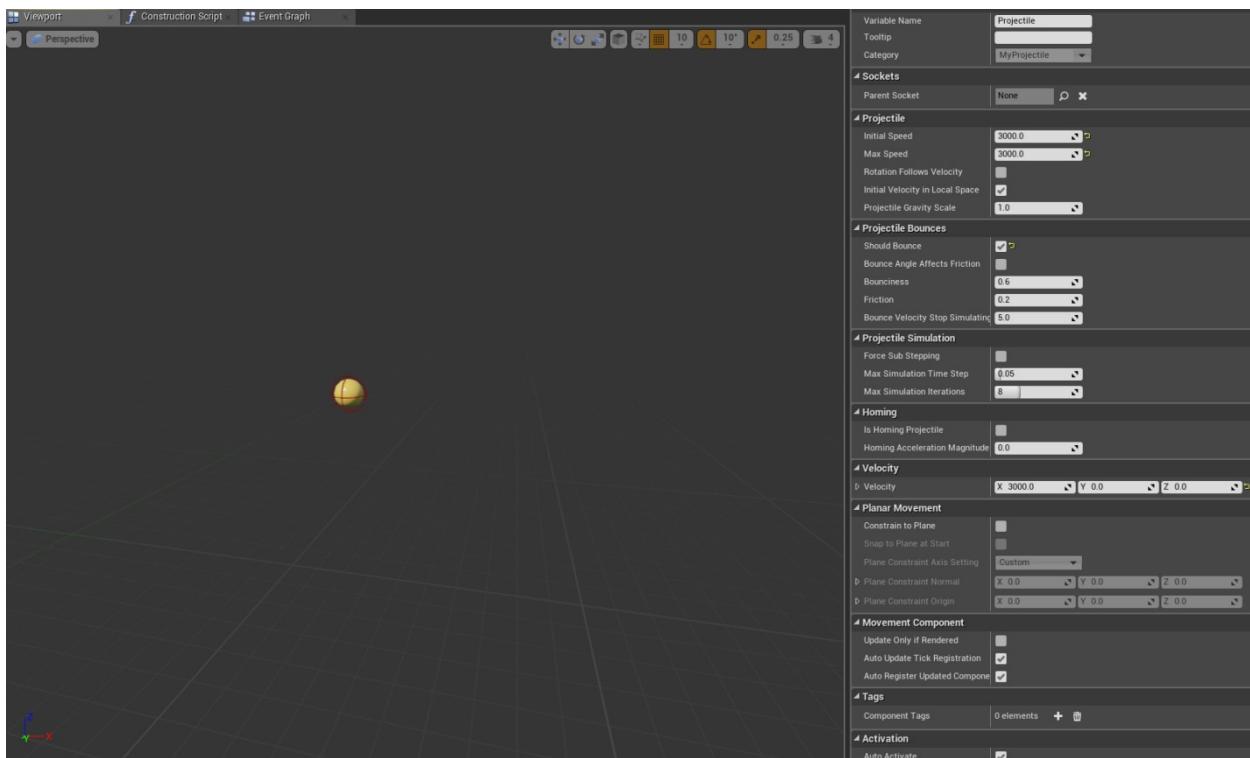


With no outside forces,
this object will
never move

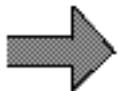


With no outside forces,
this object will
never stop

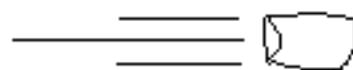




Same force



small mass: large acceleration



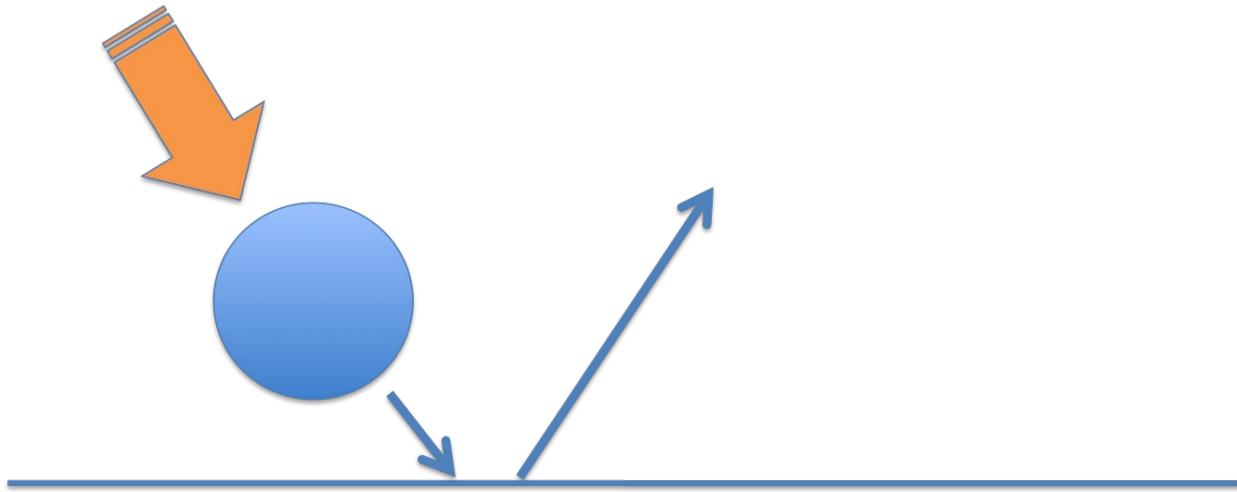
large mass: small acceleration



$\text{Force} = \text{mass} \times \text{acceleration}$

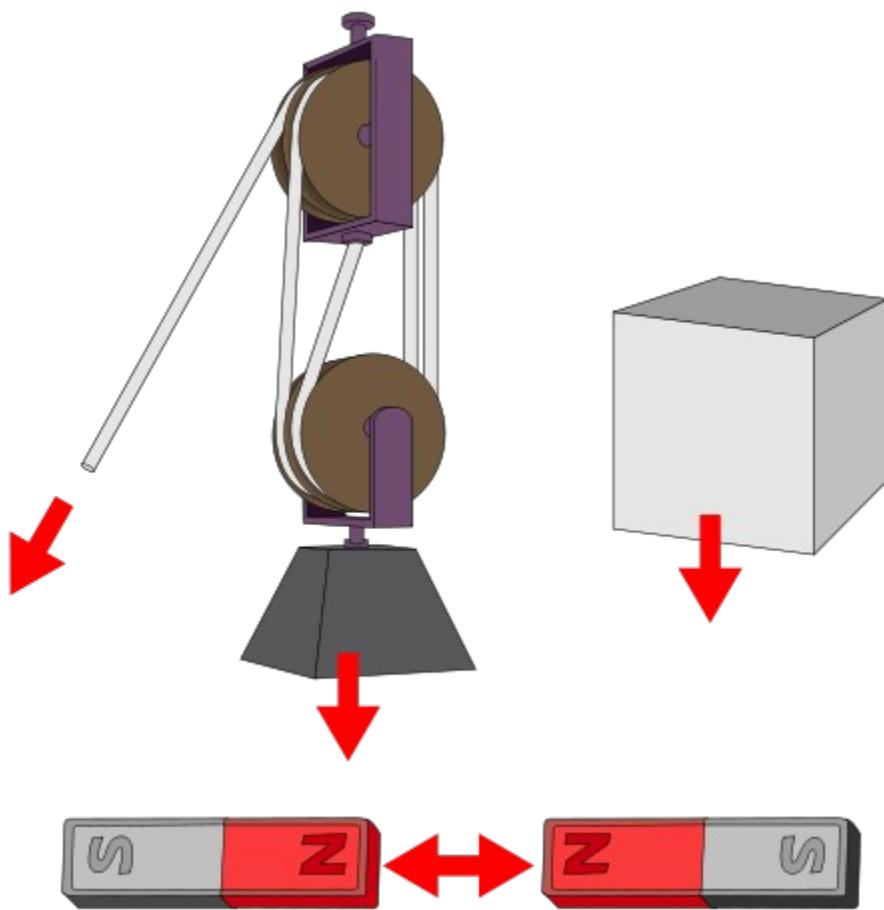
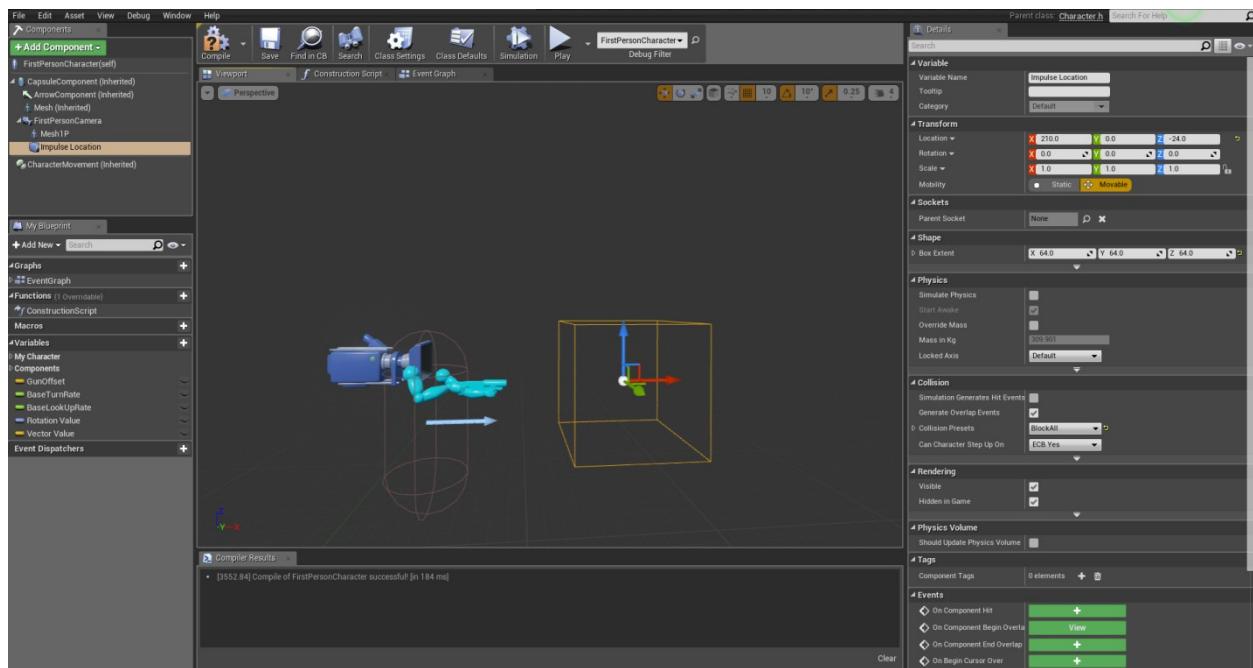
Character Movement

Max Step Height	45.0
Jump Z Velocity	420.0
Walkable Floor Angle	44.765083
Walkable Floor Z	0.71
Gravity Scale	1.0
Ground Friction	8.0
Max Walk Speed	1500.0
Max Walk Speed Crouched	300.0
Max Custom Movement Speed	600.0
Max Swim Speed	300.0
Max Fly Speed	600.0
Max Acceleration	1000.0
Braking Deceleration Walking	2048.0
Braking Deceleration Falling	0.0
Braking Deceleration Swimming	0.0
Braking Deceleration Flying	0.0
Air Control	0.05
Air Control Boost Multiplier	2.0
Air Control Boost Velocity Thres	25.0
Falling Lateral Friction	0.0
Crouched Half Height	40.0
Buoyancy	1.0
Rotation Rate	Roll 0.0 Pitch 0.0 Yaw 360.0
Orient Rotation to Movement	<input type="checkbox"/>
Can Walk Off Ledges	<input checked="" type="checkbox"/>
Can Walk Off Ledges when Crouched	<input type="checkbox"/>
Mass	500000000.0
Default Land Movement Mode	Walking
Default Water Movement Mode	Swimming
Maintain Horizontal Ground Velocity	<input checked="" type="checkbox"/>
Impart Base Velocity X	<input checked="" type="checkbox"/>
Impart Base Velocity Y	<input checked="" type="checkbox"/>
Impart Base Velocity Z	<input checked="" type="checkbox"/>
Impart Base Angular Velocity	<input checked="" type="checkbox"/>
Ignore Base Rotation	<input type="checkbox"/>



Every action has an equal
and opposite reaction





f Add Force

Target is FirstPersonProjectile_C (CollisionComponent)



Target **self**

Force

[X 0.0] [Y 0.0] [Z 0.0]

Bone Name **None**

f Add Radial Force

Target is Character (CapsuleComponent)



Target **self**

Origin

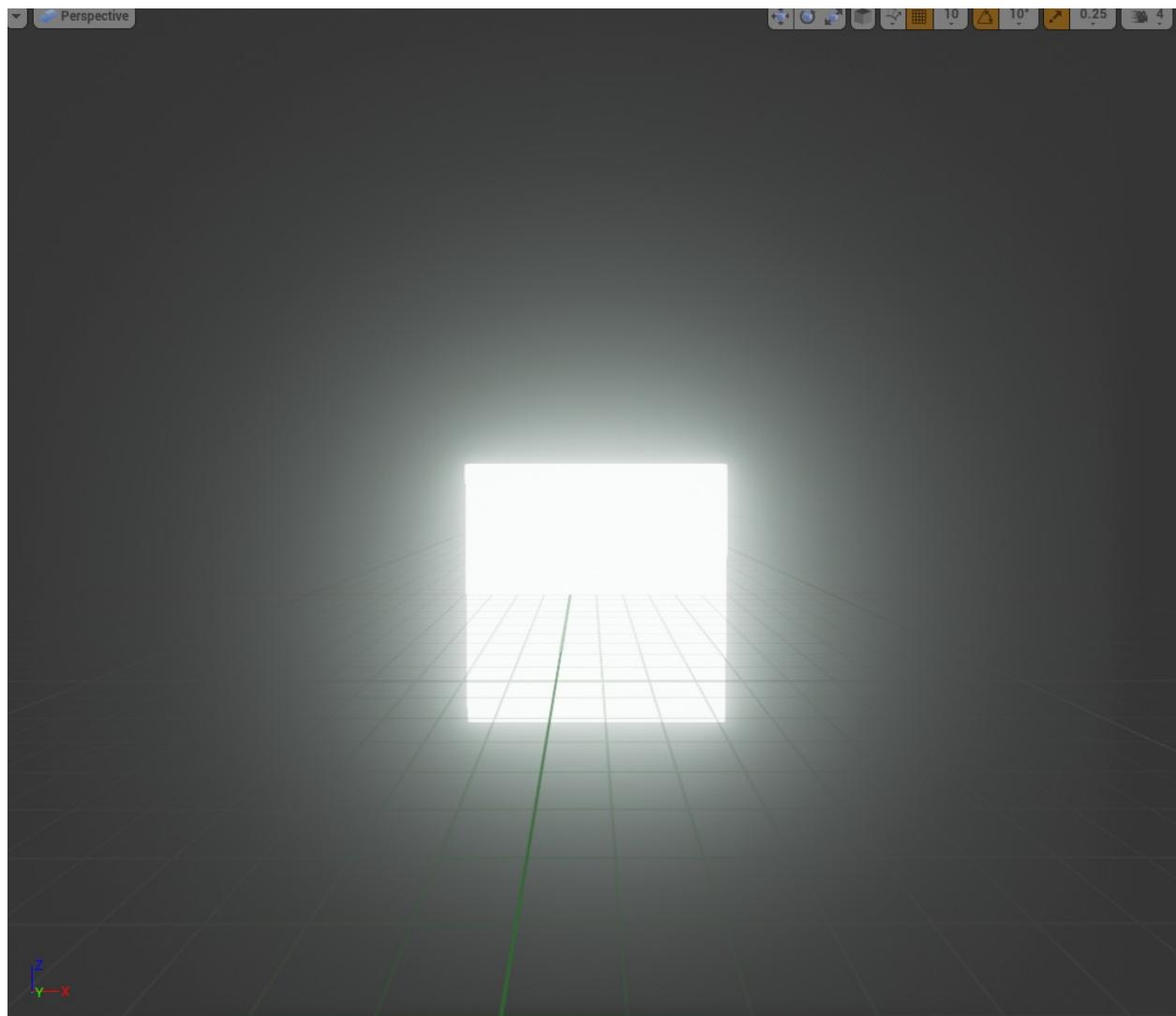
[X 0.0] [Y 0.0] [Z 0.0]

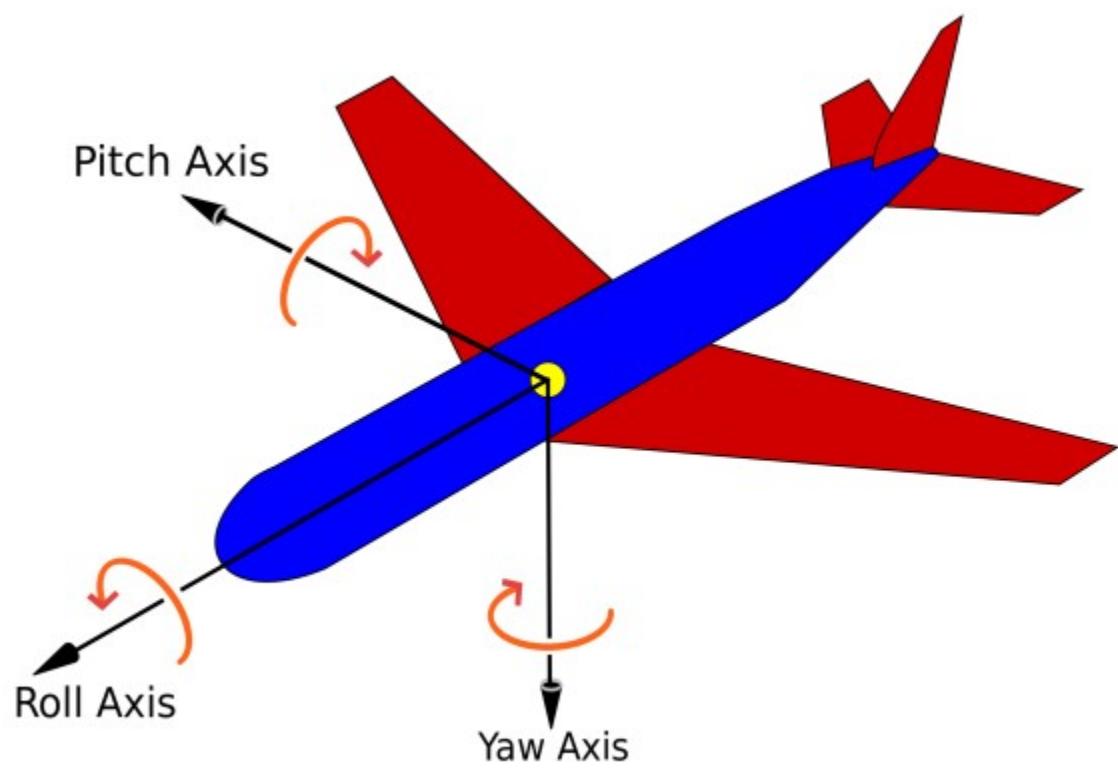
Radius **0.0**

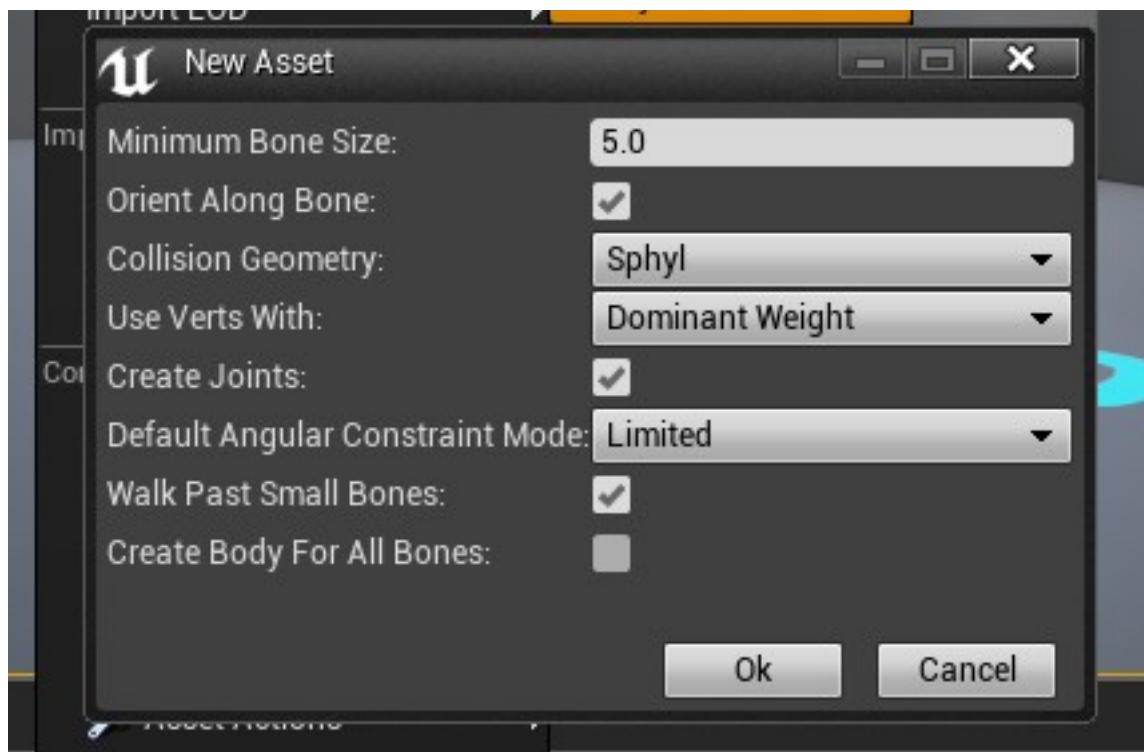
Strength **0.0**

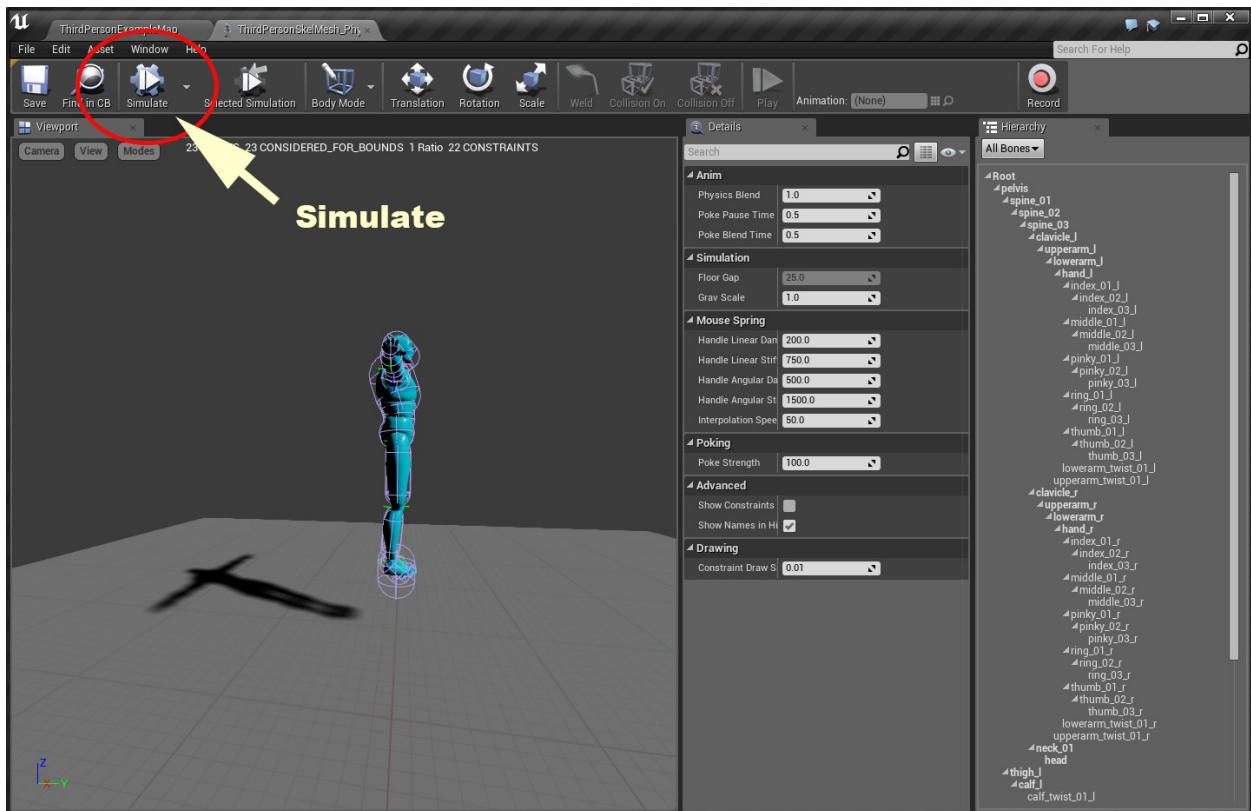
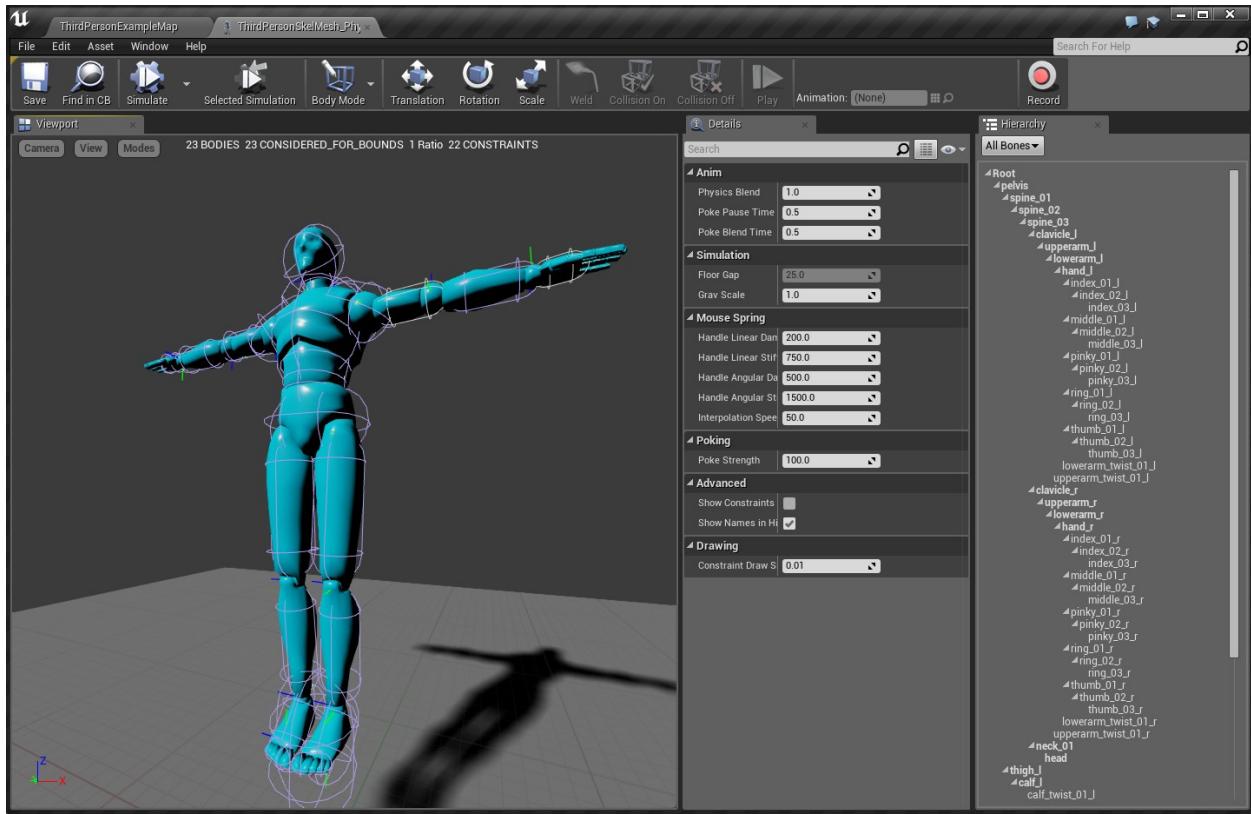
Falloff

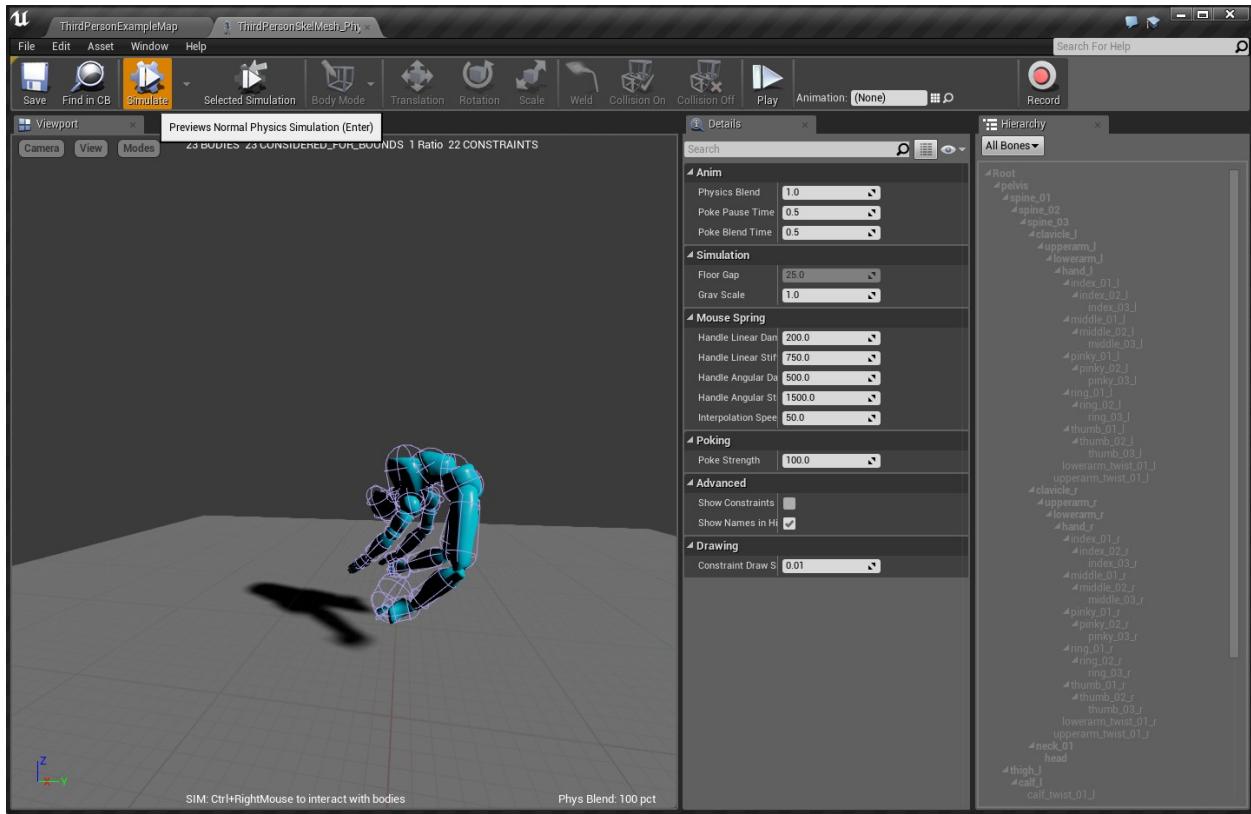
RIF Constant ▾

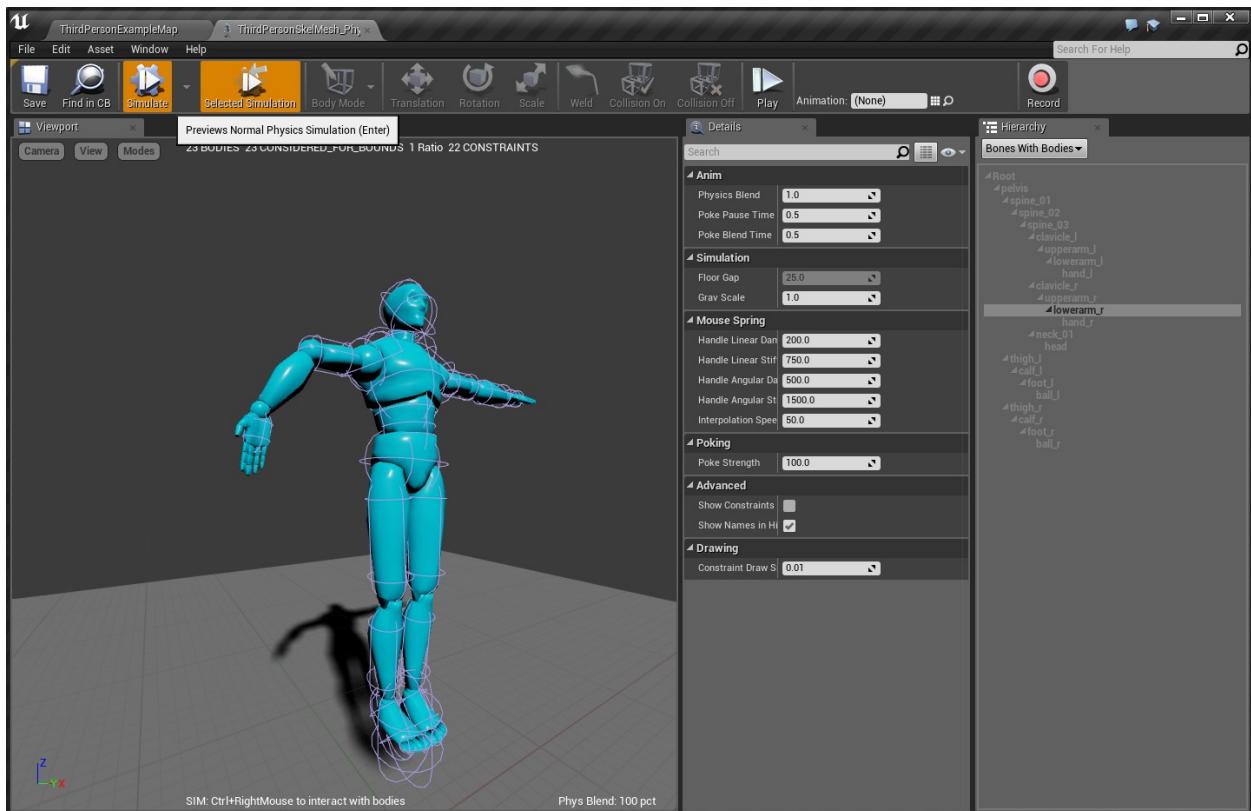


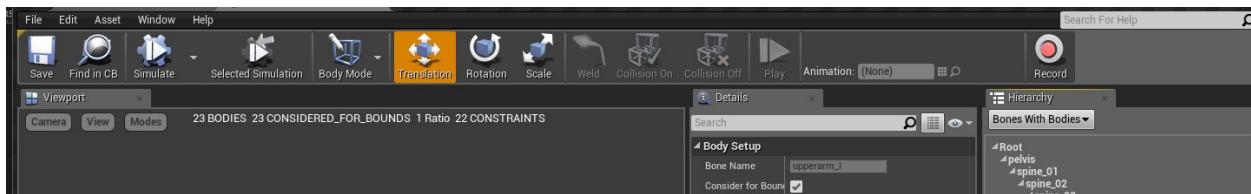
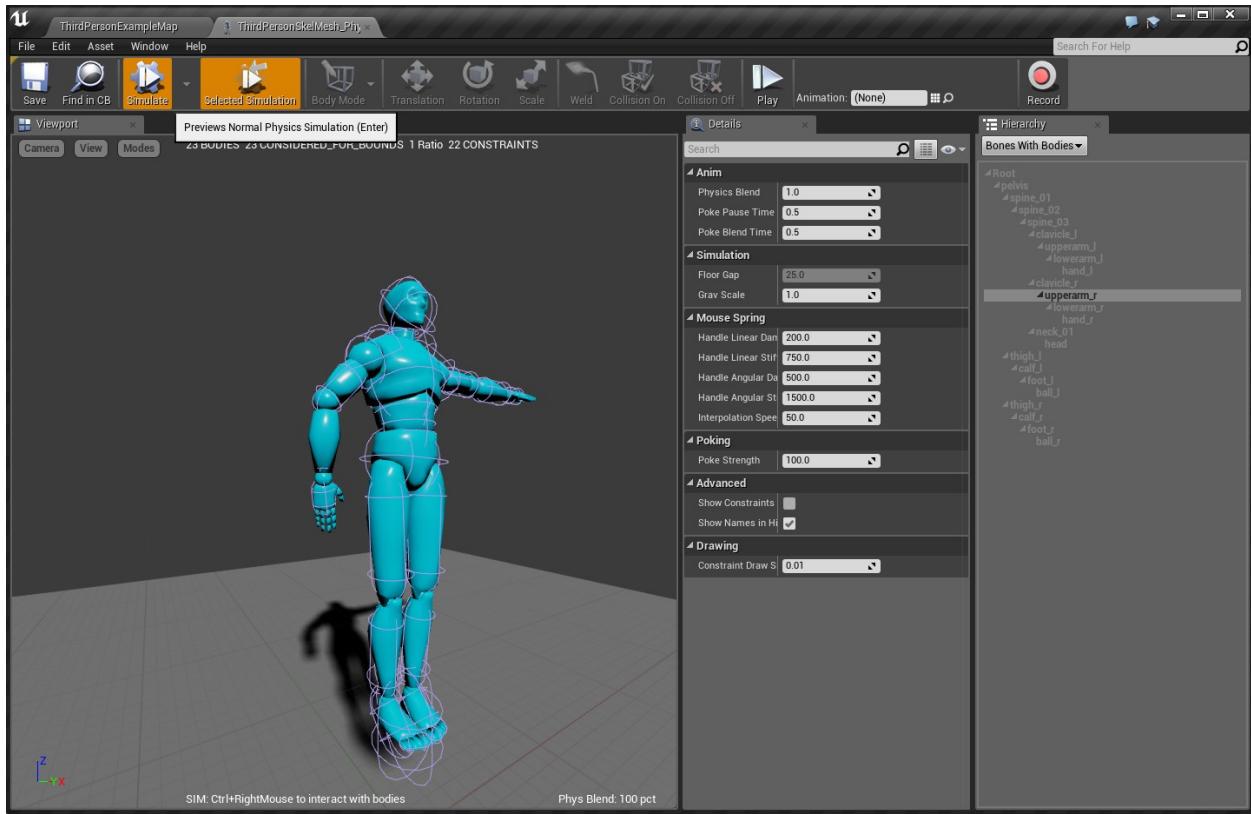


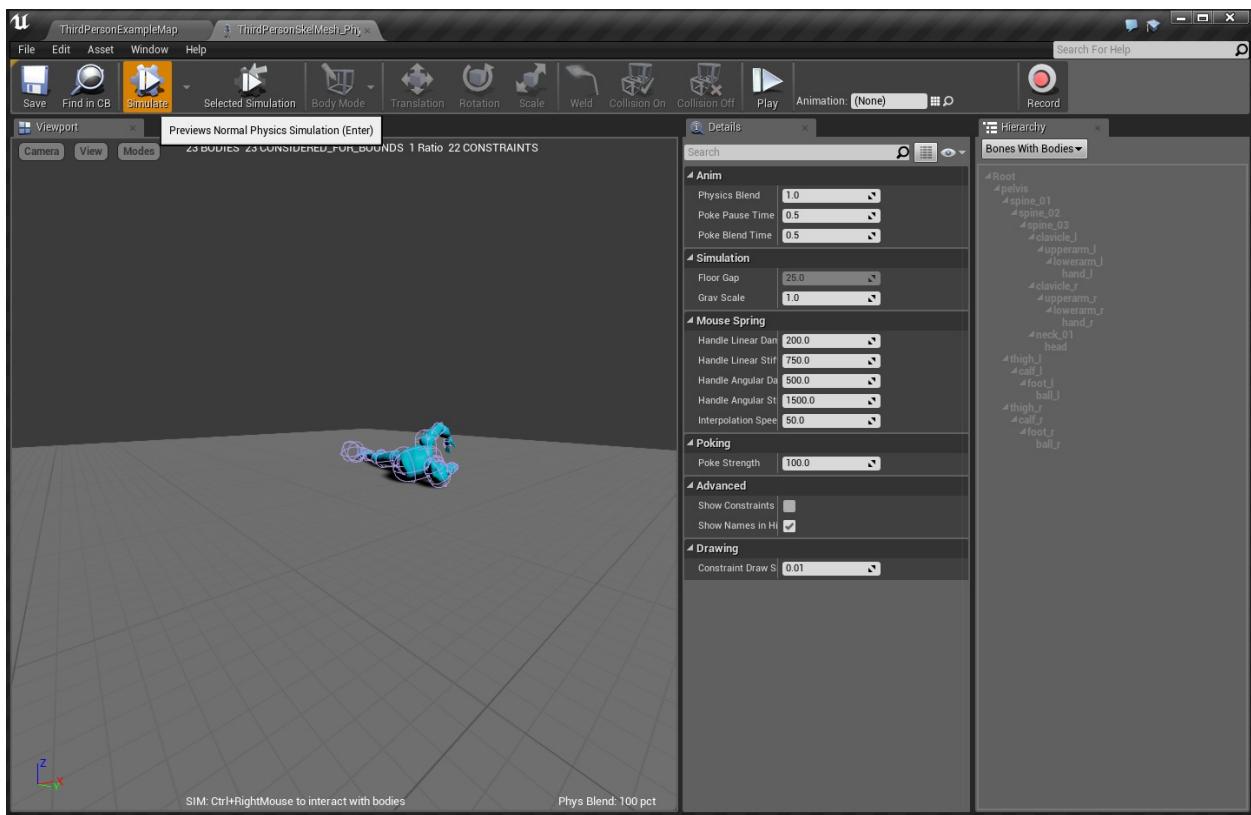
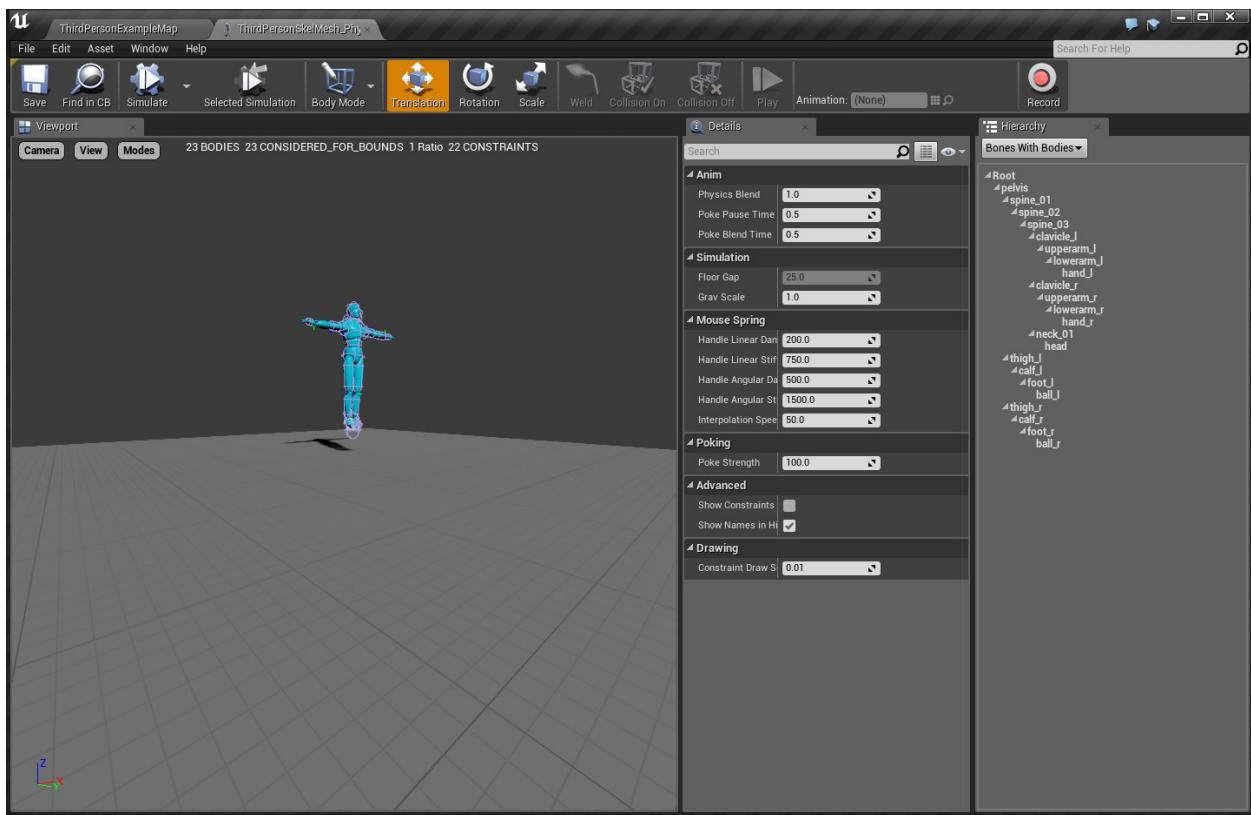


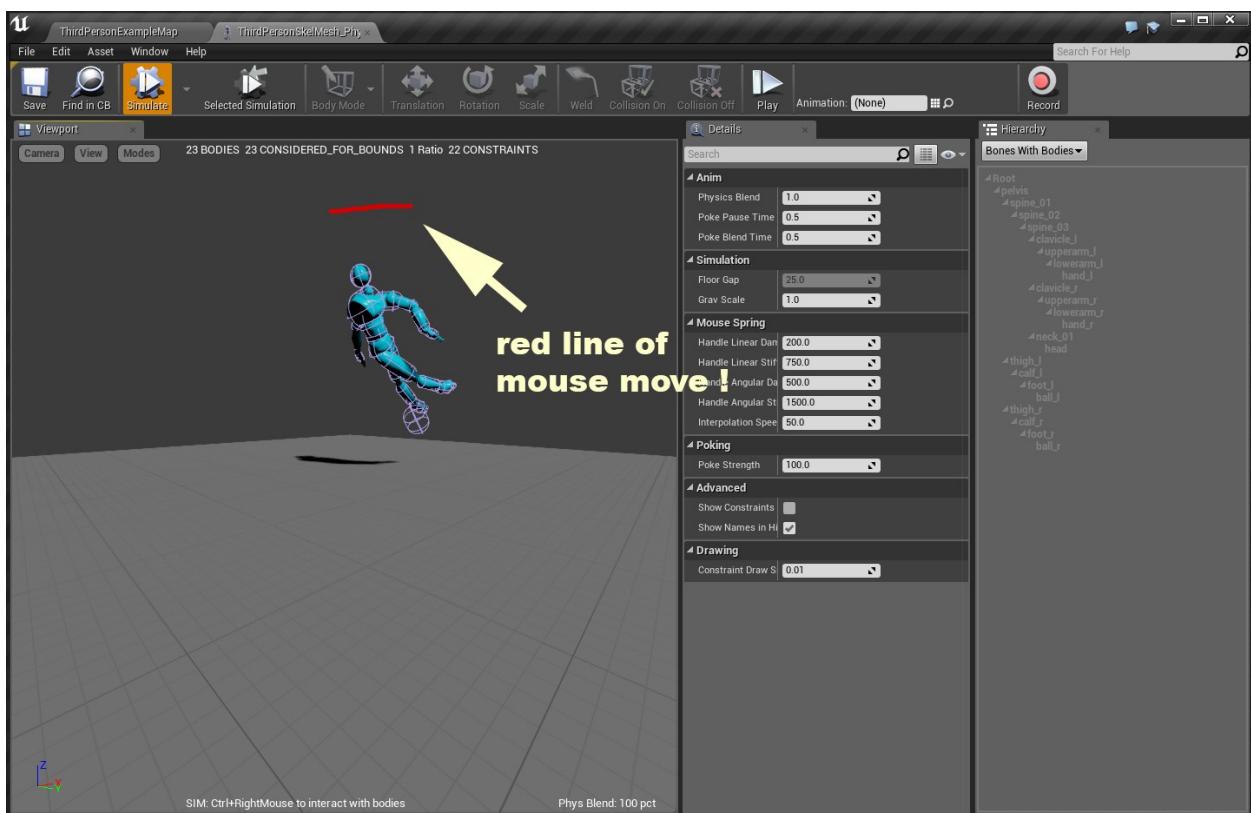
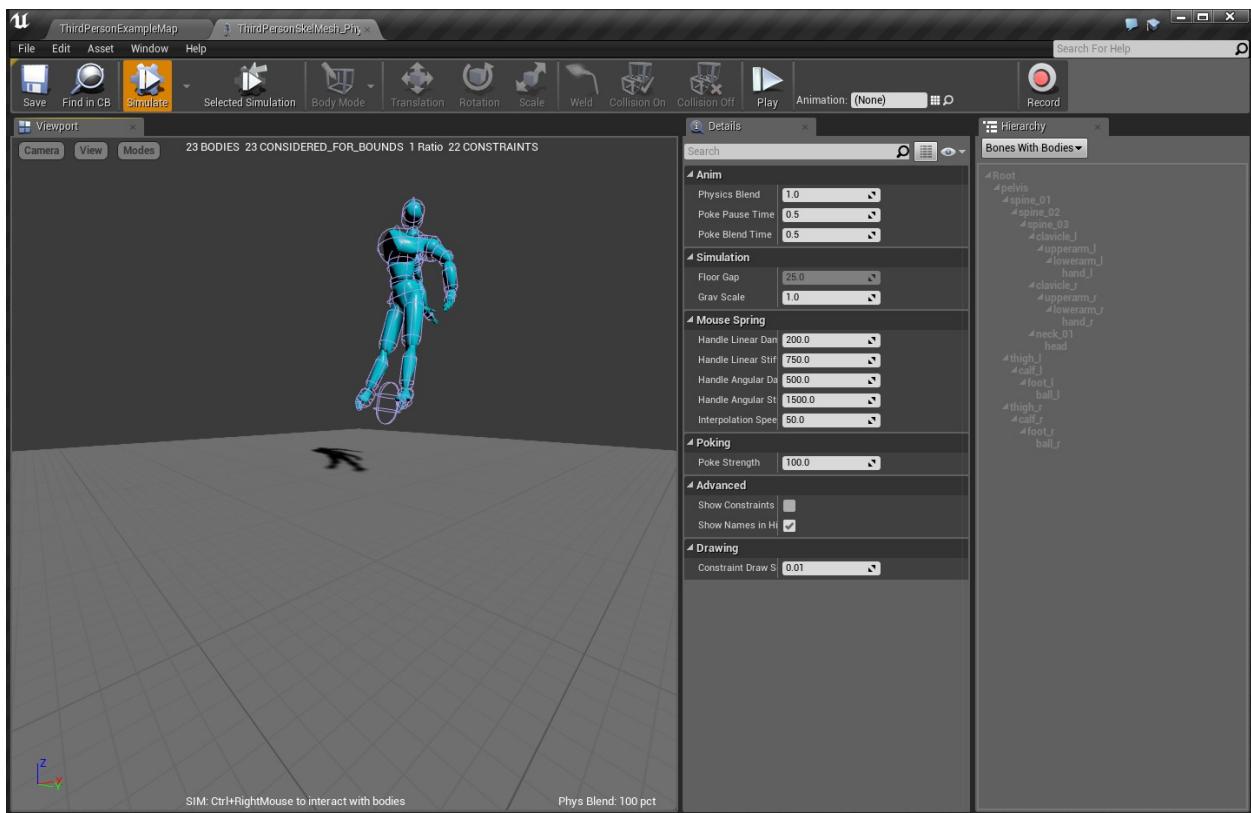


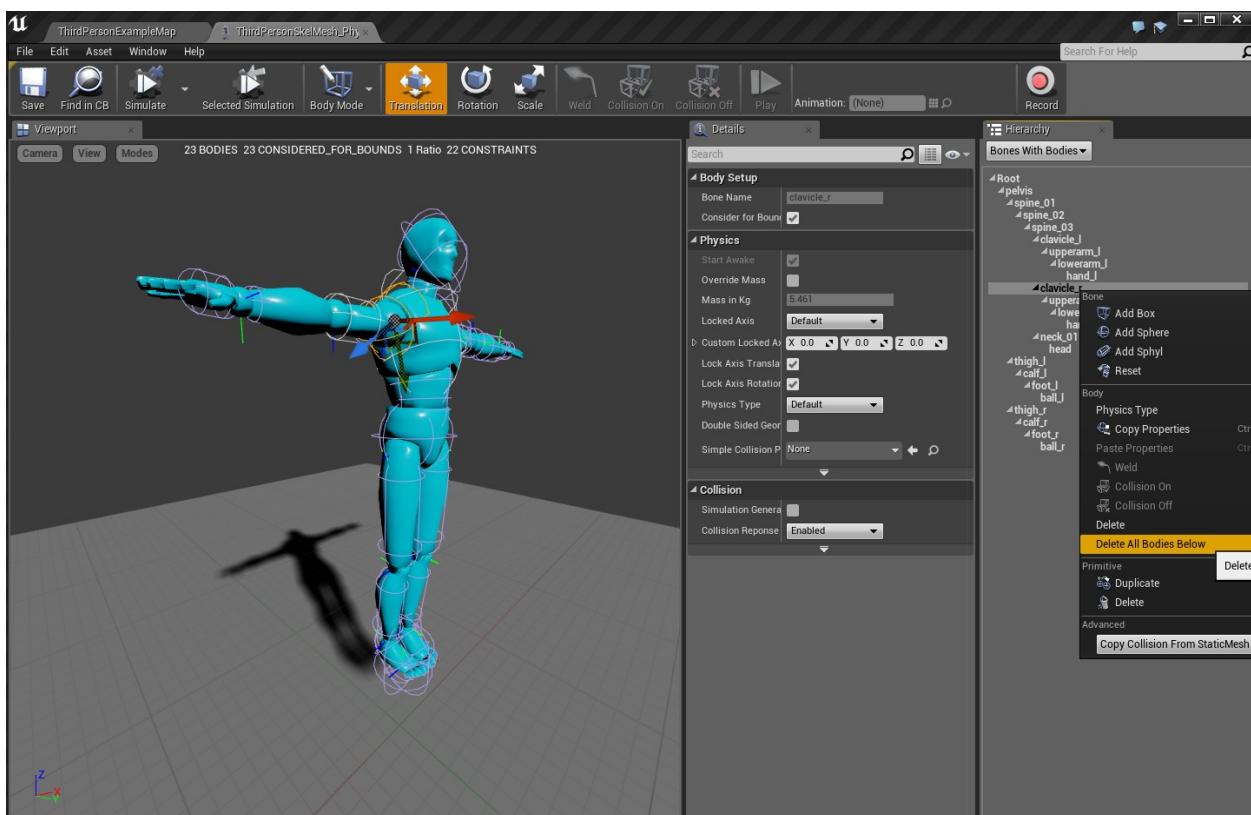
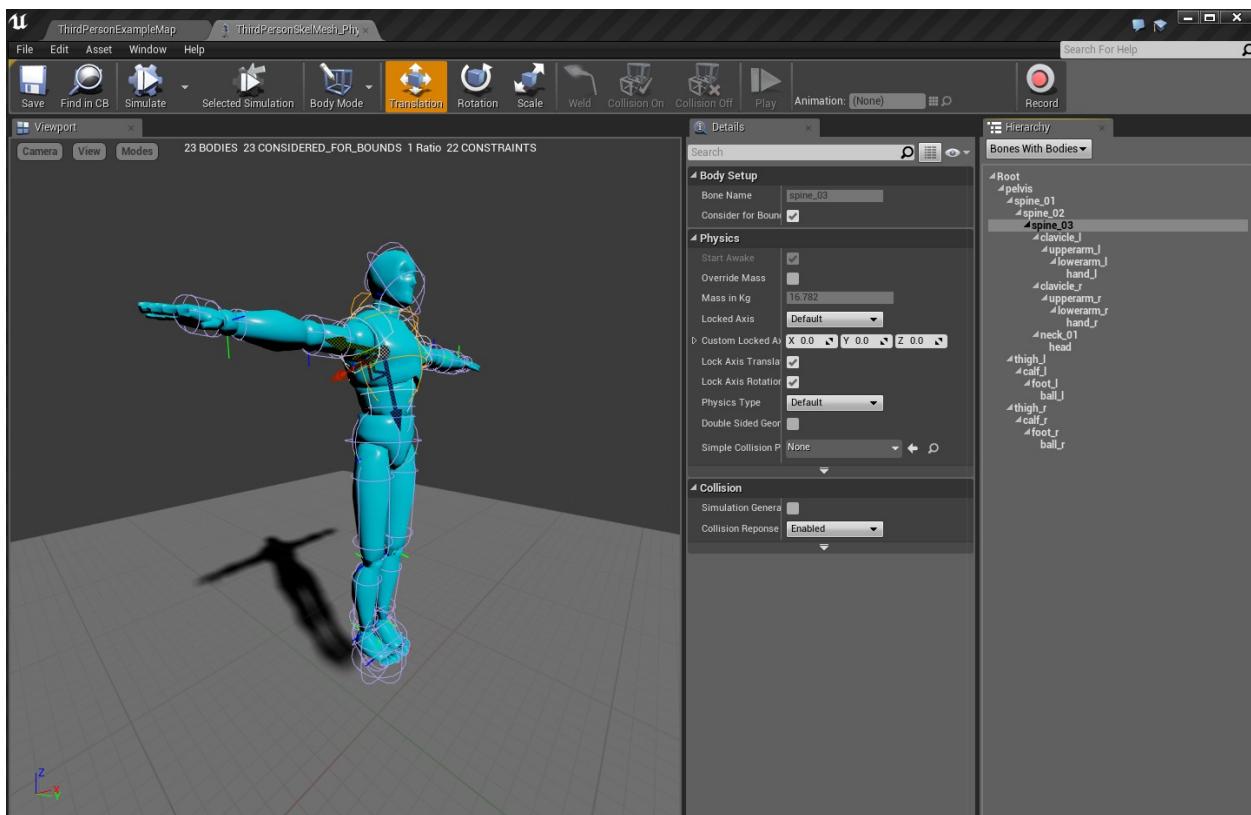


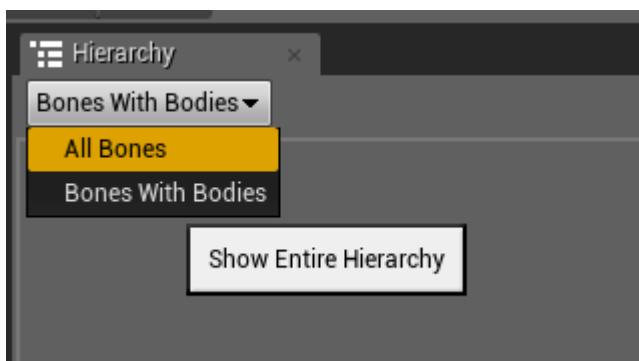
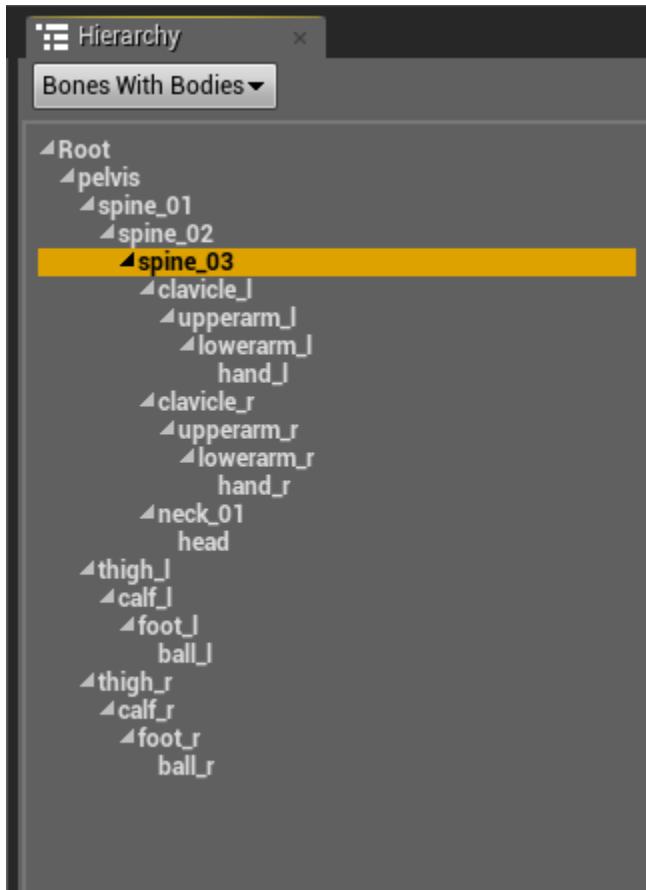


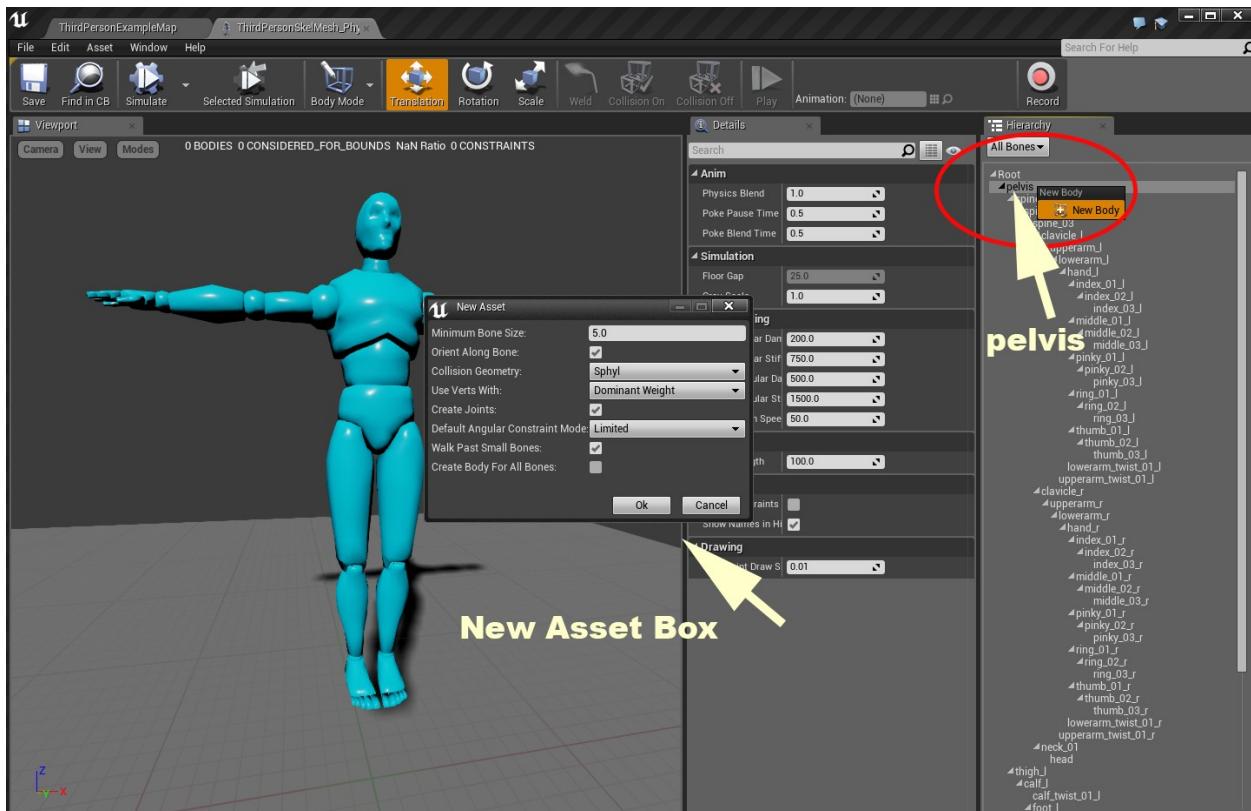
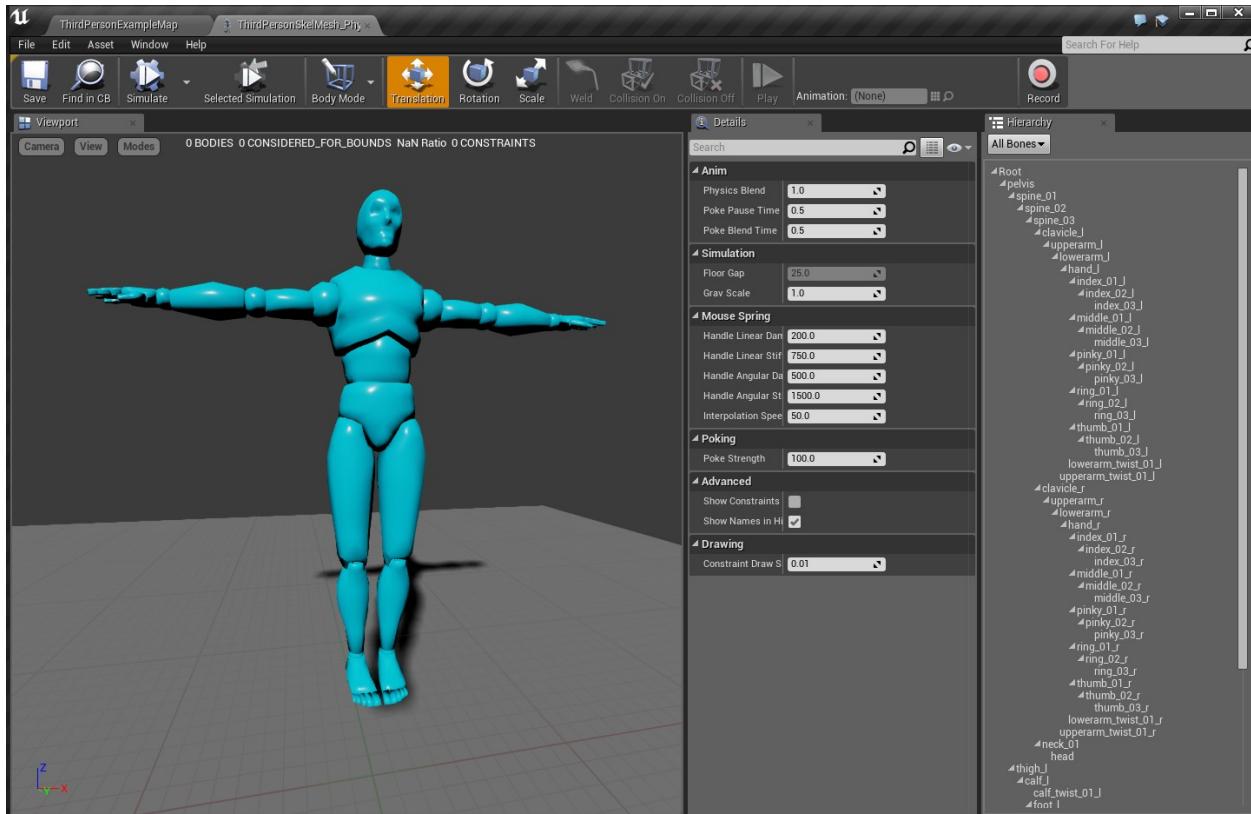


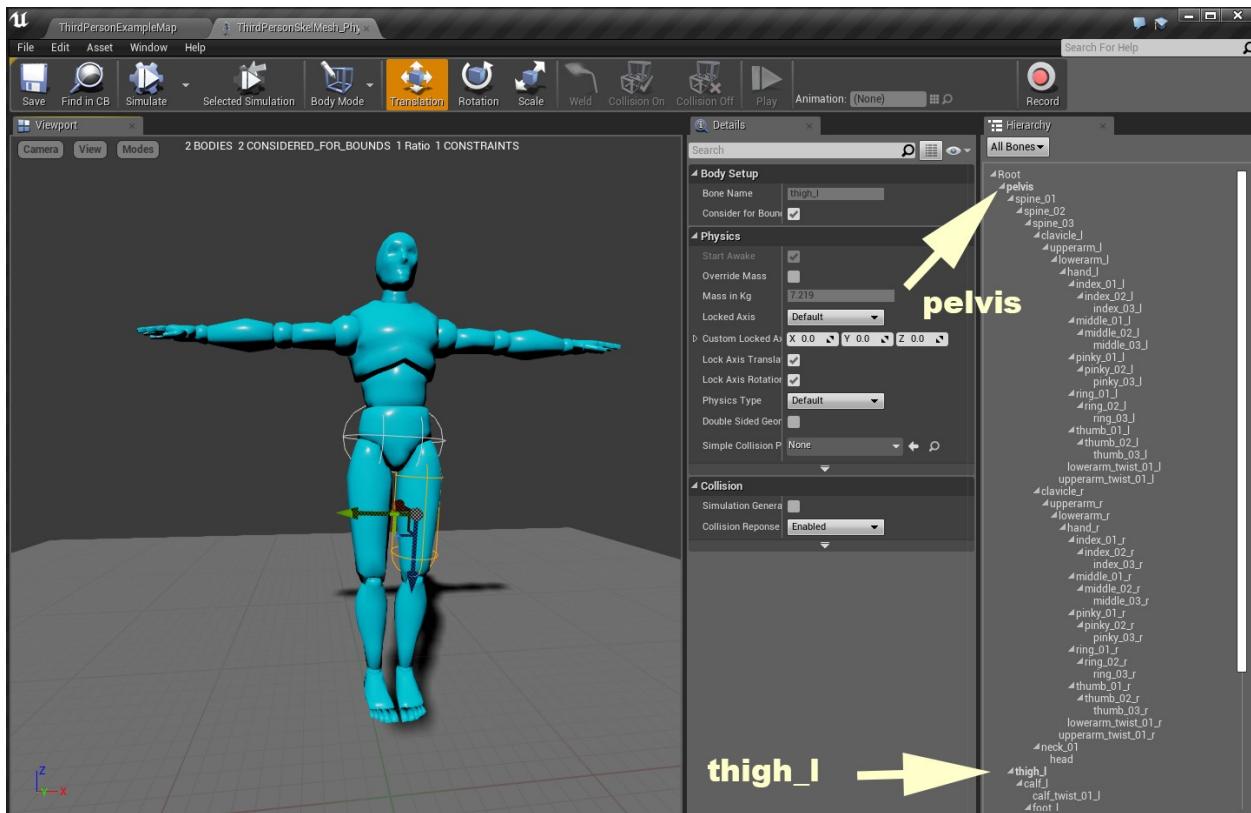
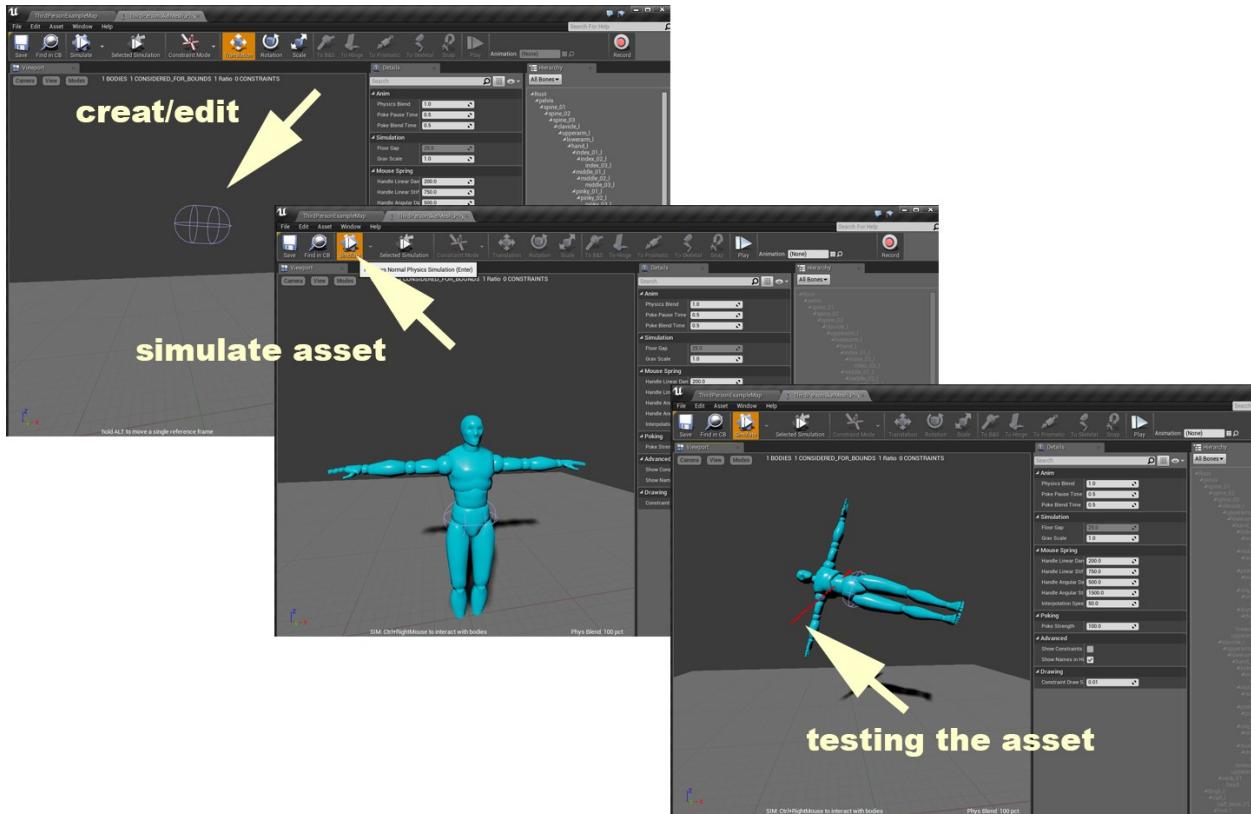


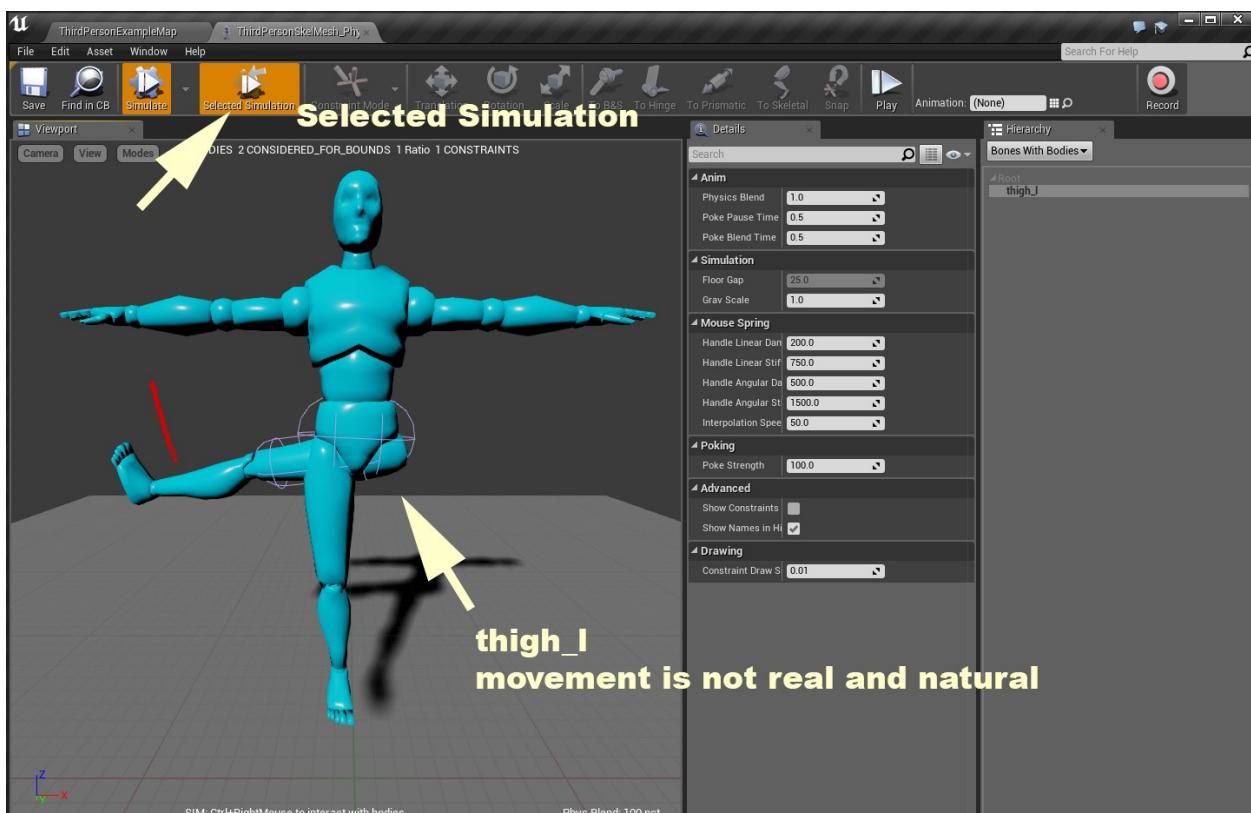
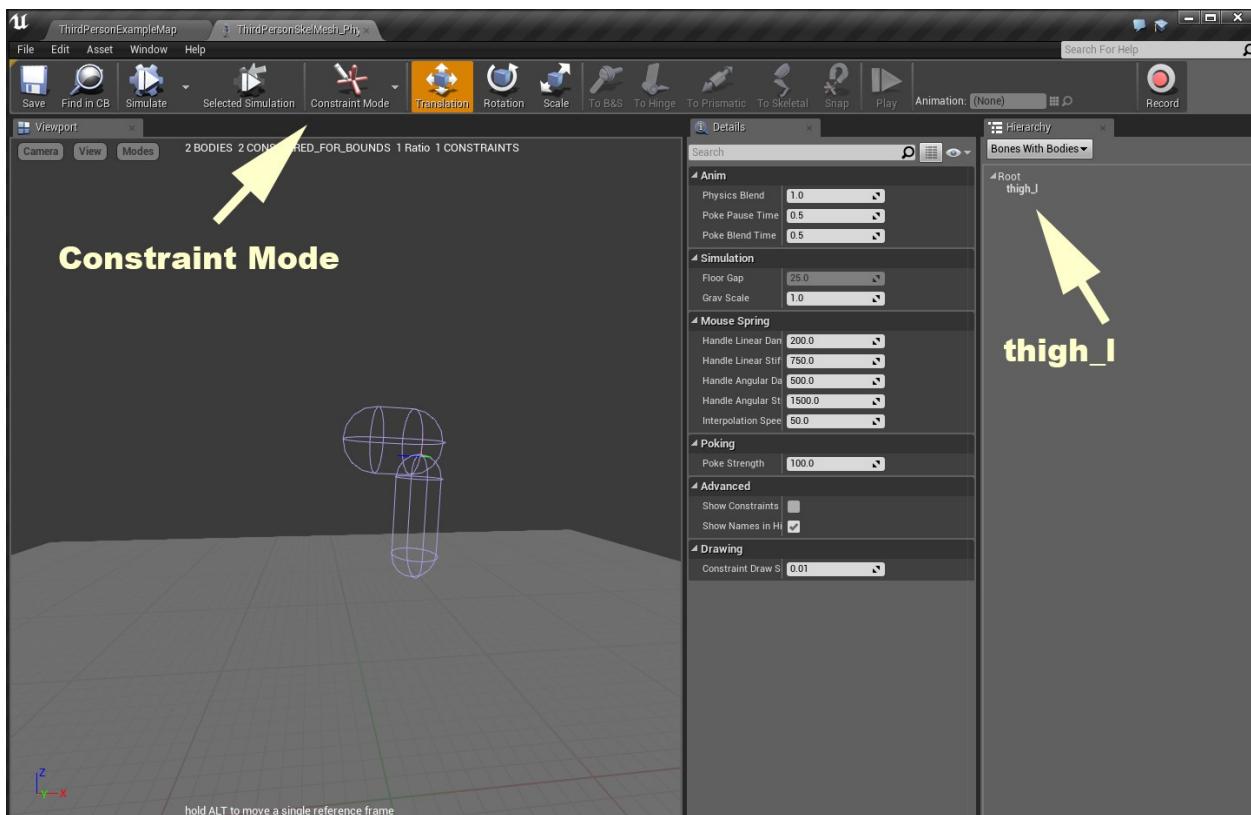












Details

Search

Constraint

Joint Name	thigh_l
Constraint Bone 1	thigh_l
Constraint Bone 2	pelvis
Disable Collision	<input type="checkbox"/>

Linear Limits

Linear XMotion	<input type="radio"/> Free <input type="radio"/> Limited <input checked="" type="radio"/> Locked
Linear YMotion	<input type="radio"/> Free <input type="radio"/> Limited <input checked="" type="radio"/> Locked
Linear ZMotion	<input type="radio"/> Free <input type="radio"/> Limited <input checked="" type="radio"/> Locked

Projection

Enable Projection	<input type="checkbox"/>
Projection Linear Tolerance	0.5
Projection Angular Tolerance	10.0

Angular Limits

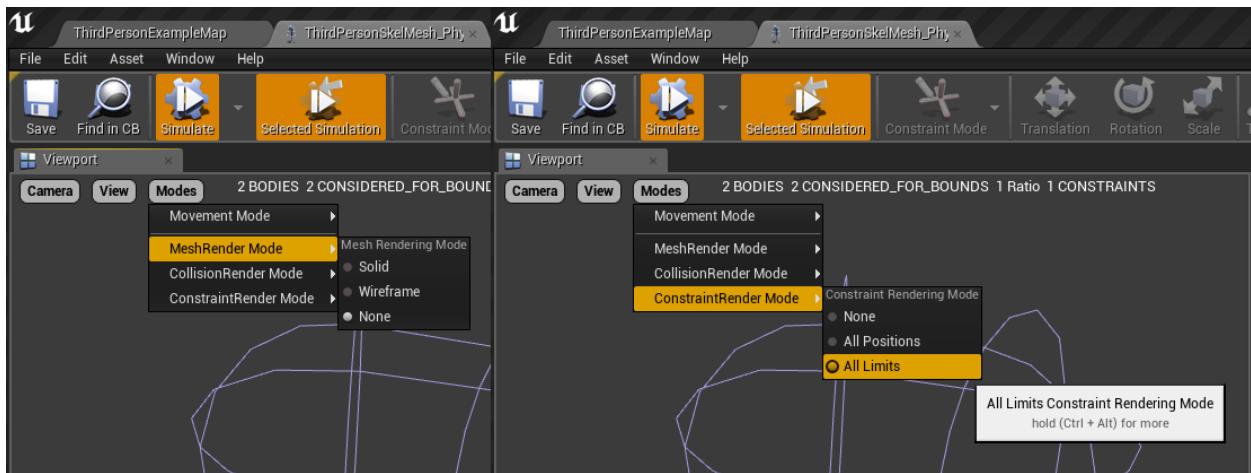
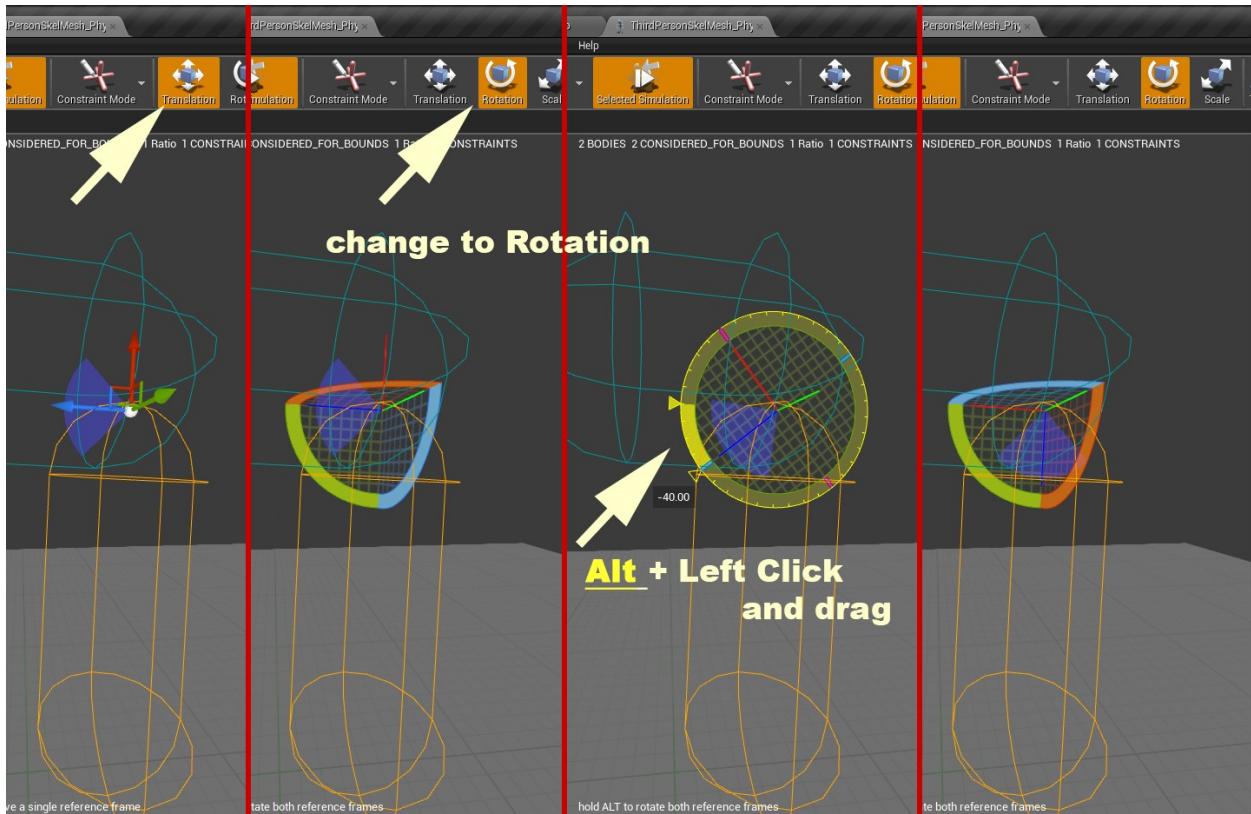
Angular Swing 1 Motion	<input type="radio"/> Free <input type="radio"/> Limited <input checked="" type="radio"/> Locked
Angular Twist Motion	<input type="radio"/> Free <input type="radio"/> Limited <input checked="" type="radio"/> Locked
Angular Swing 2 Motion	<input type="radio"/> Free <input checked="" type="radio"/> Limited <input type="radio"/> Locked
Swing 2 Limit Angle	45.0

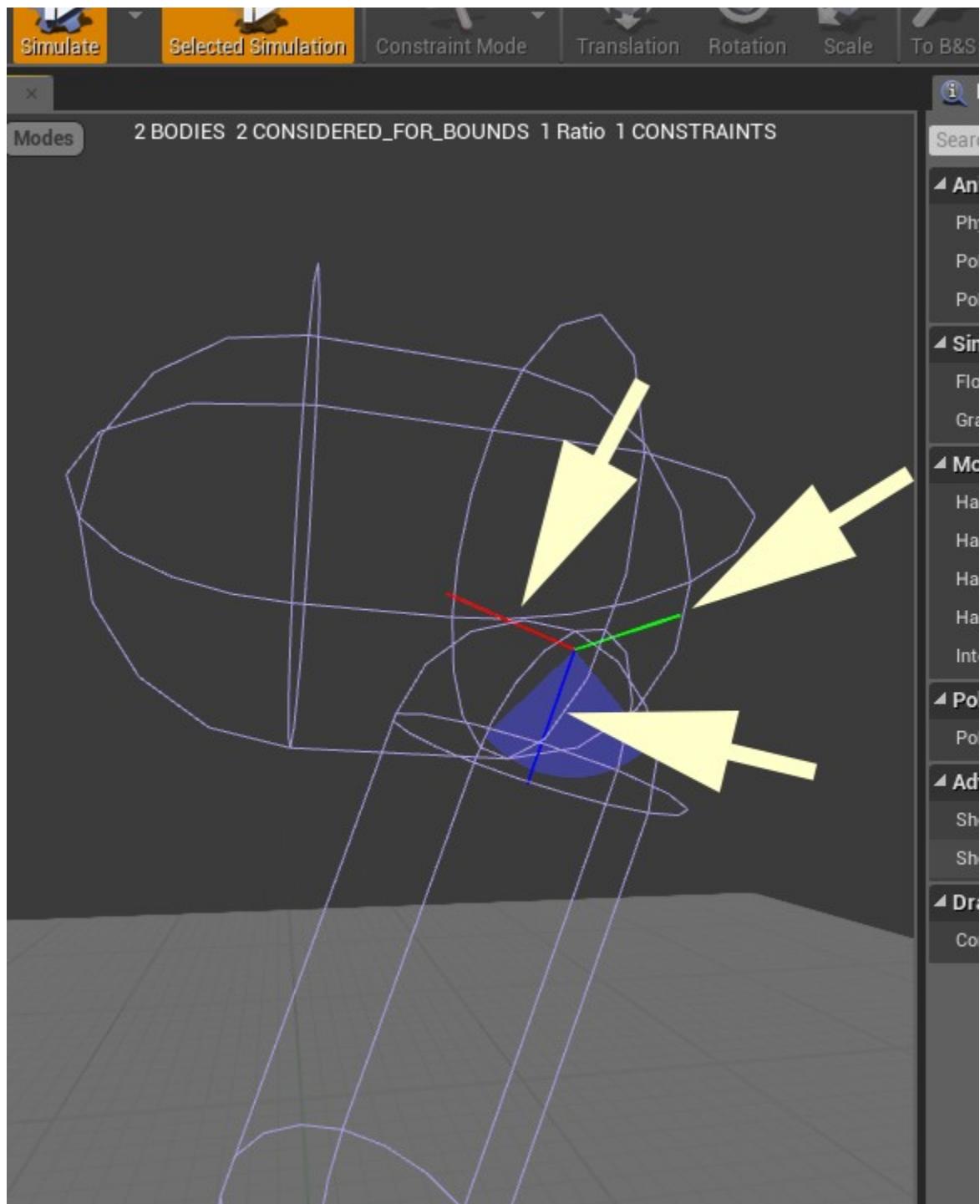
Hierarchy

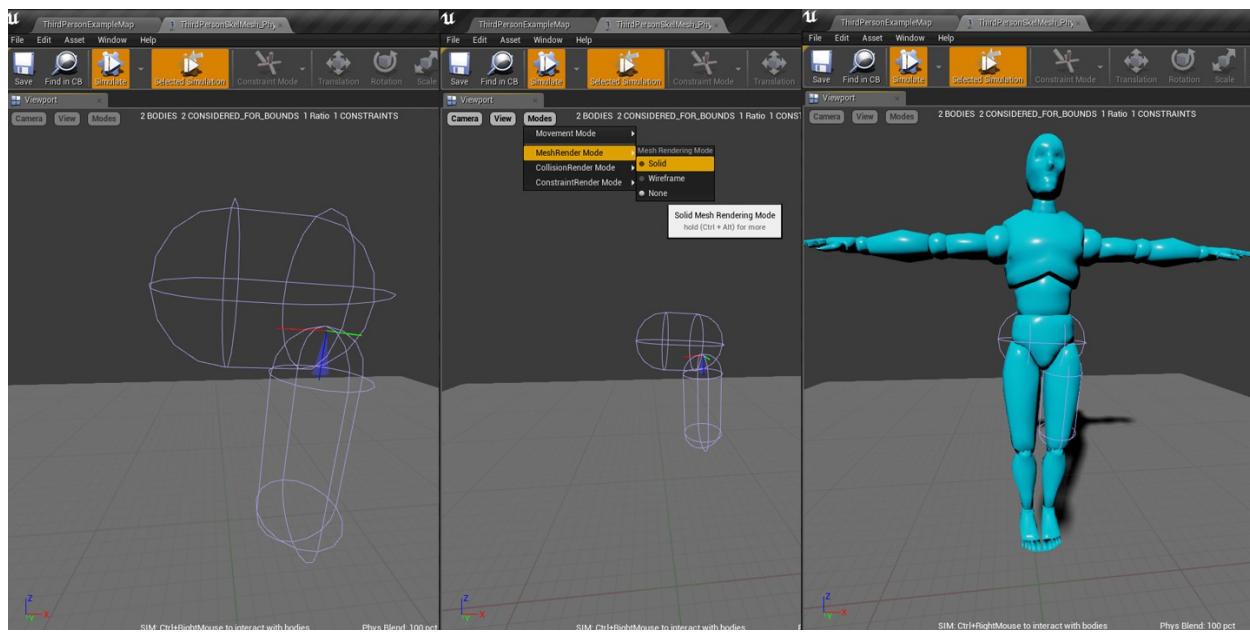
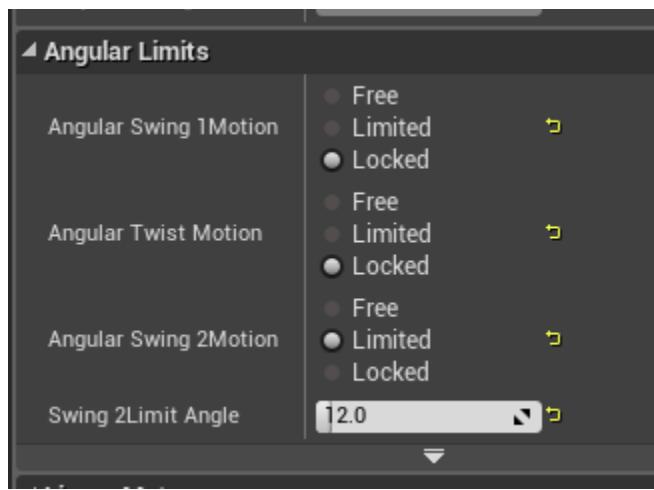
Bones With Body

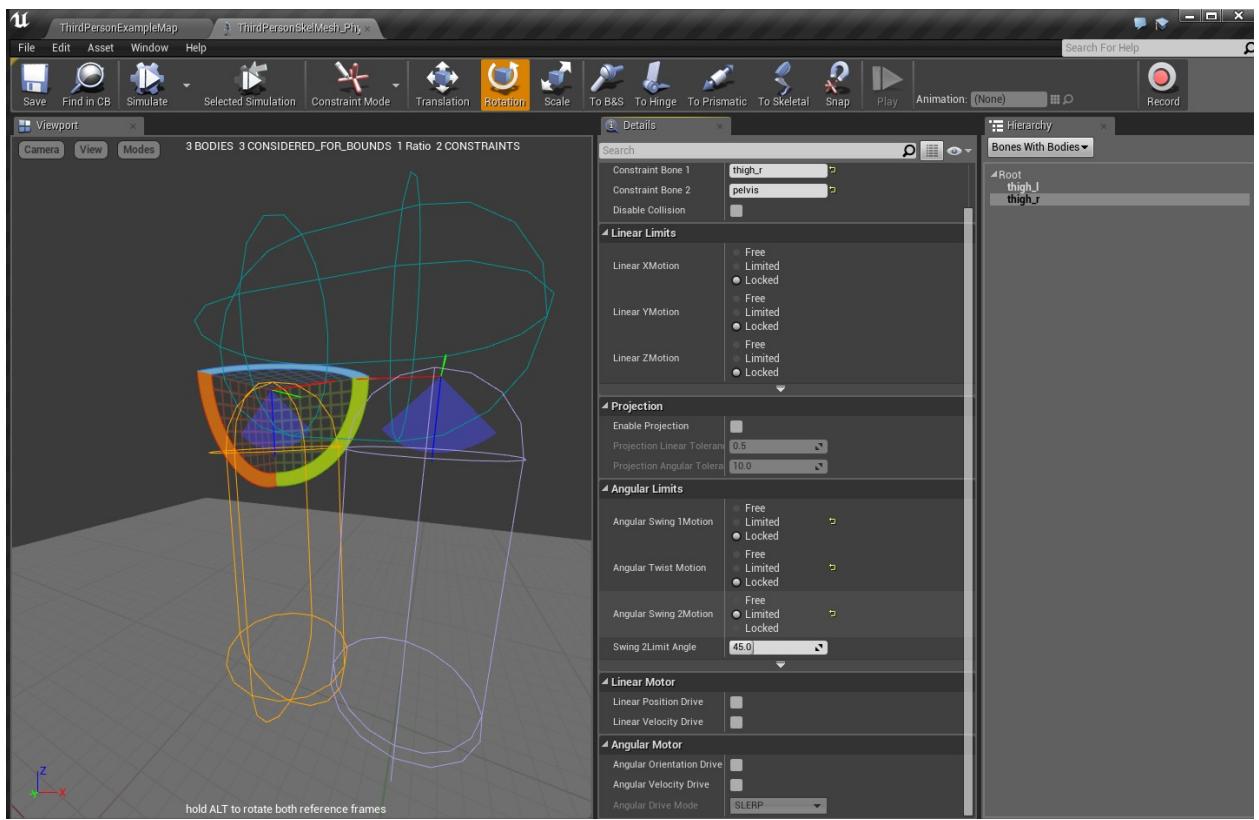
Root
thigh_l

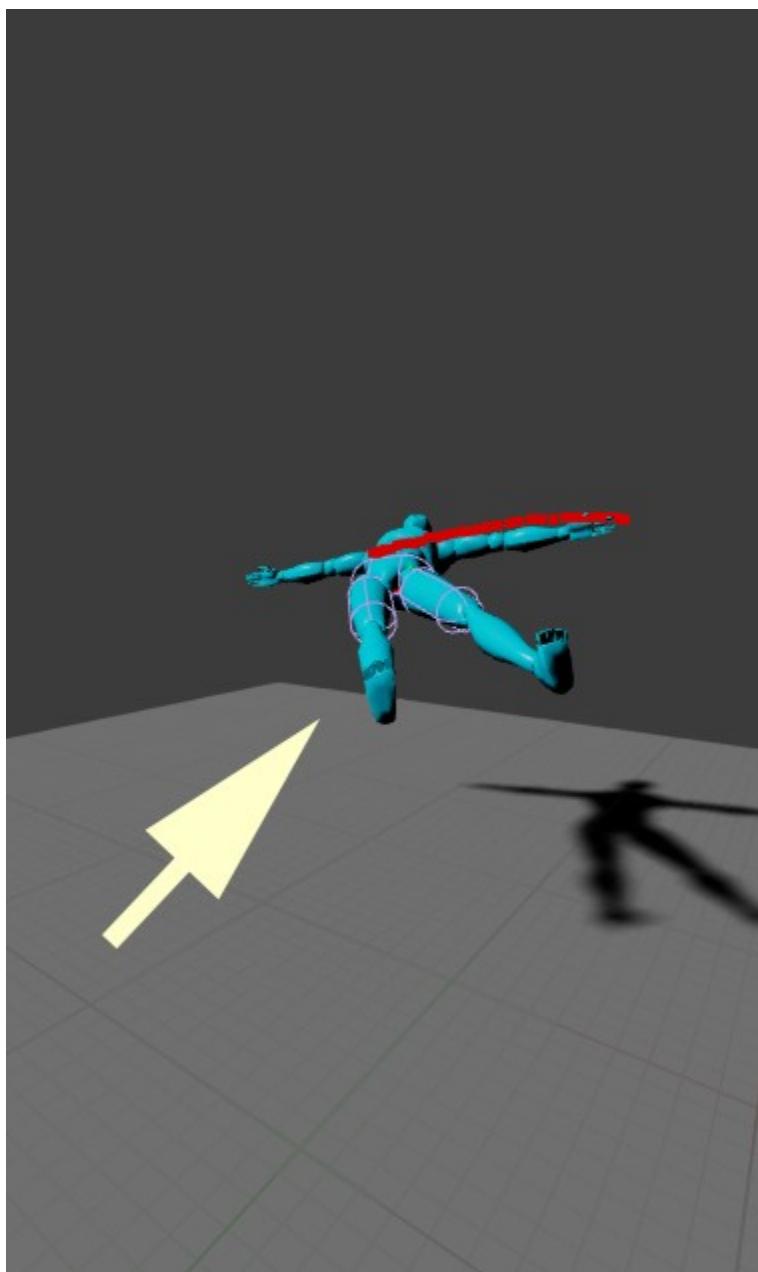


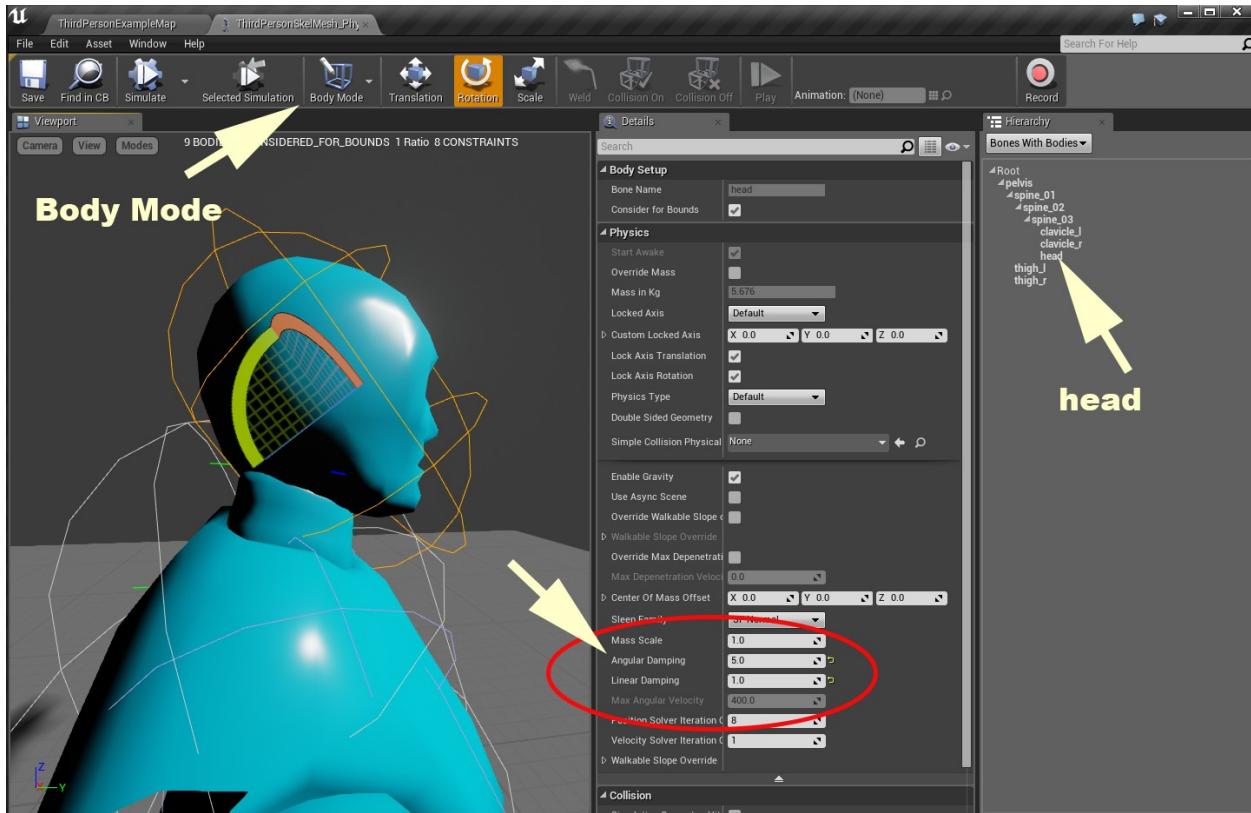
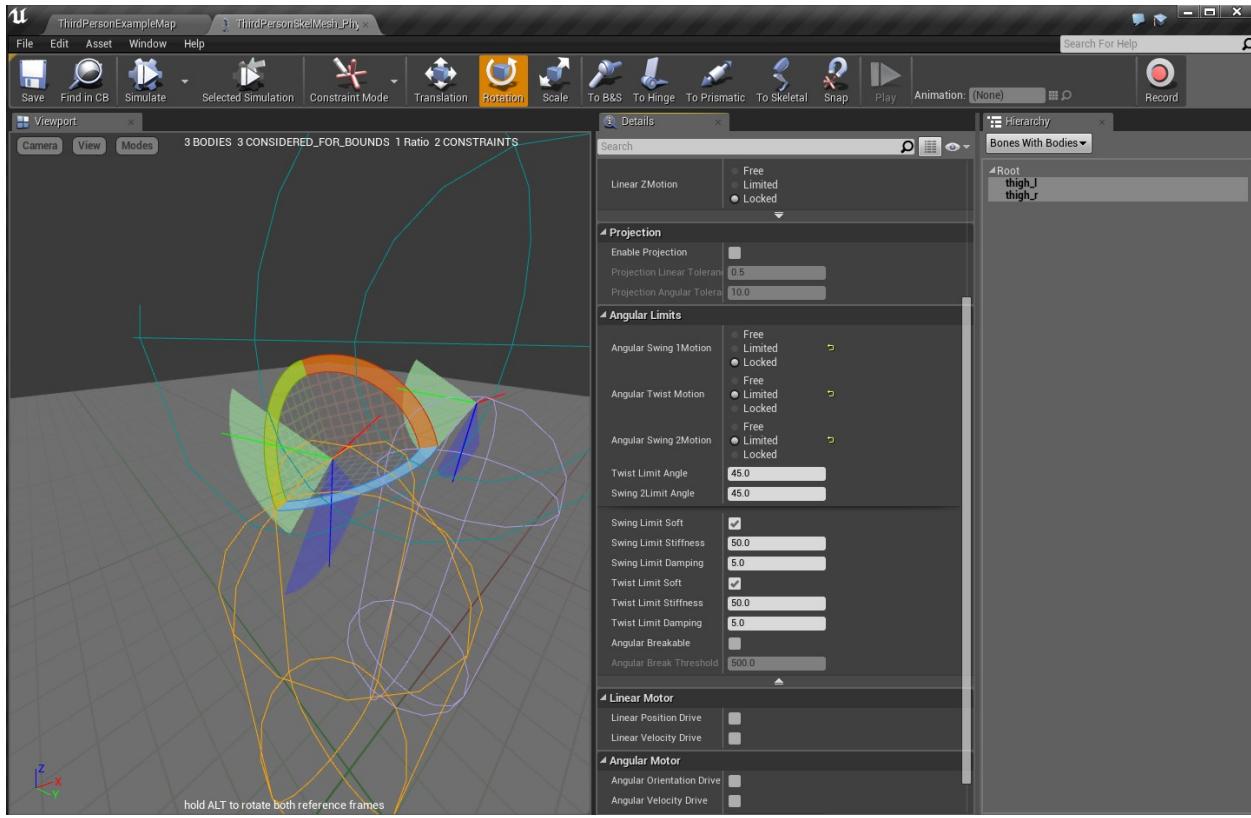






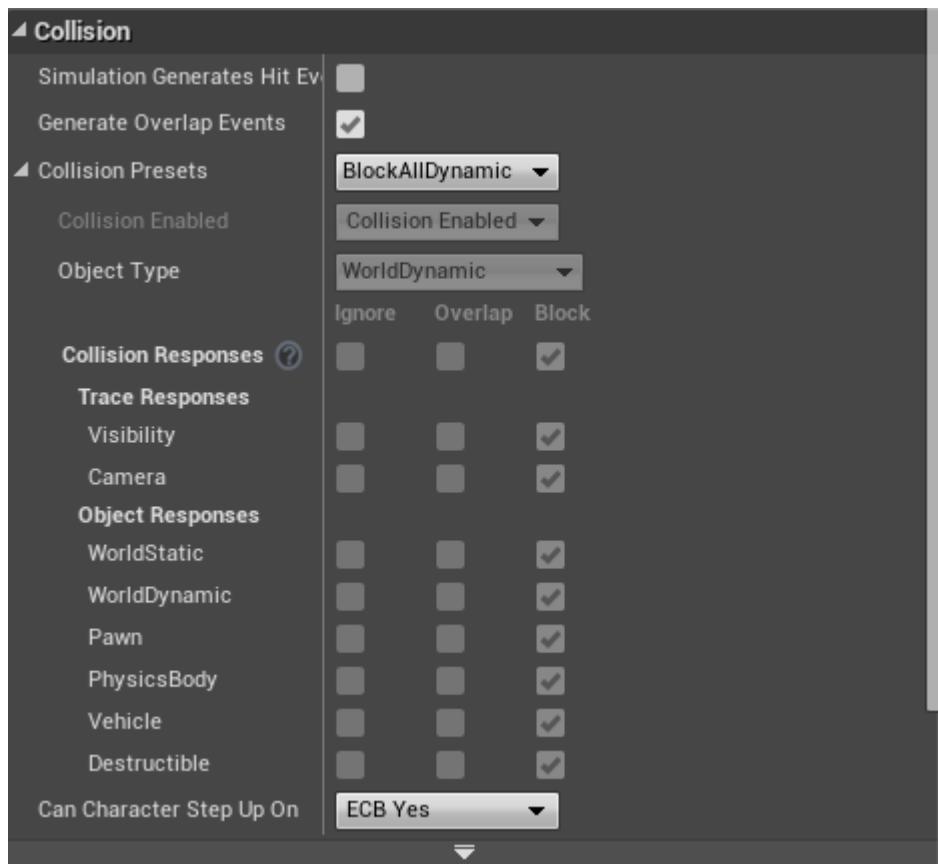


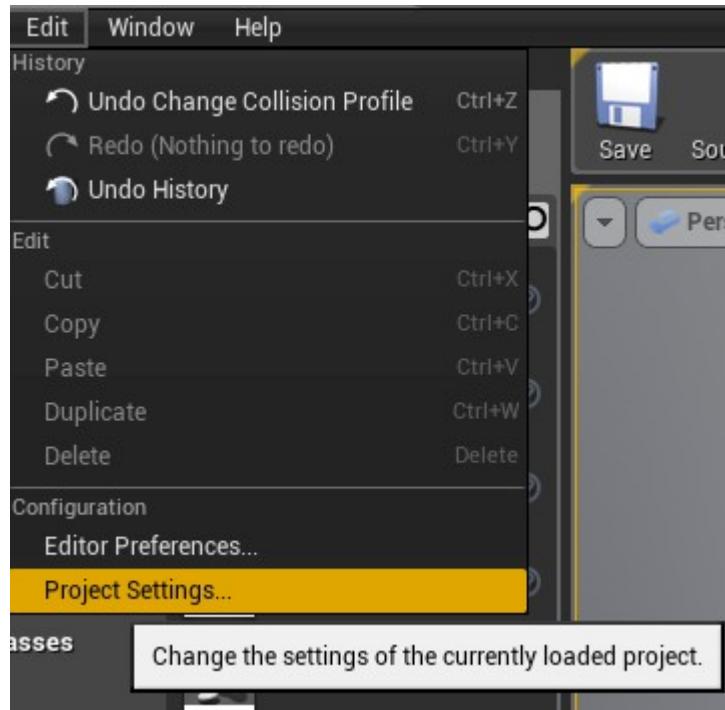






CHAPTER 3





Project

- Description
- Maps & Modes
- Movies
- Packaging
- Supported Platforms
- Target Hardware

Engine

- All System
- Audio
- Collision**
- Cookie
- Crowd Manager
- General Settings
- Input
- Navigation Mesh
- Navigation System
- Network
- Physics
- Rendering
- Tutorials
- User Interface

Platforms

- Android
- Android SDK
- HTML5
- iOS
- Linux
- Windows

Plugins

- Paper 2D
- Slate Remote
- UDP Messaging

Engine - Collision

Set up and modify collision settings.

These settings are saved in DefaultEngine.ini, which is currently writable.

Object Channels

You can have up to 18 custom channels including object and trace channels. This is list of object type for your project. If you delete the object type that has been used by game, it will go back to WorldStatic.

Name	Default Response	Actions
Projectile	Block	New Object Channel... Edit... Delete...

Trace Channels

You can have up to 18 custom channels including object and trace channels. This is list of trace channel for your project. If you delete the trace channel that has been used by game, the behavior of trace is undefined.

Name	Default Response	Actions
		New Trace Channel... Edit... Delete...

Preset

You can modify any of your project profiles. Please note that if you modify profile, it can change collision behavior. Please be careful when you change currently existing (used) collision profiles.

Name	Collision	Object Type	Description
NoCollision	No Collision	WorldStatic	No collision
BlockAll	Collision Enabled	WorldStatic	WorldStatic object that blocks all actors by default. All new custom channels will use its own default response
OverlapAll	No Physics Collision	WorldStatic	WorldStatic object that overlaps all actors by default. All new custom channels will use its own default response
BlockAllDynamic	Collision Enabled	WorldDynamic	WorldDynamic object that blocks all actors by default. All new custom channels will use its own default response
OverlapAllDynamic	No Physics Collision	WorldDynamic	WorldDynamic object that overlaps all actors by default. All new custom channels will use its own default response
IgnoreOnlyPawn	No Physics Collision	WorldDynamic	WorldDynamic object that ignores Pawn and Vehicle. All other channels will be set to default.
OverlapOnlyPawn	No Physics Collision	WorldDynamic	WorldDynamic object that overlaps Pawn, Camera, and Vehicle. All other channels will be set to default.
Pawn	Collision Enabled	Pawn	Pawn object. Can be used for capsule of any playable character or AI.
Spectator	No Physics Collision	Pawn	Pawn object that ignores all other actors except WorldStatic.
CharacterMesh	No Physics Collision	Pawn	Pawn object that is used for Character Mesh. All other channels will be set to default.
PhysicsActor	Collision Enabled	PhysicsBody	Simulating actors
Destructible	Collision Enabled	Destructible	Destructible actors
InvisibleWall	Collision Enabled	WorldStatic	WorldStatic object that is invisible
InvisibleWallDynamic	Collision Enabled	WorldDynamic	WorldDynamic object that is invisible
Trigger	No Physics Collision	WorldDynamic	WorldDynamic object that is used for trigger. All other channels will be set to default.
Ragdoll	Collision Enabled	PhysicsBody	Simulating Skeletal Mesh Component. All other channels will be set to default.
Vehicle	Collision Enabled	Vehicle	Vehicle object that blocks Vehicle, WorldStatic, and WorldDynamic. All other channels will be set to default.
UI	No Physics Collision	WorldDynamic	WorldStatic object that overlaps all actors by default. All new custom channels will use its own default response
Projectile	No Physics Collision	Projectile	Projectile

Collision

Simulation Generates Hit Events	<input type="checkbox"/>
Generate Overlap Events	<input checked="" type="checkbox"/>
Collision Presets	NoCollision <input type="button" value="..."/>
Collision Enabled	No Collision <input type="button" value="..."/>

Type of Collision Enabled

No Collision	: No collision is performed against this neither trace or physics
No Physics Collision	: This body is only used for collision raycasts, sweeps and overlaps
Collision Enabled	: This body is used for physics simulation and collision queries

Visibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Camera	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Object Responses			
WorldStatic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WorldDynamic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pawn	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PhysicsBody	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Destructible	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projectile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Can Character Step Up On	ECB Yes <input type="button" value="..."/>		

Collision

Simulation Generates Hit Events	<input type="checkbox"/>
Generate Overlap Events	<input checked="" type="checkbox"/>
Collision Presets	BlockAll

WorldStatic object that blocks all actors by default. All new custom channels will use its own default response.

Object Type	WorldStatic	Ignore	Overlap	Block
Collision Responses	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Trace Responses	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Visibility	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Camera	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Object Responses				
WorldStatic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
WorldDynamic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pawn	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
PhysicsBody	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Destructible	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Projectile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Can Character Step Up On	ECB Yes			

Lighting

Collision

Simulation Generates Hit Events

Generate Overlap Events

Collision Presets **OverlapAll** 

WorldStatic object that overlaps all actors by default. All new custom channels will use its own default response.

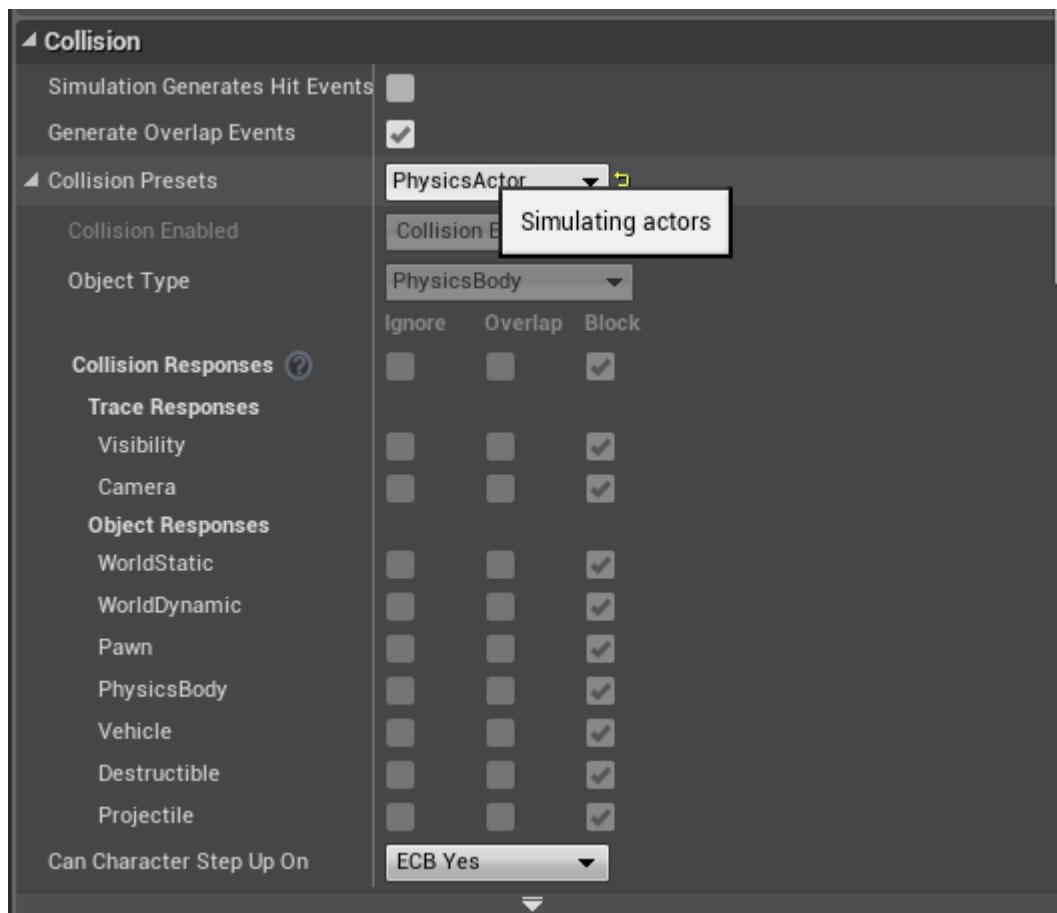
Object Type	WorldStatic	Ignore	Overlap	Block
Collision Responses 	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Trace Responses				
Visibility	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Camera	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Object Responses				
WorldStatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WorldDynamic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pawn	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PhysicsBody	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Destructible	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Projectile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Can Character Step Up On	ECB Yes			

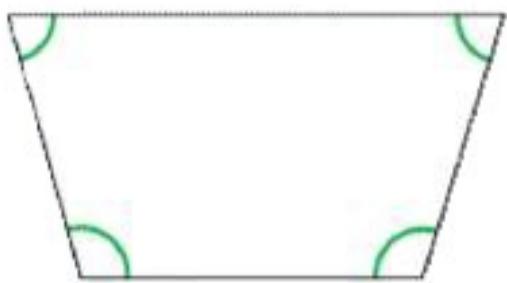
Collision

Simulation Generates Hit Events	<input type="checkbox"/>
Generate Overlap Events	<input checked="" type="checkbox"/>

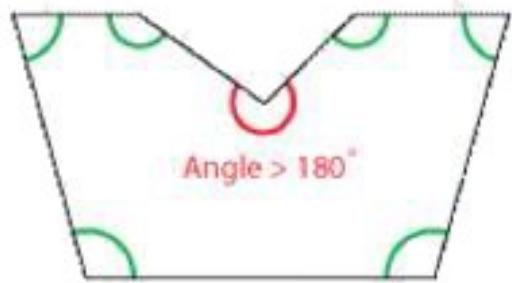
Collision Presets

Object Type	Pawn																					
Collision Responses	<table border="1"><tr><td>Ignore</td><td>Overlap</td><td>Block</td></tr><tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Ignore	Overlap	Block	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
Ignore	Overlap	Block																				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																				
Trace Responses	<table border="1"><tr><td>Visibility</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Camera</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Visibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Camera	<input type="checkbox"/>	<input type="checkbox"/>															
Visibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>																				
Camera	<input type="checkbox"/>	<input type="checkbox"/>																				
Object Responses	<table border="1"><tr><td>WorldStatic</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>WorldDynamic</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Pawn</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>PhysicsBody</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Vehicle</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Destructible</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Projectile</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	WorldStatic	<input type="checkbox"/>	<input type="checkbox"/>	WorldDynamic	<input type="checkbox"/>	<input type="checkbox"/>	Pawn	<input type="checkbox"/>	<input type="checkbox"/>	PhysicsBody	<input type="checkbox"/>	<input type="checkbox"/>	Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	Destructible	<input type="checkbox"/>	<input type="checkbox"/>	Projectile	<input type="checkbox"/>	<input type="checkbox"/>
WorldStatic	<input type="checkbox"/>	<input type="checkbox"/>																				
WorldDynamic	<input type="checkbox"/>	<input type="checkbox"/>																				
Pawn	<input type="checkbox"/>	<input type="checkbox"/>																				
PhysicsBody	<input type="checkbox"/>	<input type="checkbox"/>																				
Vehicle	<input type="checkbox"/>	<input type="checkbox"/>																				
Destructible	<input type="checkbox"/>	<input type="checkbox"/>																				
Projectile	<input type="checkbox"/>	<input type="checkbox"/>																				
Can Character Step Up On	ECB Yes																					



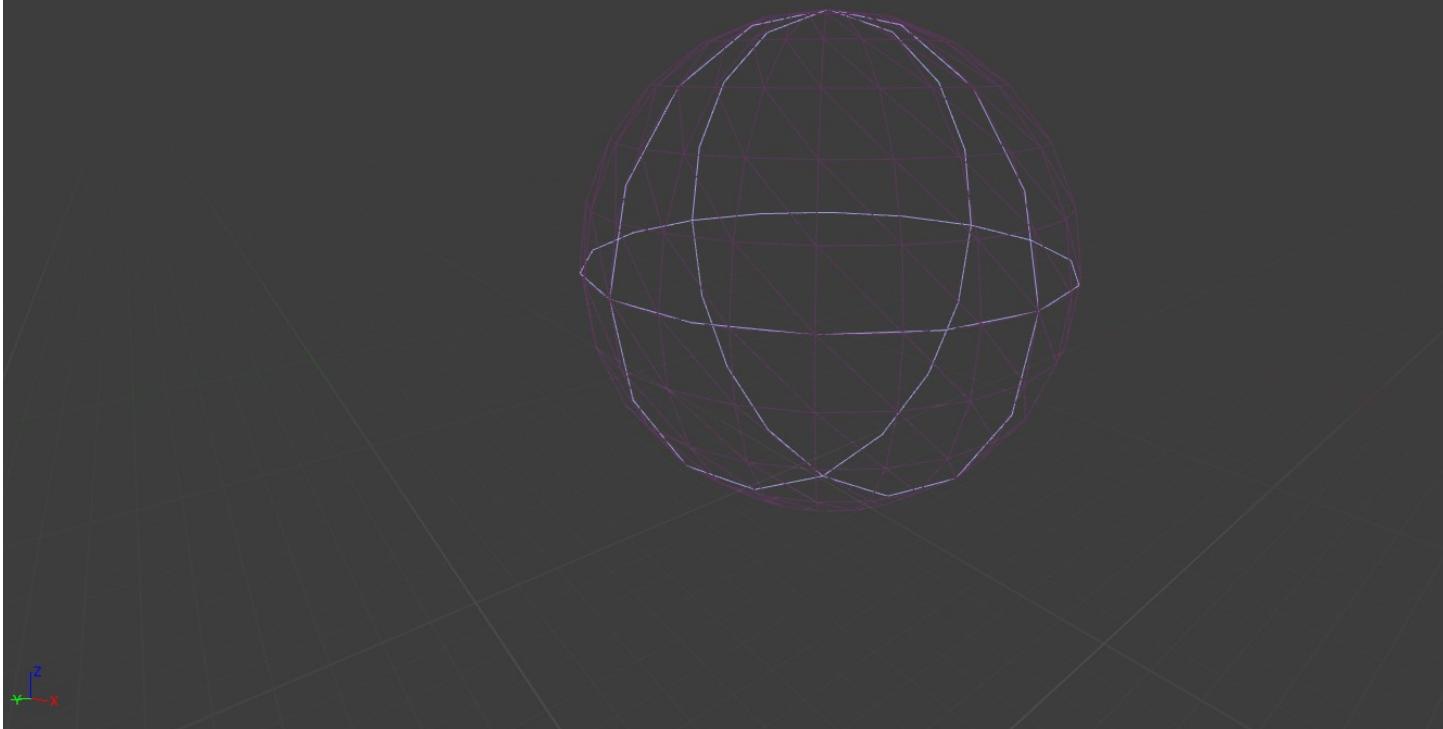


Convex

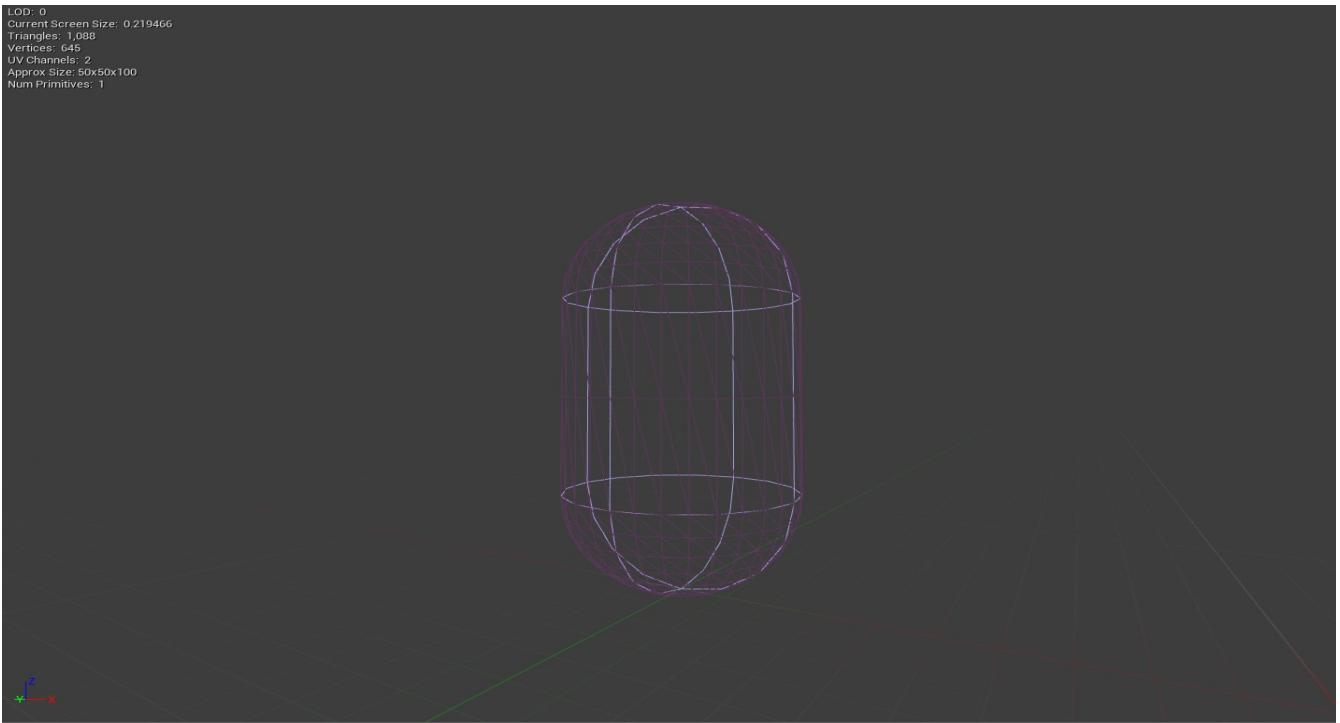


Concave

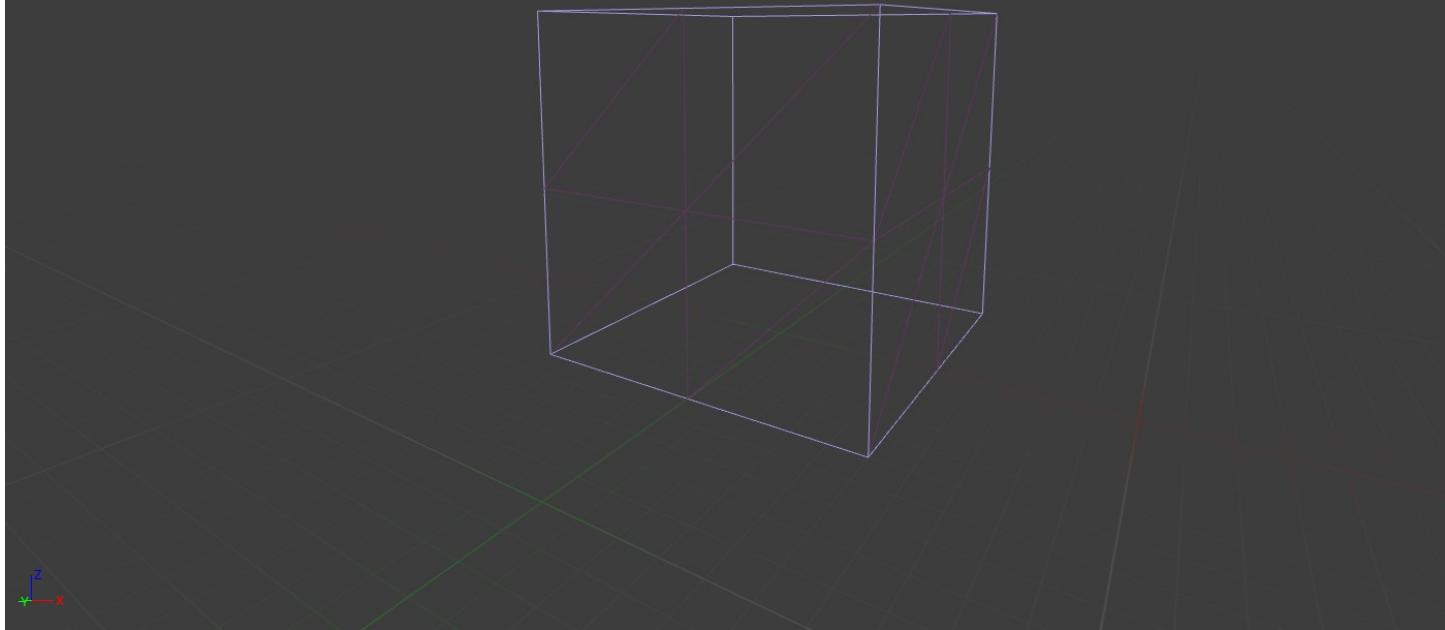
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Triangles: 528
Vertices: 323
UV Channels: 1
Approx Size: 320x320x320
Num Primitives: 1



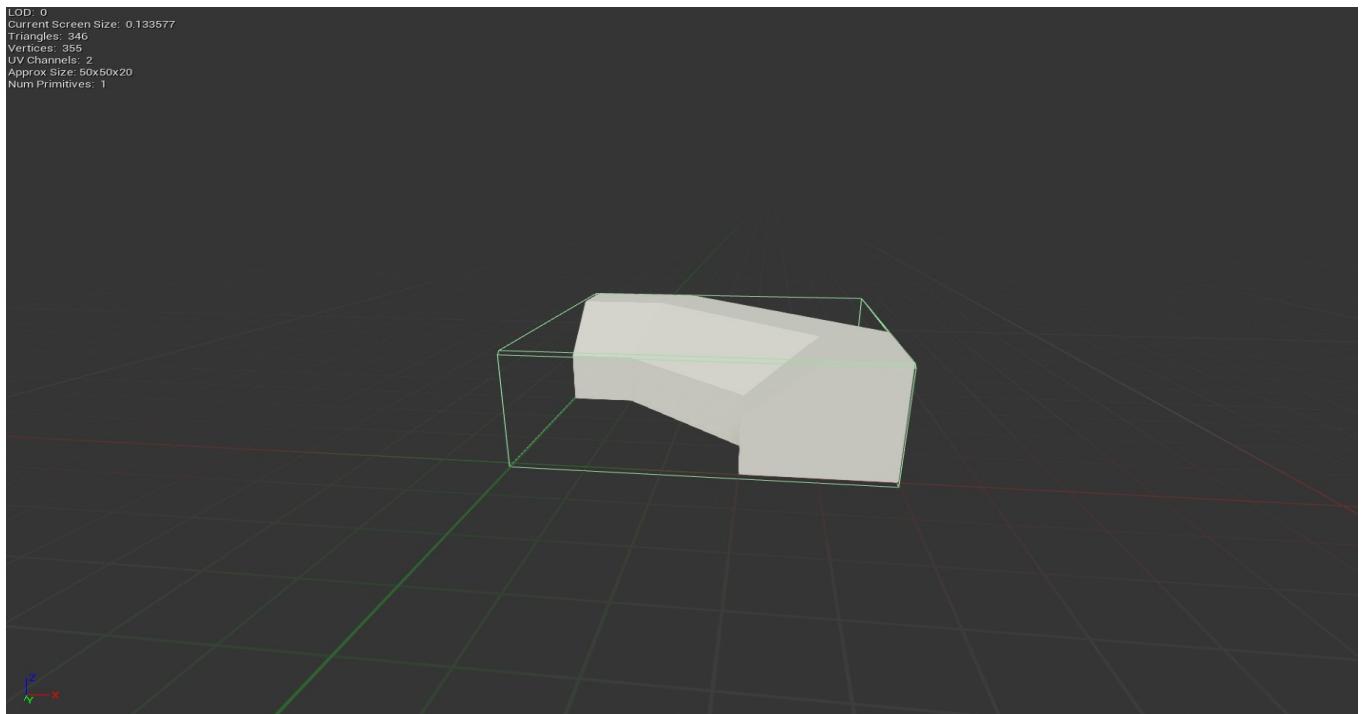
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Current Screen Size: 0.219466
Triangles: 1,088
Vertices: 645
UV Channels: 2
Approx Size: 50x50x100
Num Primitives: 1



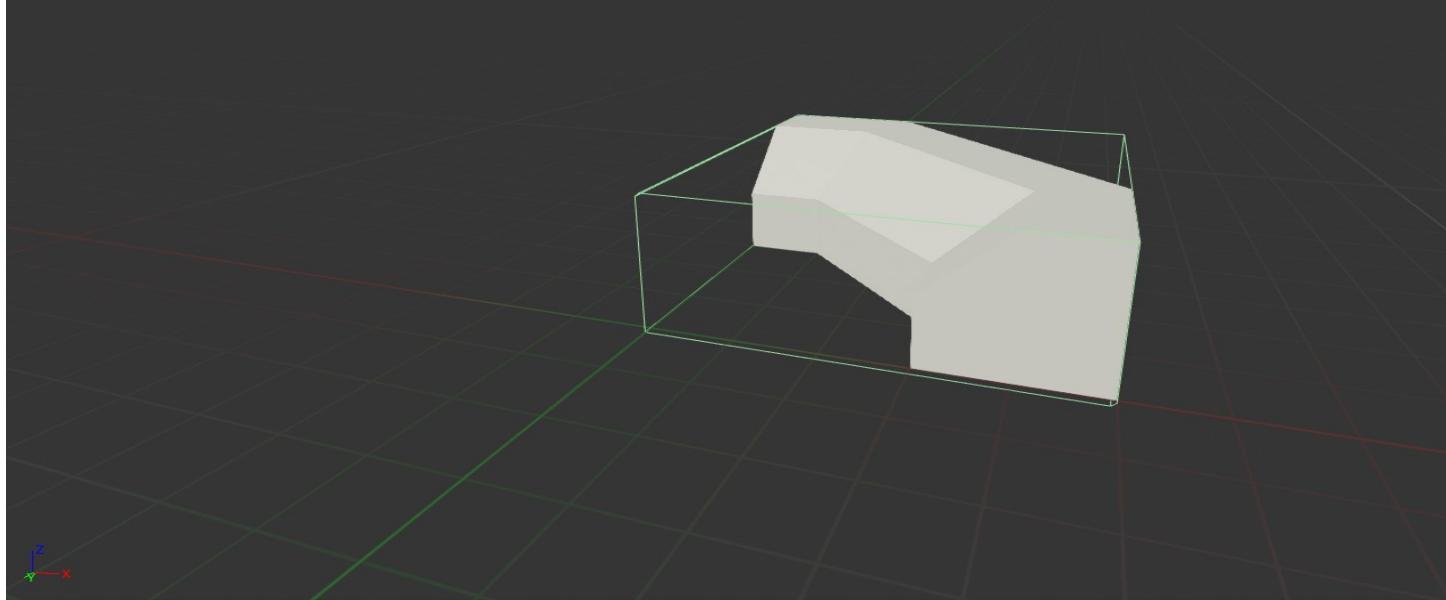
LOD: 0
Current Screen Size: 0.170329
Triangles: 48
Vertices: 54
UV Channels: 2
Approx Size: 100x100x100
Num Primitives: 1



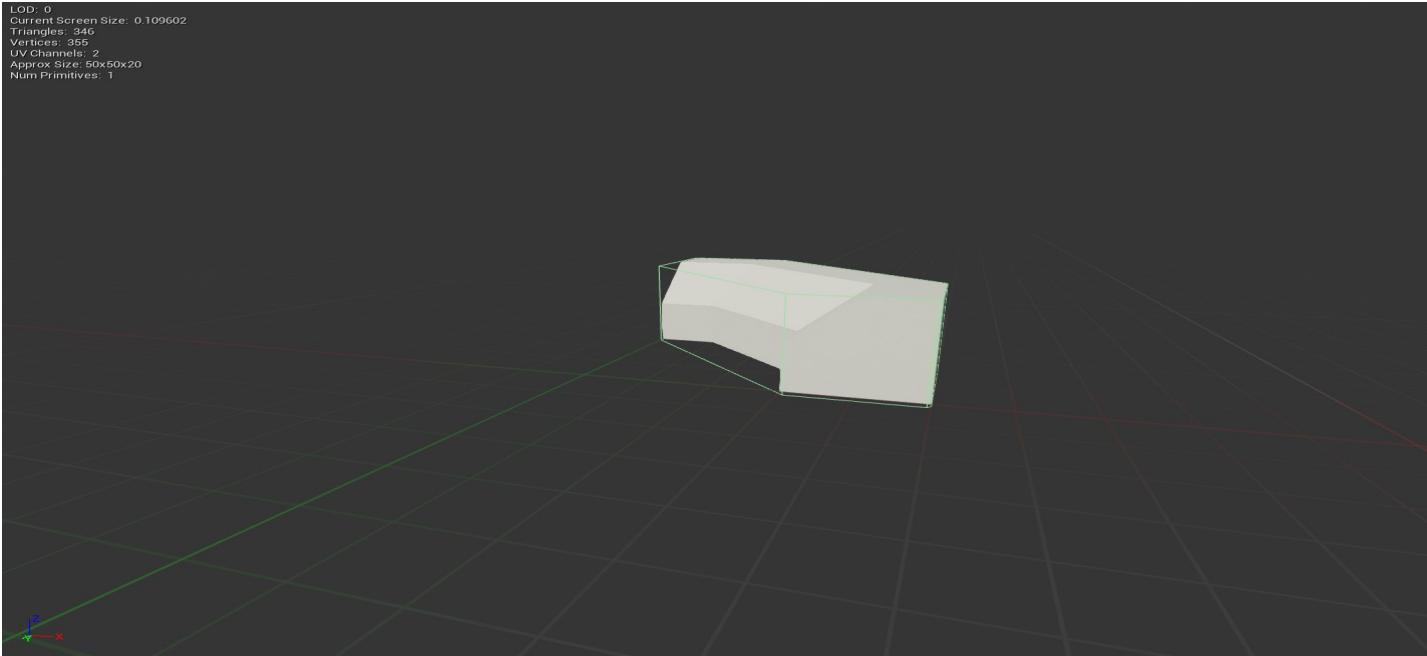
LOD 0
Current Screen Size: 0.133577
Triangles: 346
Vertices: 355
UV Channels: 2
Approx Size: 50x50x20
Num Primitives: 1



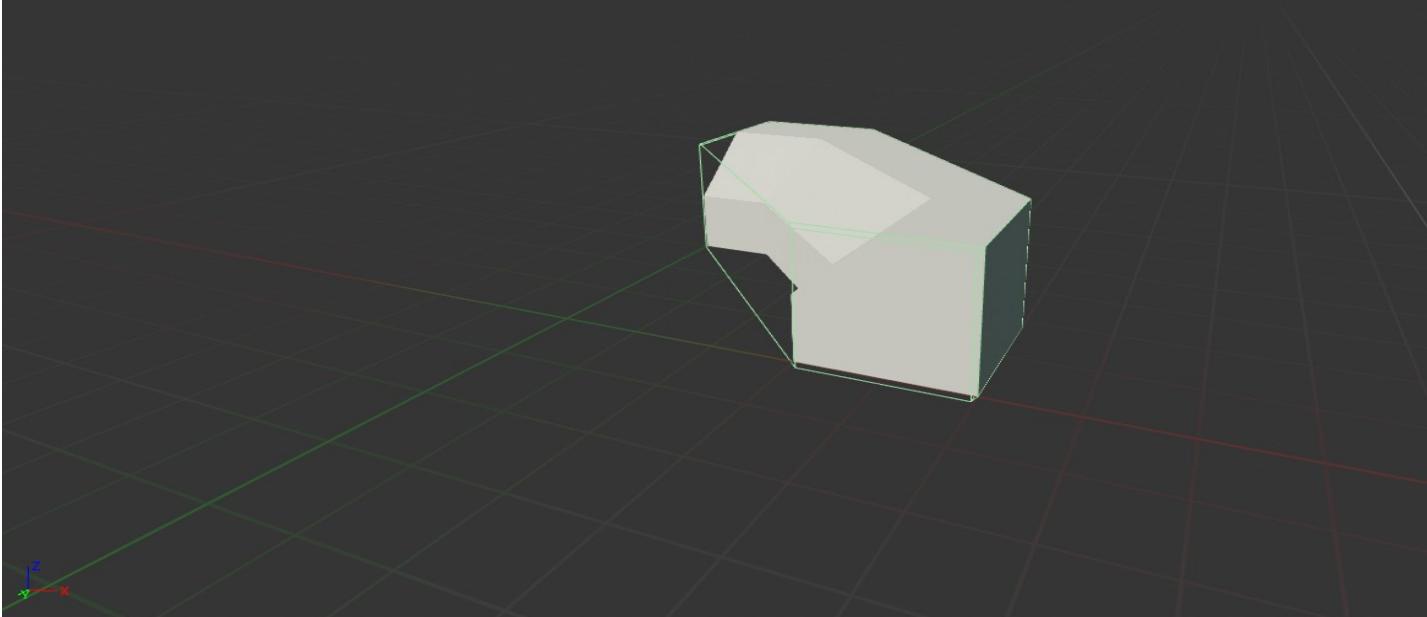
LOD: 0
Current Screen Size: 0.143552
Triangles: 346
Vertices: 355
UV Channels: 2
Approx Size: 50x50x20
Num Primitives: 1



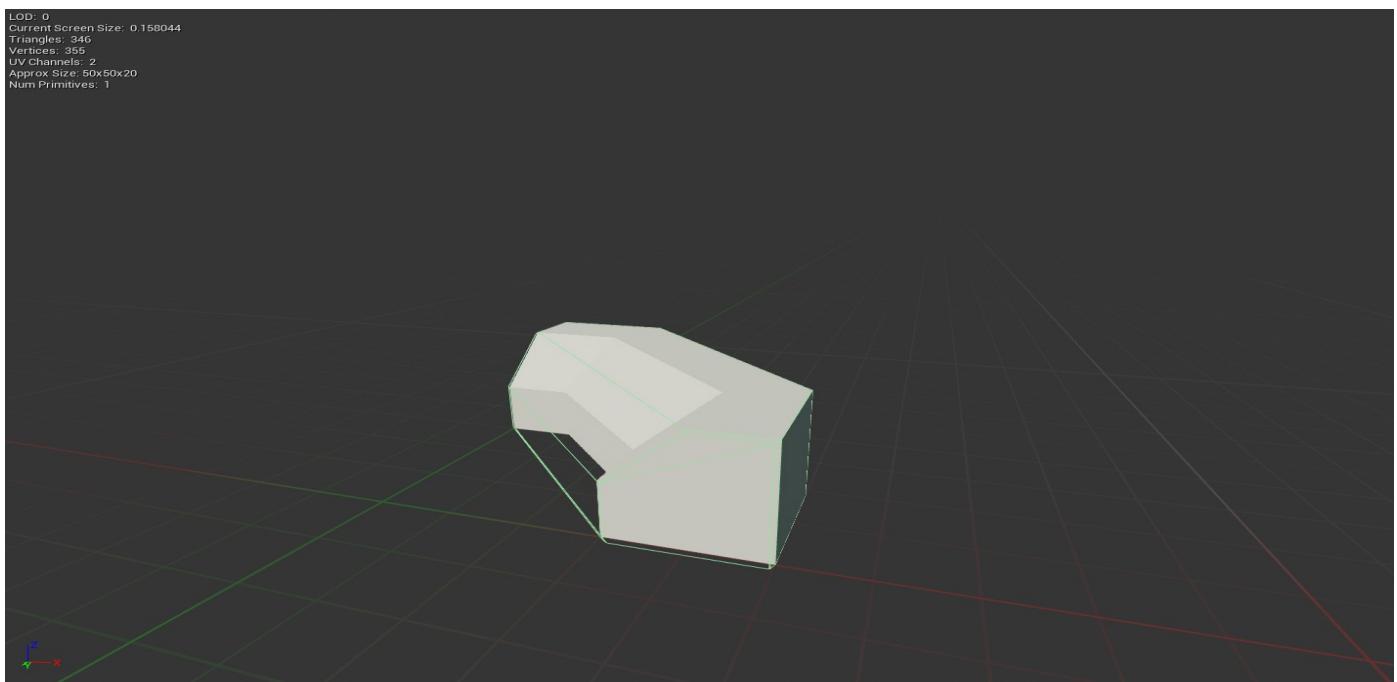
LOD: 0
Current Screen Size: 0.109602
Triangles: 346
Vertices: 355
UV Channels: 2
Approx Size: 50x50x20
Num Primitives: 1



LOD: 0
Current Screen Size: 0.123266
Triangles: 346
Vertices: 355
UV Channels: 2
Approx Size: 50x50x20
Num Primitives: 1



LOD: 0
Current Screen Size: 0.158044
Triangles: 346
Vertices: 356
UV channels: 2
Approx Size: 50x50x20
Num Primitives: 1



Static Mesh Settings

Simple Collision Physical Material: None

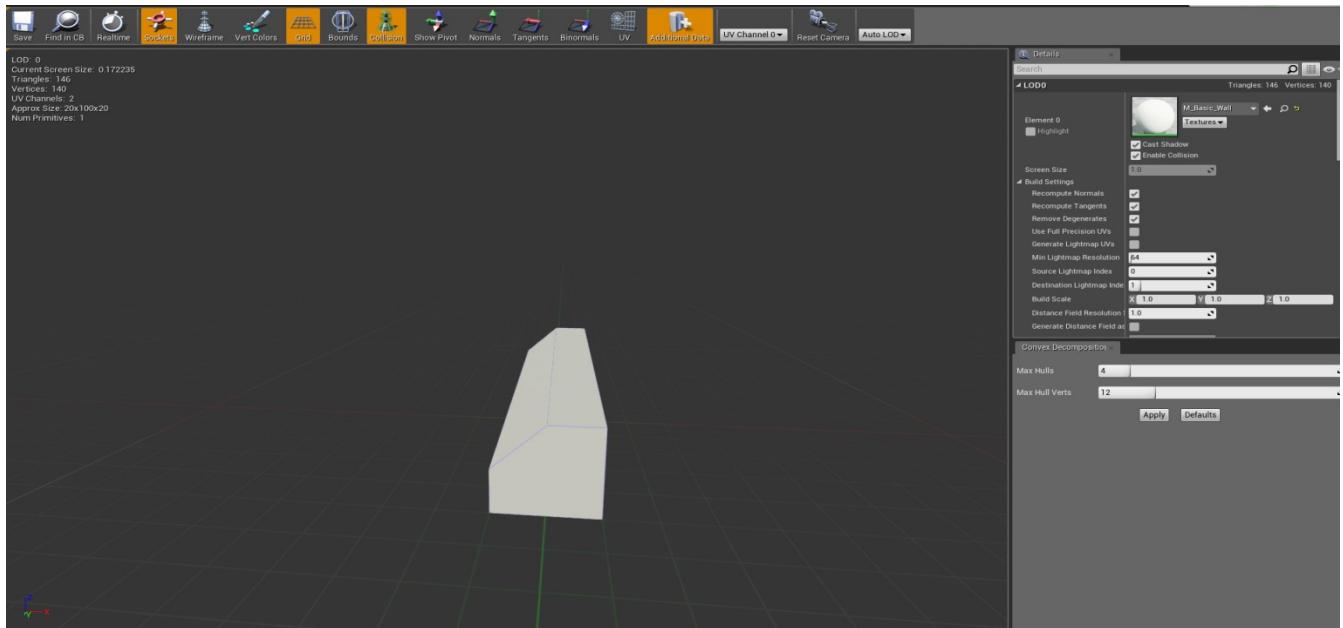
↶ ↽

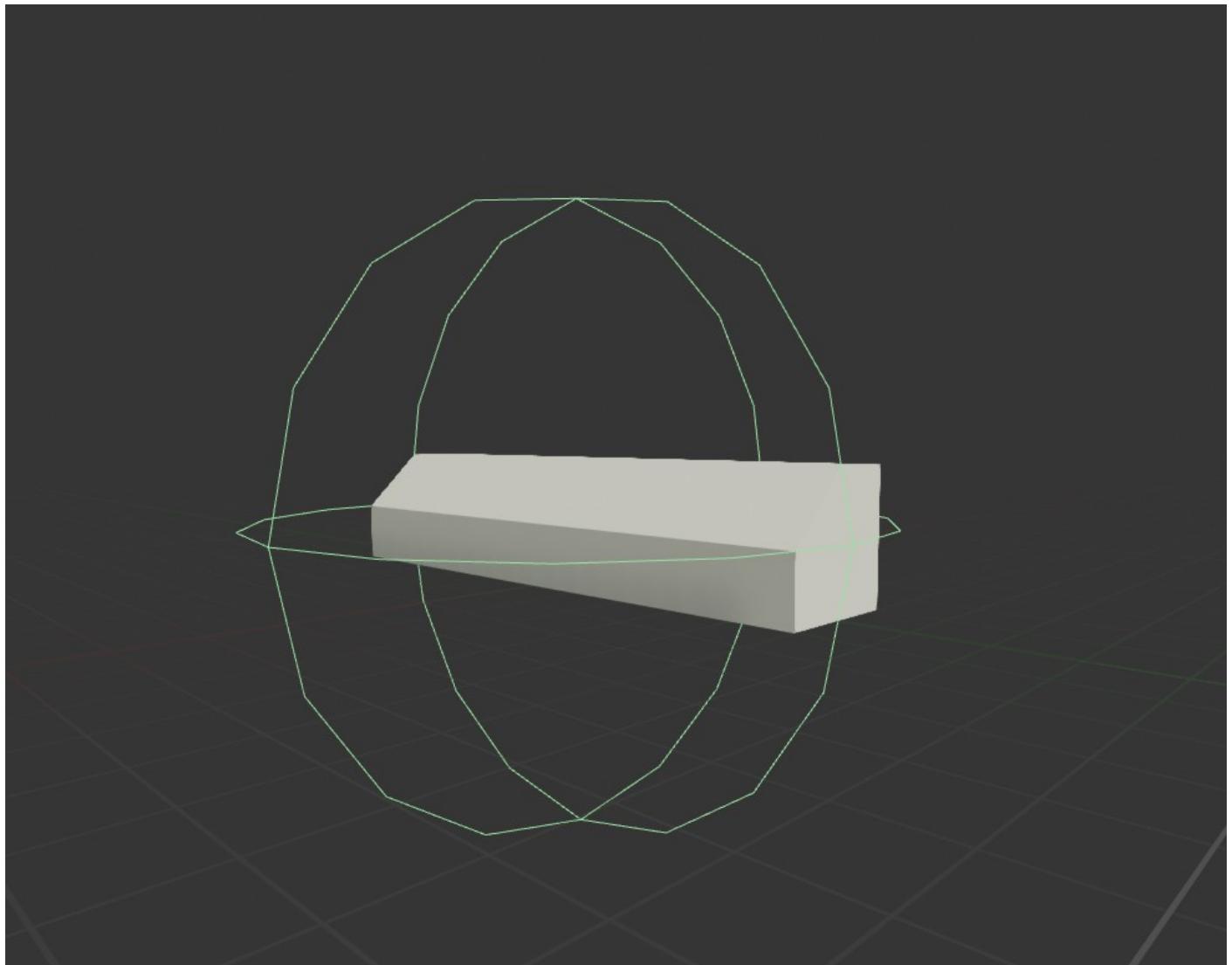
Collision Complexity:

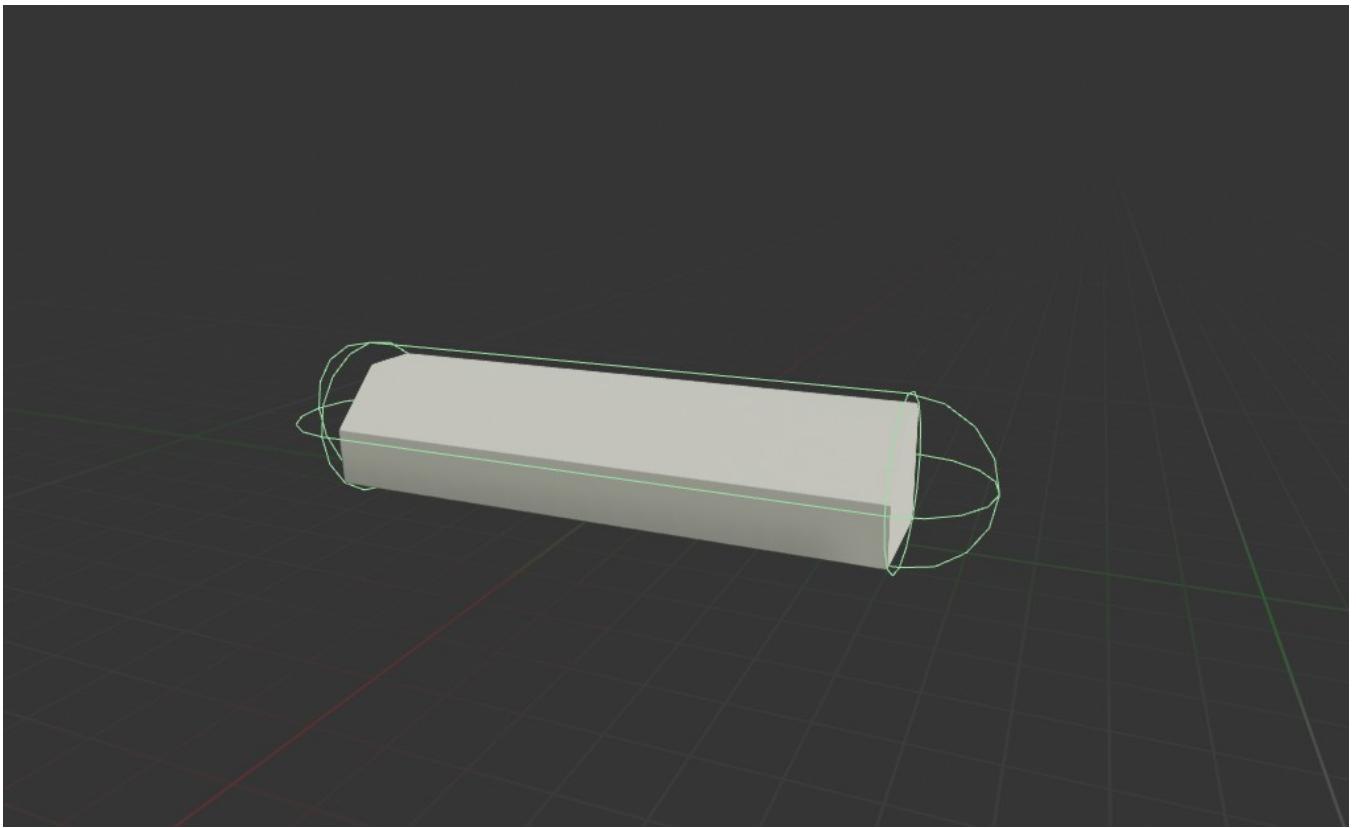
Default

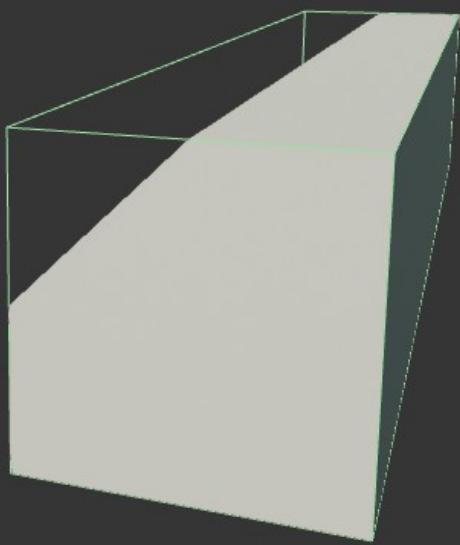
- Default
- Use Simple Collision As Complex
- Use Complex Collision As Simple

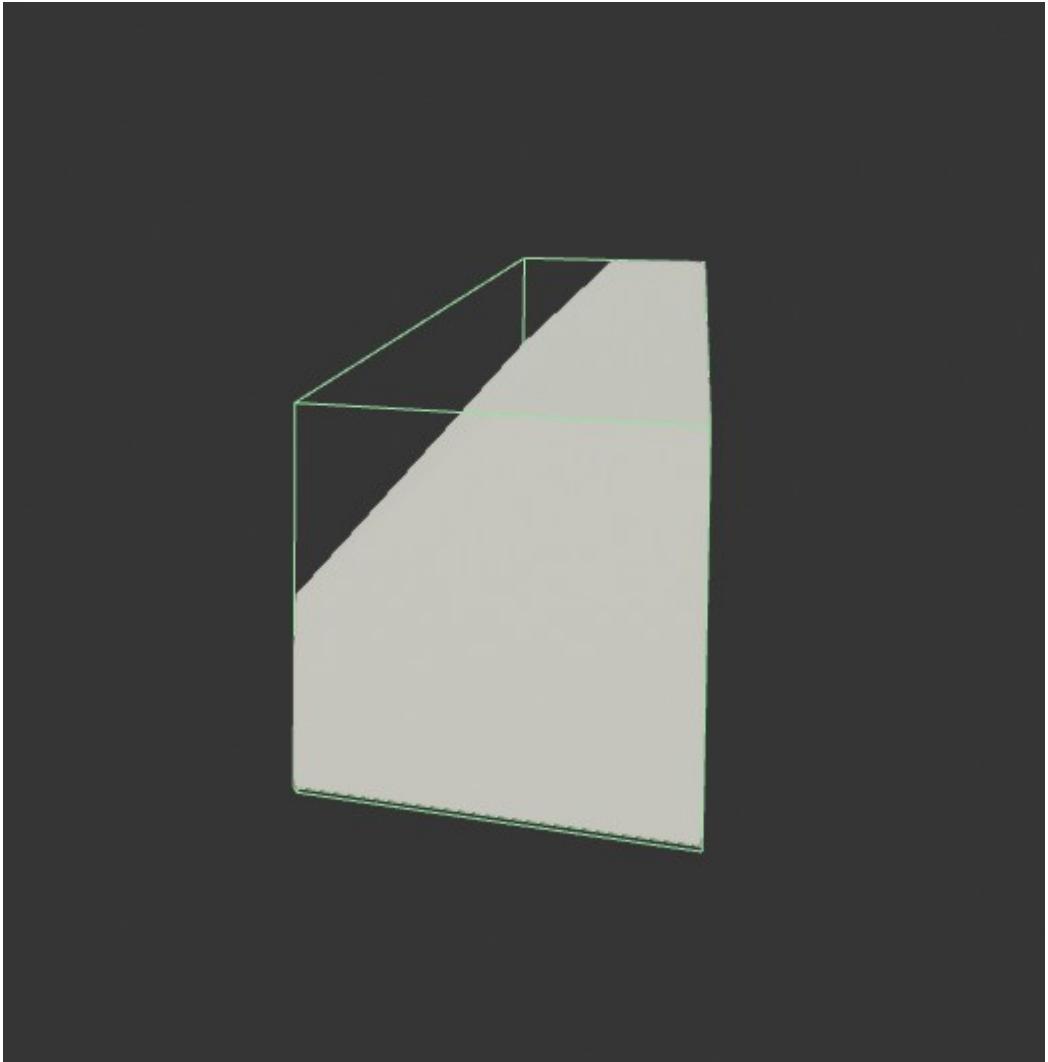
Import Settings

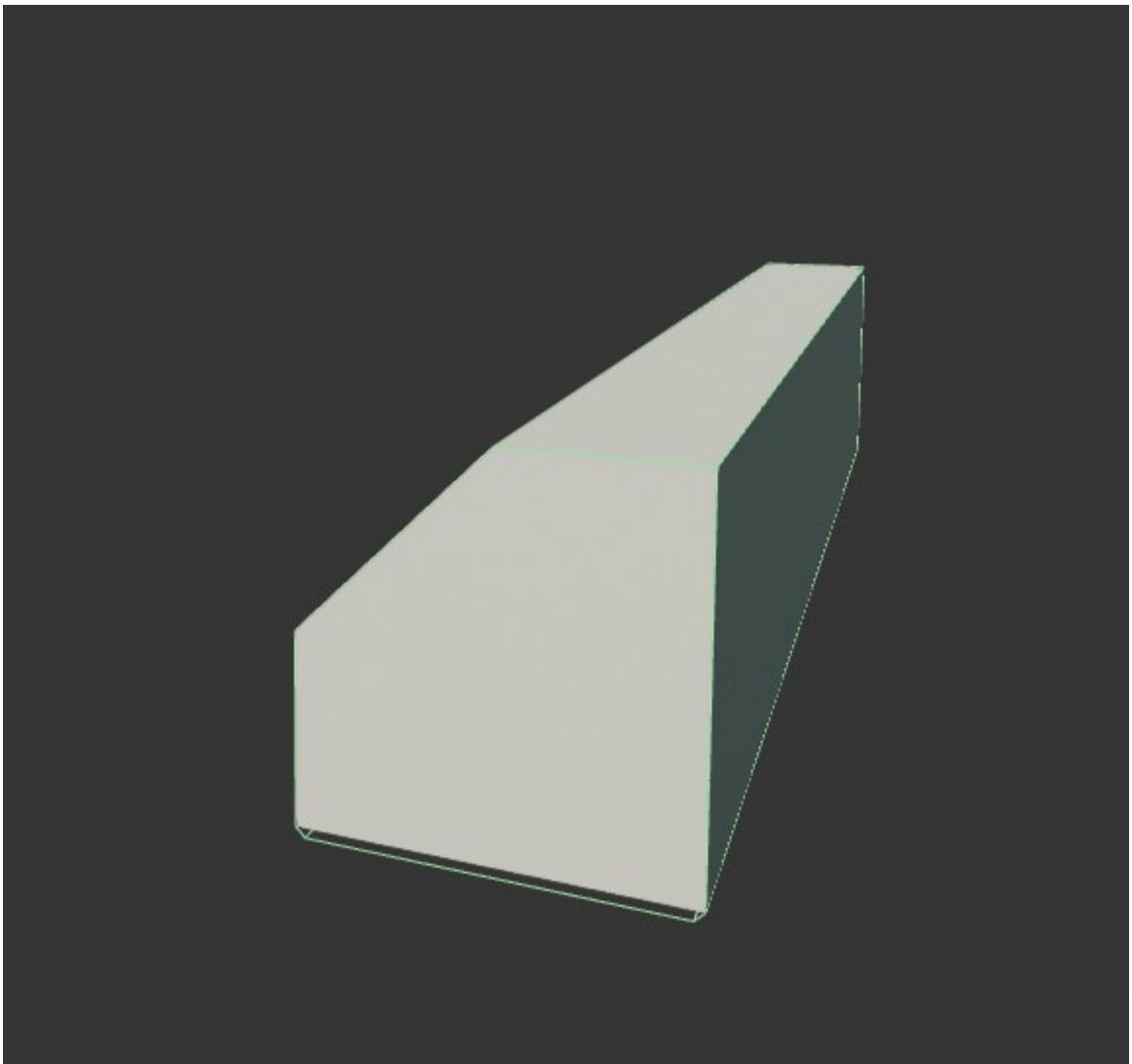


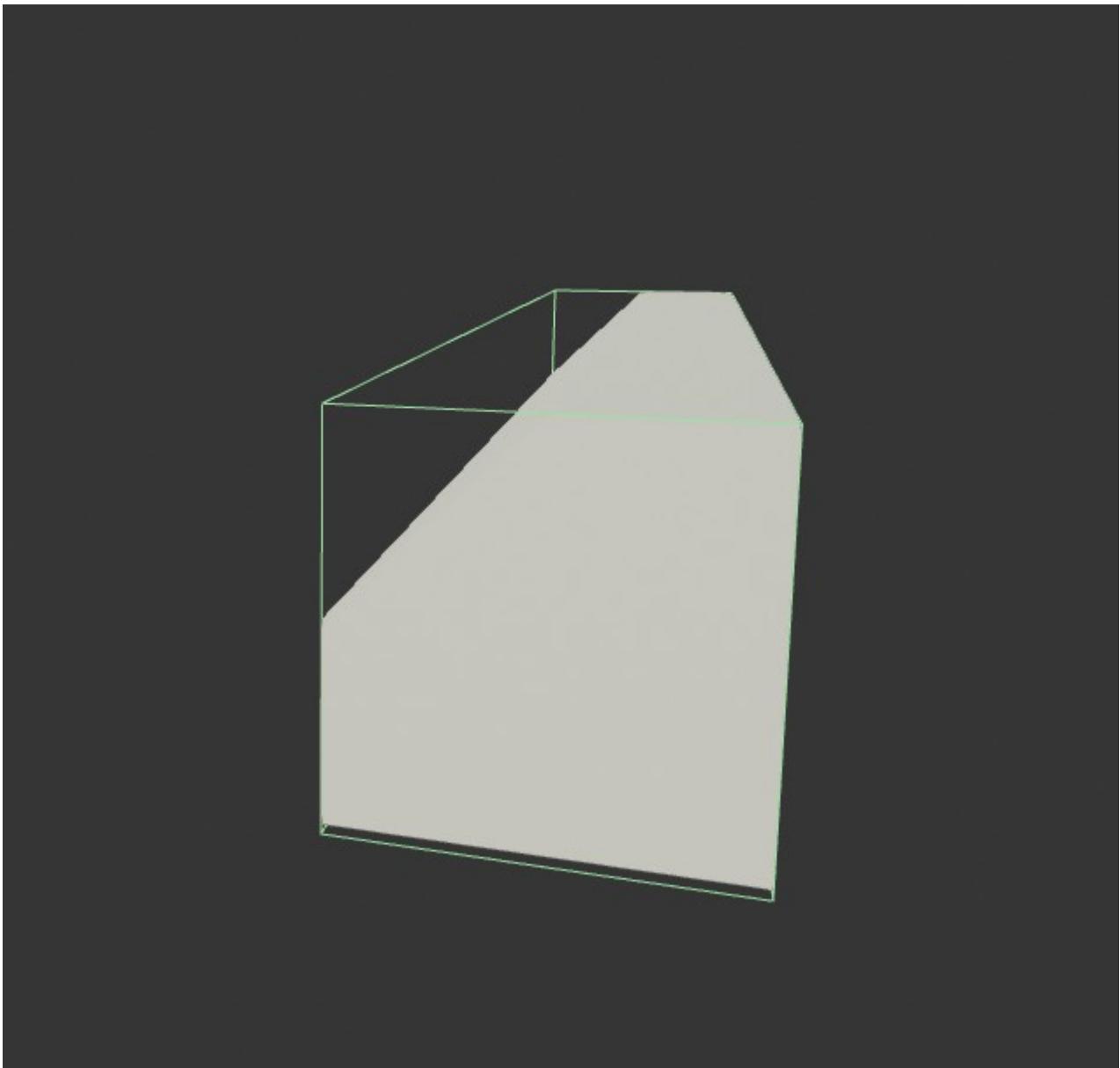


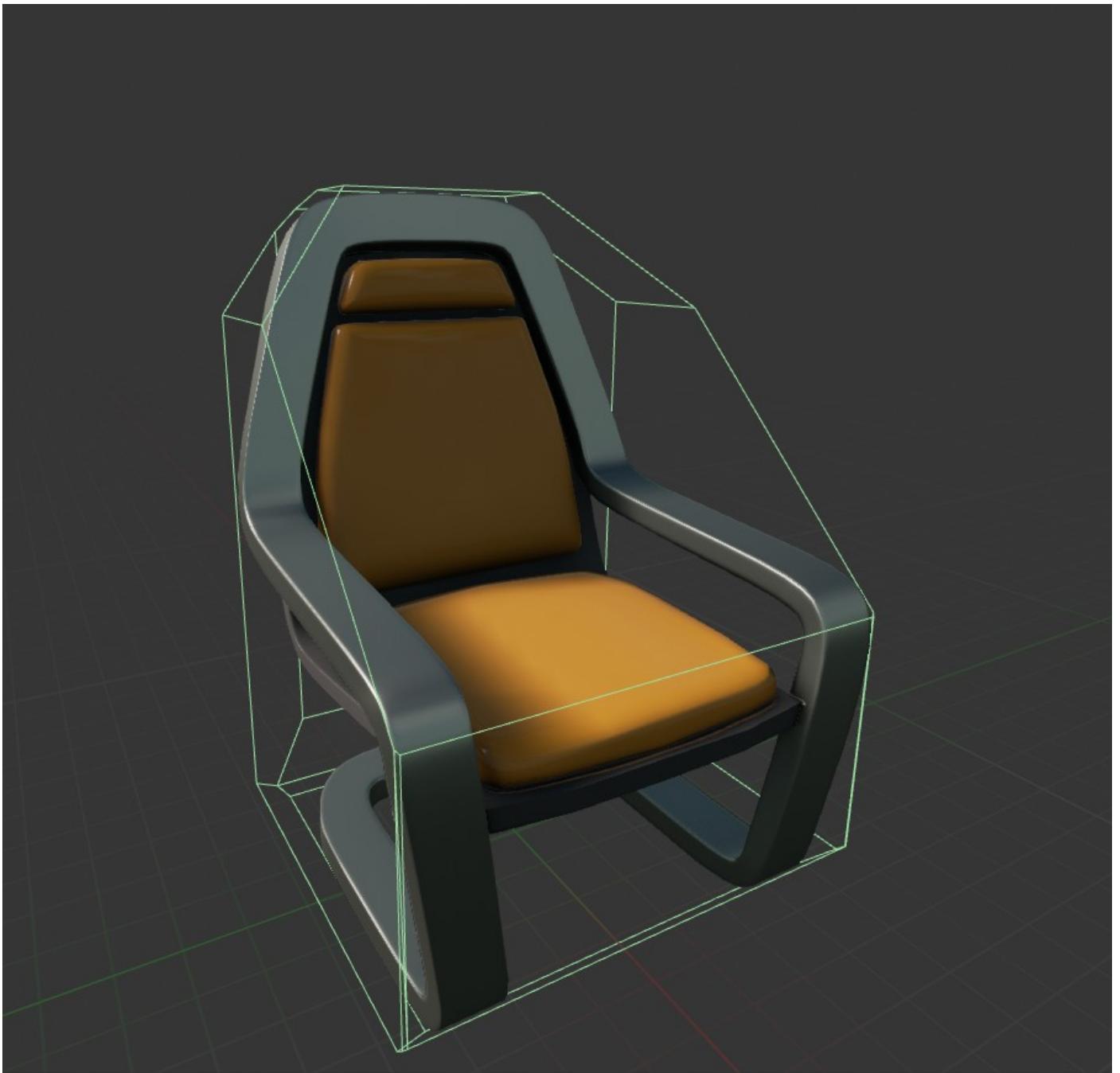


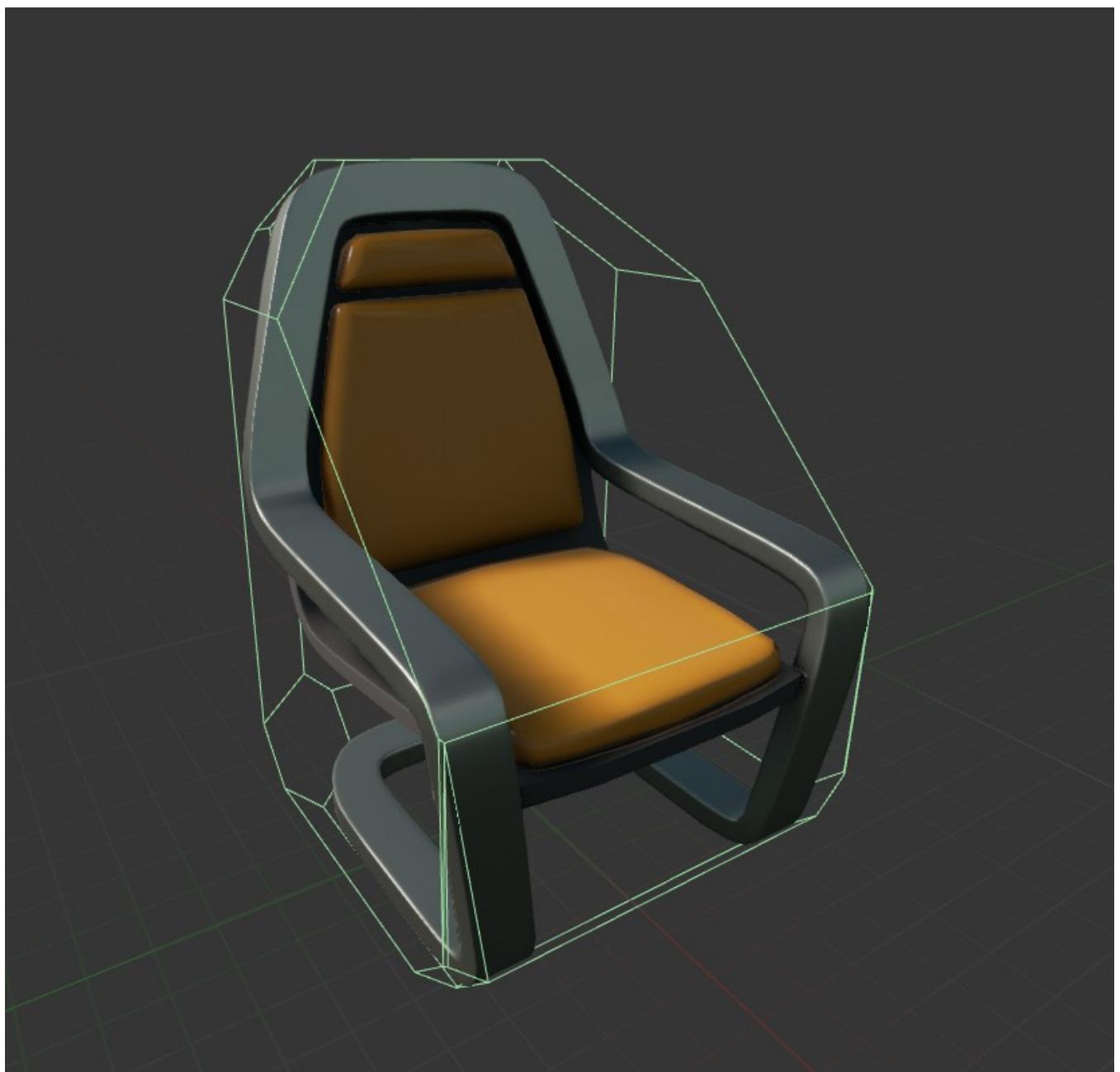


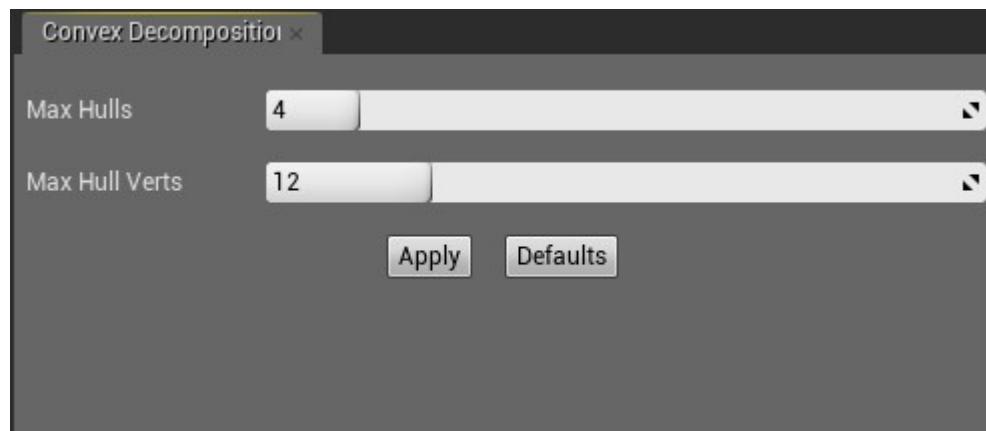


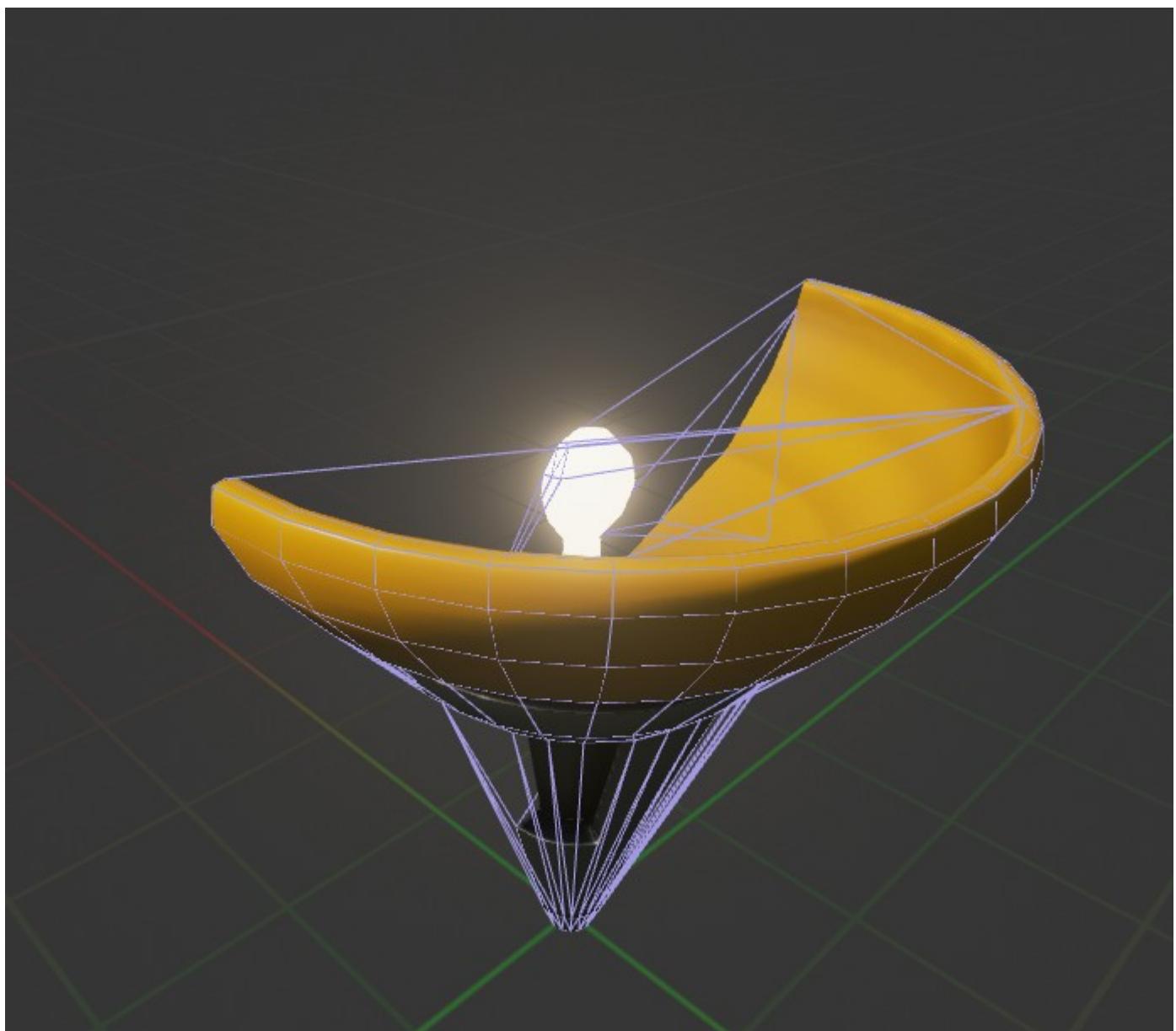


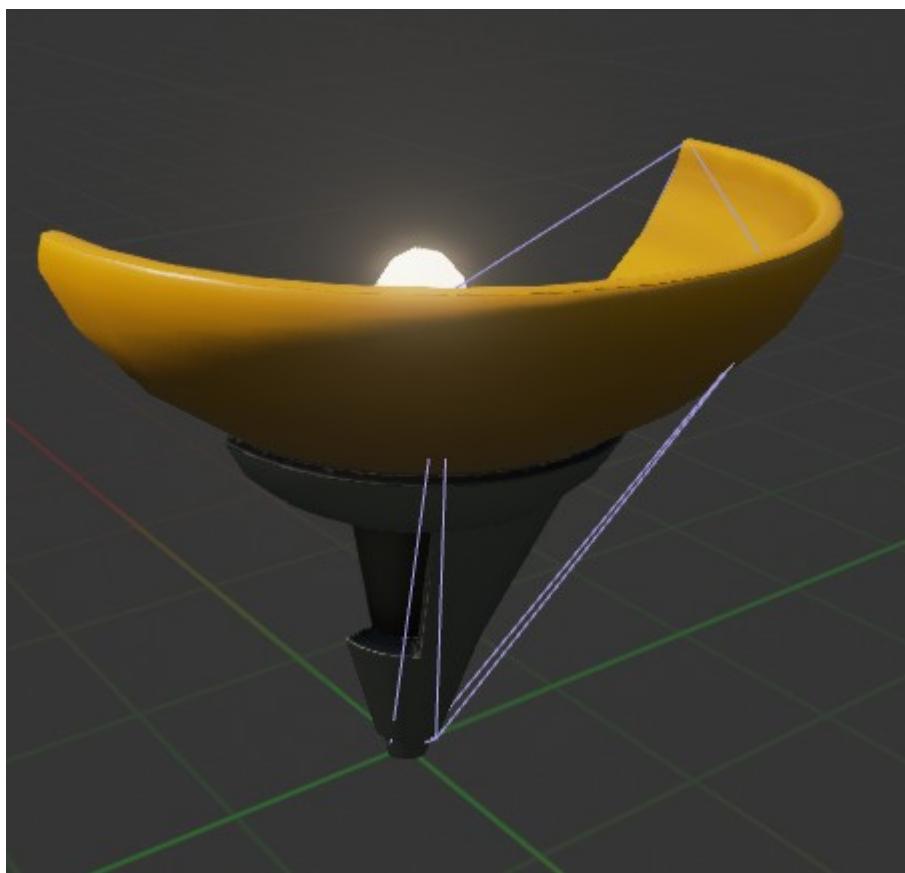


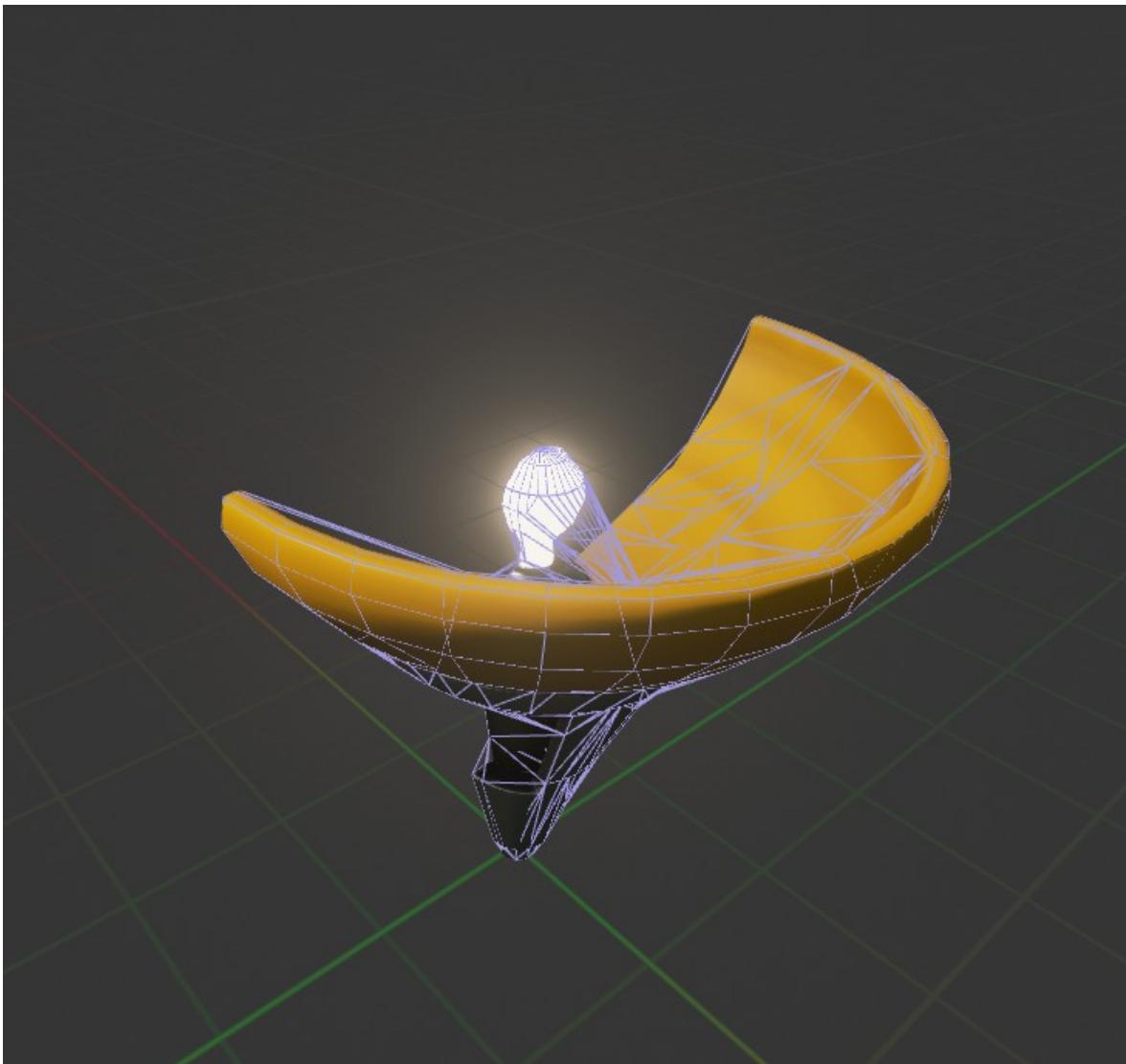




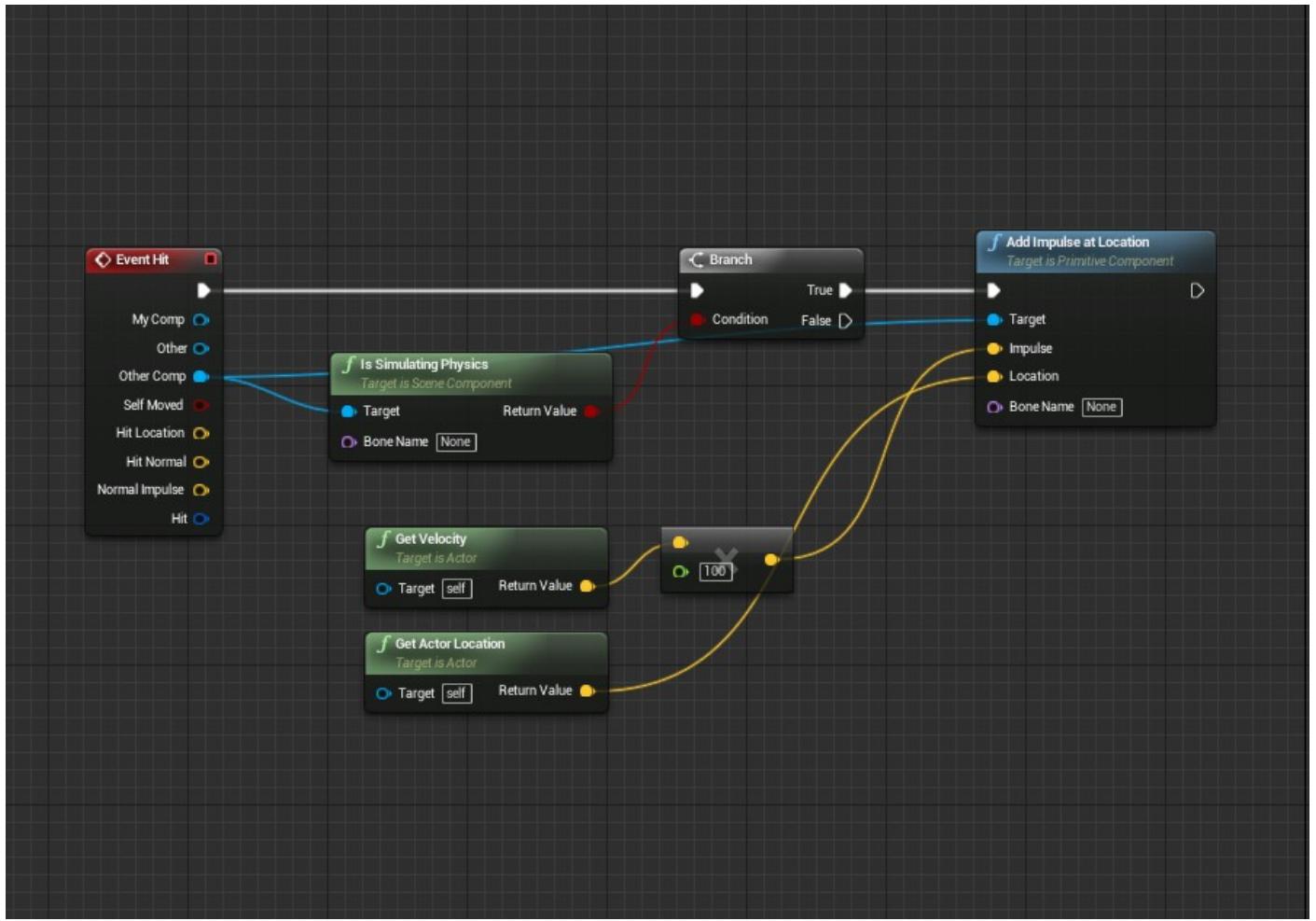


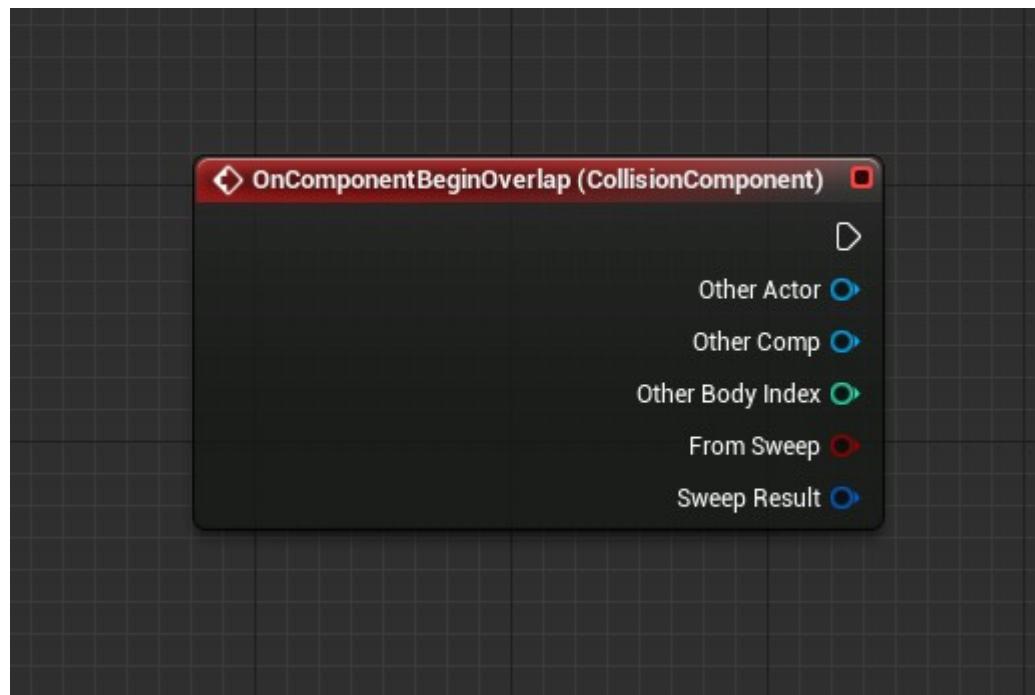
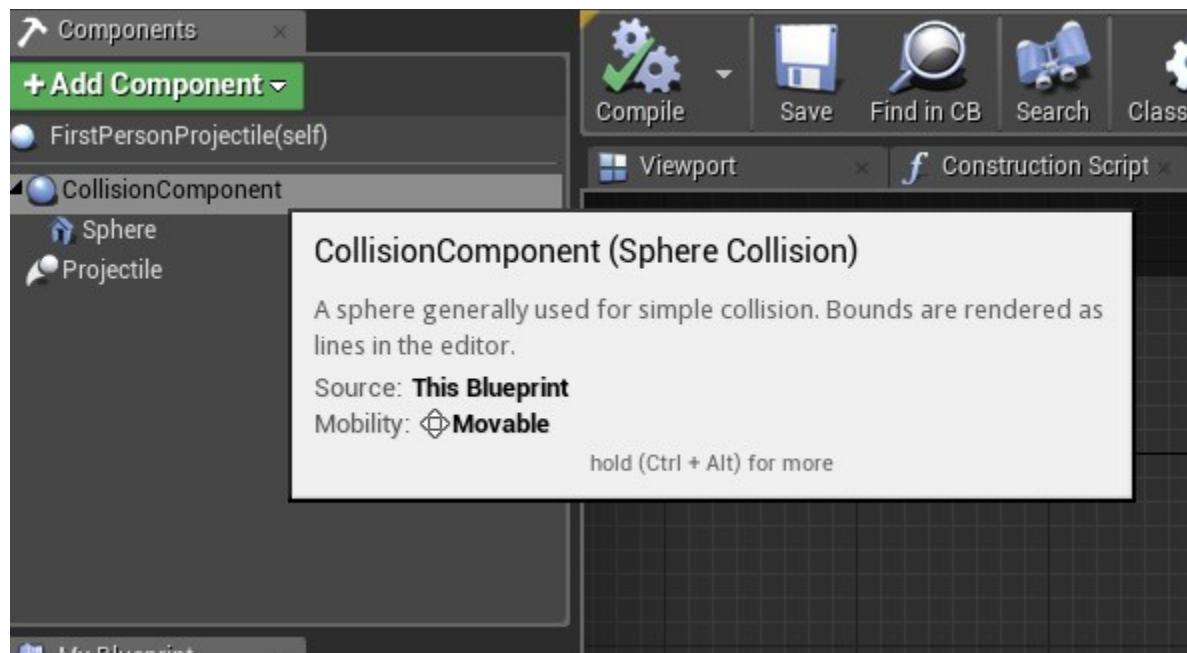


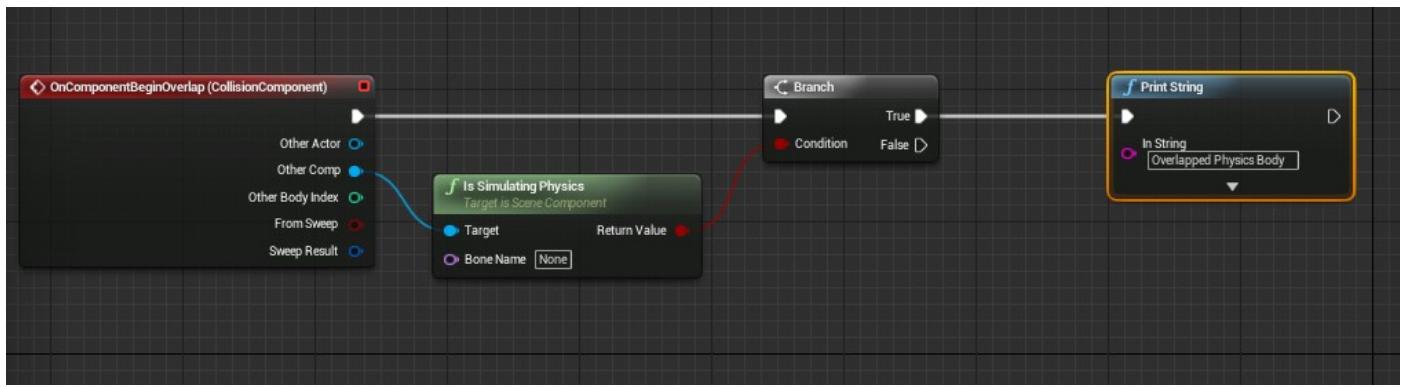
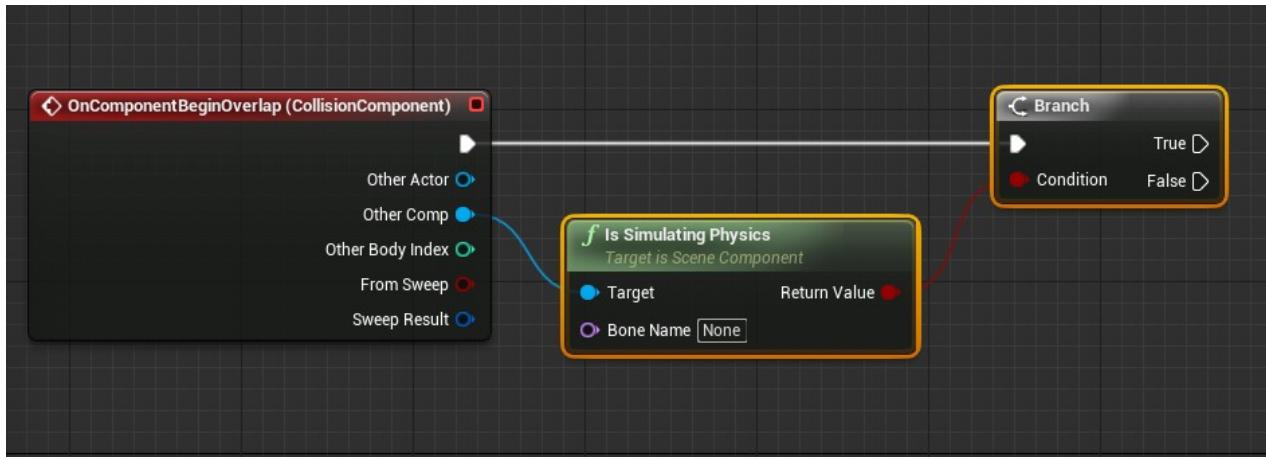


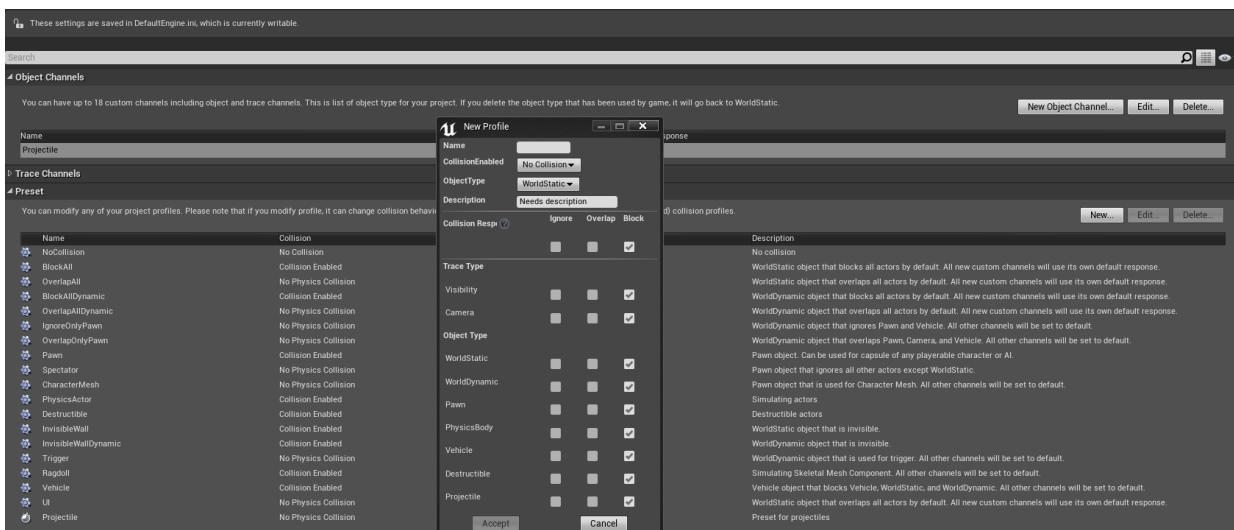
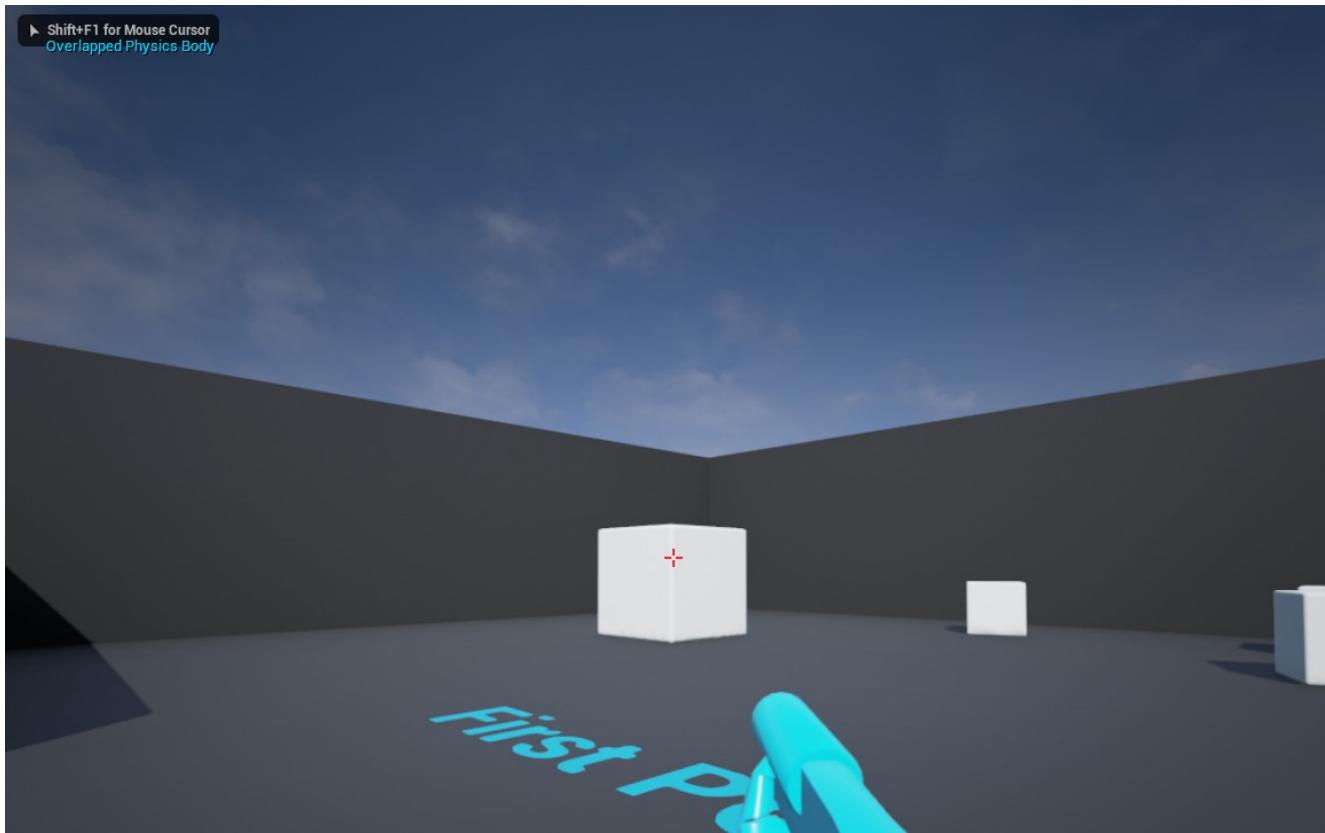


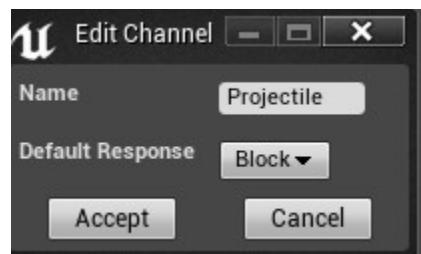
Collision		
Simulation Generates Hit	<input type="checkbox"/>	
Generate Overlap Events	<input type="checkbox"/>	
Collision Presets	PhysicsActor ▾	
Collision Enabled	Collision Enabled ▾	
Object Type	PhysicsBody ▾	
	Ignore	Overlap
Collision Responses ⓘ	<input type="checkbox"/>	<input type="checkbox"/>
Trace Responses	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visibility	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Camera	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Object Responses		
WorldStatic	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WorldDynamic	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pawn	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PhysicsBody	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Destructible	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projectile	<input type="checkbox"/>	<input checked="" type="checkbox"/>











Collision

Simulation Generates Hit Events:

Generate Overlap Events:

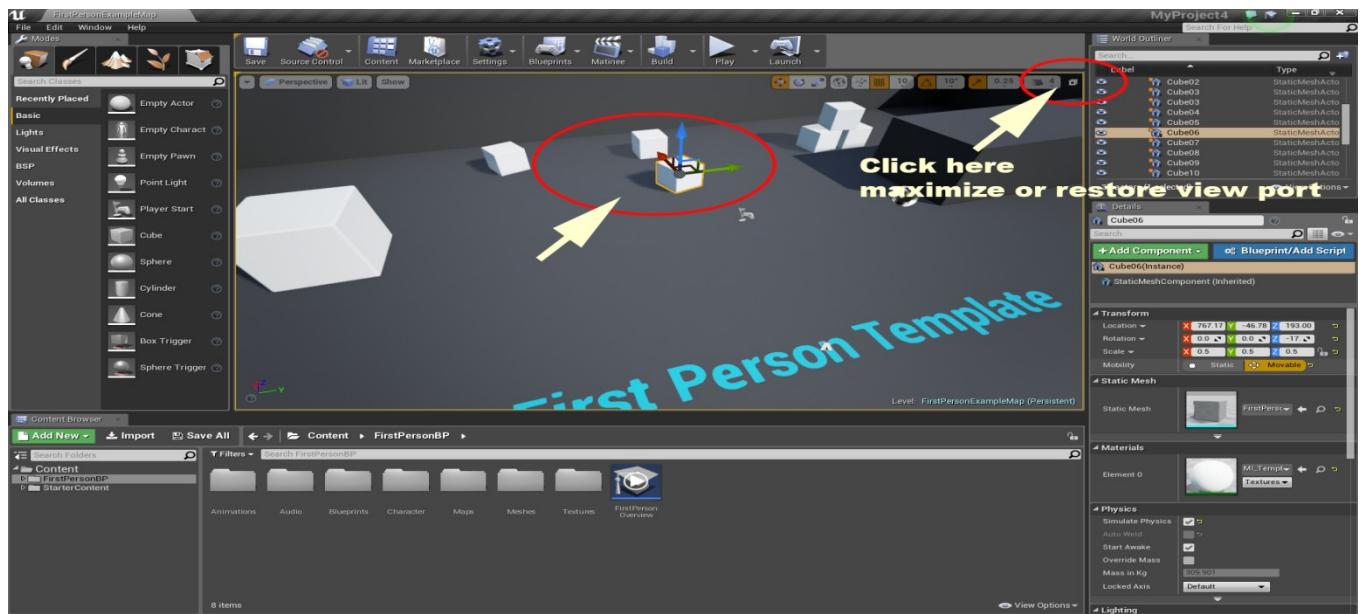
Collision Presets: Projectile

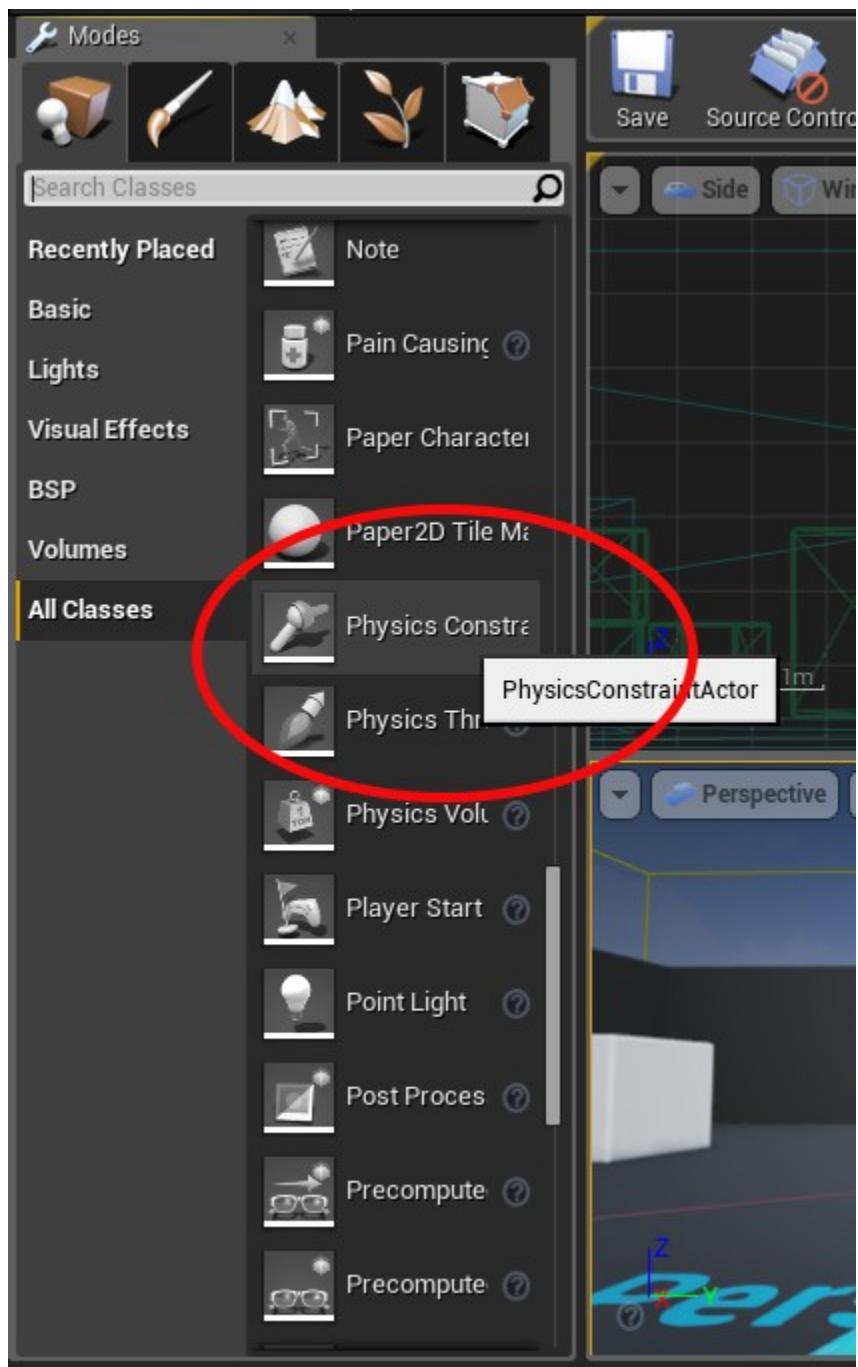
Collision Enabled: No Physics Collision

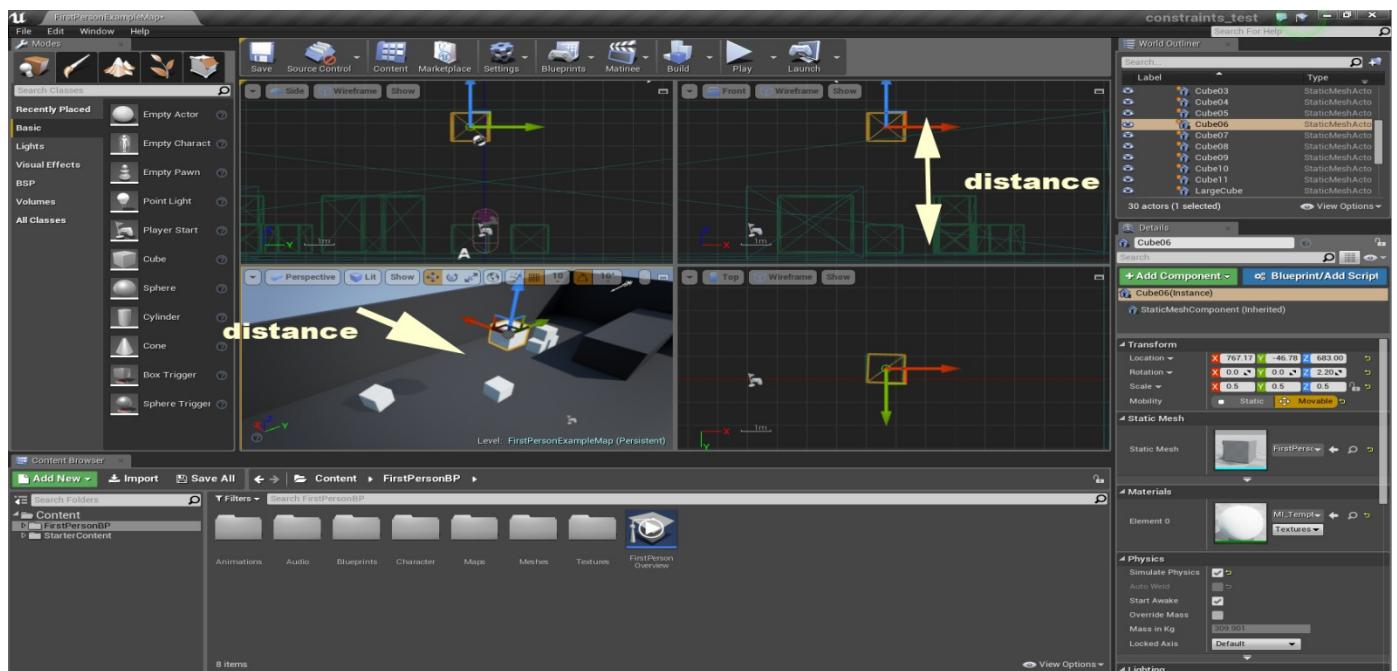
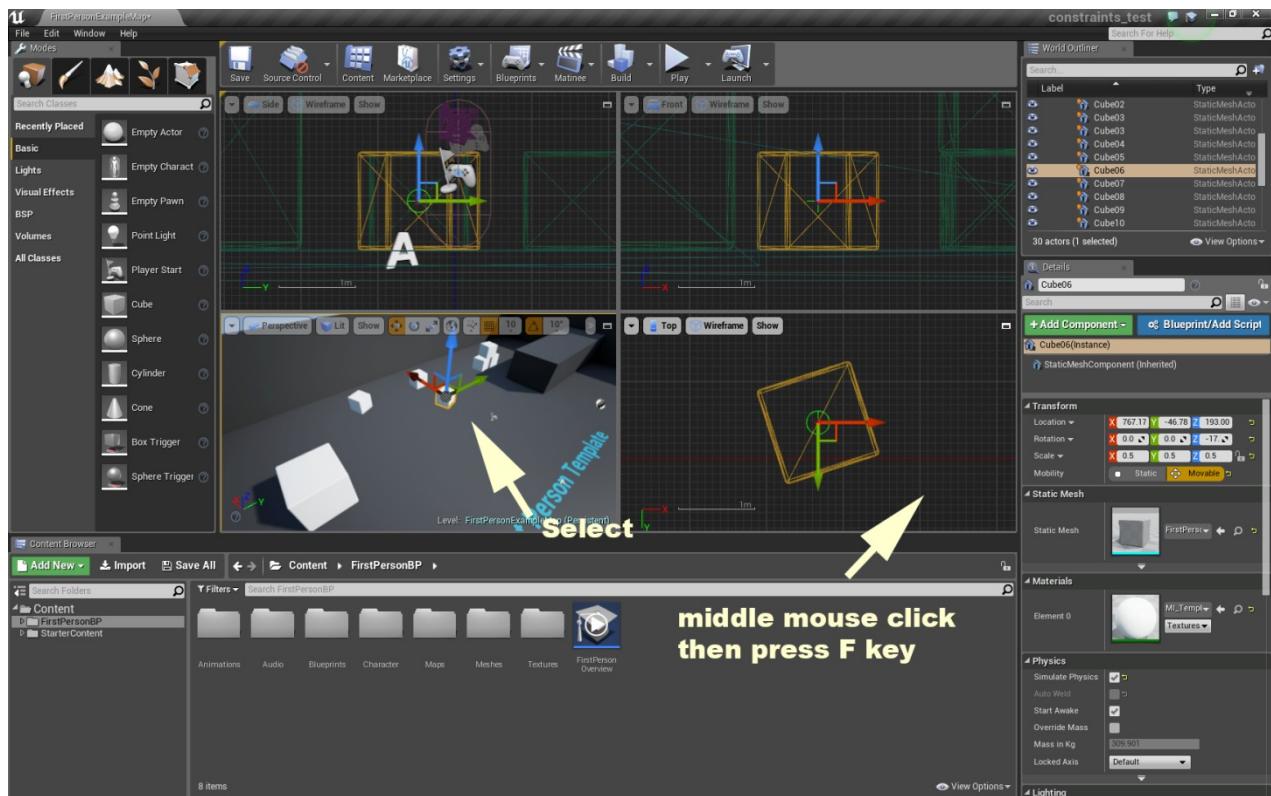
Object Type: Projectile

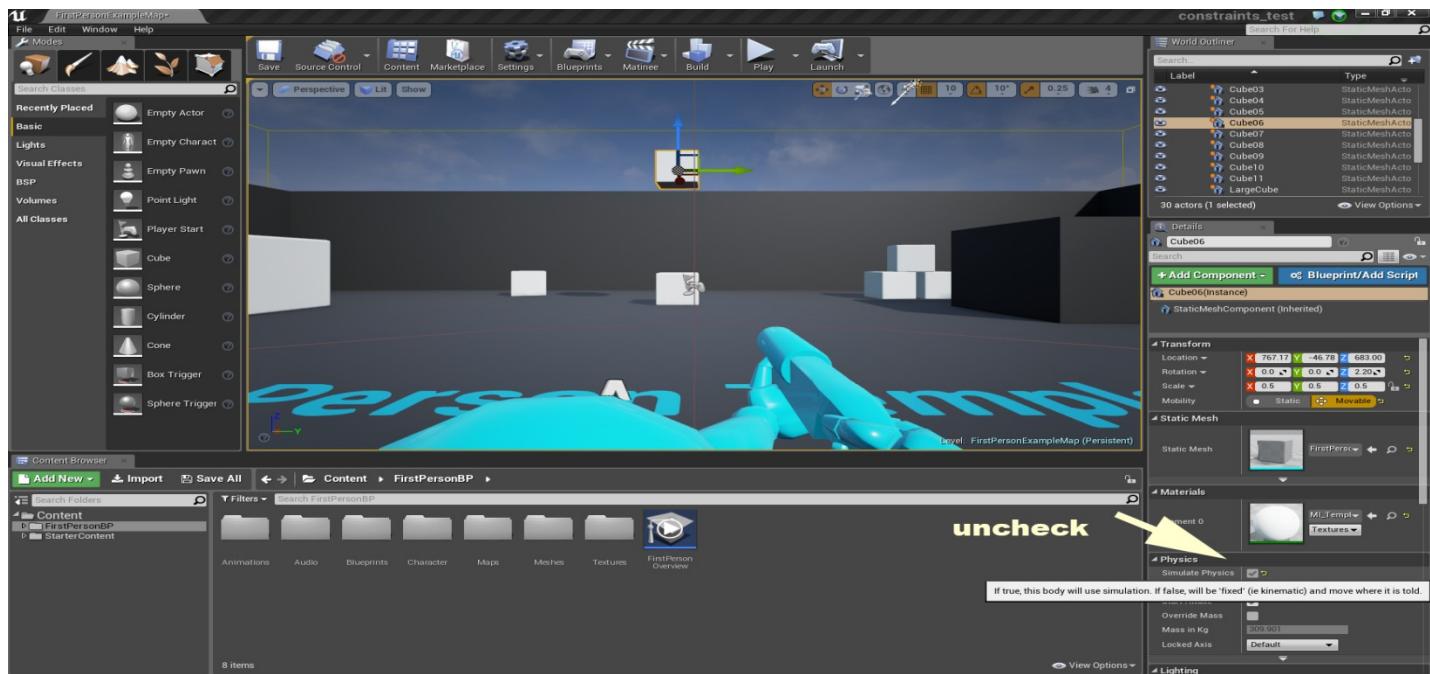
	Ignore	Overlap	Block
Collision Responses	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Trace Responses	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visibility	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Camera	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Object Responses			
WorldStatic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WorldDynamic	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pawn	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PhysicsBody	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Destructible	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Projectile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Can Character Step Up On	ECB Yes	<input type="checkbox"/>	

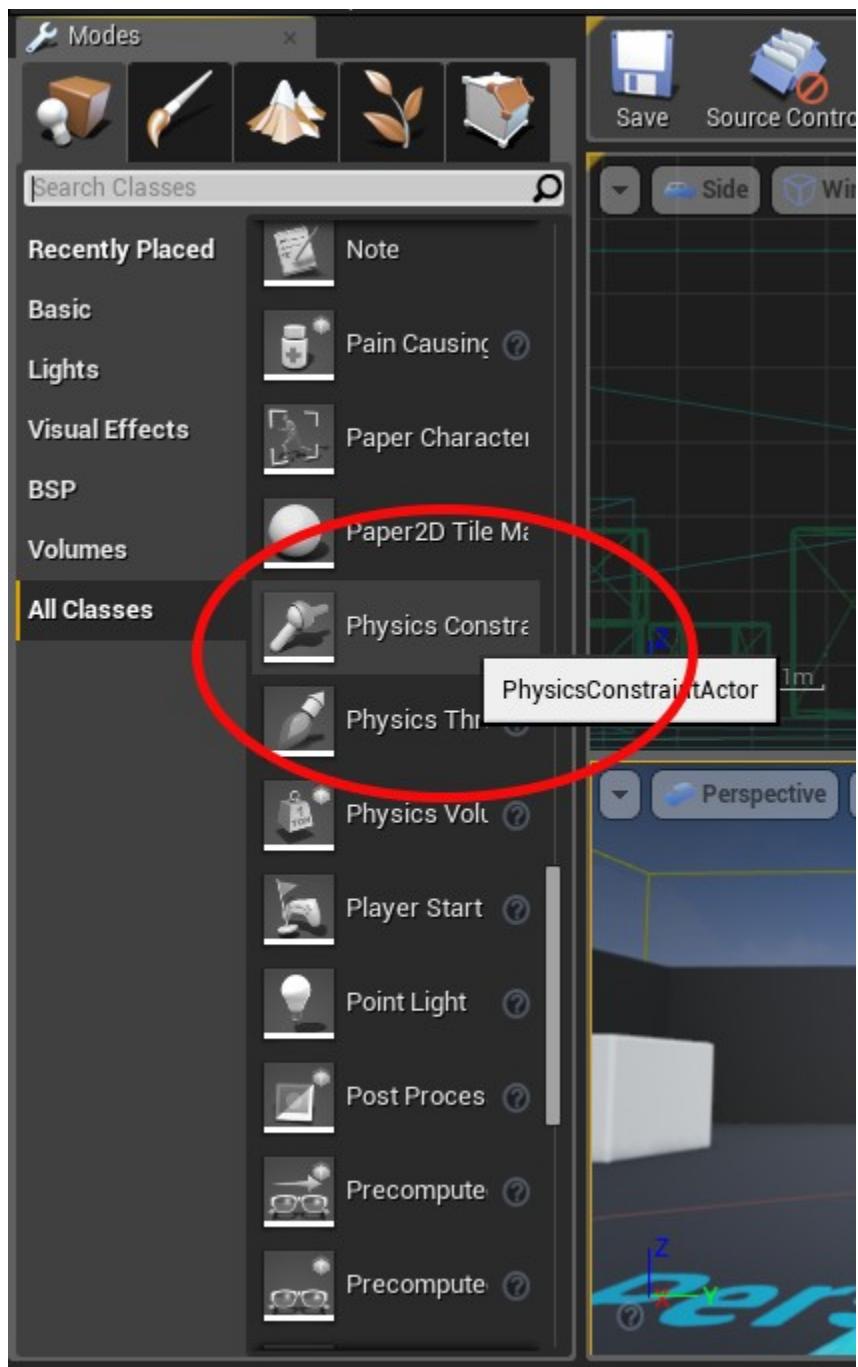
CHAPTER 4

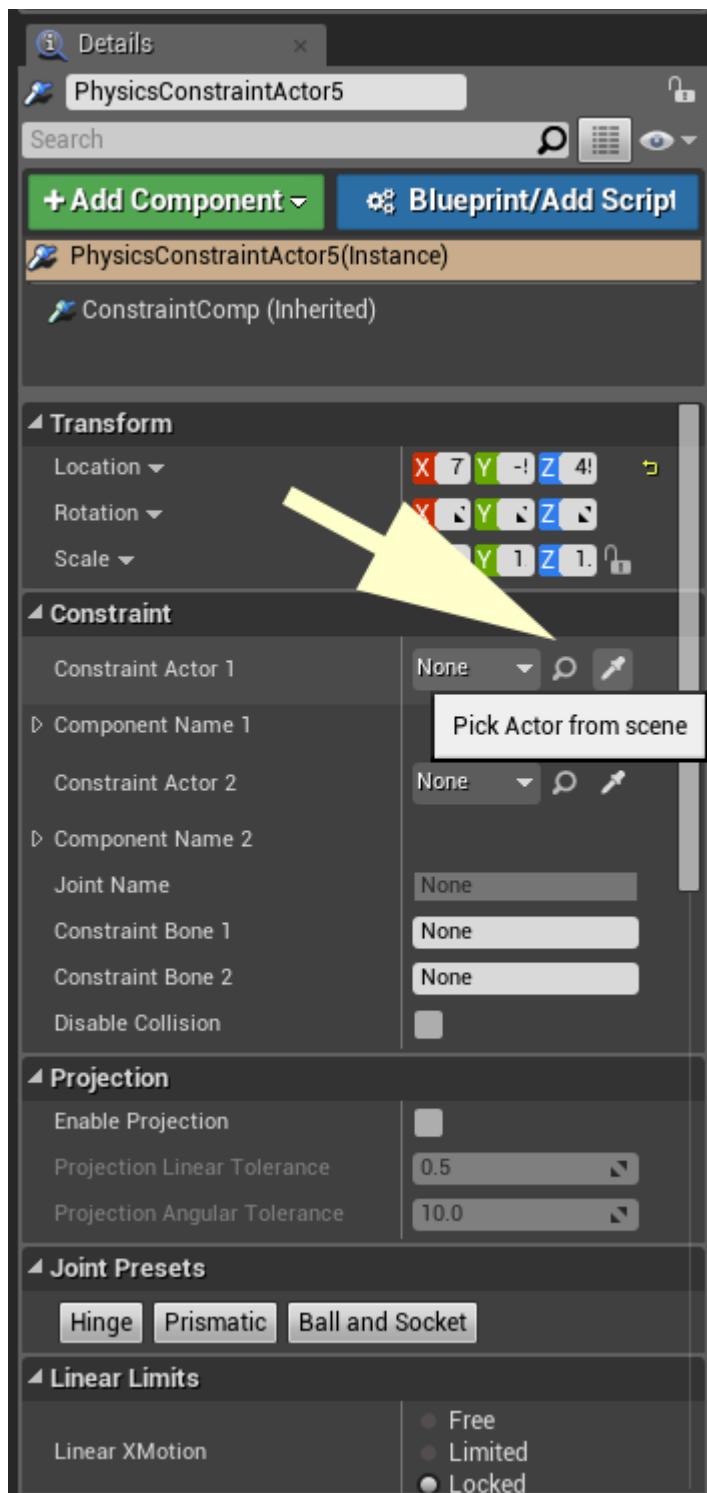


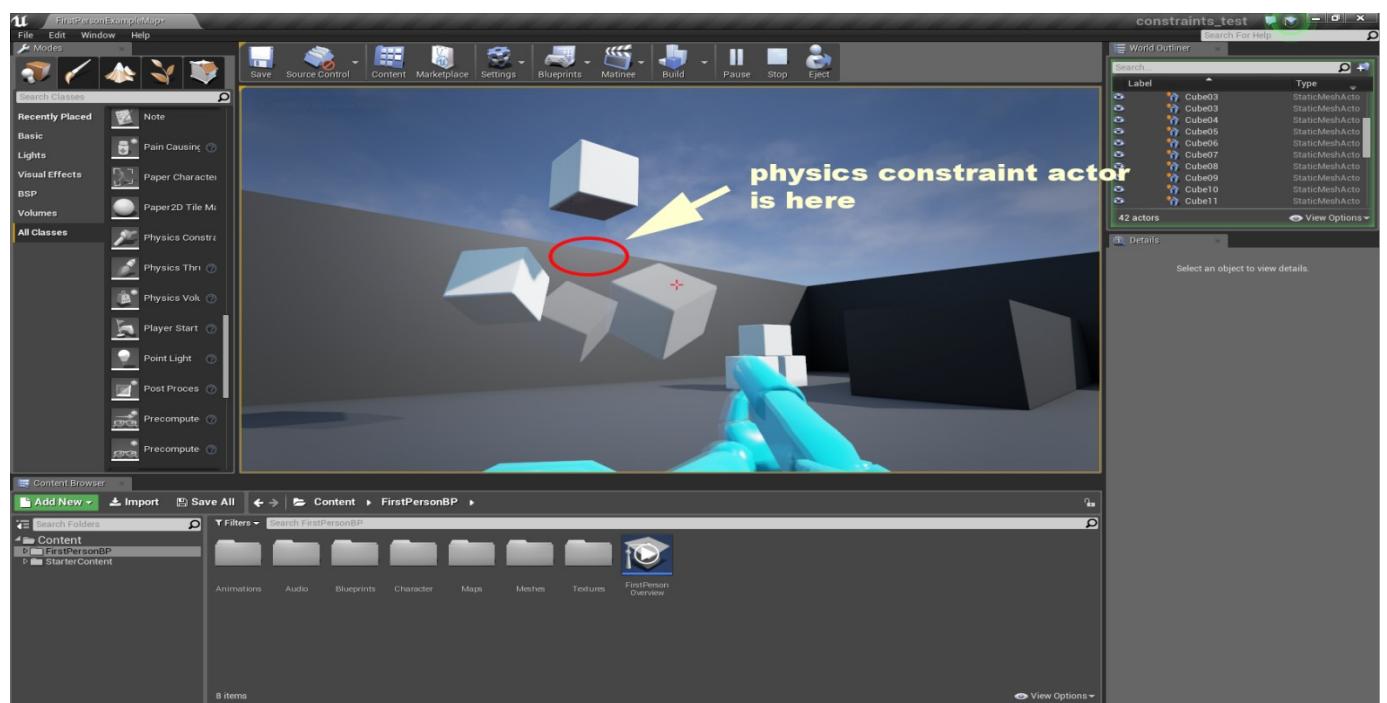
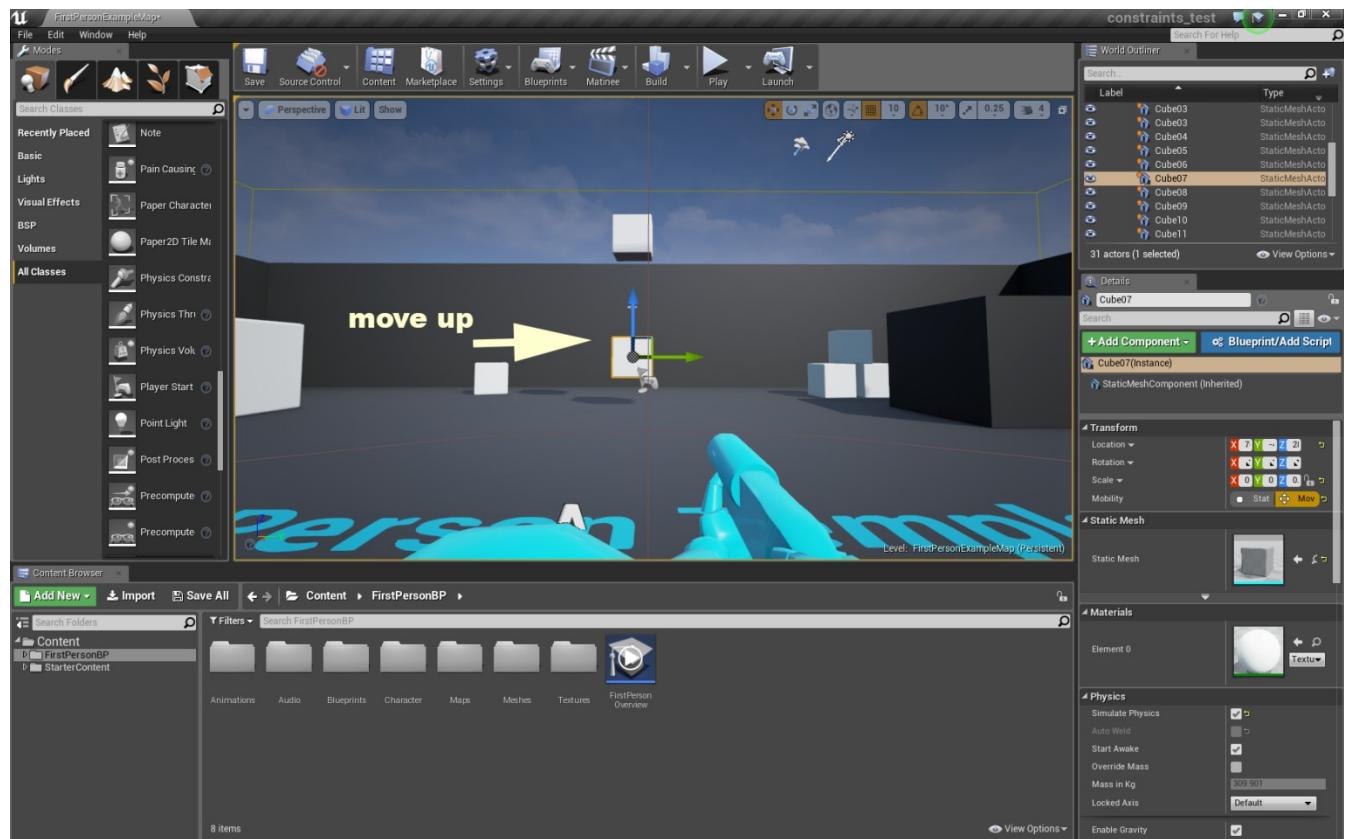












Details

Cube07

+ Add Component ▾ Blueprint/Add Script

Cube07(Instance)

StaticMeshComponent (Inherited)

Physics

Simulate Physics

Auto Weld

Start Awake

Override Mass

Mass in Kg

Locked Axis

Enable Gravity

Use Async Scene

Override Walkable Slope on Instance

Walkable Slope Override

Override Max Depenetration

Max Depenetration Velocity

Center Of Mass Offset

Sleep Family

Mass Scale

Angular Damping

Linear Damping

Max Angular Velocity

Position Solver Iteration Count

Velocity Solver Iteration Count

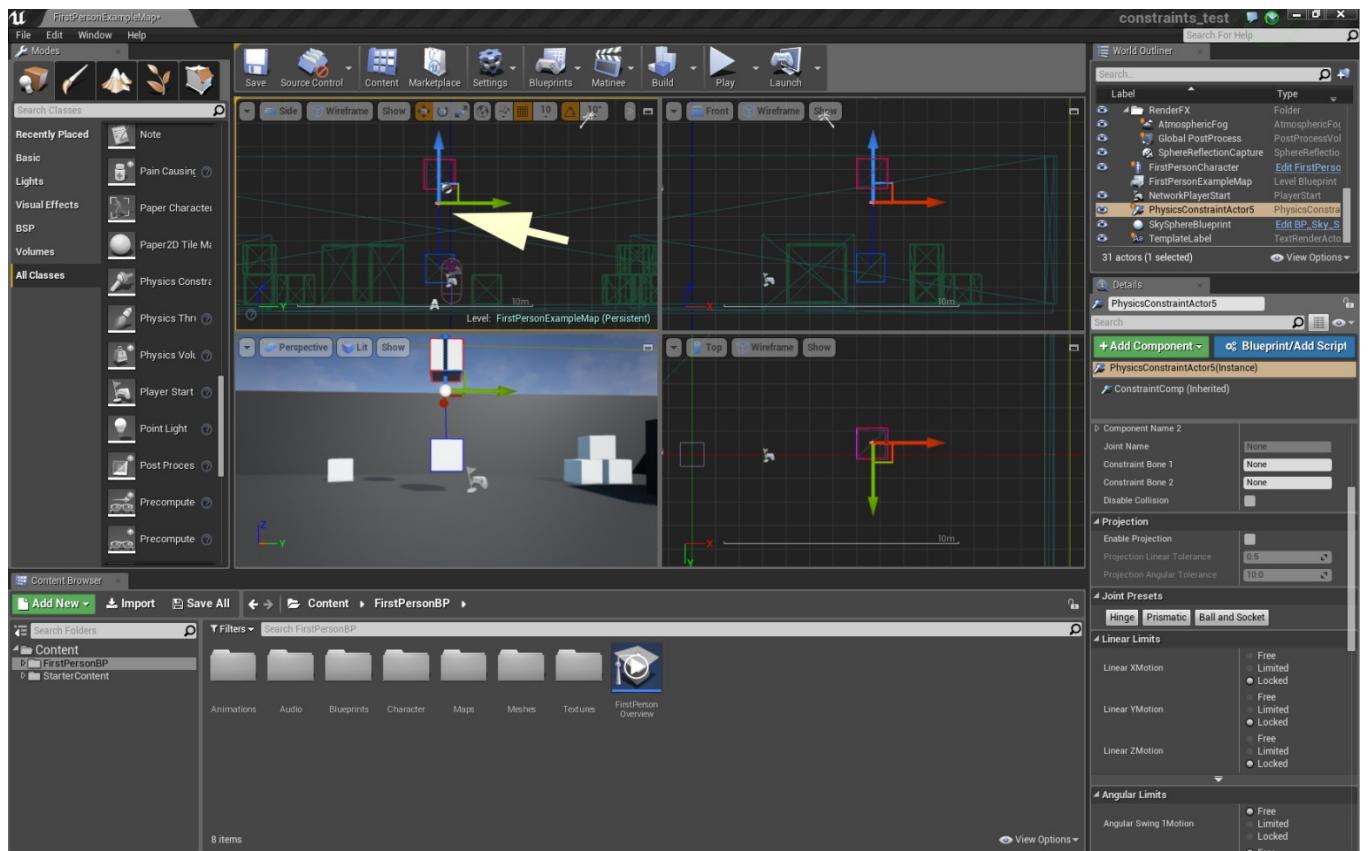
Per-instance scaling of mass

Lighting

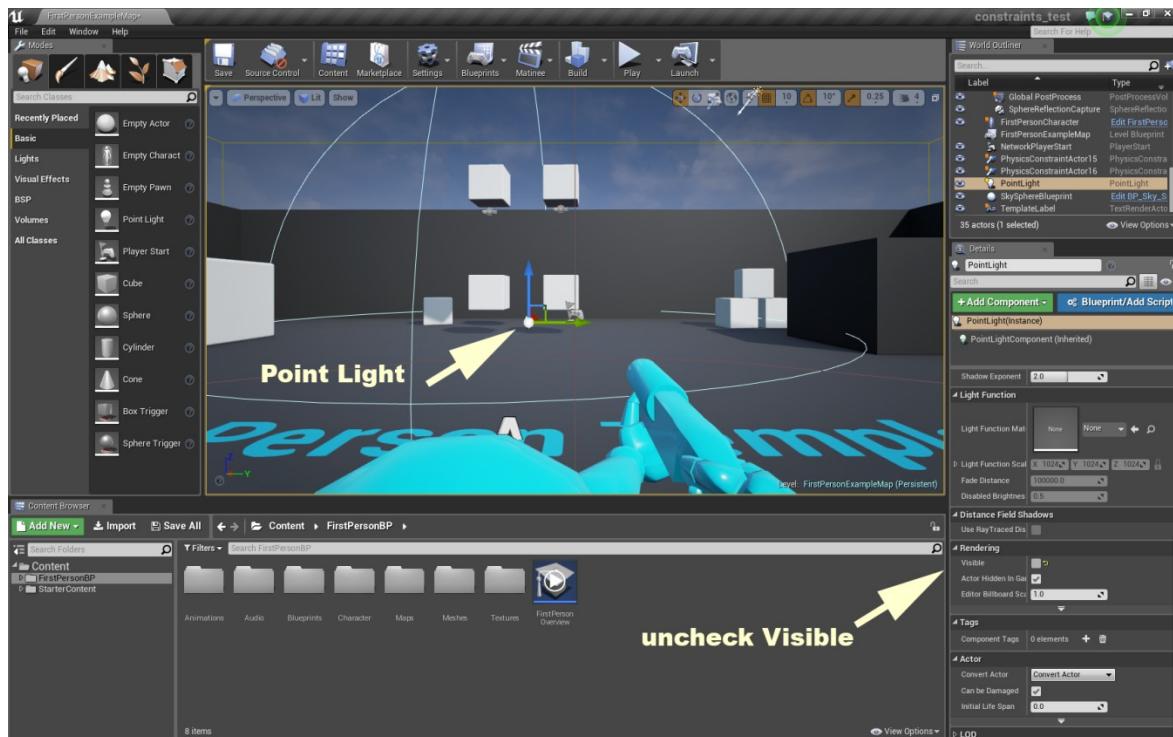
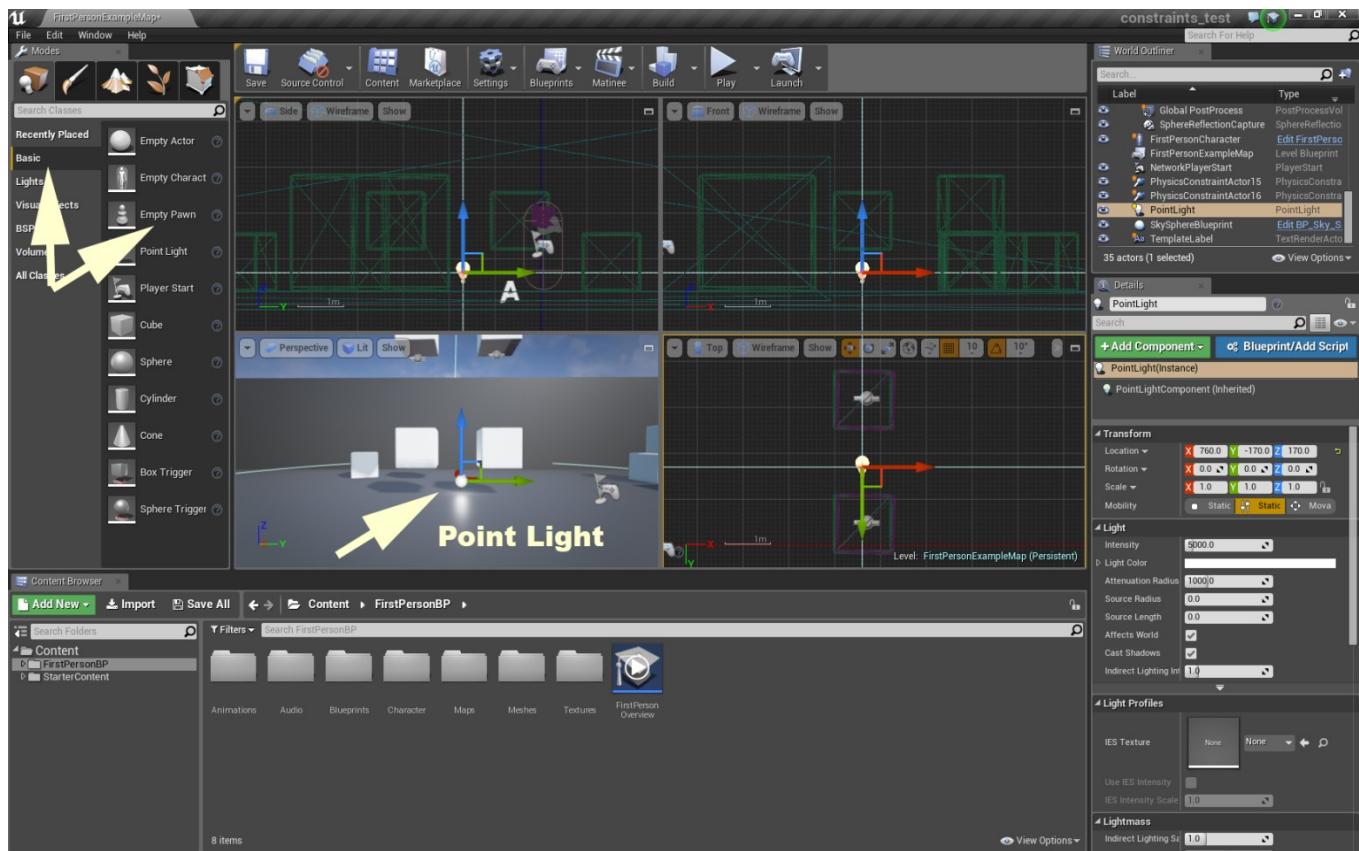
Enable Gravity

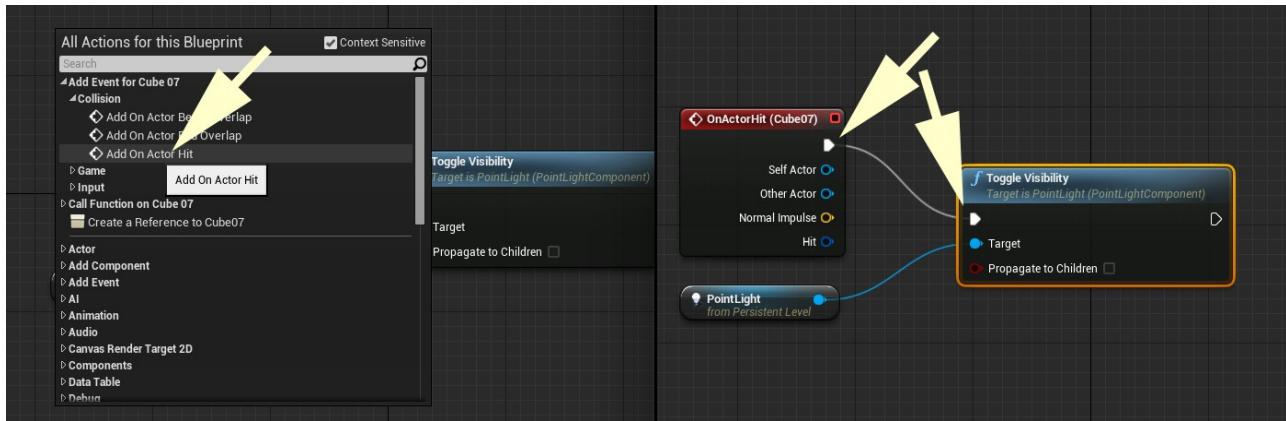
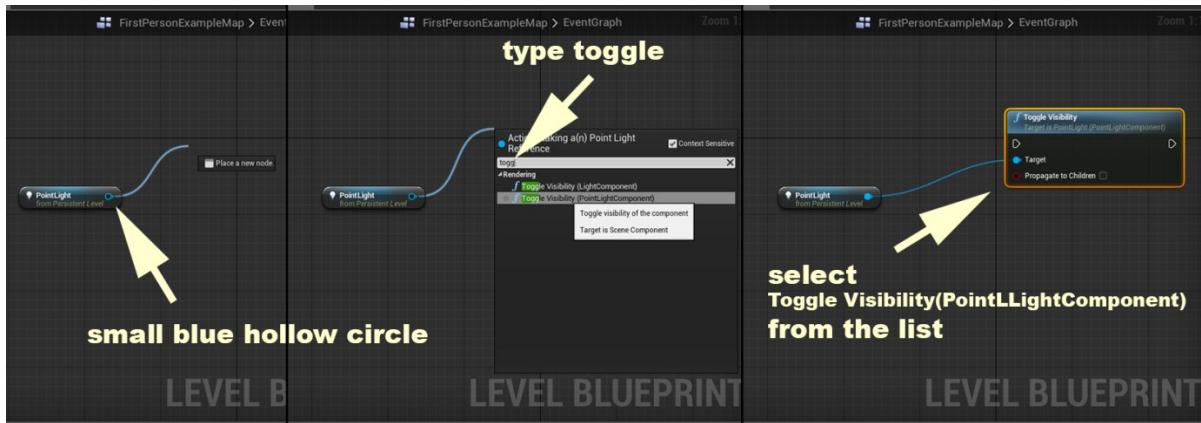
Use Async Scene

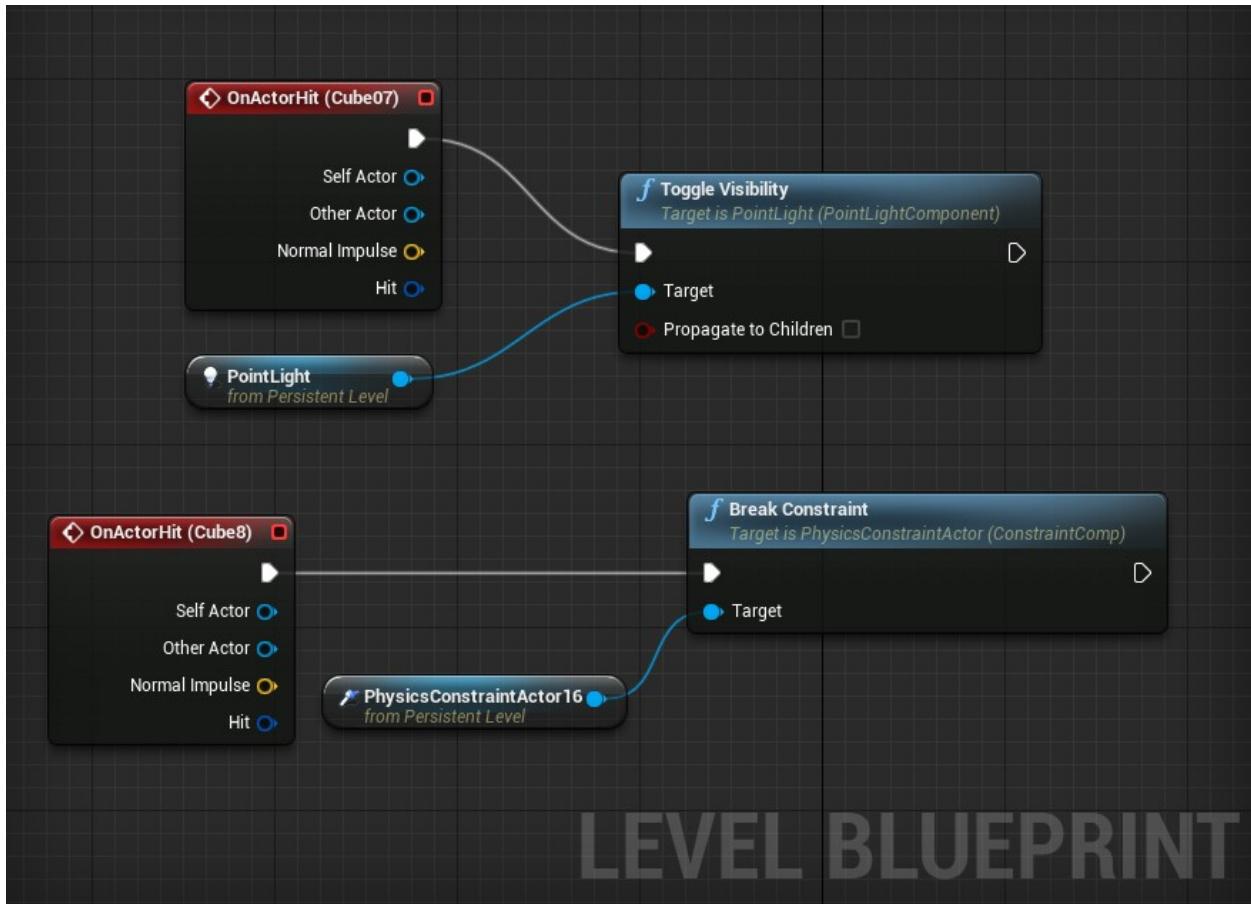
Per-instance scaling of mass



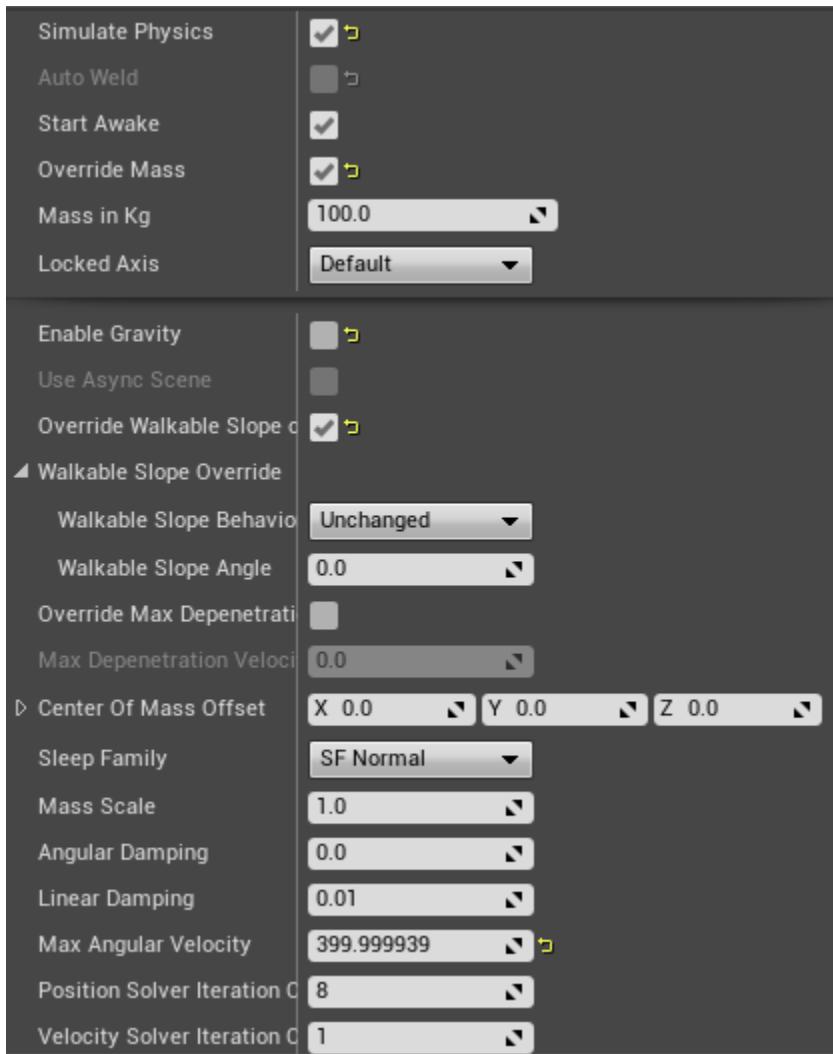
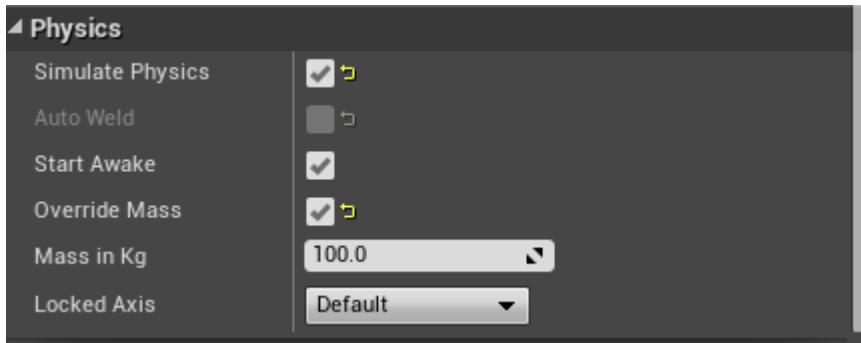
Angular Limits	
Angular Swing 1Motion	<input type="radio"/> Free <input type="radio"/> Limited  <input checked="" type="radio"/> Locked
Angular Twist Motion	<input type="radio"/> Free <input checked="" type="radio"/> Limited  <input type="radio"/> Locked
Angular Swing 2Motion	<input type="radio"/> Free <input checked="" type="radio"/> Limited  <input type="radio"/> Locked
Twist Limit Angle	60.0 
Swing 2Limit Angle	60.0 
Angular Rotation Offset	
Roll	Roll  Pitch  Yaw 
Pitch	0.0 
Yaw	0.0 
Swing Limit Soft	<input checked="" type="checkbox"/>
Swing Limit Stiffness	50.0 
Swing Limit Damping	5.0 
Twist Limit Soft	<input checked="" type="checkbox"/>
Twist Limit Stiffness	50.0 
Twist Limit Damping	5.0 
Angular Breakable	<input type="checkbox"/>
Angular Break Threshold	500.0 
Linear Motor	

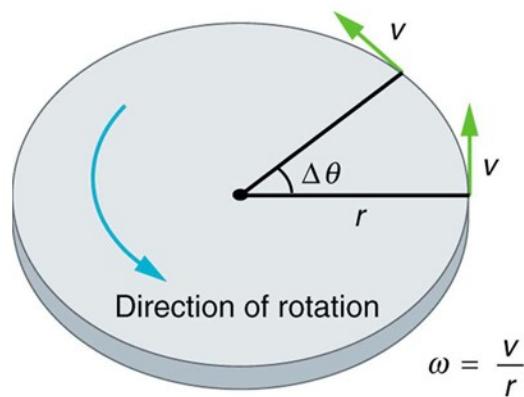






CHAPTER 5



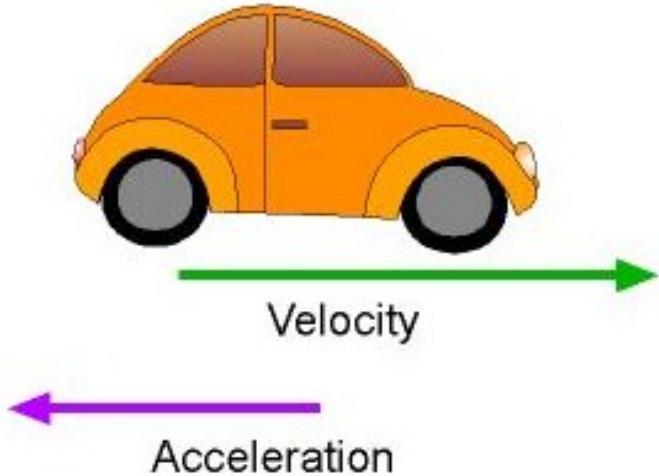


$$\omega = \frac{v}{r}$$

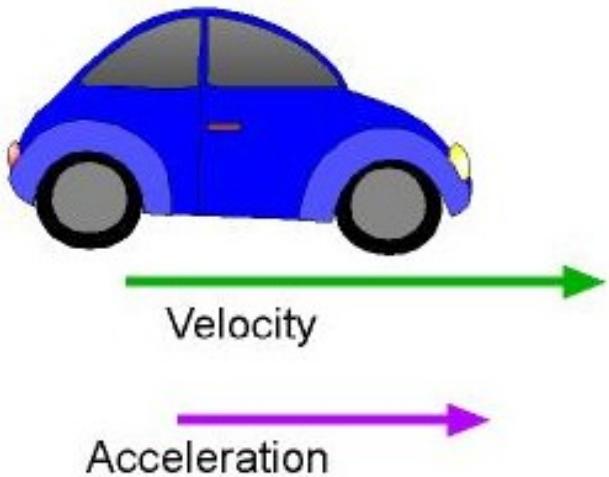
▲ Physics

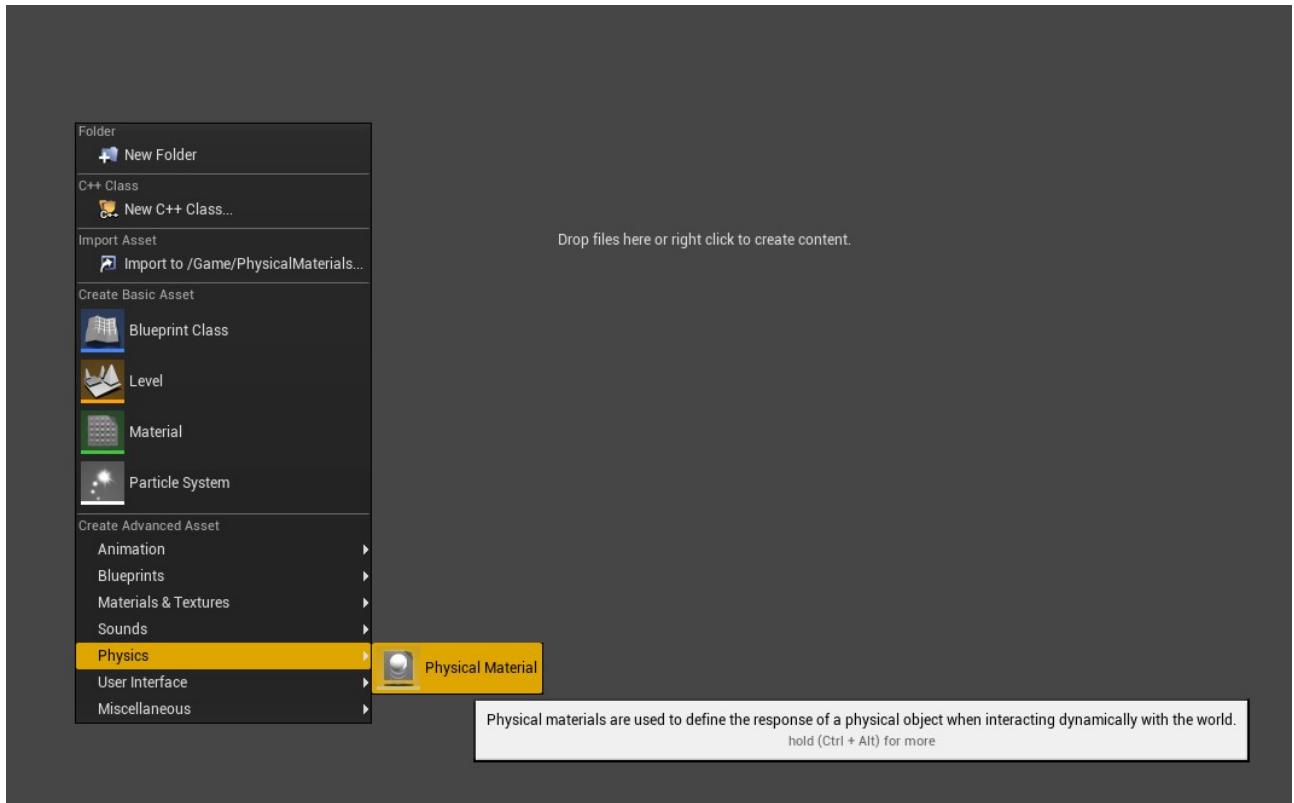
Simulate Physics	<input checked="" type="checkbox"/>
Auto Weld	<input type="checkbox"/>
Start Awake	<input checked="" type="checkbox"/>
Override Mass	<input checked="" type="checkbox"/>
Mass in Kg	10.0 <input type="button" value="▼"/>
Locked Axis	Default <input type="button" value="▼"/>
Enable Gravity	<input type="checkbox"/>
Use Async Scene	<input type="checkbox"/>
Override Walkable Slope on Instance	<input type="checkbox"/>
Walkable Slope Override	<input type="checkbox"/>
Override Max Depenetration Velocity	<input type="checkbox"/>
Max Depenetration Velocity	0.0 <input type="button" value="▼"/>
Center Of Mass Offset	X 0.0 <input type="button" value="▼"/> Y 0.0 <input type="button" value="▼"/> Z 0.0 <input type="button" value="▼"/>
Sleep Family	SF Normal <input type="button" value="▼"/>
Mass Scale	1.0 <input type="button" value="▼"/>
Angular Damping	0.0 <input type="button" value="▼"/>
Linear Damping	100.0 <input type="button" value="▼"/>
Max Angular Velocity	800.0 <input type="button" value="▼"/>
Position Solver Iteration Count	8 <input type="button" value="▼"/>
Velocity Solver Iteration Count	1 <input type="button" value="▼"/>

This car is slowing down



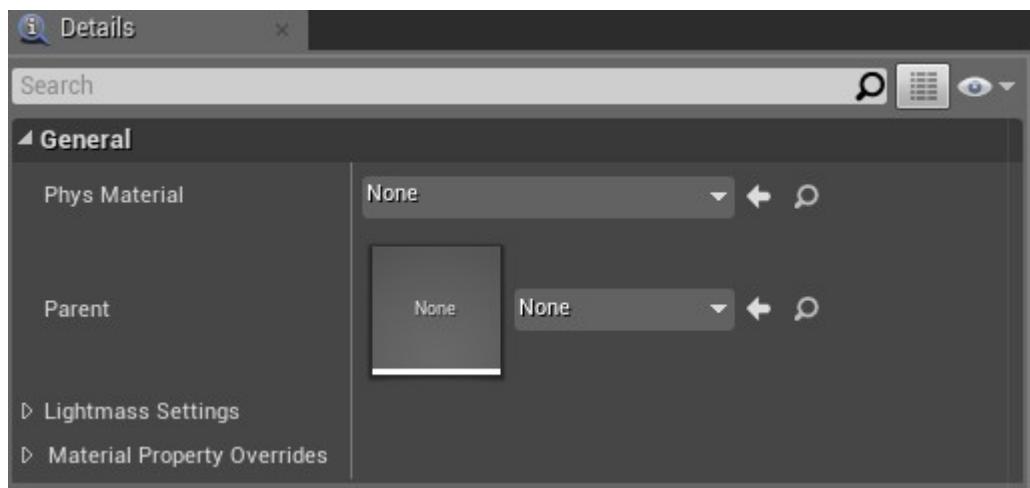
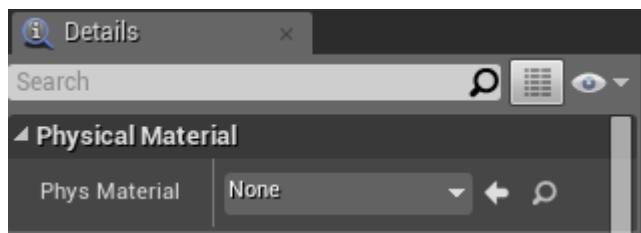
This car is speeding up

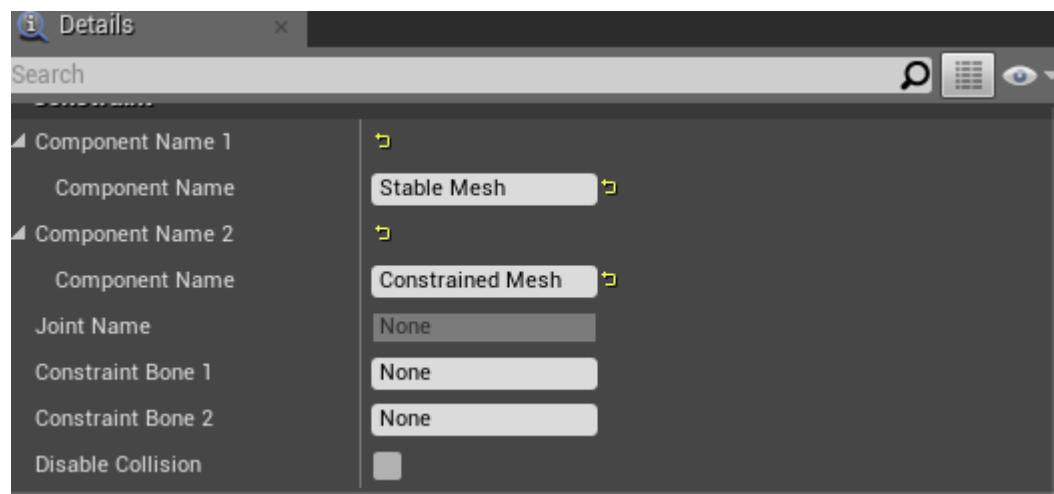
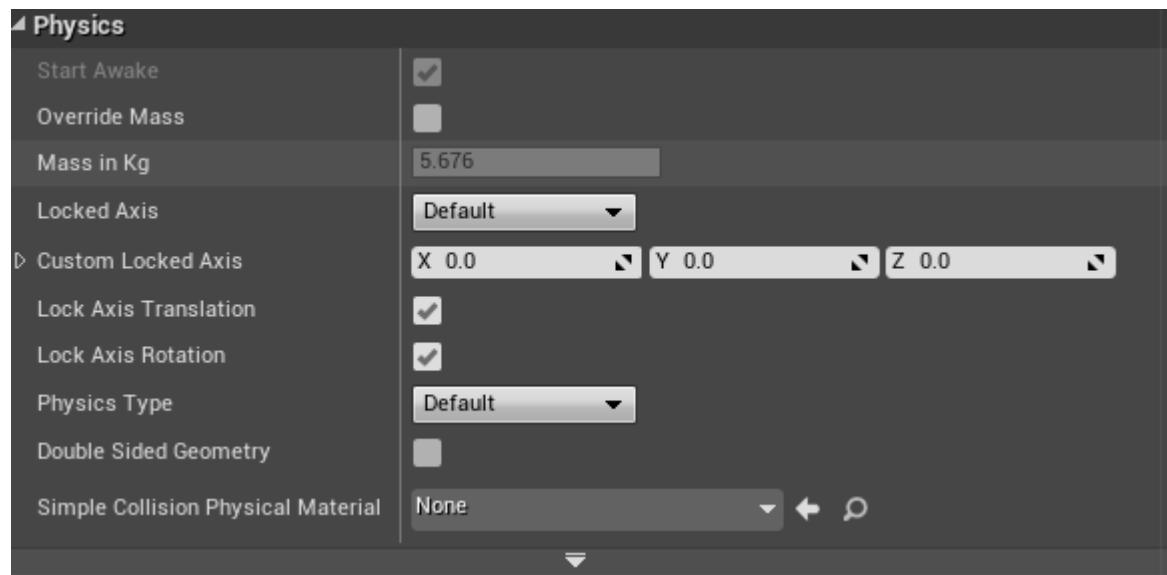


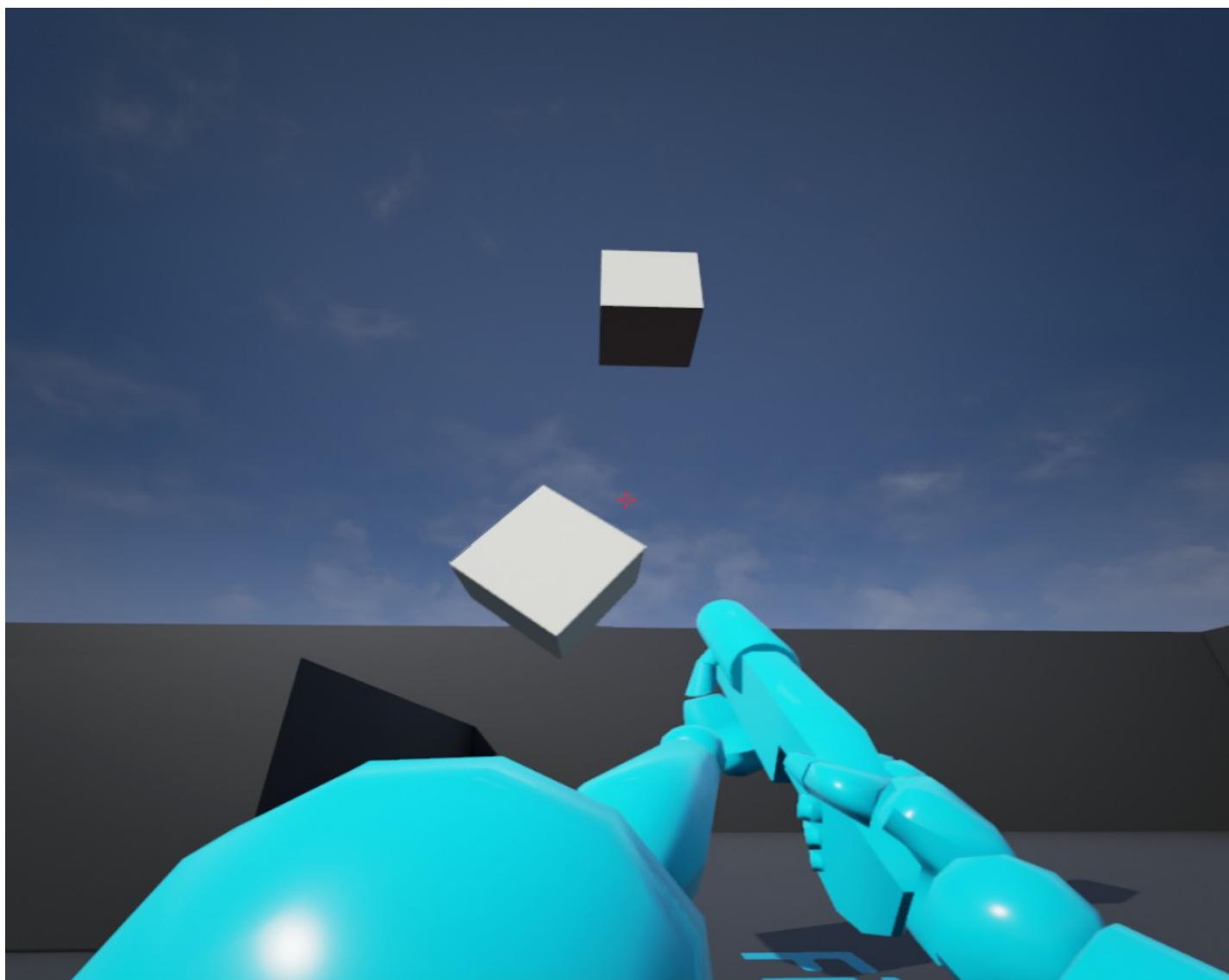


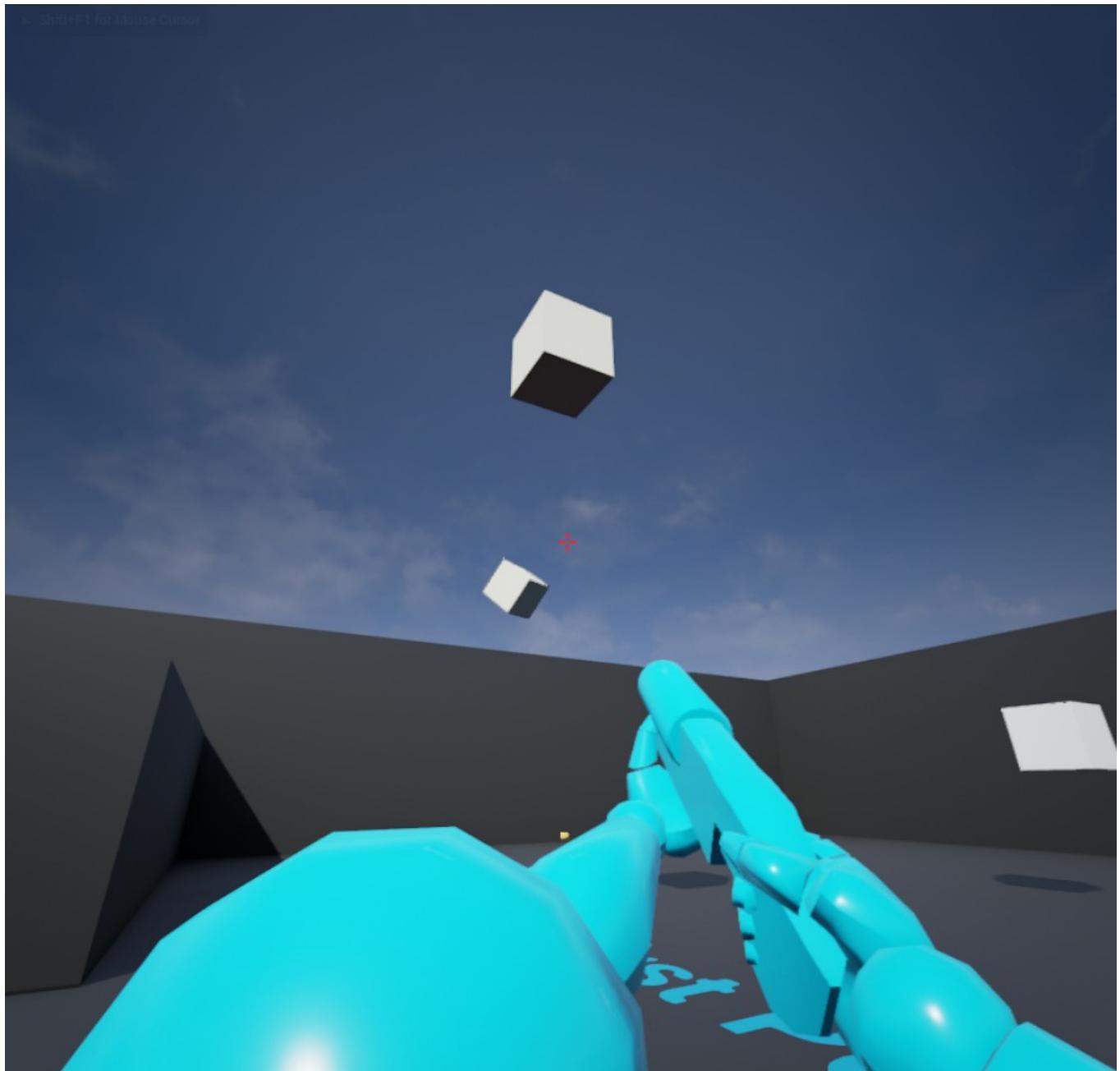
The screenshot shows the "Physical Material" properties panel in the Unreal Engine 4 Editor. The panel is organized into sections:

- Physical Material**
 - Friction: Value 0.7, Mode Average, Friction Combine Mode: Off
 - Restitution: Value 0.3
 - Density: Value 1.0
- Advanced**
 - Raise Mass to Power: Value 0.75
- Destruction**
 - Destructible Damage Threshold Scale: Value 1.0
- Physical Properties**
 - Surface Type: Default
- Vehicles**
 - Tire Friction Scale: Value 1.0
 - Tire Friction Scales: 0 elements, +, -

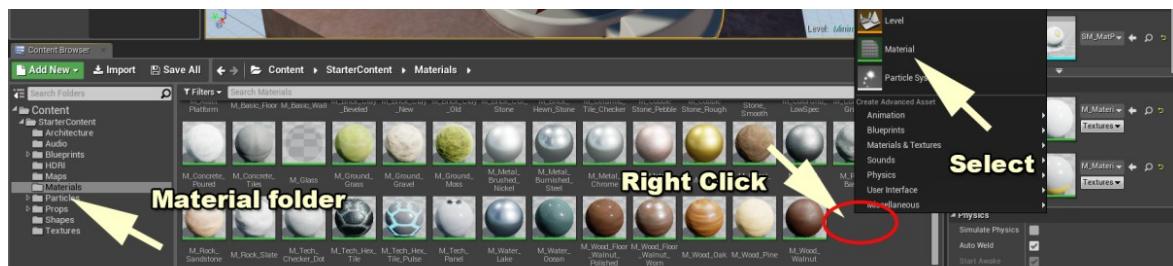




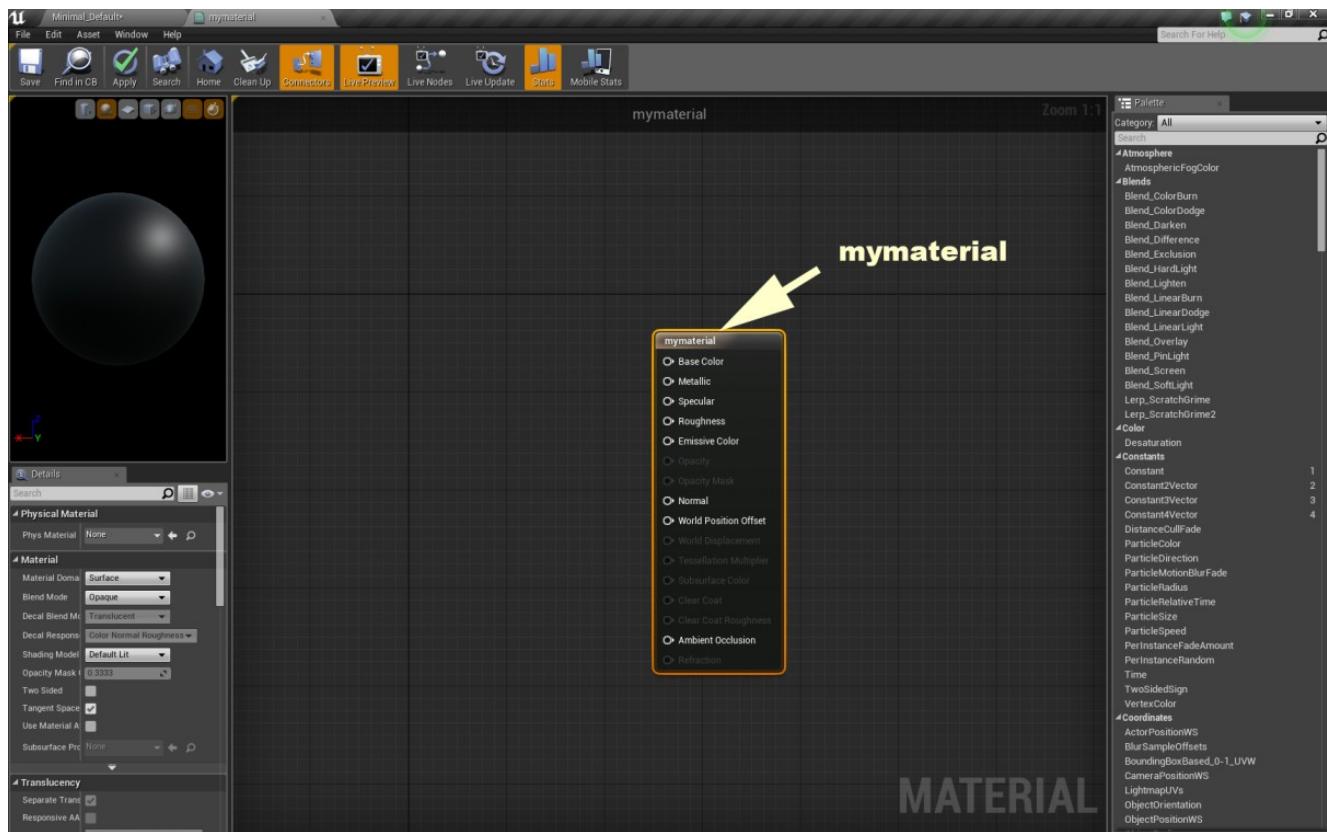


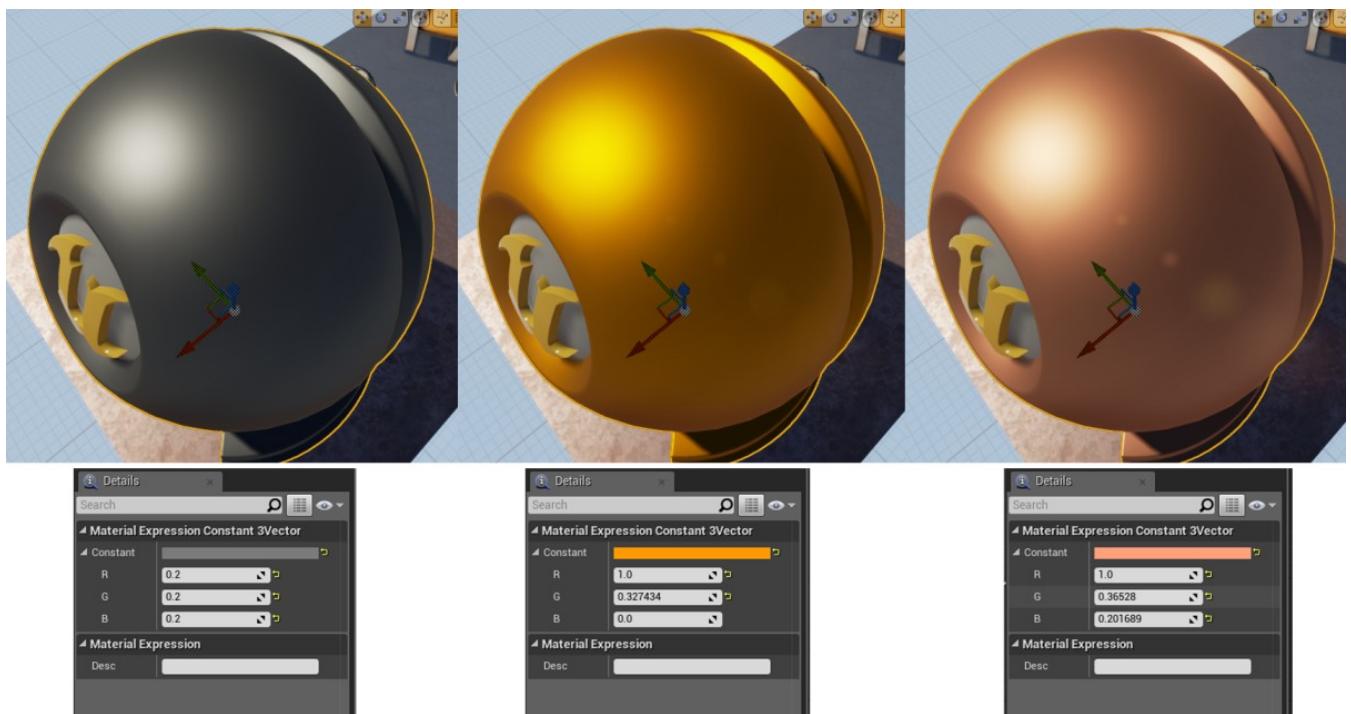
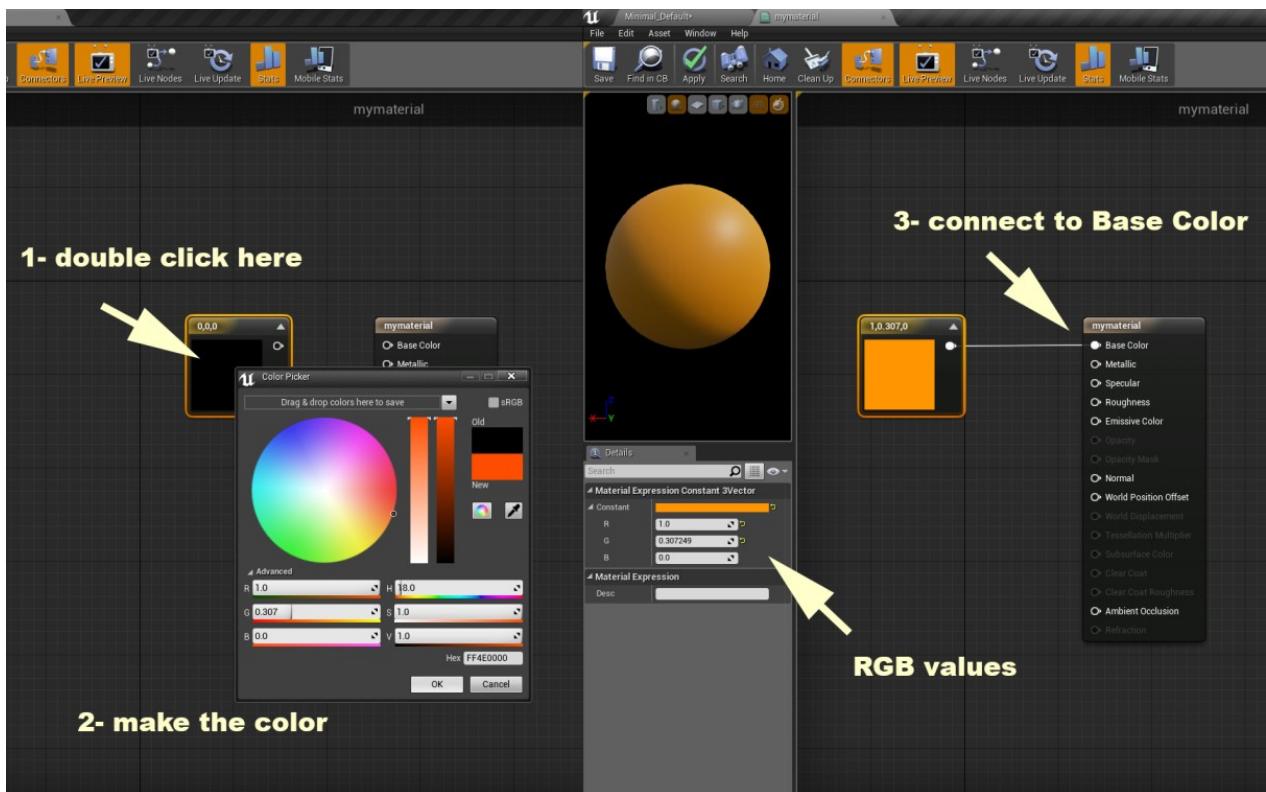


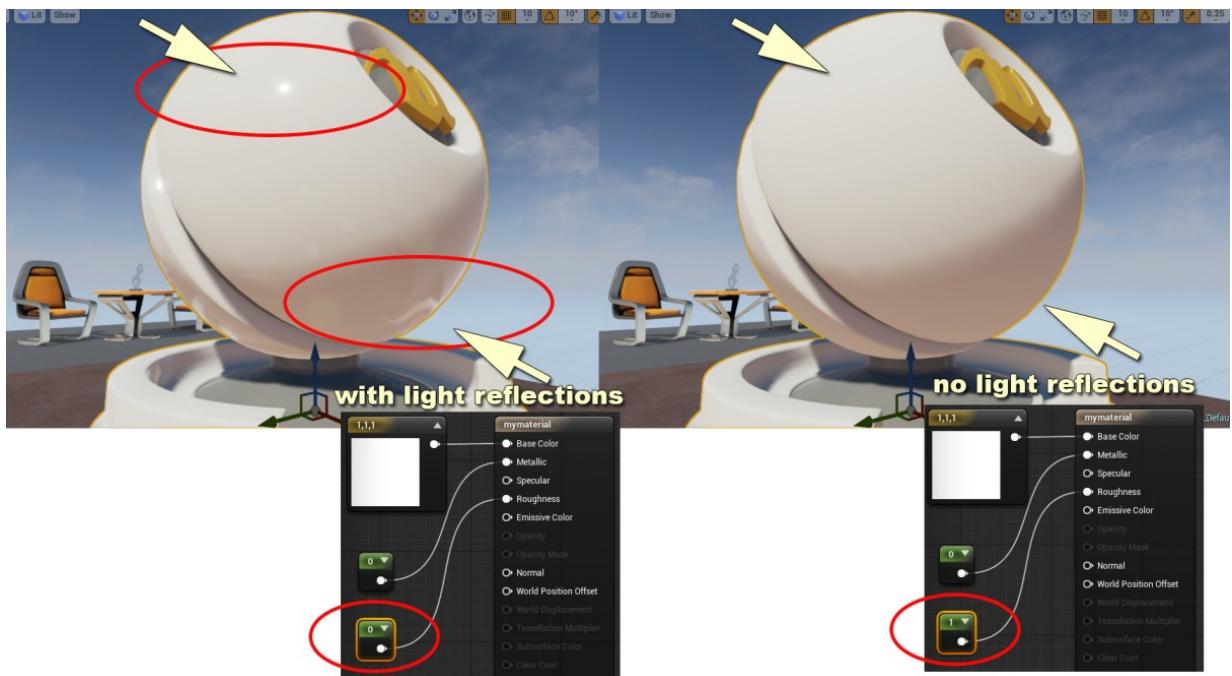
CHAPTER 6

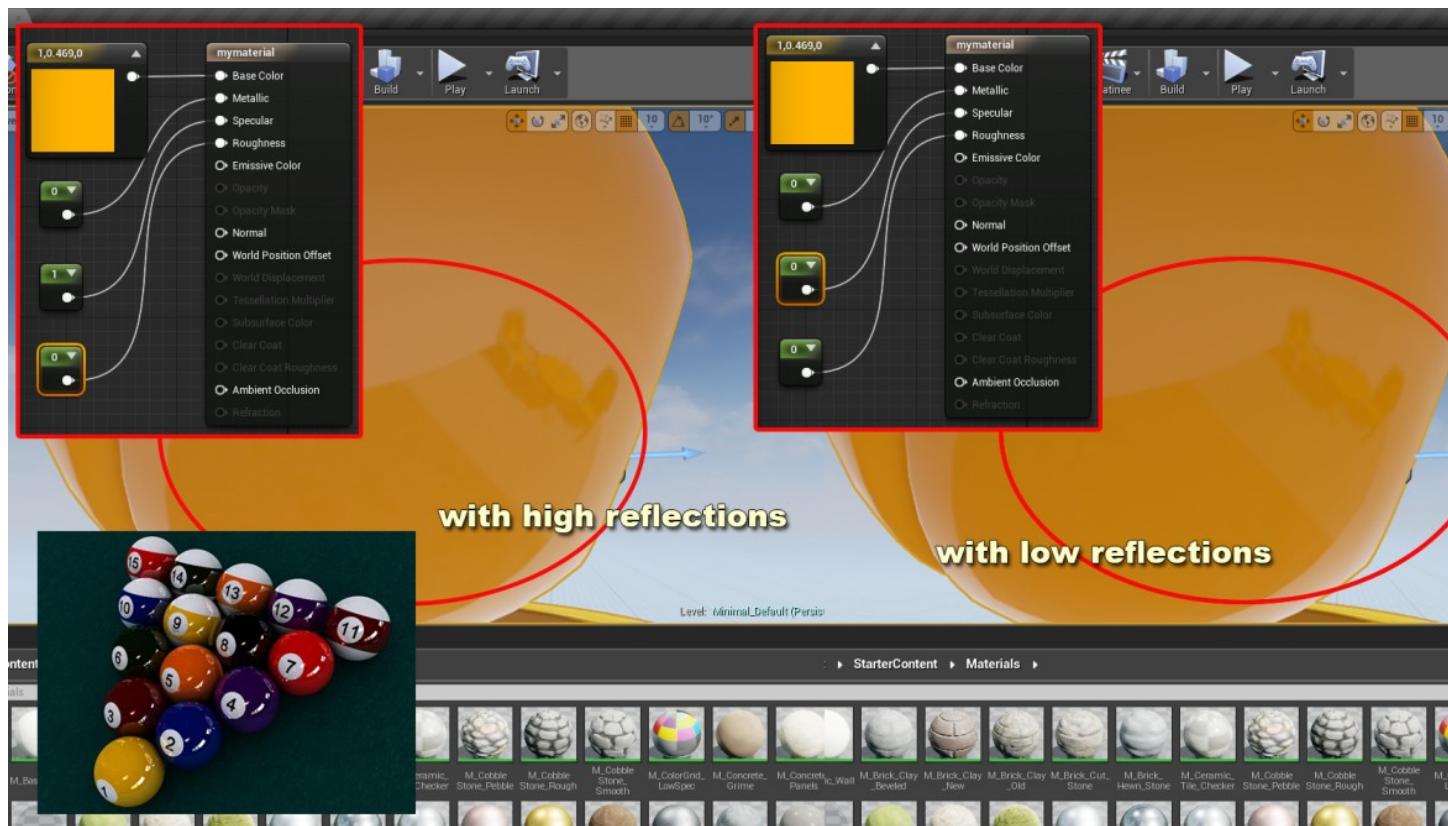
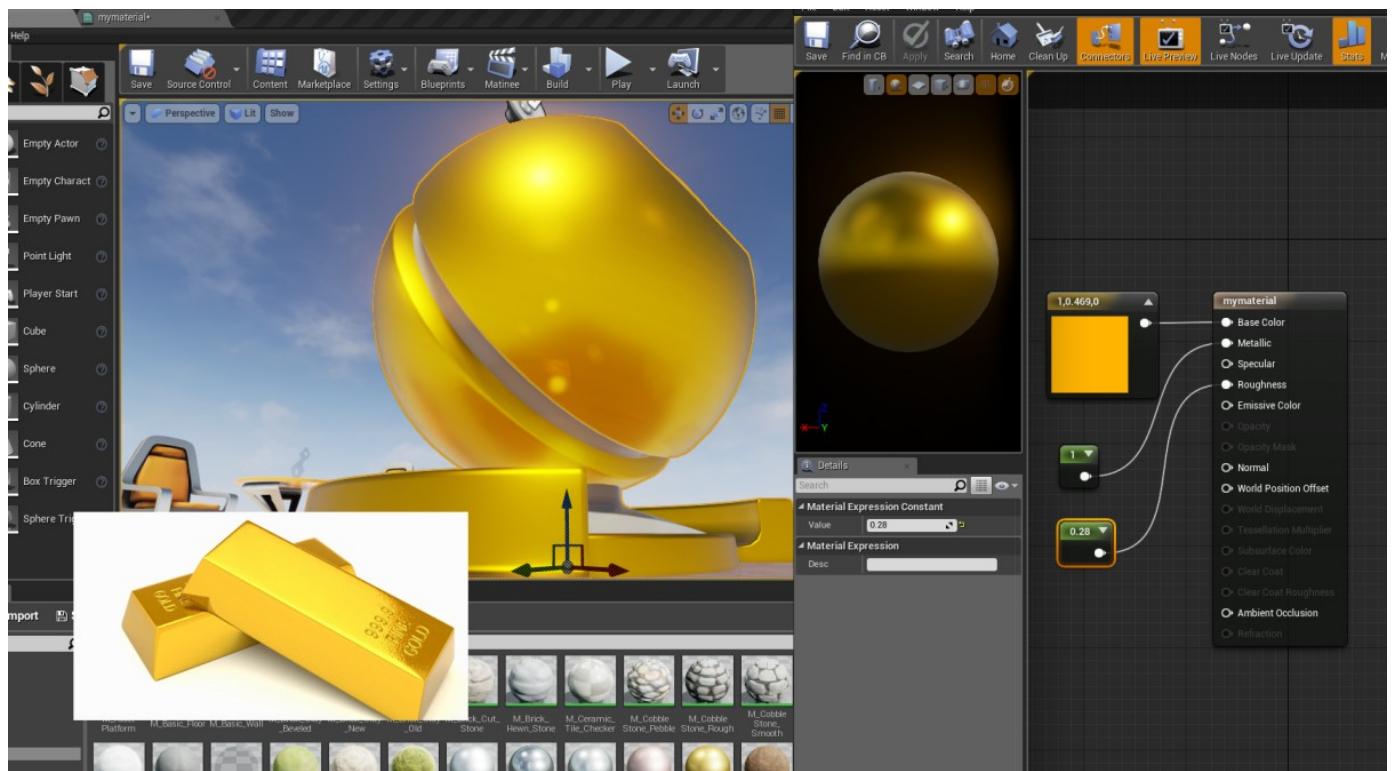




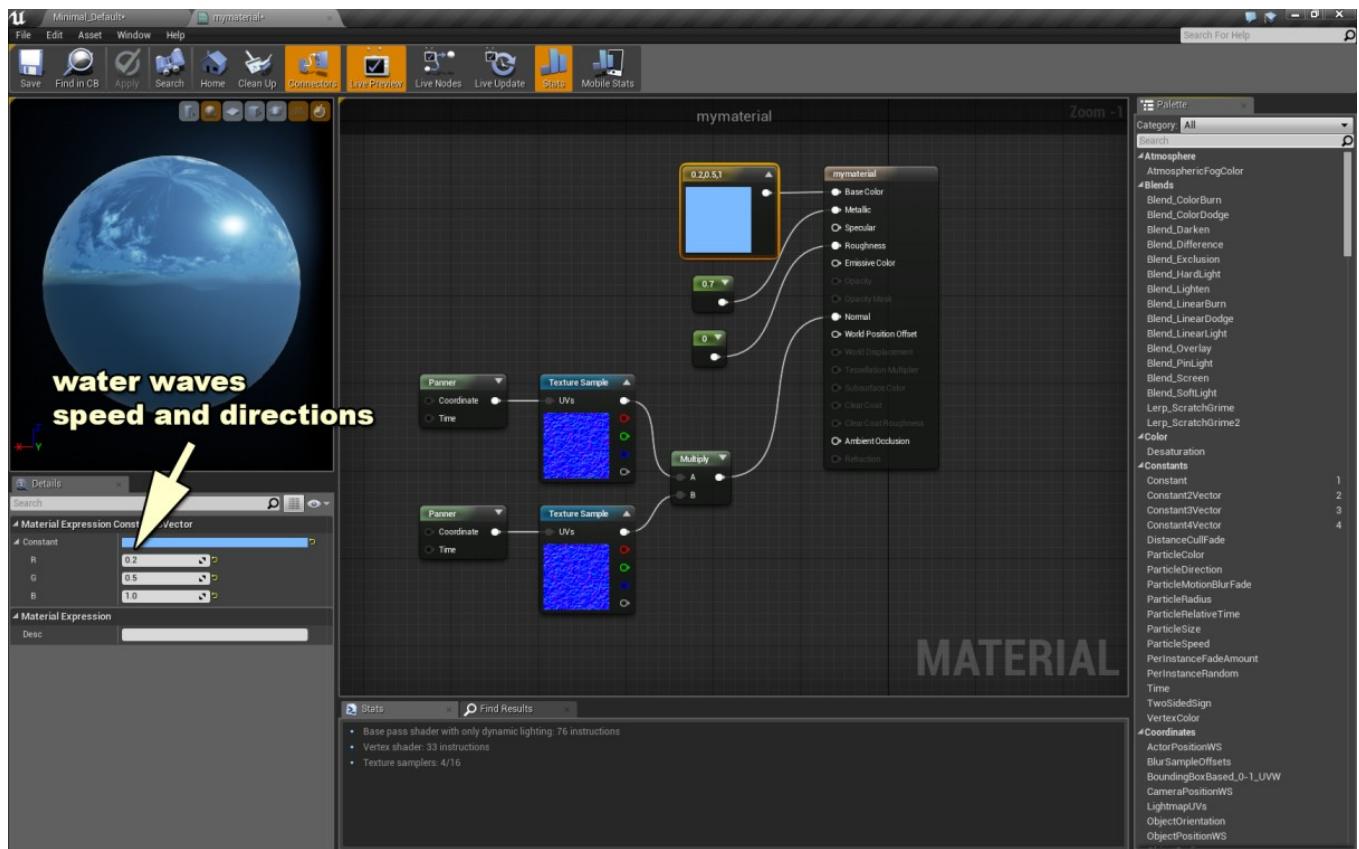


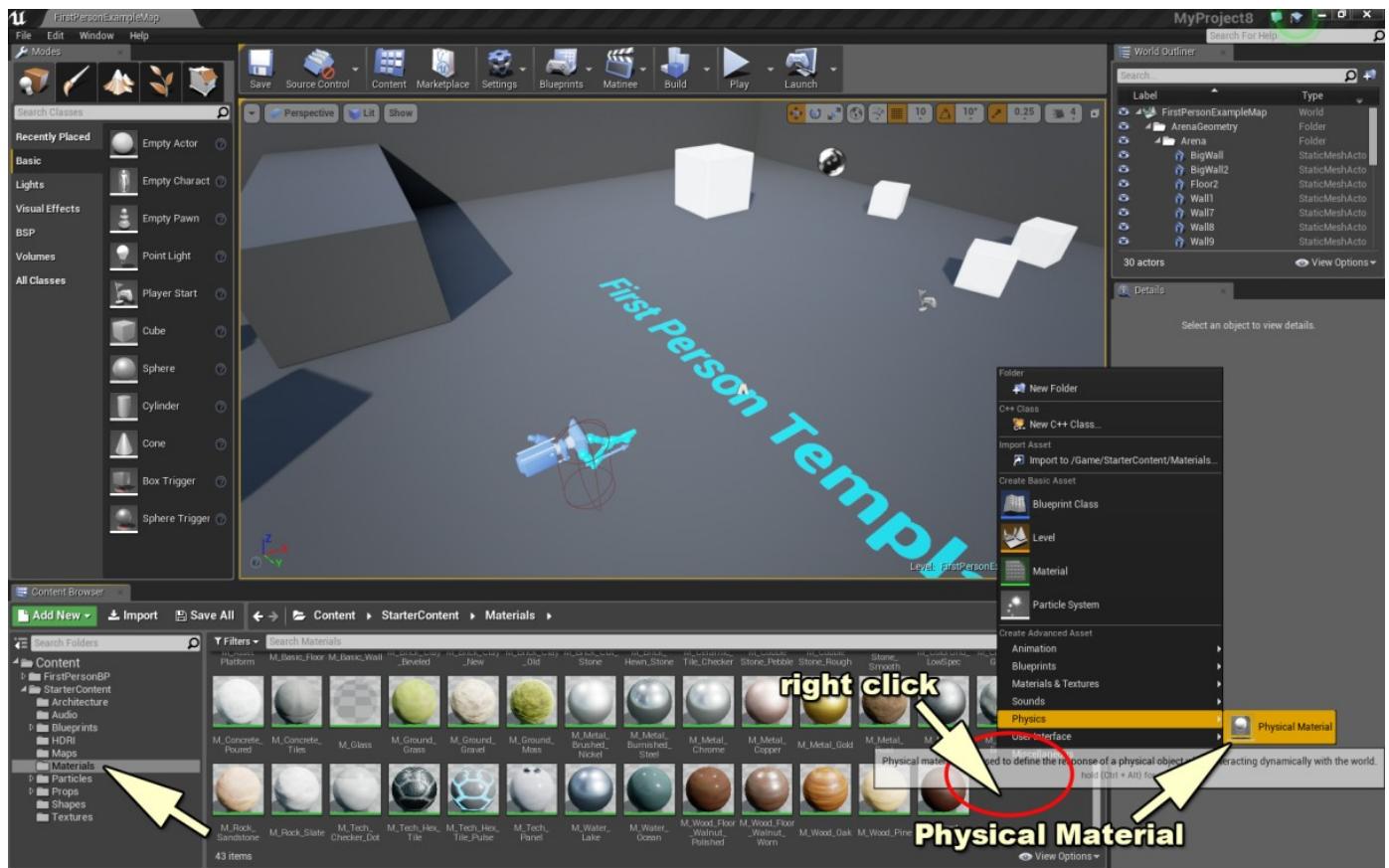


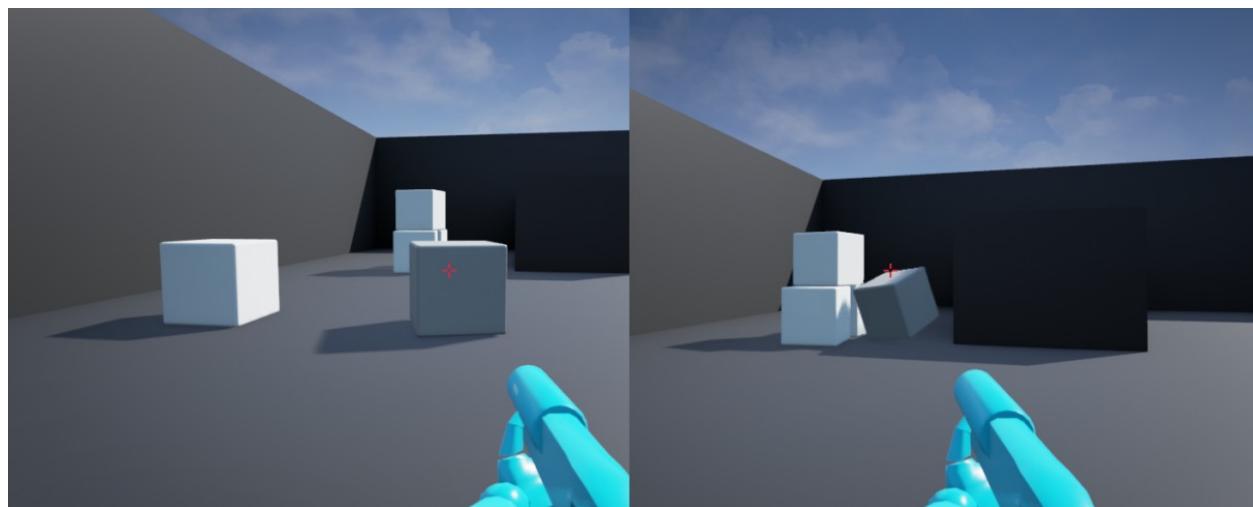
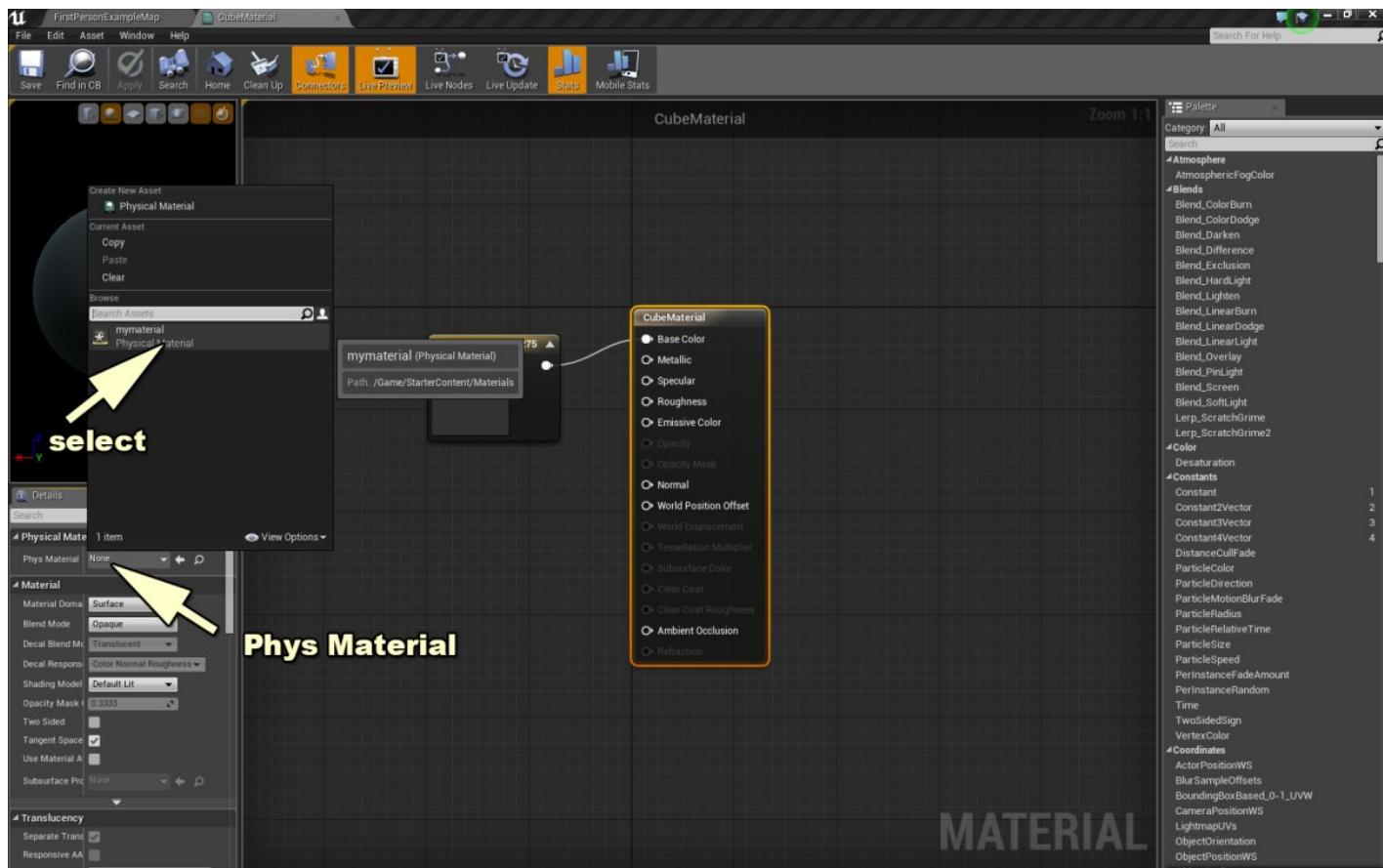




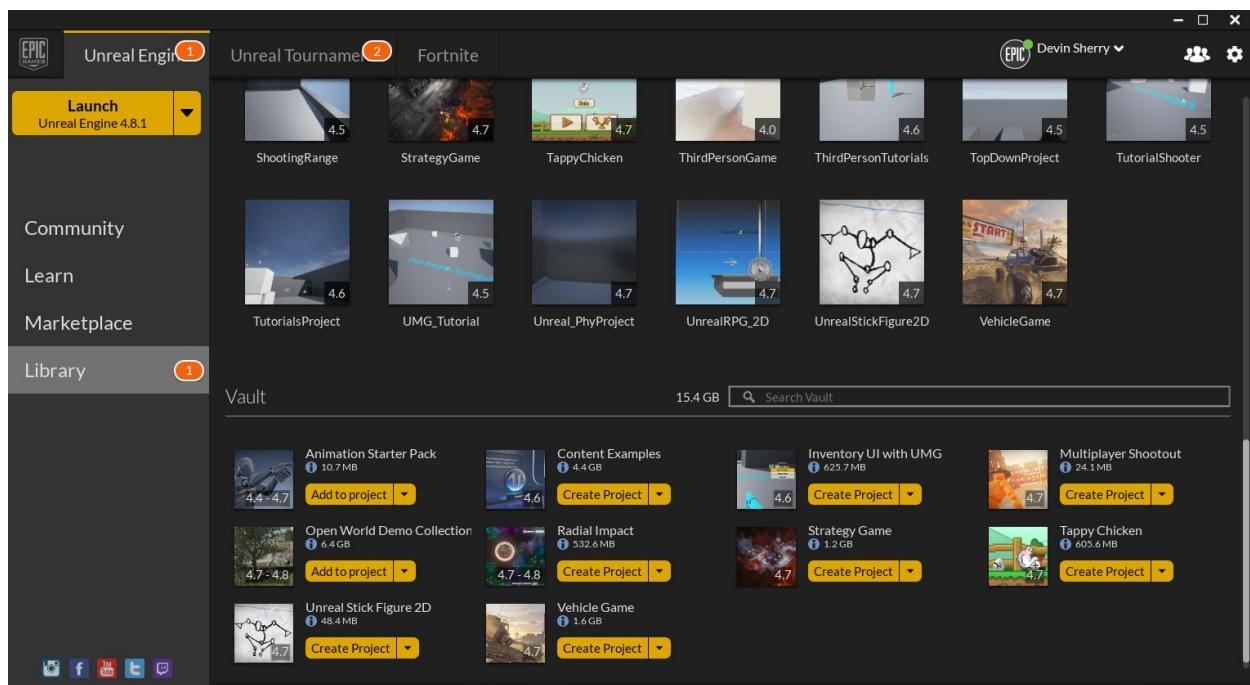
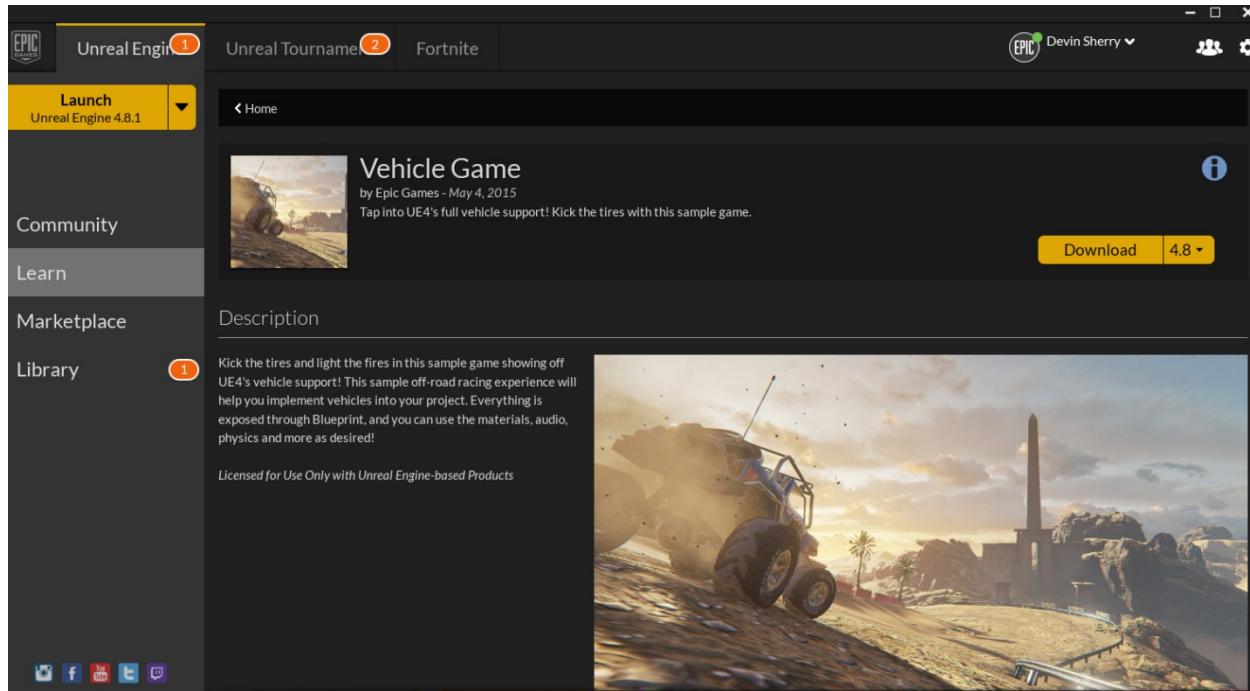


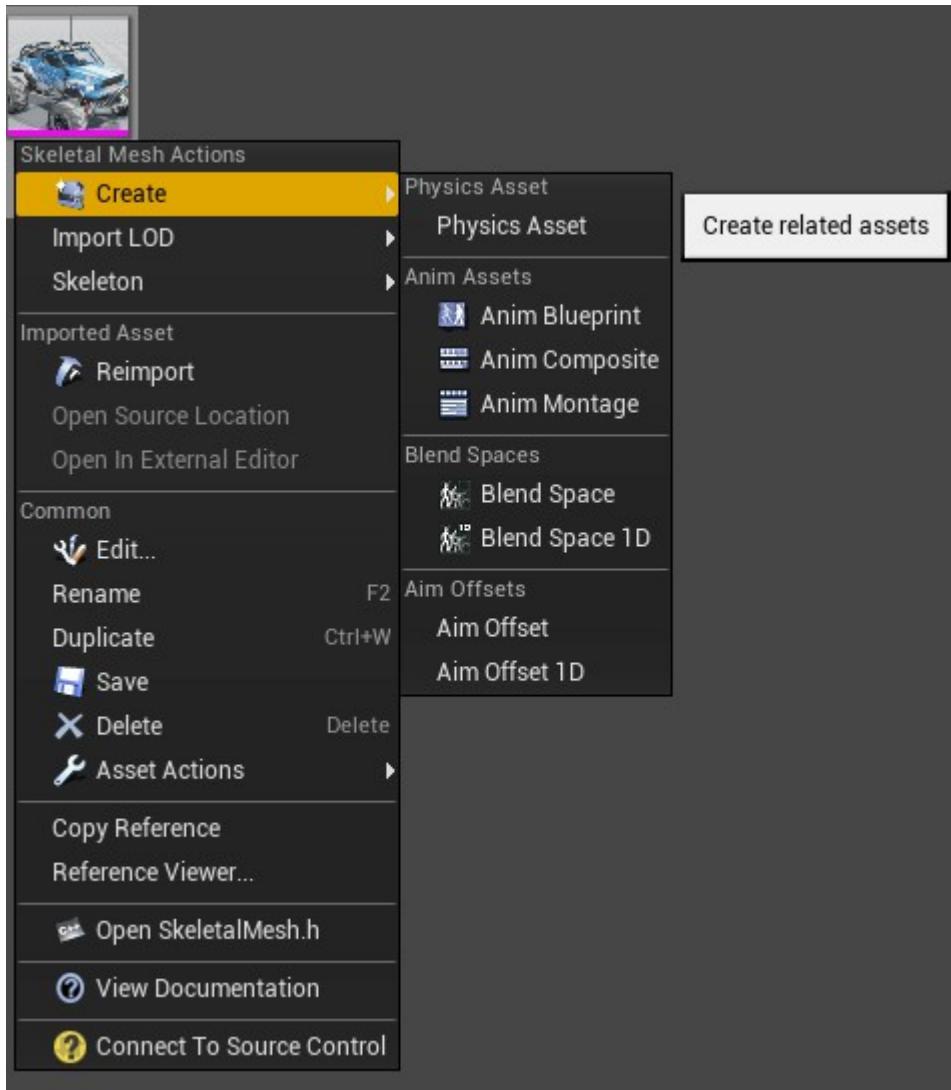


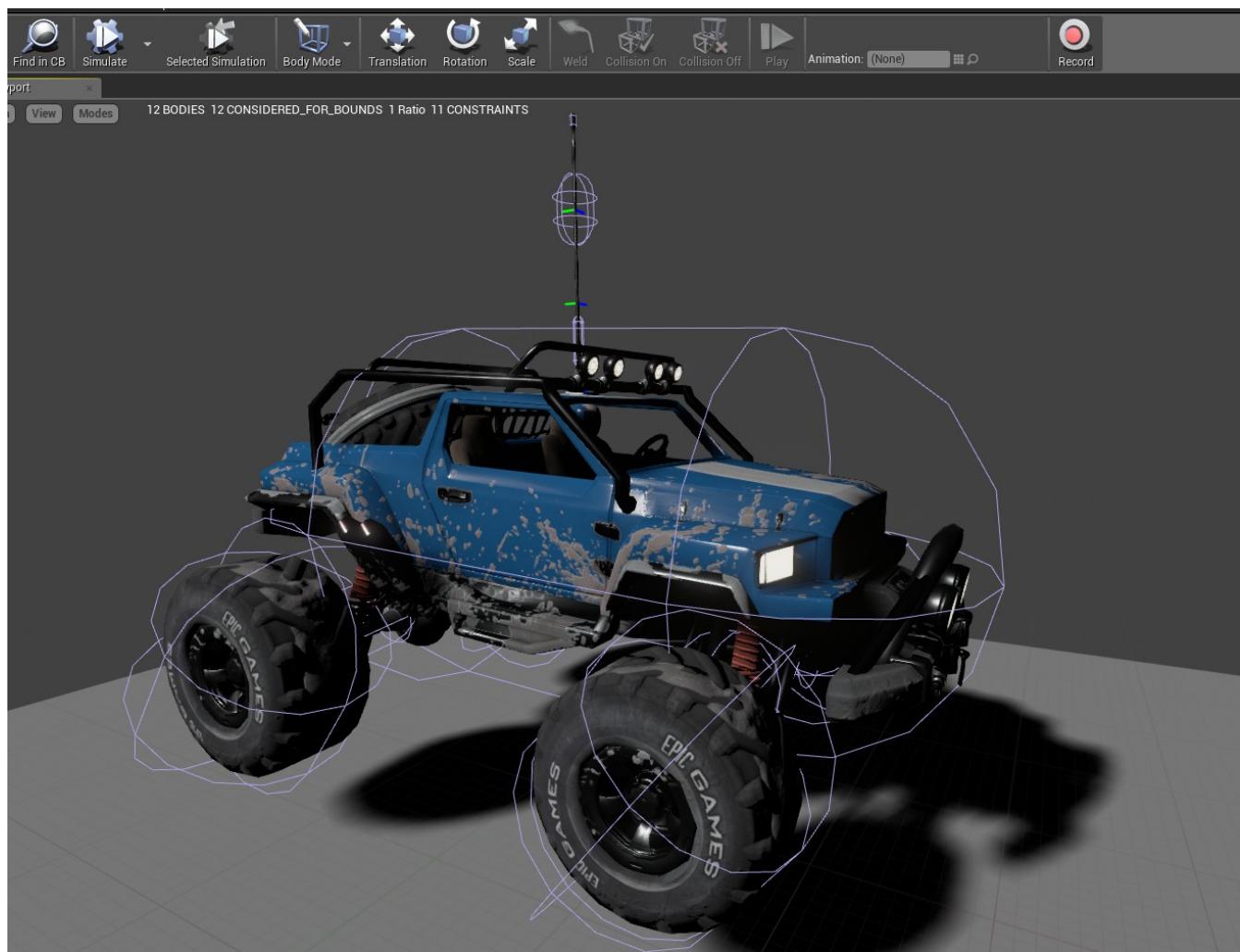


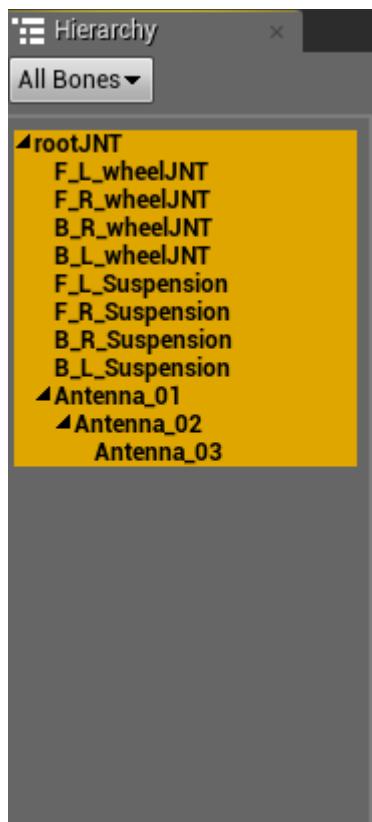


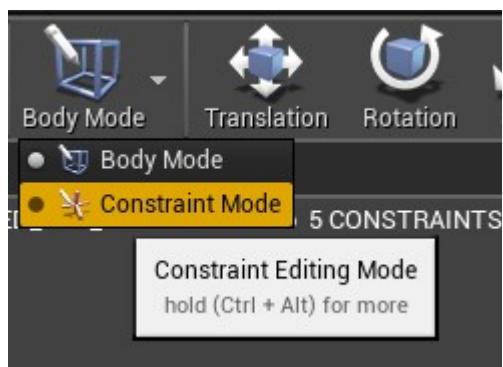
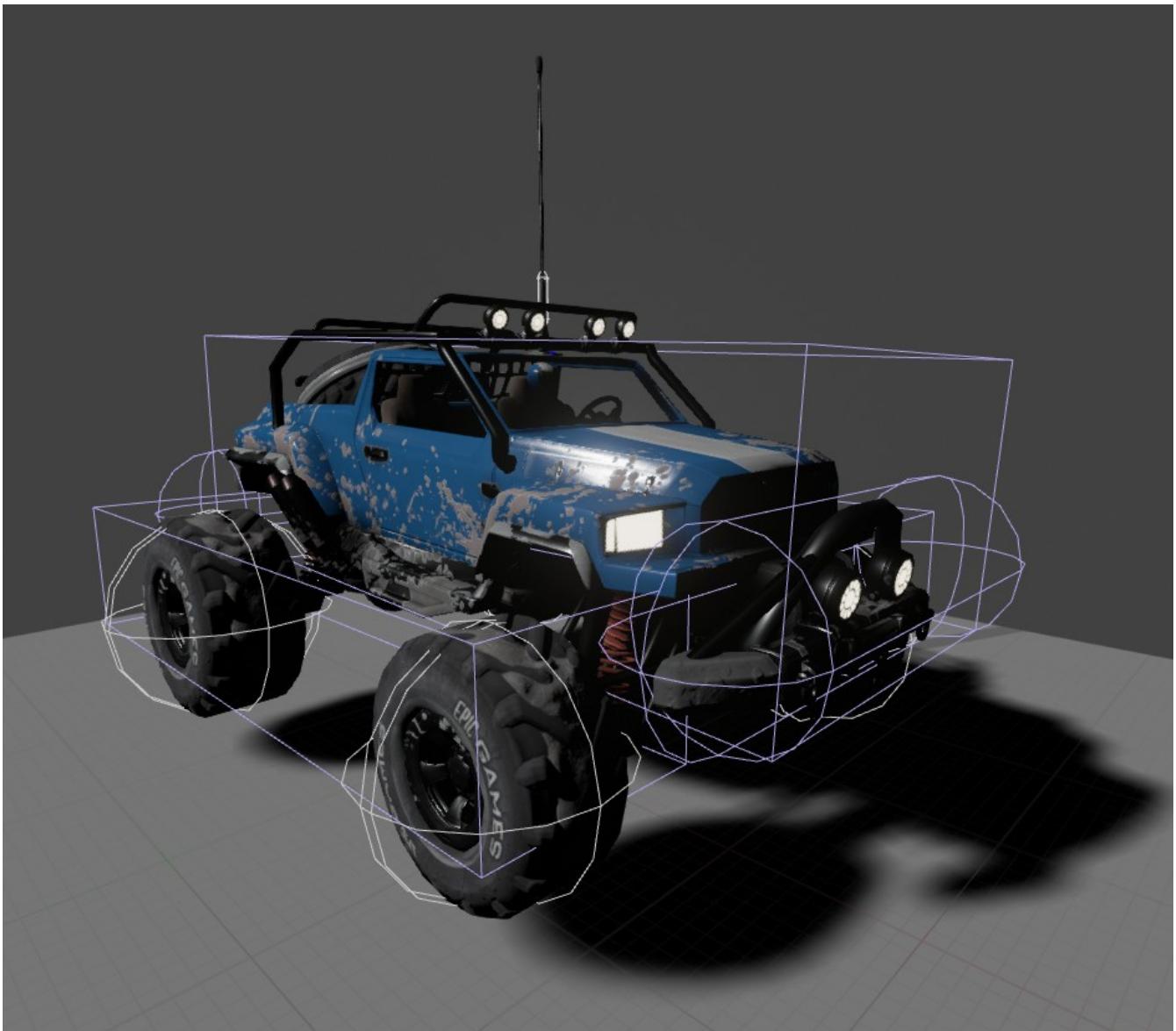
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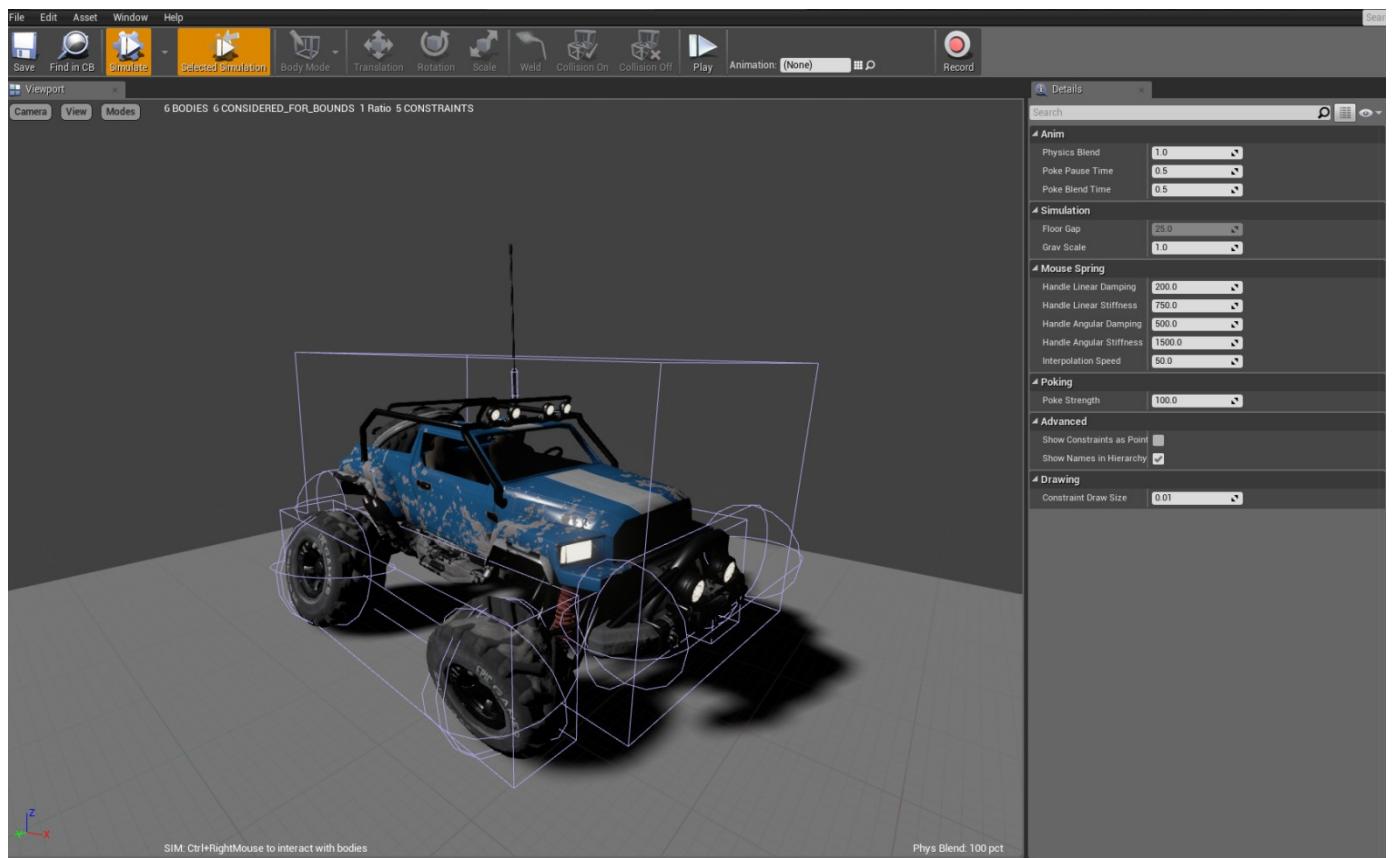


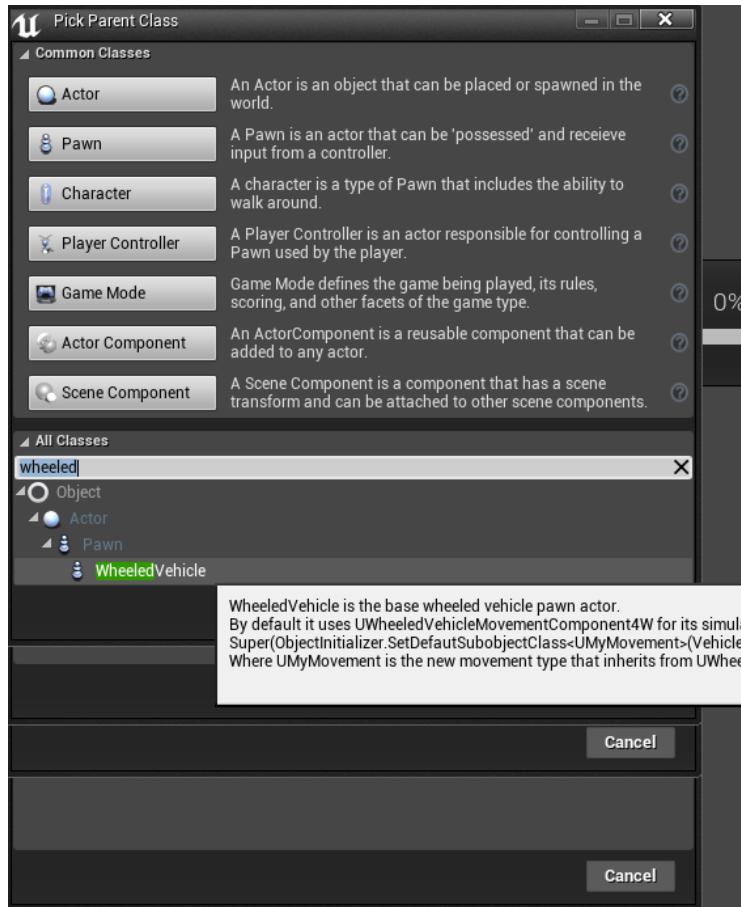


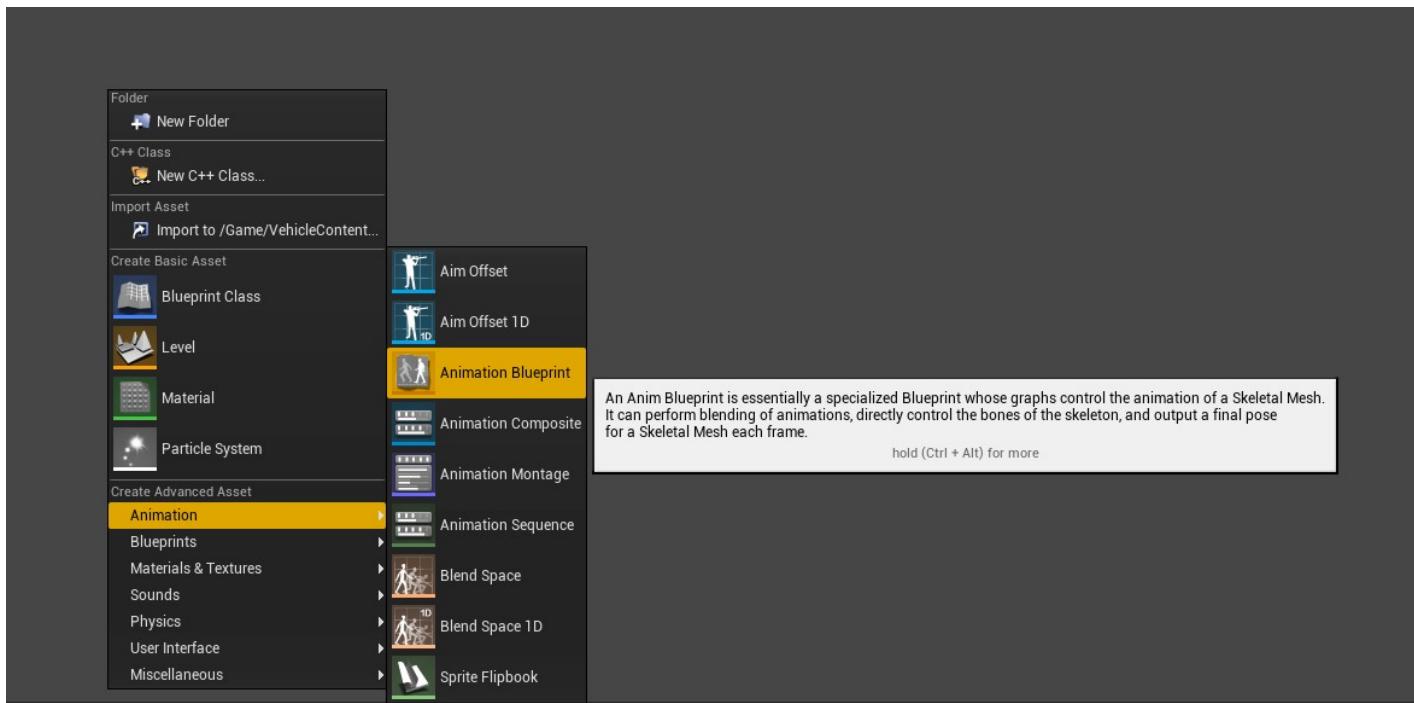
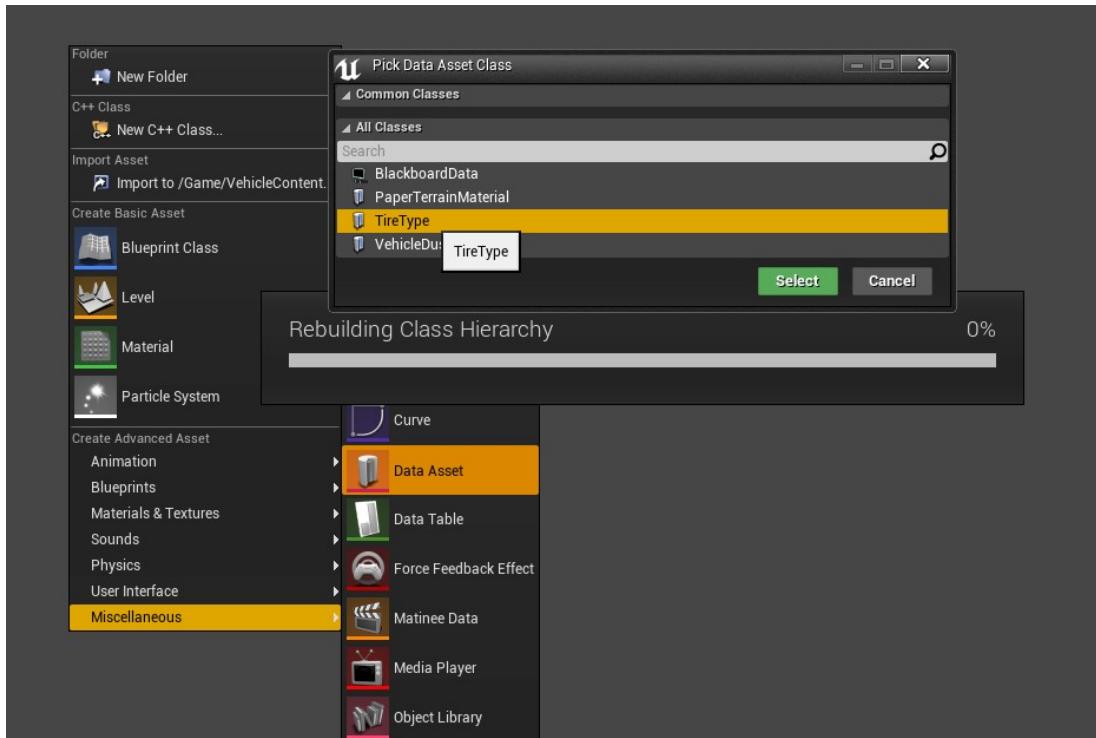


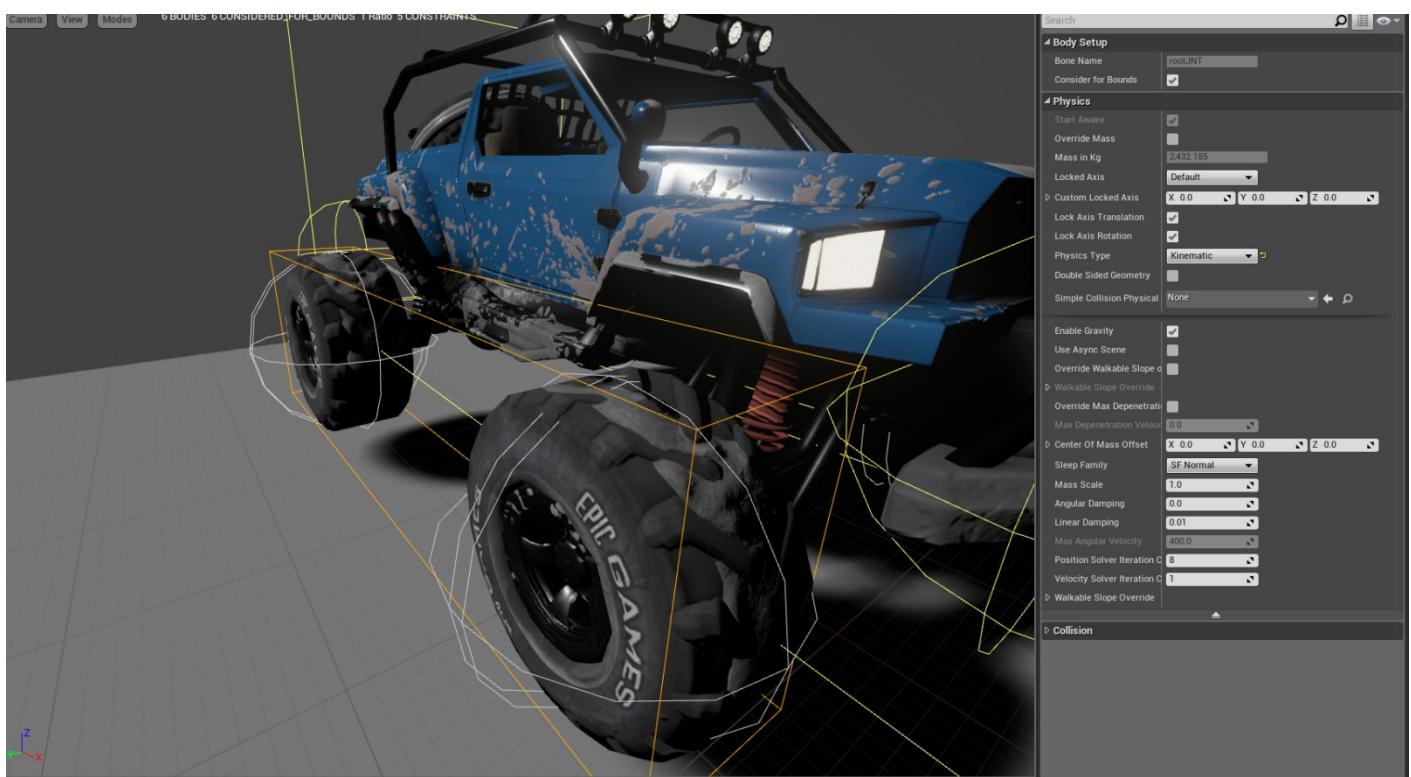
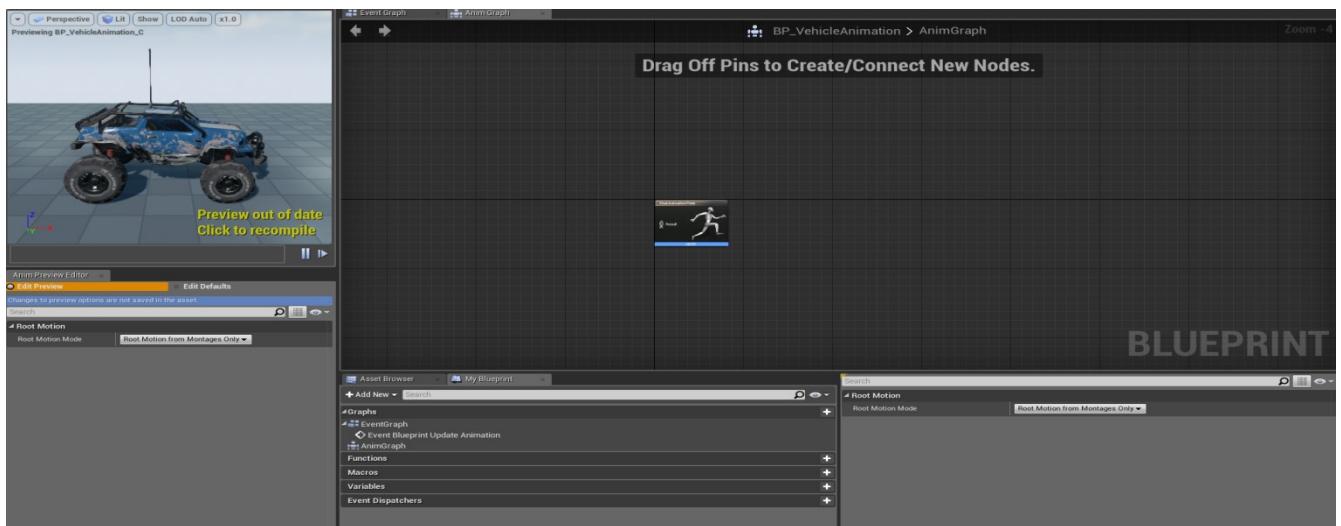


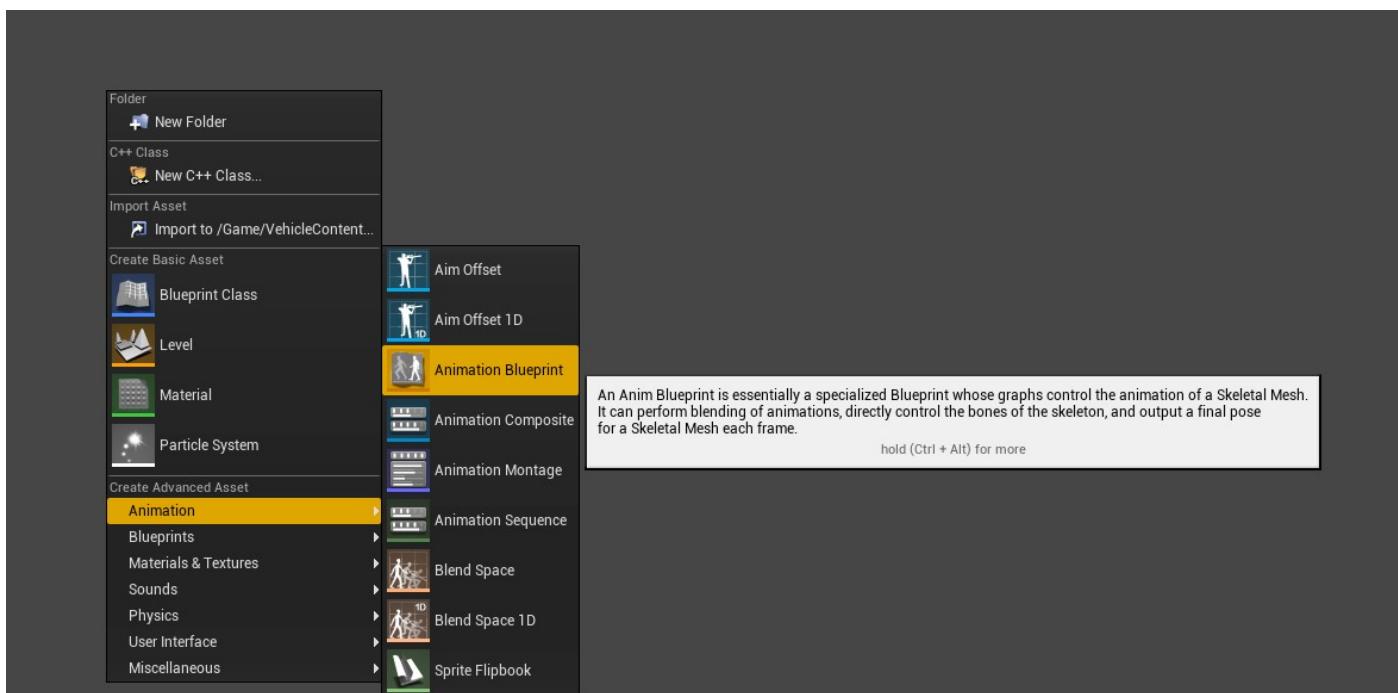
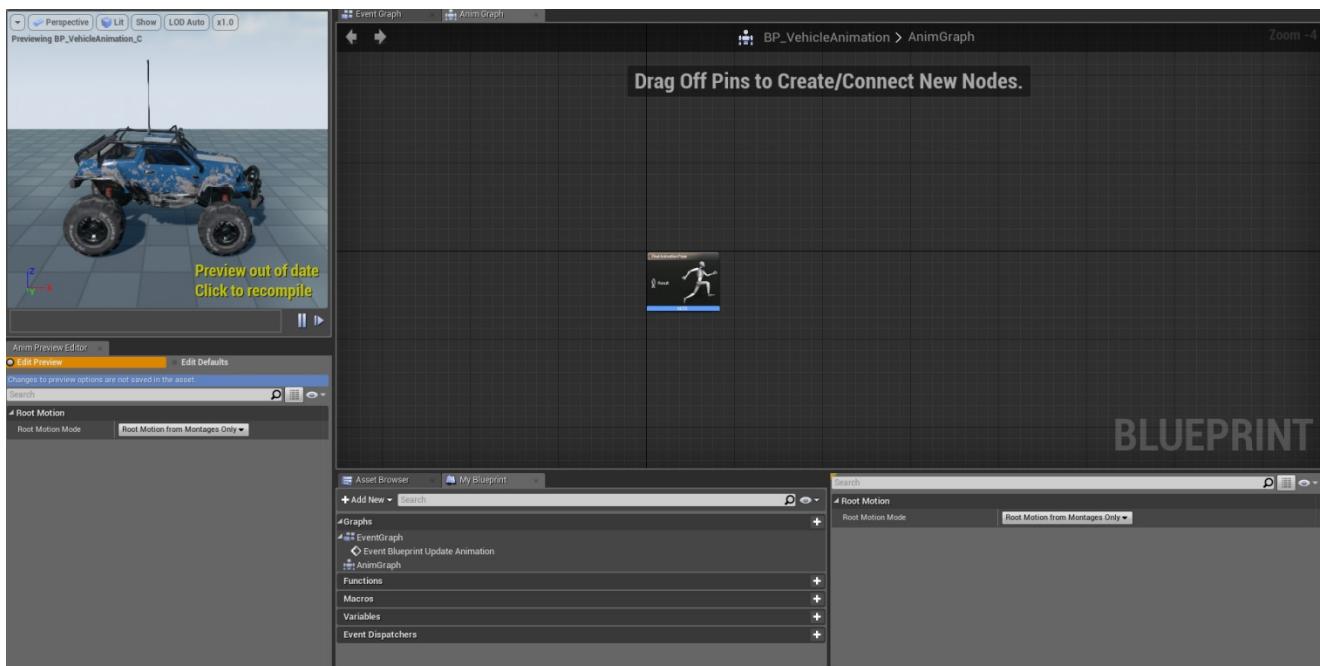


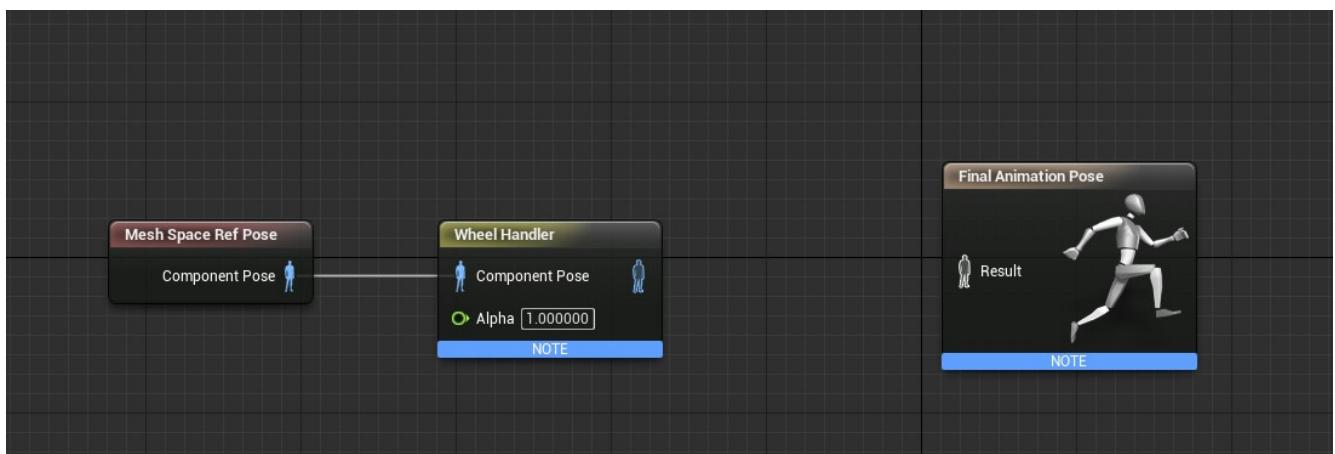
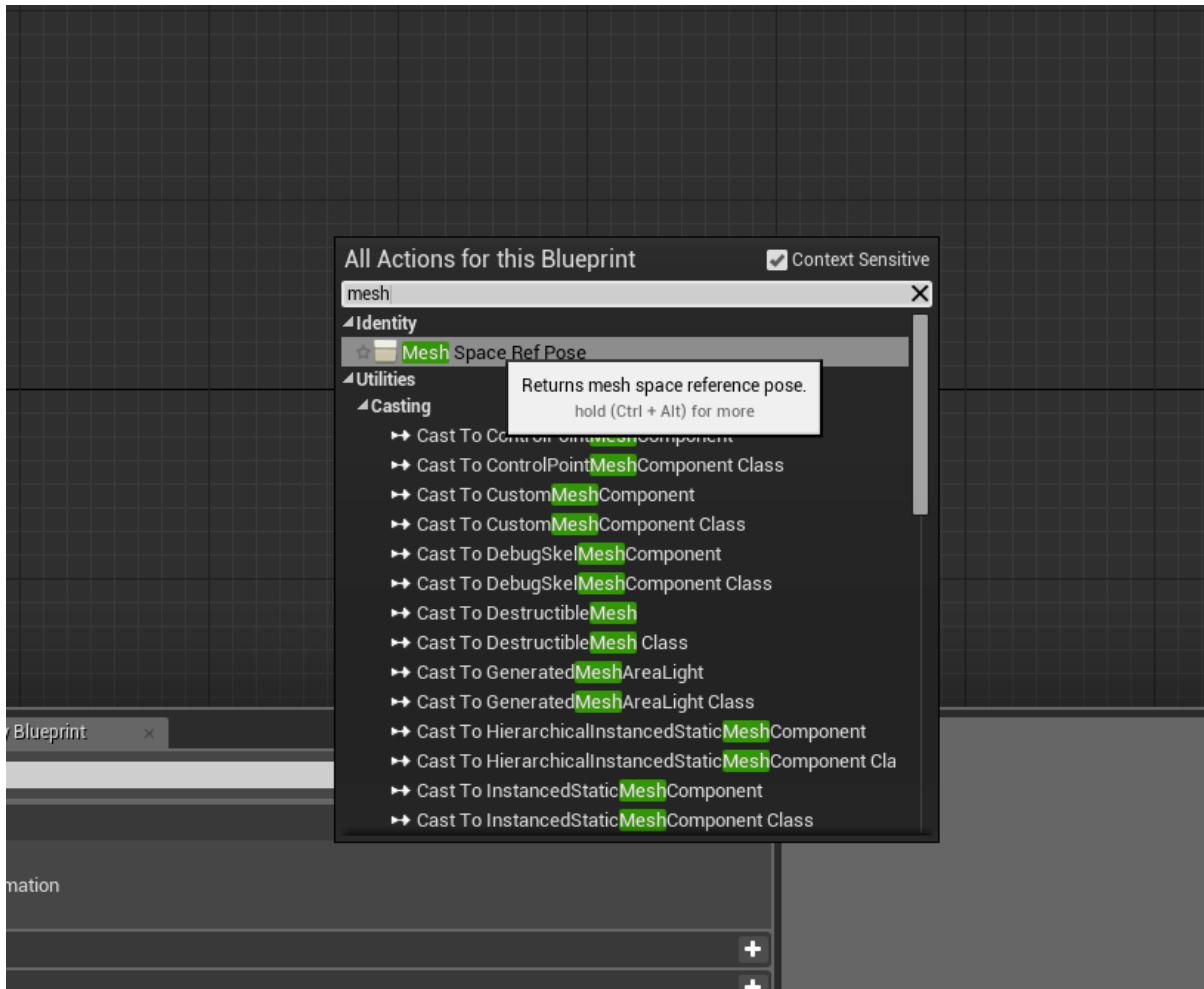




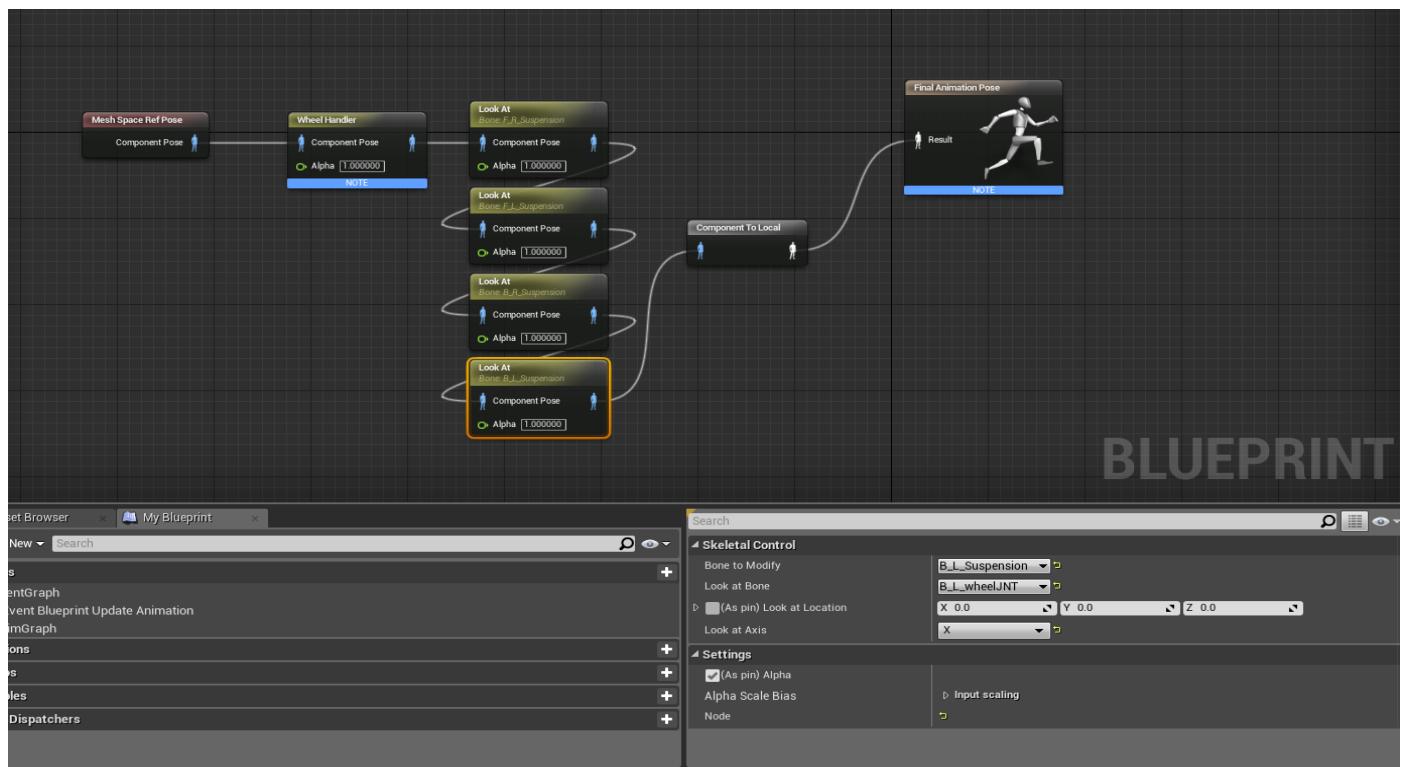


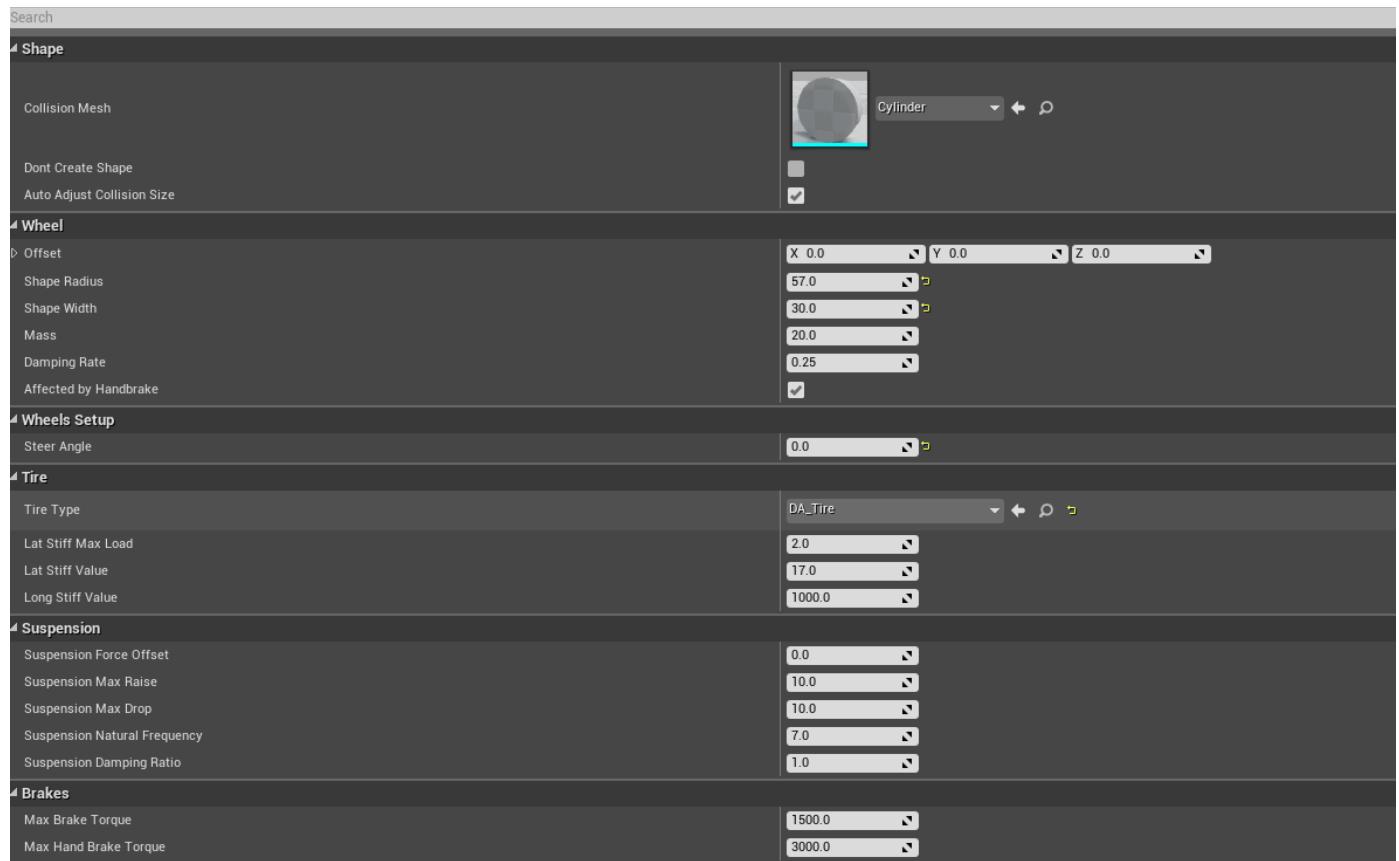


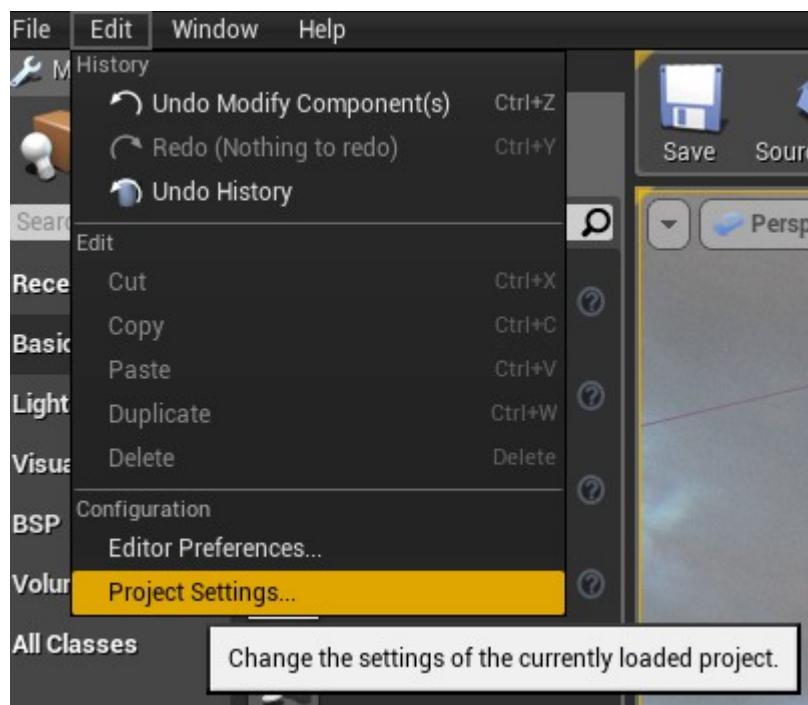
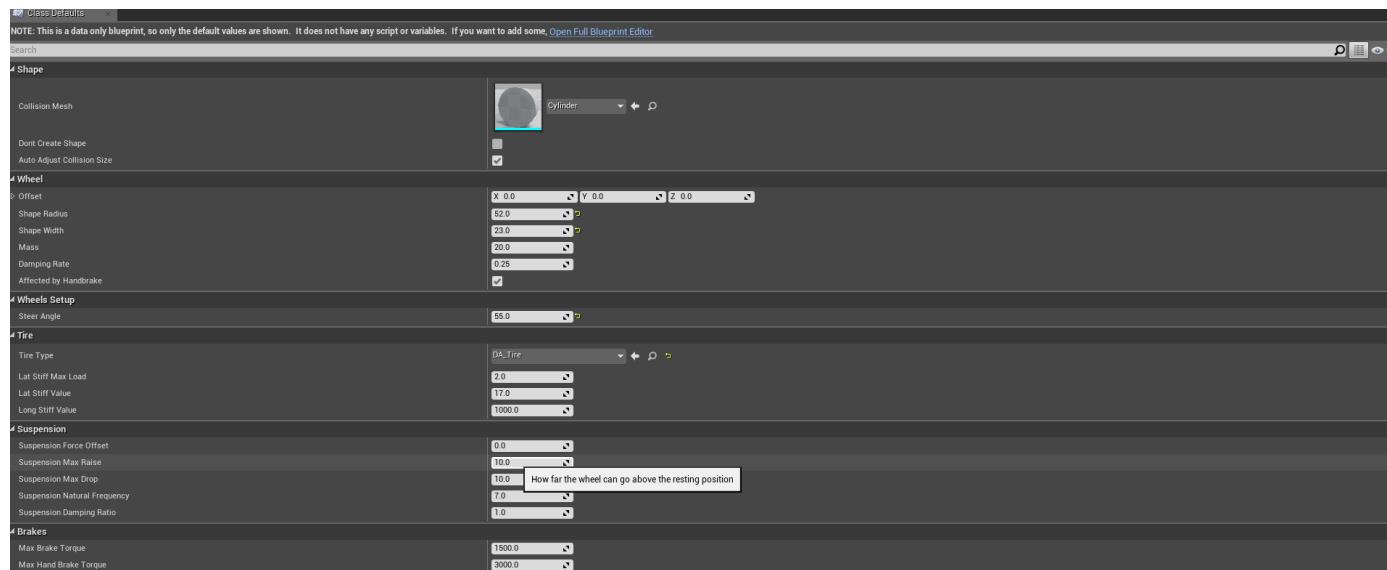


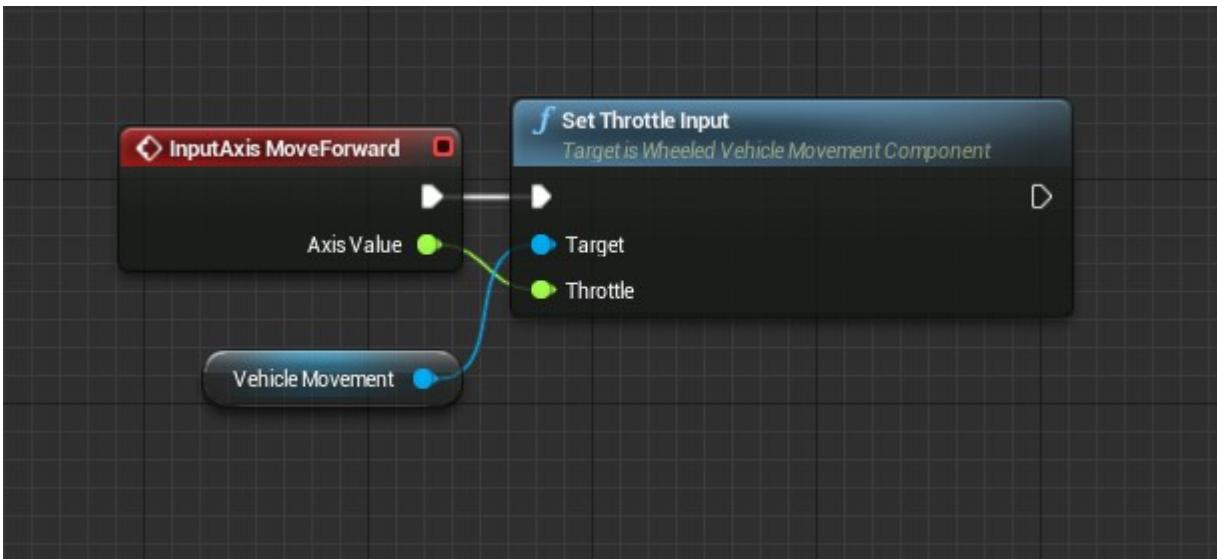


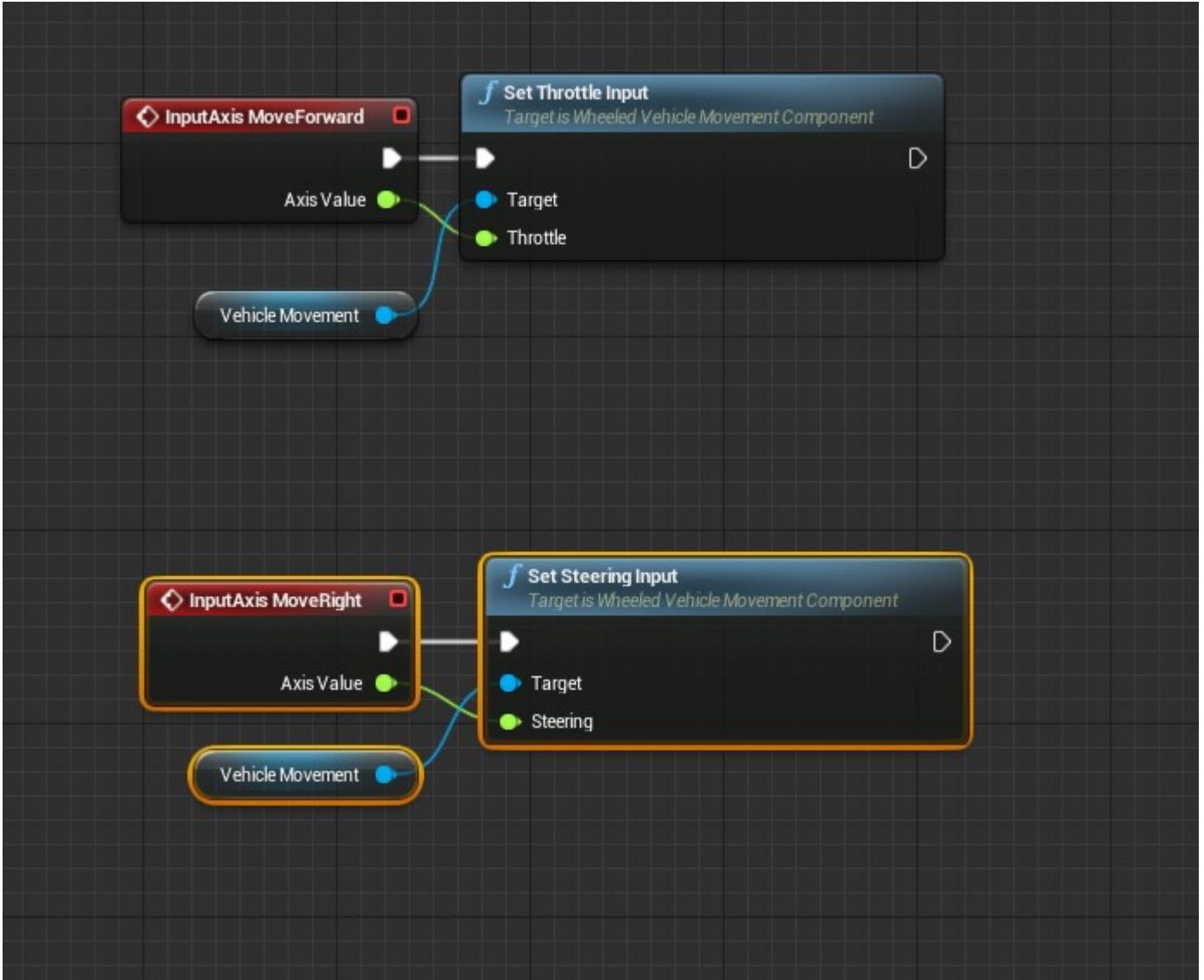
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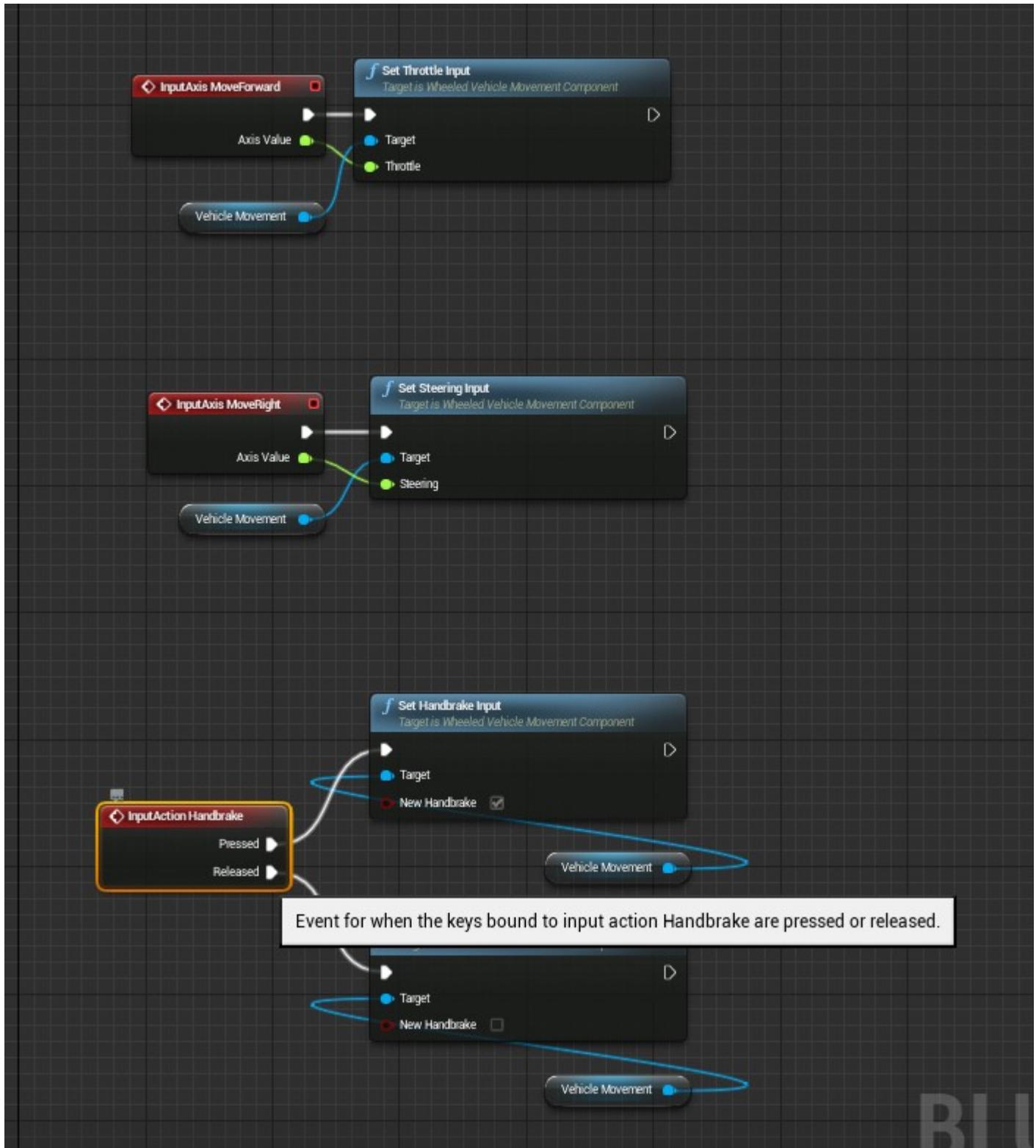














Vehicle Setup	
Wheel Setups	4 elements + - ✖
▲ 0	3 members ▼ ✖
Wheel Class	BP_FrontWheel ◀ ○ + × ✖
Bone Name	F_L_wheelJNT ✖
▷ Additional Offset	X 0.0 ▼ Y 0.0 ▼ Z 0.0 ▼
▲ 1	3 members ▼ ✖
Wheel Class	BP_FrontWheel ◀ ○ + × ✖
Bone Name	F_R_wheelJNT ✖
▷ Additional Offset	X 0.0 ▼ Y 0.0 ▼ Z 0.0 ▼
▲ 2	3 members ▼ ✖
Wheel Class	BP_BackWheel ◀ ○ + × ✖
Bone Name	B_L_wheelJNT ✖
▷ Additional Offset	X 0.0 ▼ Y 0.0 ▼ Z 0.0 ▼
▲ 3	3 members ▼ ✖
Wheel Class	BP_BackWheel ◀ ○ + × ✖
Bone Name	B_R_wheelJNT ✖
▷ Additional Offset	X 0.0 ▼ Y 0.0 ▼ Z 0.0 ▼
Mass	1500.0 ▼
Drag Coefficient	0.0 ✖
Chassis Width	180.0 ▼
Chassis Height	140.0 ▼

Bindings

Action and Axis Mappings provide a mechanism to conveniently map keys and axes to inputs.

Action Mappings

- BackOnTrack + X
- InGameMenu + X
- Handbrake
 - Space Bar + X

Axis Mappings

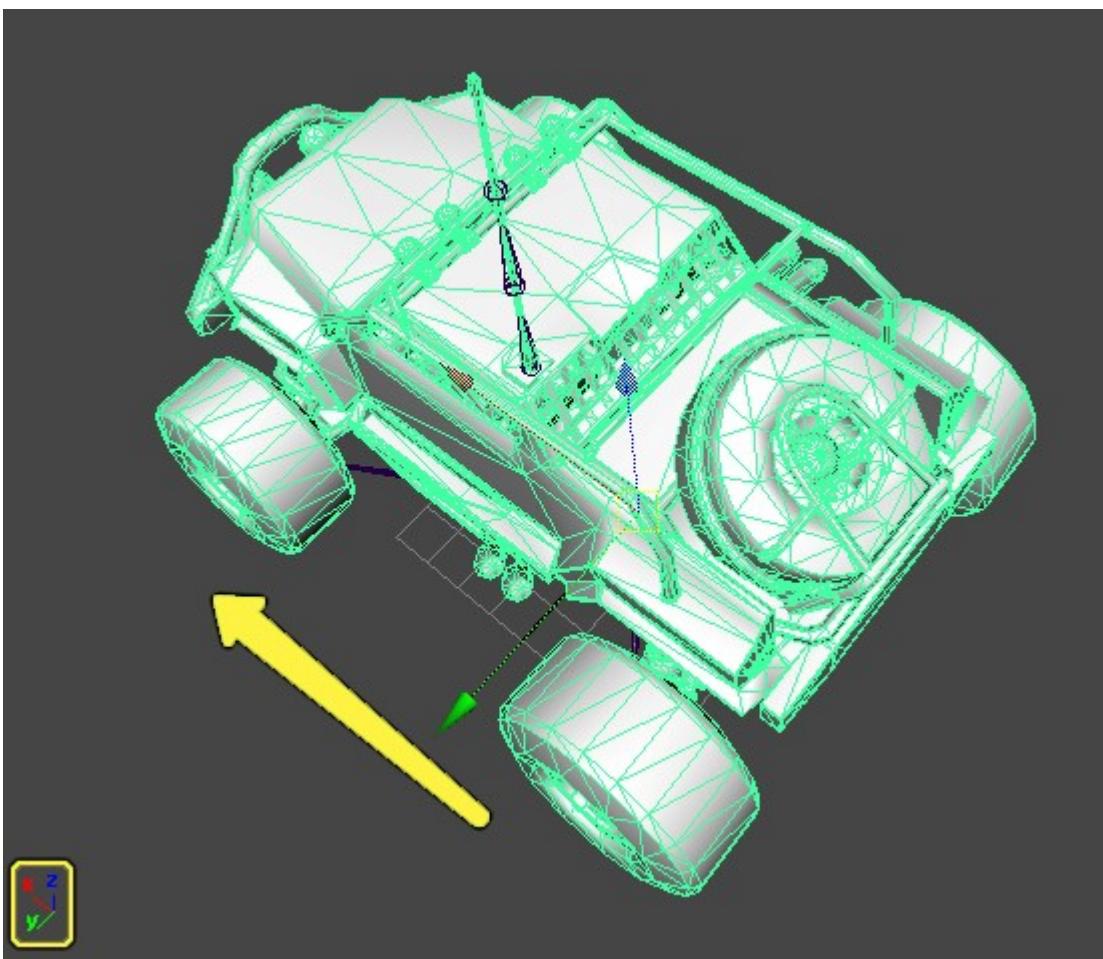
- MoveForward
 - W Scale 1.0 + X
 - S Scale -1.0 + X
- MoveRight
 - A Scale -1.0 + X
 - D Scale 1.0 + X

Collision

Simulation Generates Hit Events

Phys Material Override

Collision Response



CHAPTER 8

