

Chapter 1: UE4 Development Tools

Visual Studio Community


A free, fully-featured, and extensible IDE for creating modern applications for Windows, Android, and iOS, as well as web applications and cloud services.

[Download Community 2015](#)

Visual Studio

Community 2015
with Update 1

Select features

- Programming Languages
 - Visual C++
 - Common Tools for Visual C++ 2015
 - Microsoft Foundation Classes for C++
 - Windows XP Support for C++
 - Visual F#
 - Python Tools for Visual Studio (December 2015)
- Windows and Web Development
- Cross Platform Mobile Development
- Common Tools
 - Git for Windows [3rd Party]  (Replaced)
 - Git for Windows [3rd Party] (Updated)
 - GitHub Extension for Visual Studio [3rd Party]
 - Visual Studio Extensibility Tools Update 1

Select All

[Reset Defaults](#)

Setup requires up to 10 GB across all drives.

Back

Next



Welcome!

Connect to all your developer services.

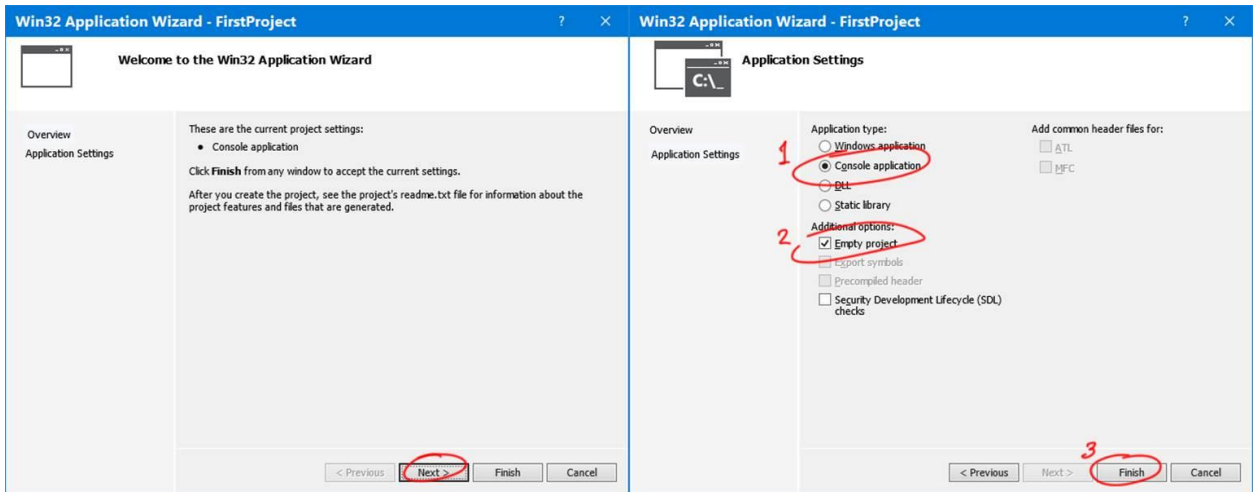
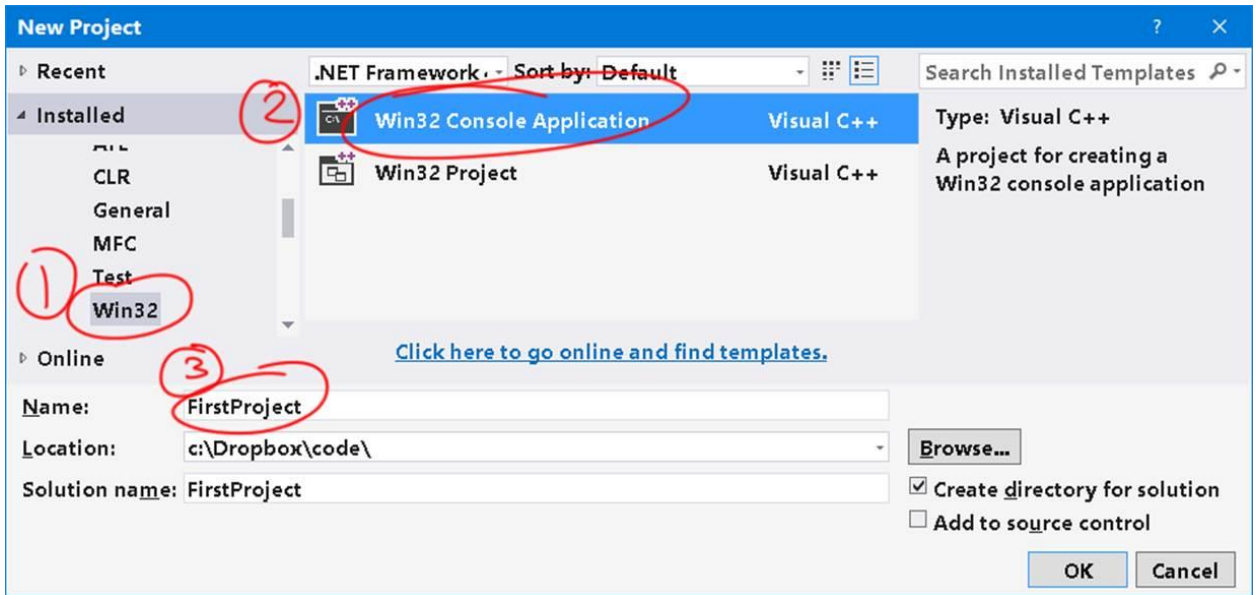
Sign in to start using your Azure credits, publish code to a private Git repository, sync your settings, and unlock the IDE.

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Sign in

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FirstProject - Microsoft Visual Studio
File Edit View Project Build Debug

Debug

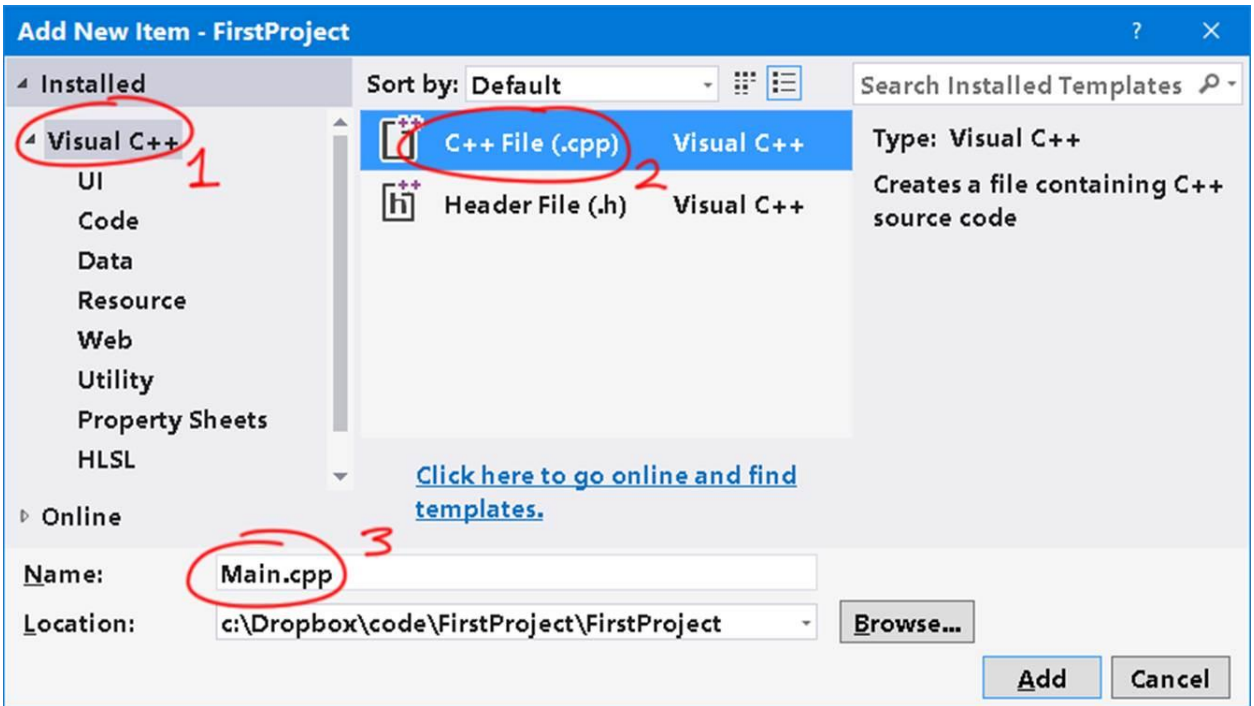
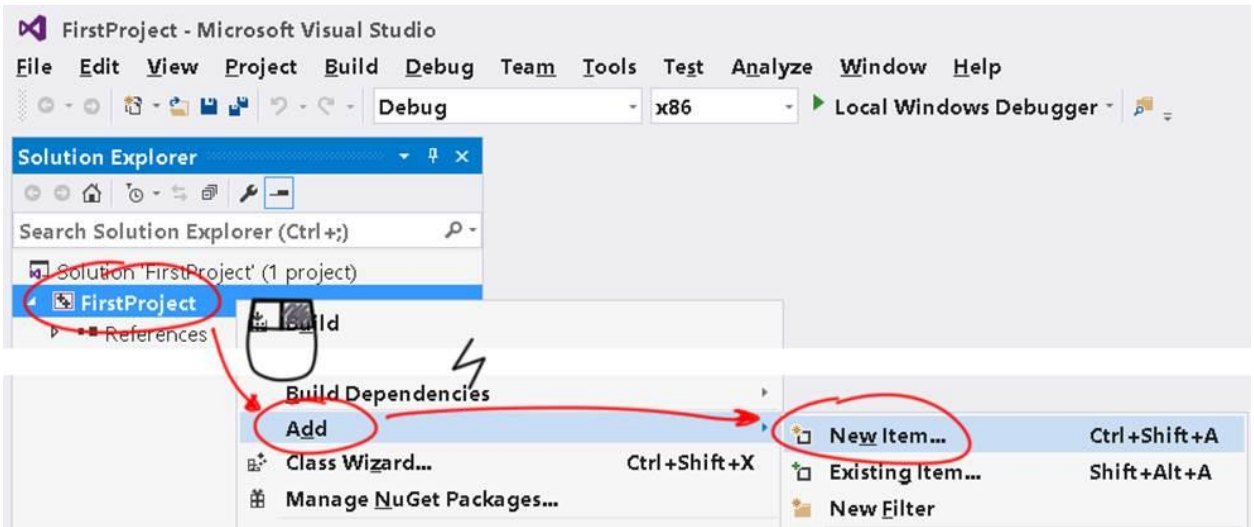
Solution Explorer

Search Solution Explorer (Ctrl+;)

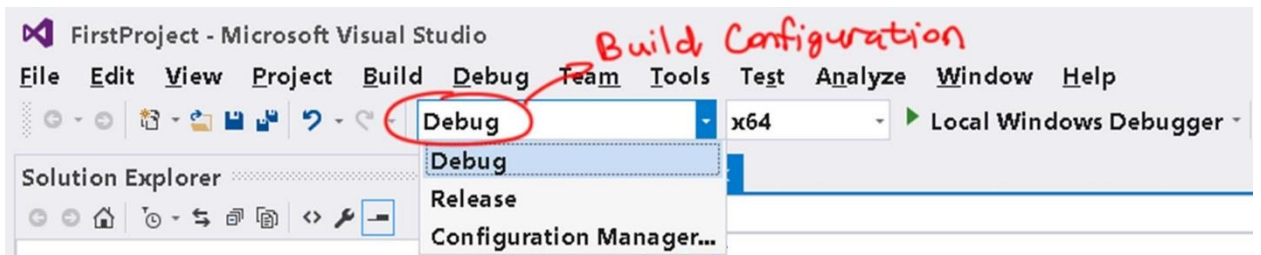
Solution 'FirstProject' (1 project)

FirstProject

- References
- External Dependencies
- Header Files
- Resource Files
- Source Files

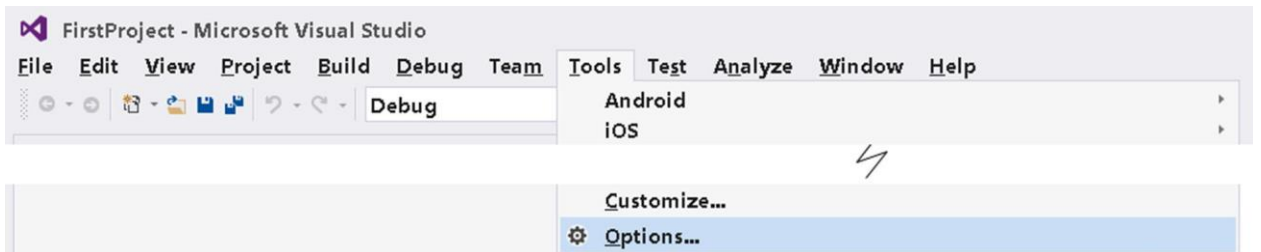


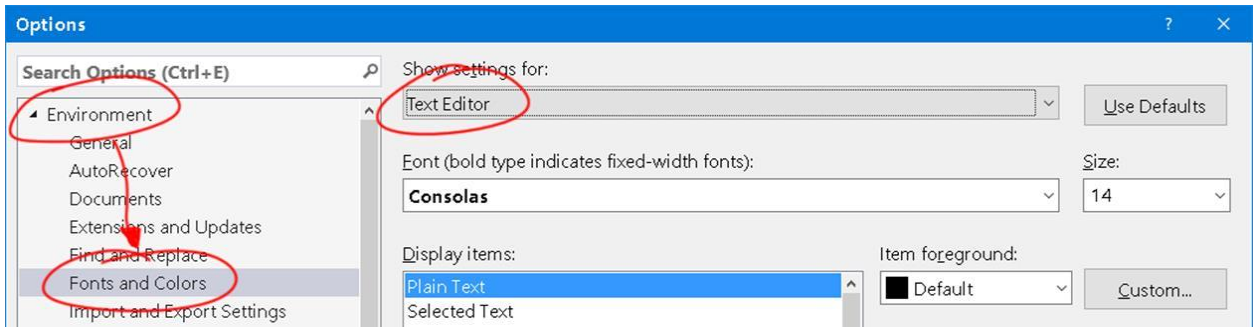
```
C:\WINDOWS\system32\cmd.exe
Welcome to Visual Studio 2015 Community Edition!
Press any key to continue . . .
```



```
#include <stdio.h>
```

```
int main()
{
    puts( "Welcome to Visual Studio 2015 Community Edition!" );
}
```



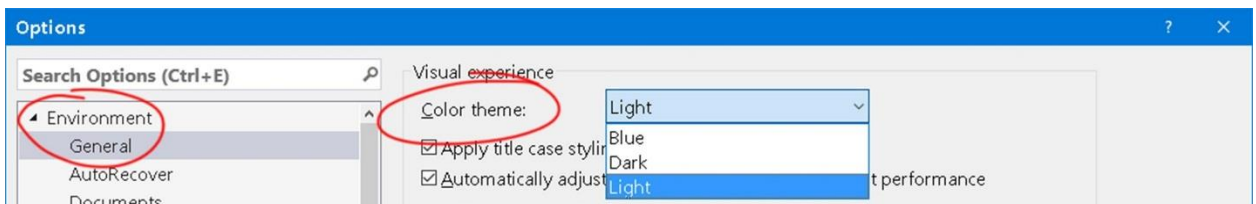
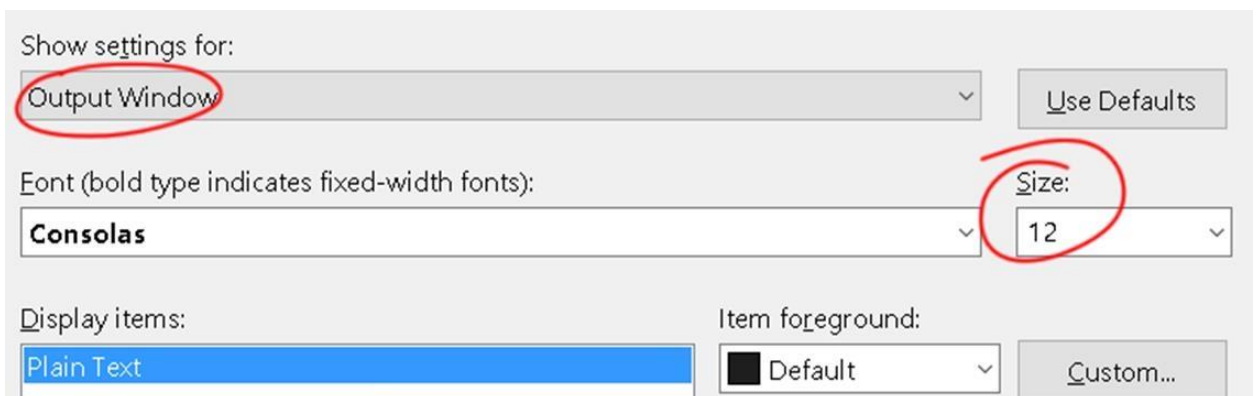
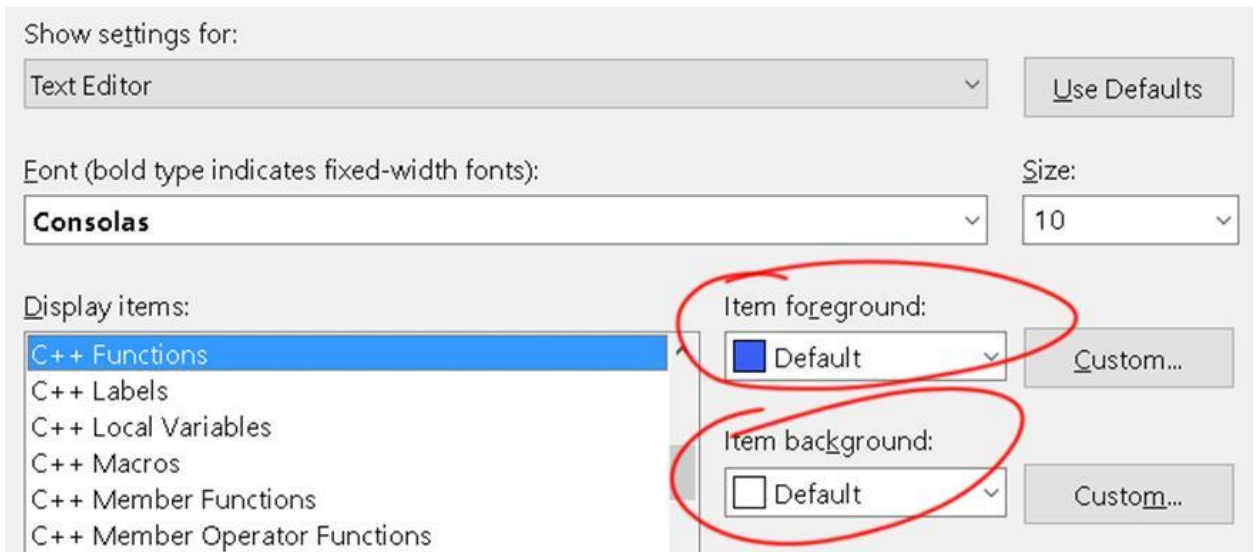


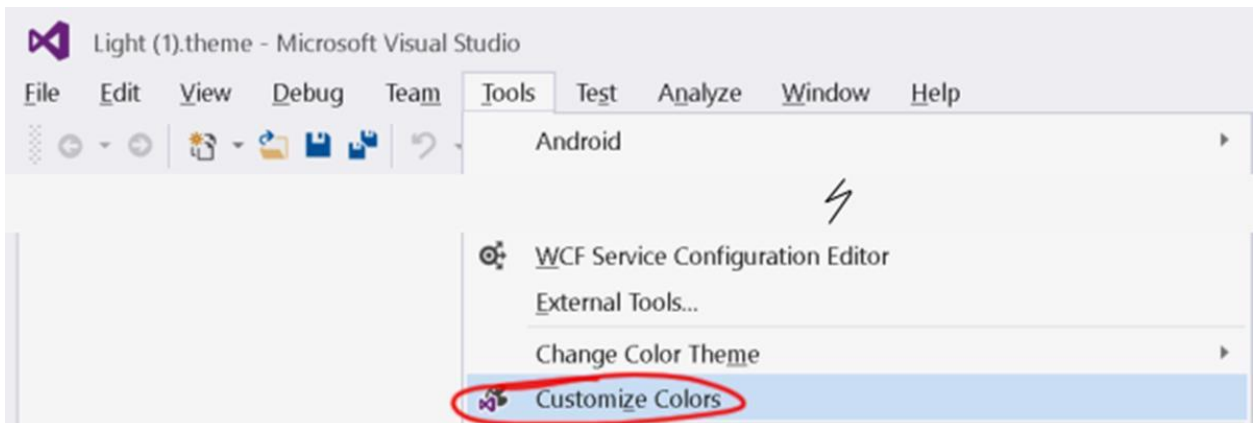
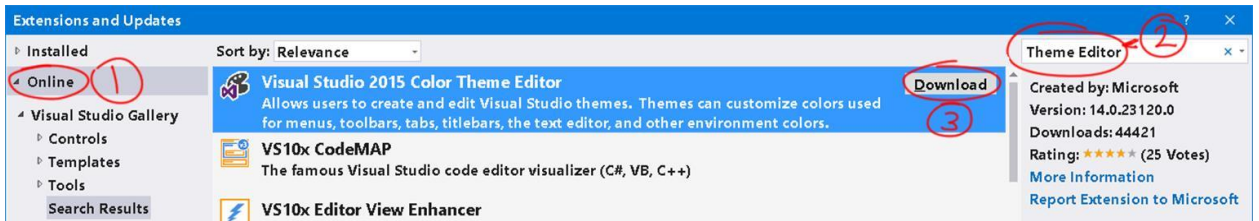
```
#include <stdio.h>
```

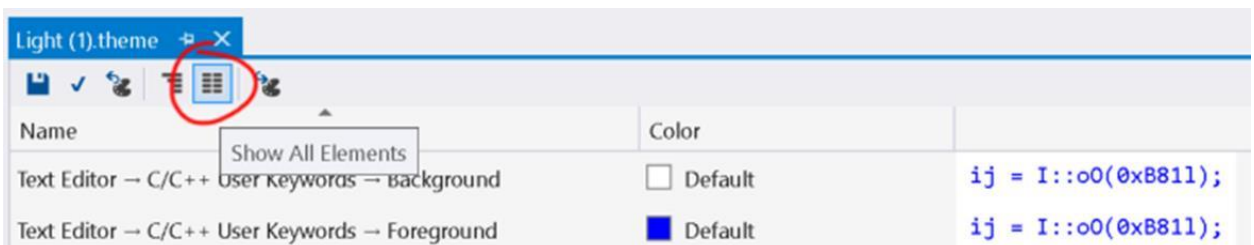
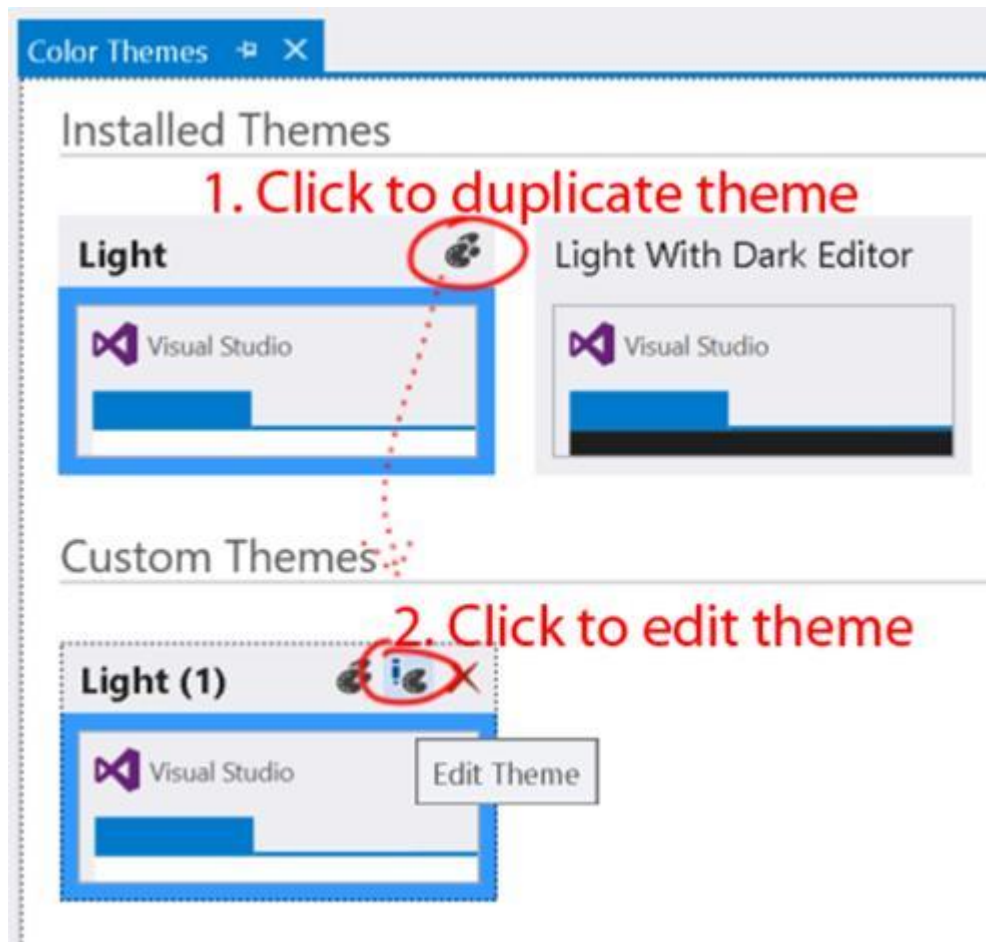
```
int main()  
{  
    puts( "Welcome!" );  
}
```

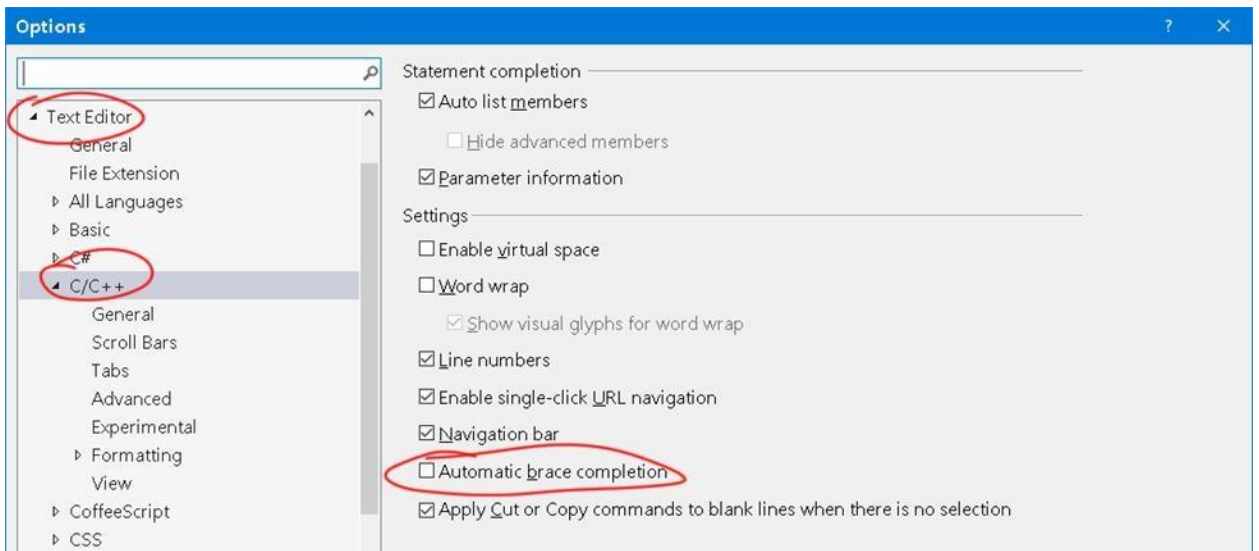
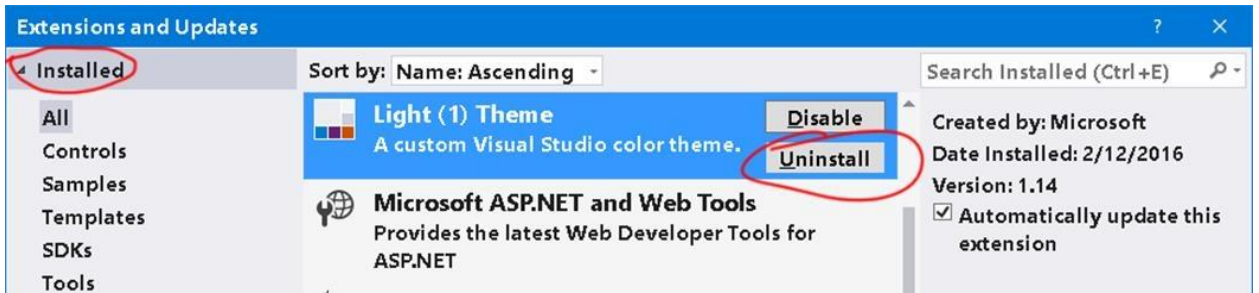
```
#include <stdio.h>
```

```
int main()  
{  
    puts( "Welcome!" );  
}
```

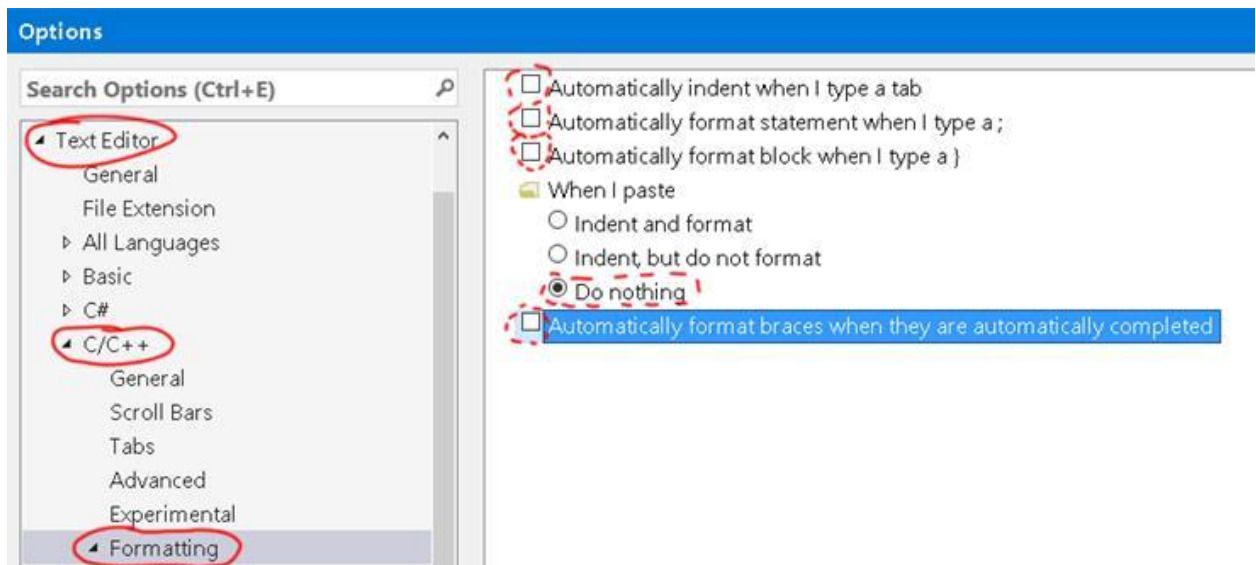
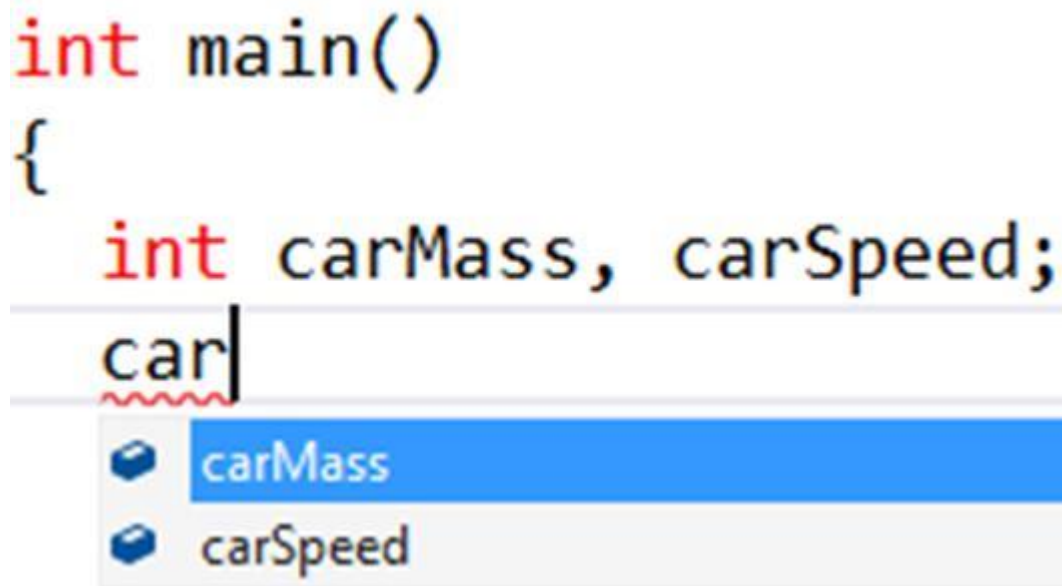









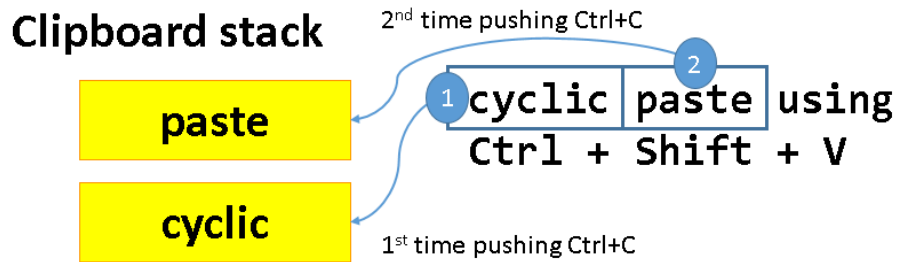
```
int main()
{
    int carMass, carSpeed;
    car
```



```

14
15 UCLASS( Abstract, meta=(ShortTooltip="Abstract base f
16 class WRVYV_API UAction : public UObject
17 {
18     GENERATED_UCLASS_BODY()
19 public:
14
15 UTexture
16
17     error: "GetIcon not implemented in %s", *G
18     return 0;
19 }

```



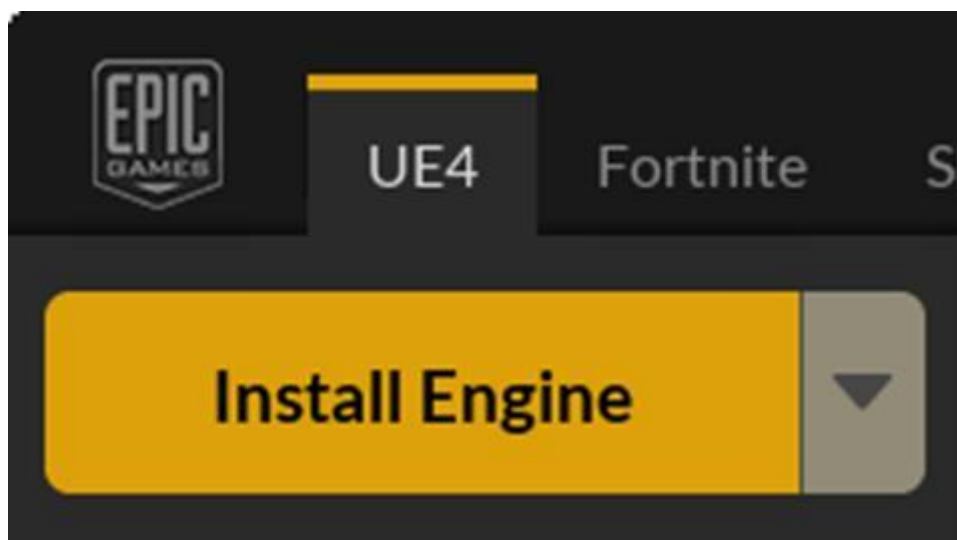
```

UTexture* UBuildAction::GetIcon()
{
    return Game->GetData( BuildingType ).Portrait;
}
UTexture* UBuildAction::GetIcon() { ... }

```

```
FString::Printf(TEXT(
```

```
// initialize a bunch of cooldown  
FString name = FString::Printf(  
Clock* clock = new Clock( name,
```

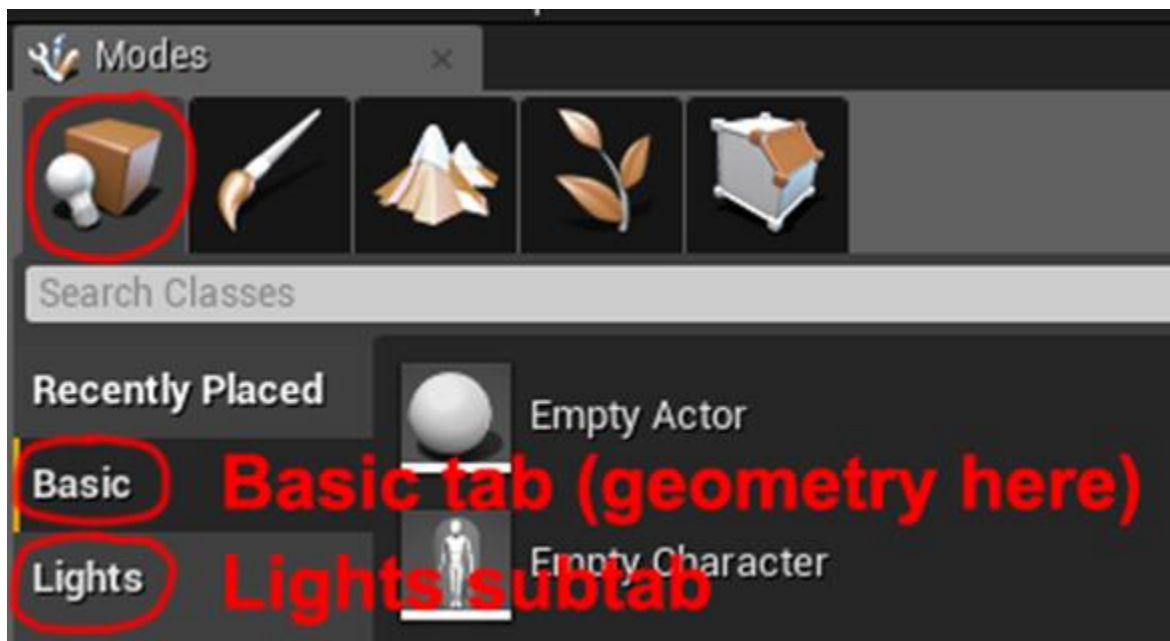


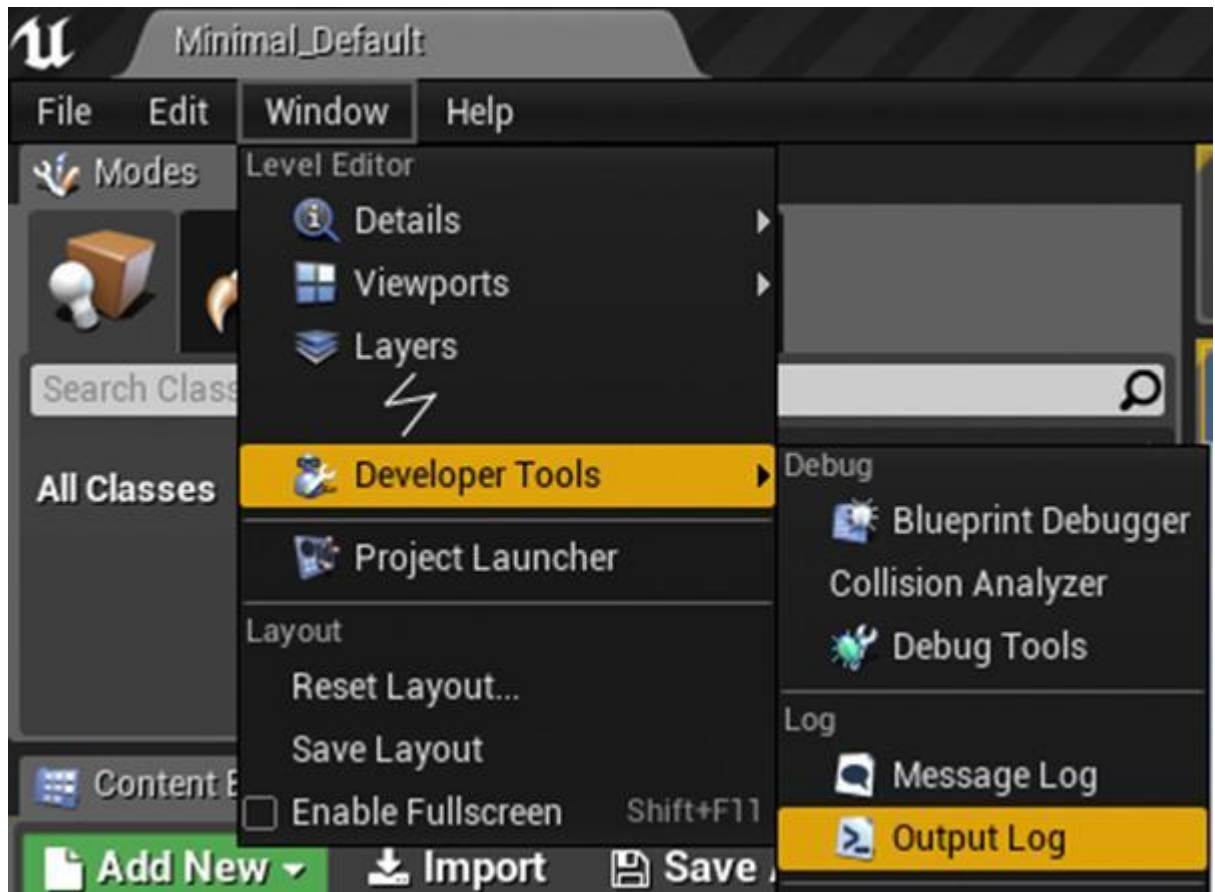
Unreal Engine 4.10.4 installation options

Core Components	7.20 GB	<input checked="" type="checkbox"/>
Starter Content	807.07 MB	<input checked="" type="checkbox"/>
Templates and Feature Packs	514.99 MB	<input checked="" type="checkbox"/>
Editor symbols for debugging	6.78 GB	<input type="checkbox"/>

Download Size: 4.39 GB
Required Storage Space: 8.49 GB

Install





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ue4cookbook **cookbook** UE4 Cookbook code Updated 3 hours ago

This repository Search Pull requests Issues Gist

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Code **Issues 0** Pull requests 0 Wiki Pulse Graphs Settings

Filters is: issue is: open Labels Milestones [New issue](#)

Code Issues 1 Pull requests 0 Wiki Pulse Graphs Settings

Parallax scrolling #1 [Open](#) ue4cookbook opened this issue 13 minutes ago · 0 comments

Write Preview **Apply labels to this issue**

Parallax scrolling should be added to the background. Check out [samples] (https://en.wikipedia.org/wiki/Super_Mario_World/media/File:Supermanowr1.png) of parallax SNES games

[supermarioworld](https://cloud.githubusercontent.com/assets/17153652/12939588/236e6092-11e5-8652-97a3-72c0b81.jpg)

Attach files by dragging & dropping, selecting them, or pasting from the clipboard.

Cancel [Update comment](#)

Labels: None yet

Milestone: No milestone

Assignee: No one—assign yourself

Notifications: [Unsubscribe](#)

You're watching notifications because you authored the thread.

1 participant

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Filters **Labels** Milestones

1 Open 0 Closed Author ▾ Labels ▾

Parallax scrolling enhancement
#1 opened 26 minutes ago by ue4cookbook

enhancement 1 open issue [Edit](#) [Delete](#)

Are you sure? Deleting a label will remove it from all issues and pull requests. [Delete label](#) [Cancel](#)

ue4cookbook / **cookbook** Unwatch ▾ 1 [Star](#) 0 [Fork](#) 0


[Code](#) **Issues 1** [Pull requests 0](#) [Wiki](#) [Pulse](#) [Graphs](#) [Settings](#)

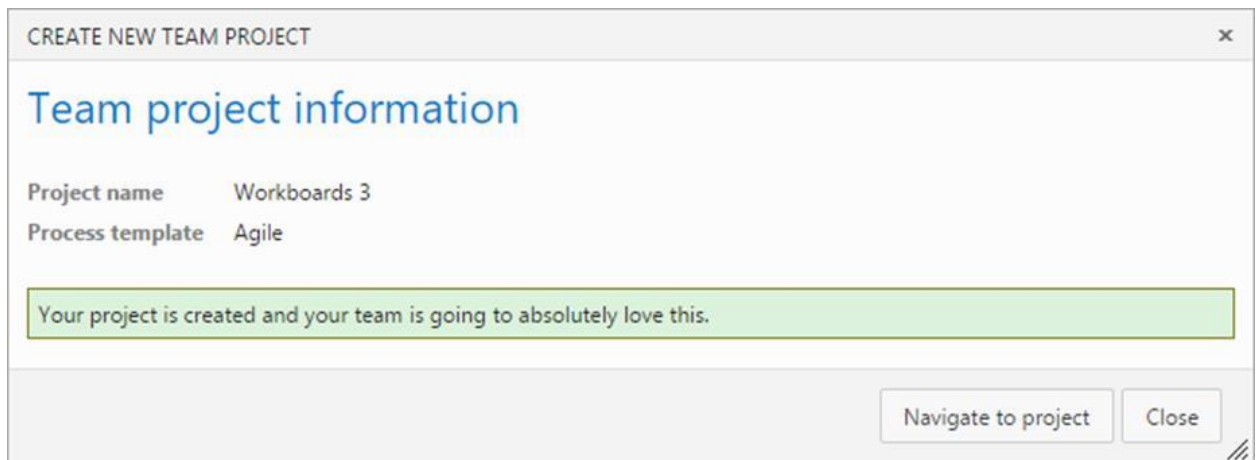
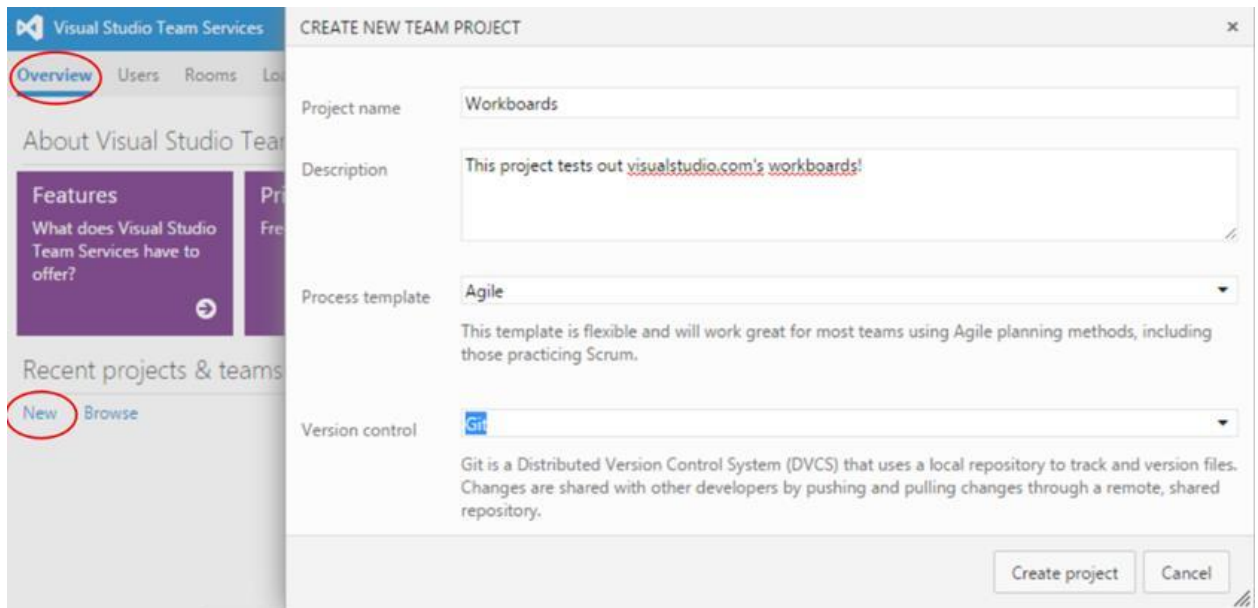
Labels Milestones [New label](#)

2 labels Sort ▾

bug 0 open issues [Edit](#) [Delete](#)

#84b6e2 [Cancel](#) [Save changes](#)







HOME

CODE

WORK

BUILD

TEST

RELEASE*

Welcome

Overview



Welcome

Get started using Visual Studio Team Services to make the most of your team dashboard.



Manage Work

Add work to your board

Visual Studio Team Services / Workboards

HOME CODE WORK BUILD TEST RELEASE*

Backlogs Queries

- Features
- Stories
- Current
 - Iteration 1
- Future
 - Iteration 2
 - Iteration 3

Stories

Backlog Board

New < Active

+ New item 🔍

Create sprites

Add a title

Cards can be customized to show more details. For now, we'll start with just a brief description.

Press **Enter** when you're done.

Backlogs Queries

- Epics
- Features
- Stories
- Current
 - First sprint - base graphics and sound
- Future
 - Second sprint
 - Third sprint

Stories

Backlog Board

New < Active 1/5 Resolved 1/5 Closed

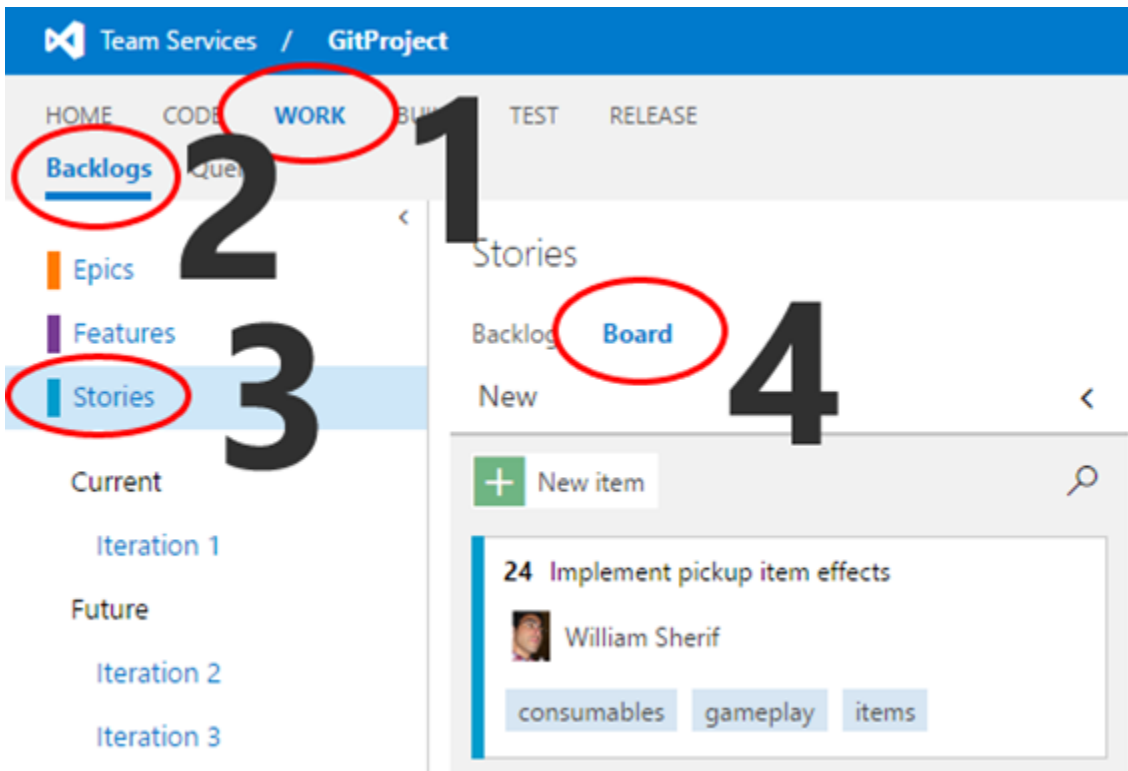
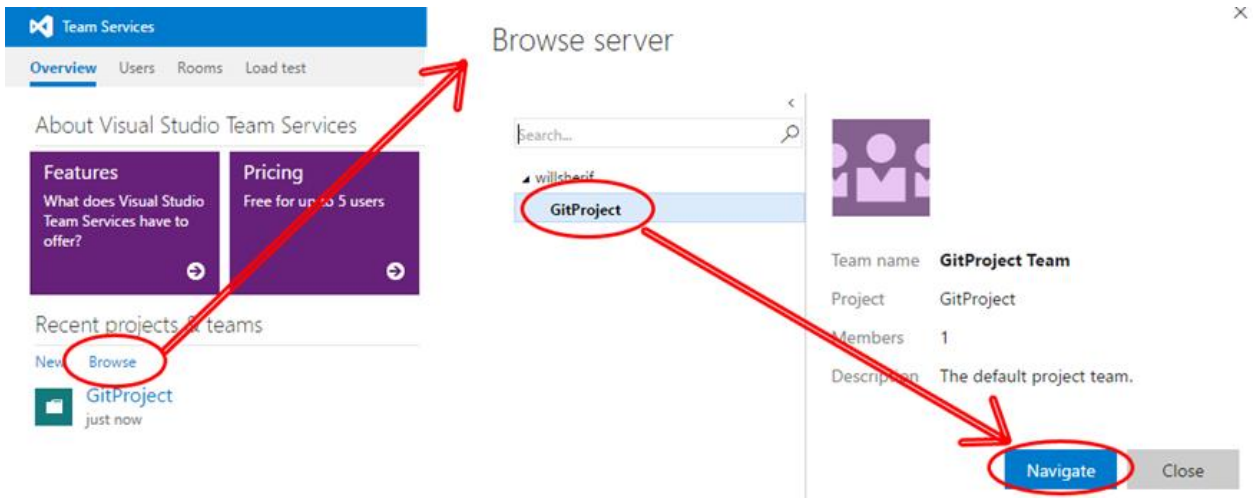
+ New item 🔍

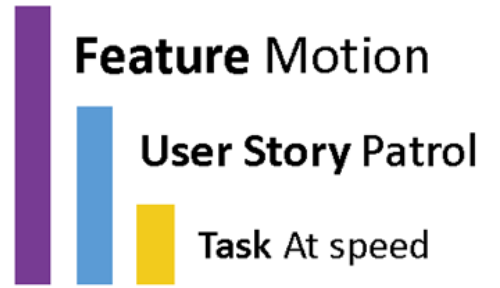
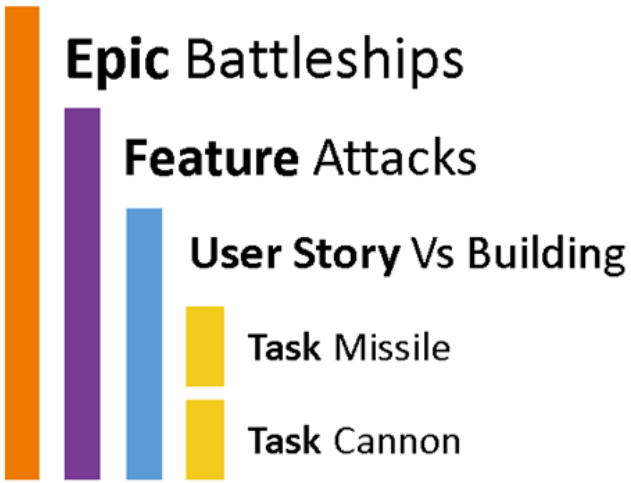
Mix sounds
UC UE4 Cookbook

Create sprites
UC UE4 Cookbook

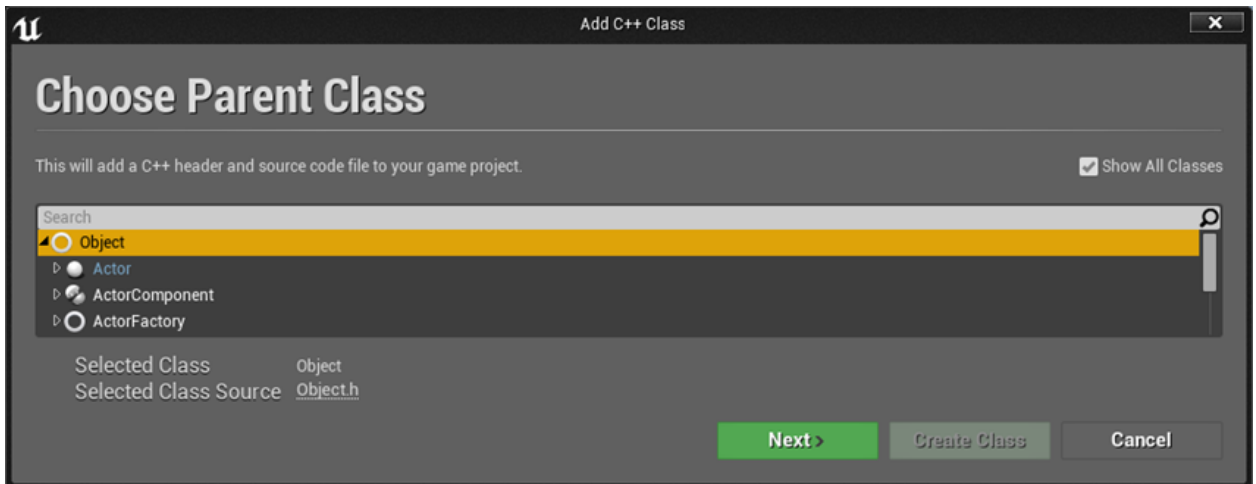
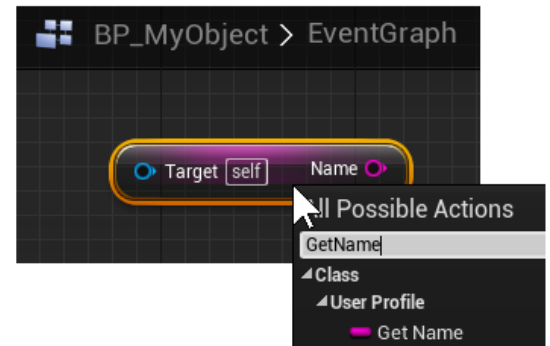
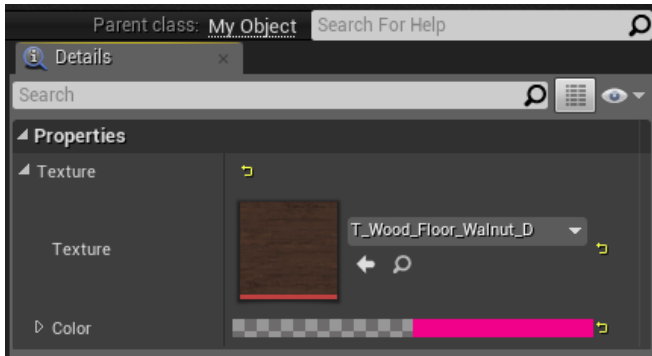
Finish player model
UC UE4 Cookbook

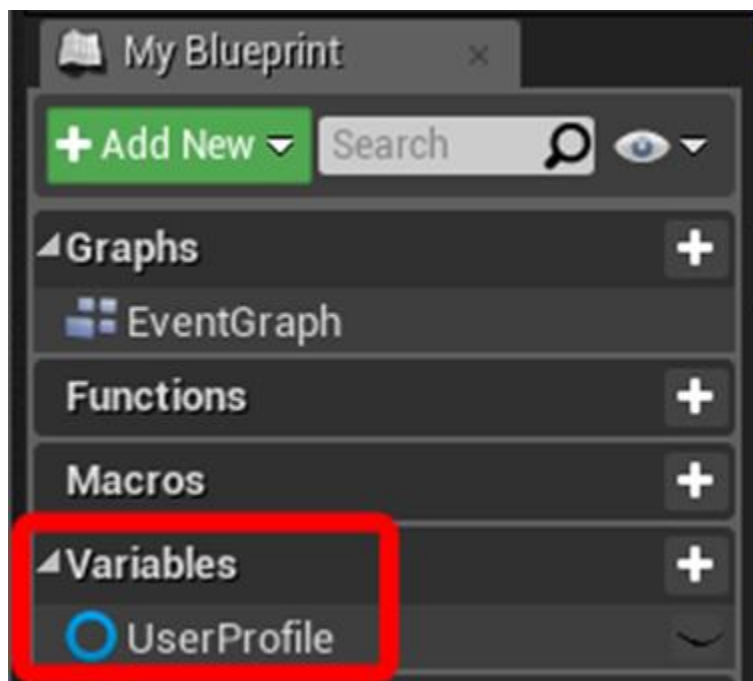
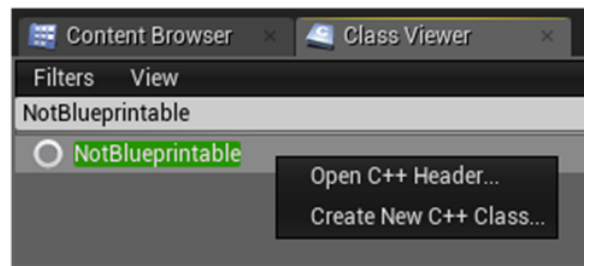
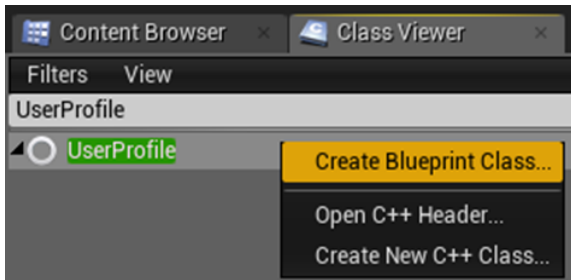
Design 1st level

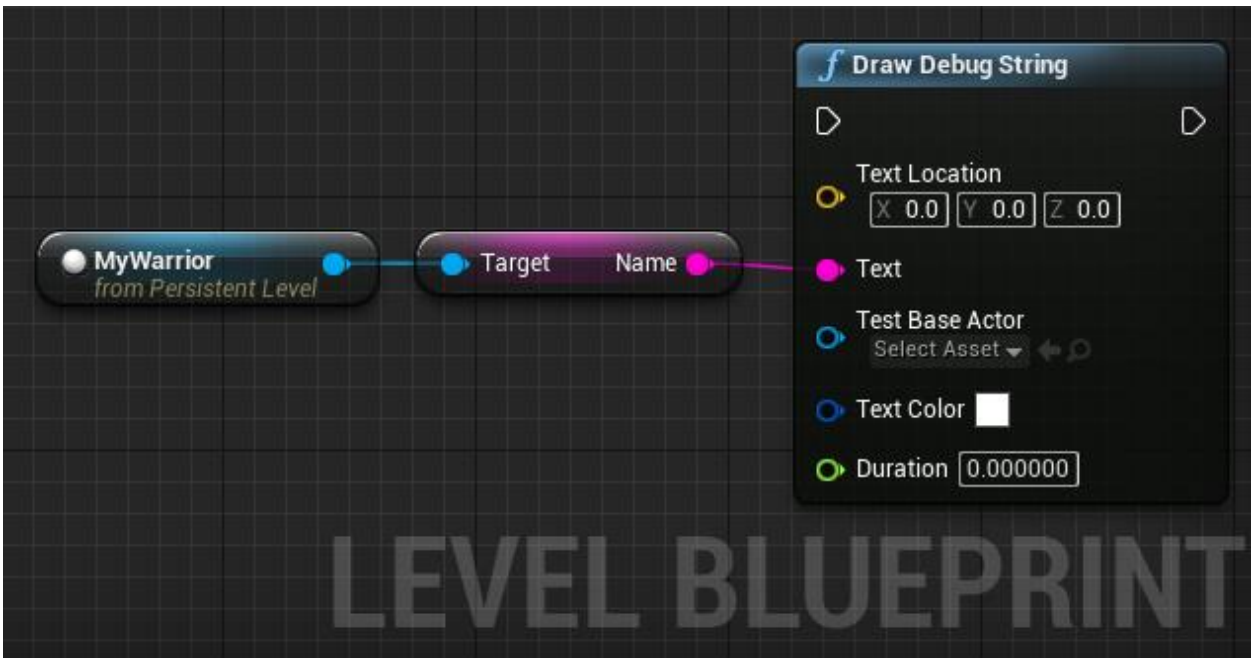
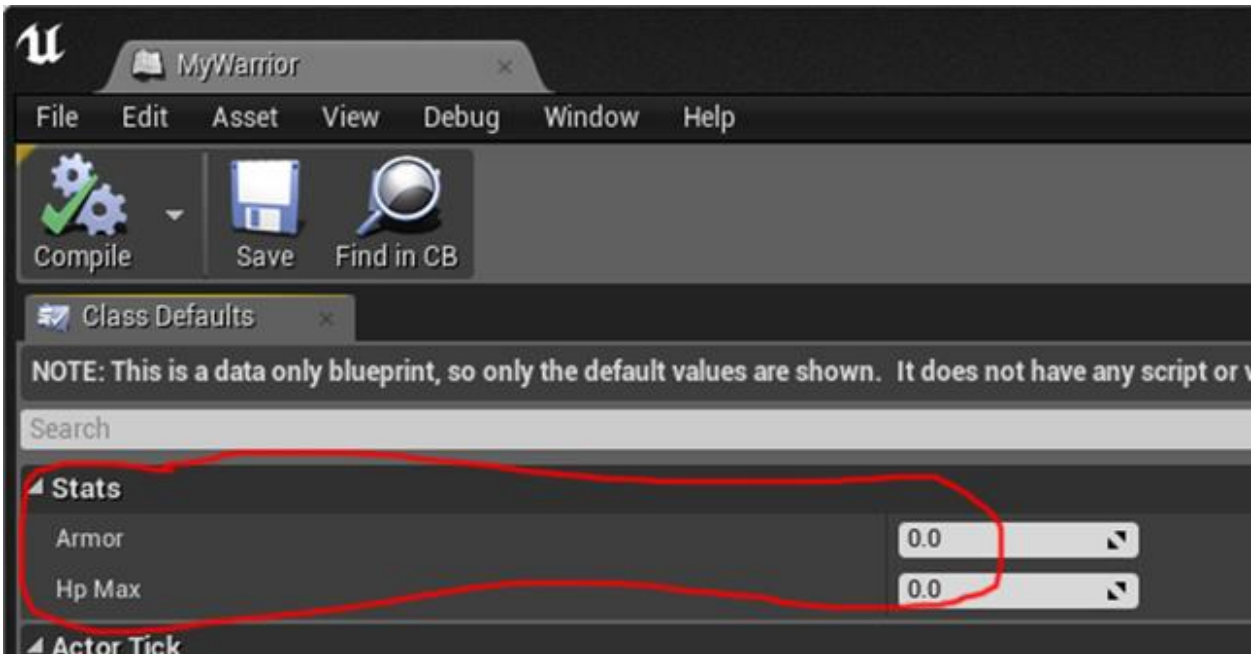


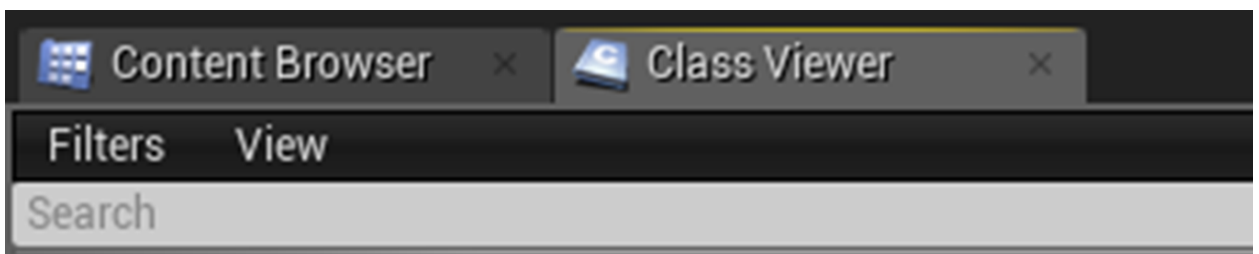
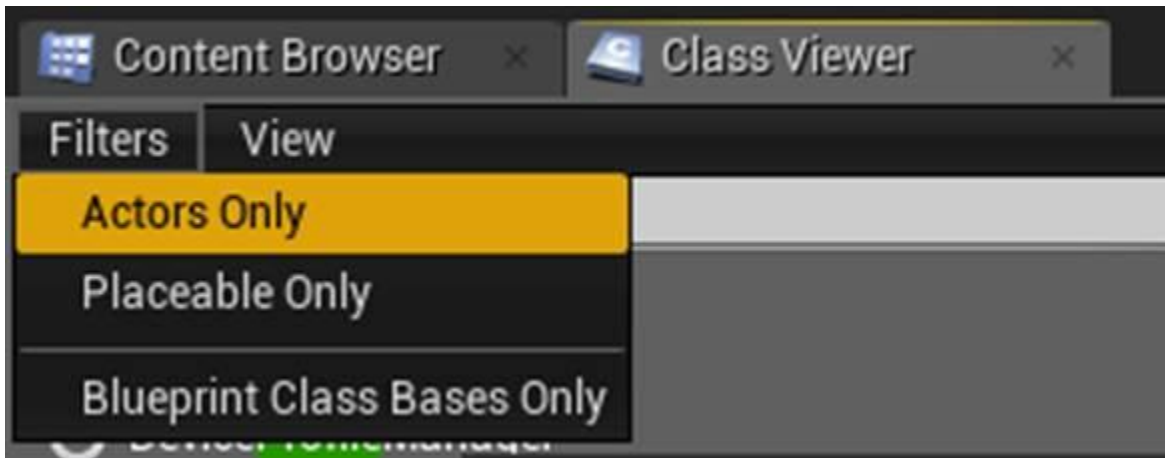


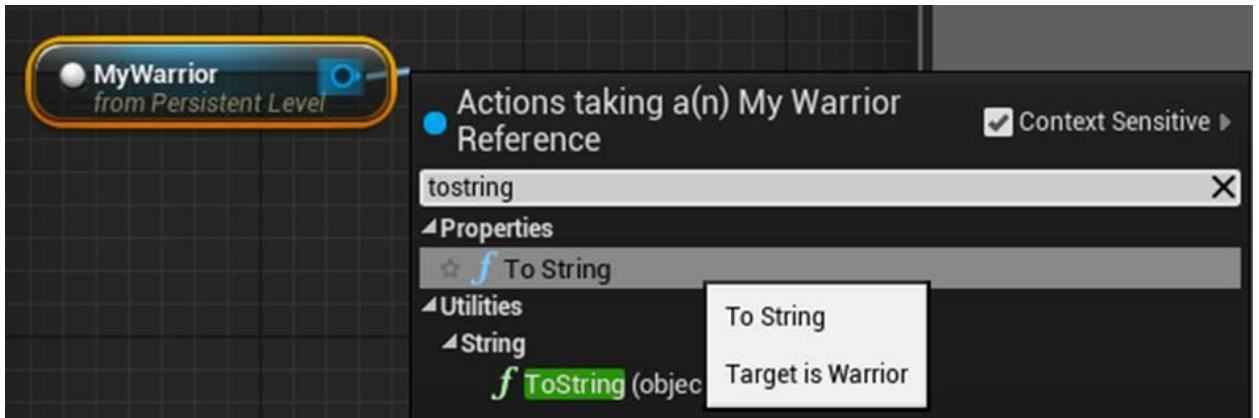
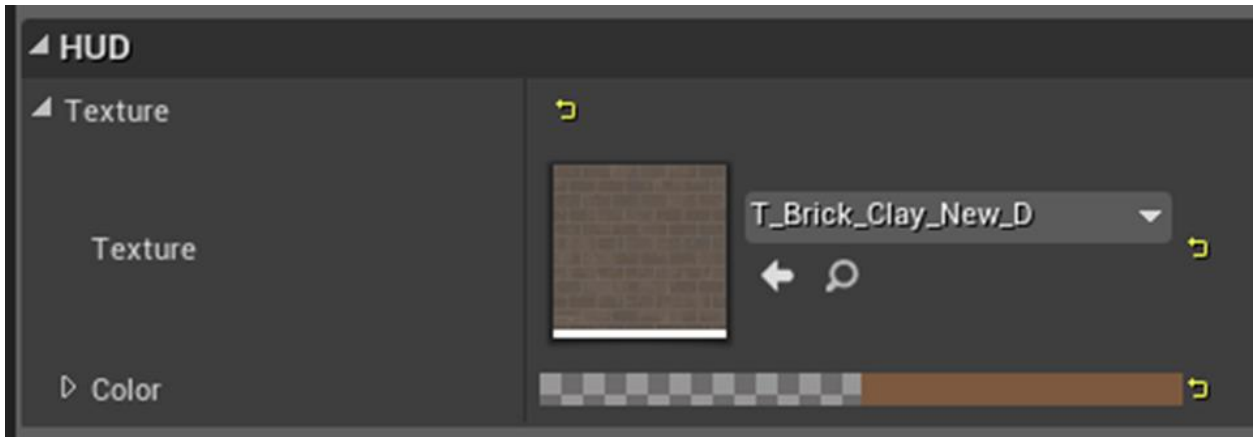
Chapter 2: Creating Classes

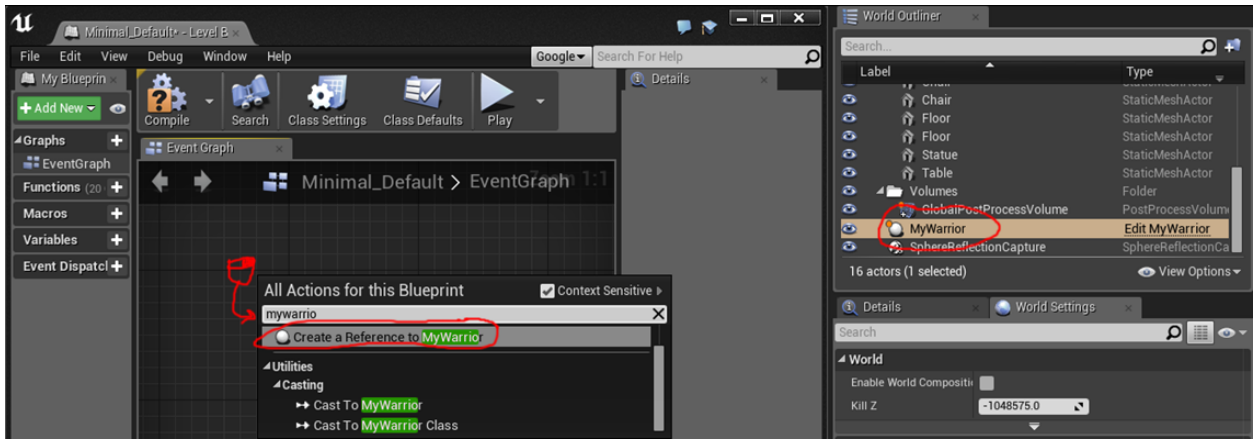




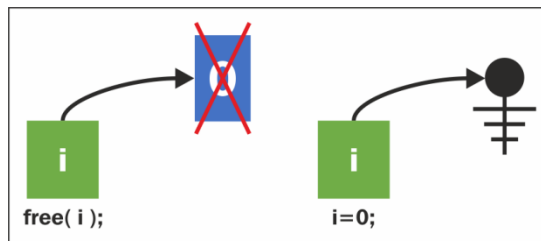
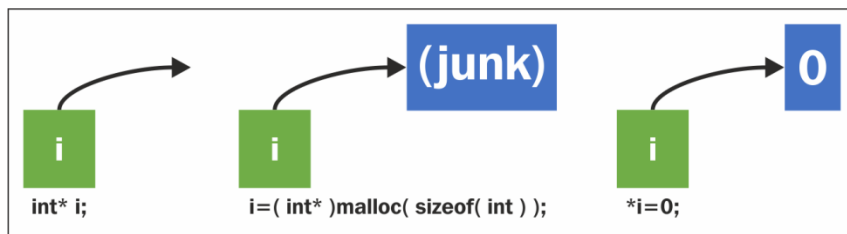
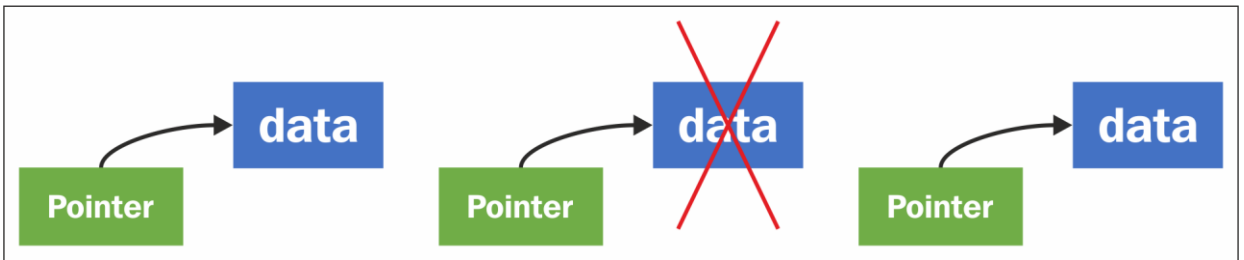


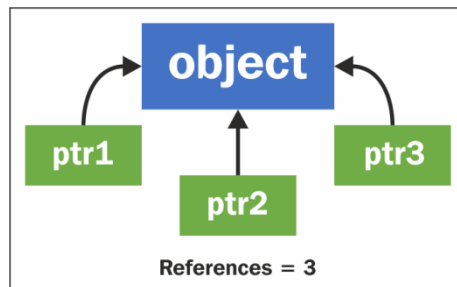






Chapter 3: Memory Management and Smart Pointers






```

8 | UObject *o = NewObject<UObject>( GetTransientPackage(),
9 | UObject::StaticClass() );
  
```

Call Stack

Name
UE4Editor-MyProject.dll!NewObject<UObject>(UObject * Outer, UClass * Class, FName Name, EObjectFlags Flags, UE4Editor-MyProject.dll!AMyProjectGameMode::AMyProjectGameMode(const FObjectInitializer & PCIP) Line 11

Analysis Target




Startup Project
MyProject

Change Target ▾

Available Tools

CPU Usage

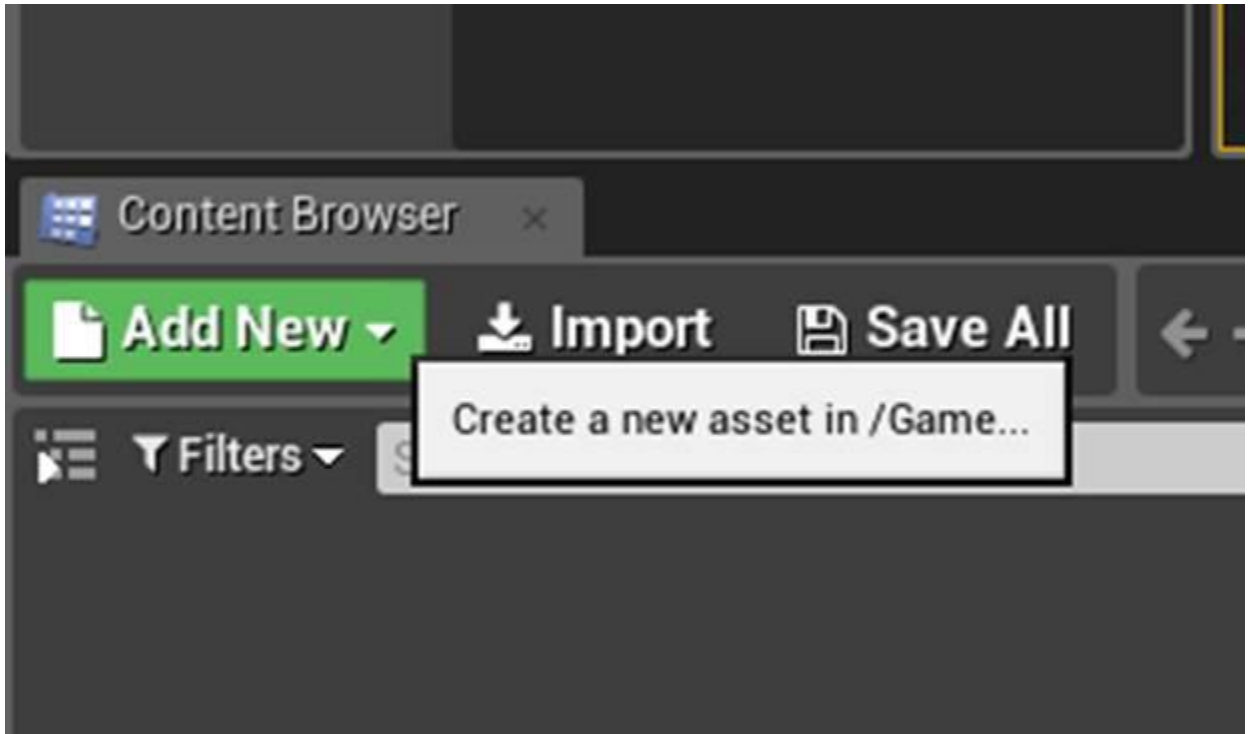
See where the CPU is spending time executing your code. Useful when the CPU is the performance bottleneck

GPU Usage 


Examine GPU usage in your DirectX application. Useful to determine whether the CPU or GPU is the performance bottleneck

Start

Chapter 4: Actors and Components



Content

 Add Feature or Content Pack...

Folder


 New Folder


C++ Class

 New C++ Class...

Create Basic Asset

 Blueprint Class

 Level

 Material

 Particle System

Create Advanced Asset

Animation ▶

Blueprints ▶

Materials & Textures ▶

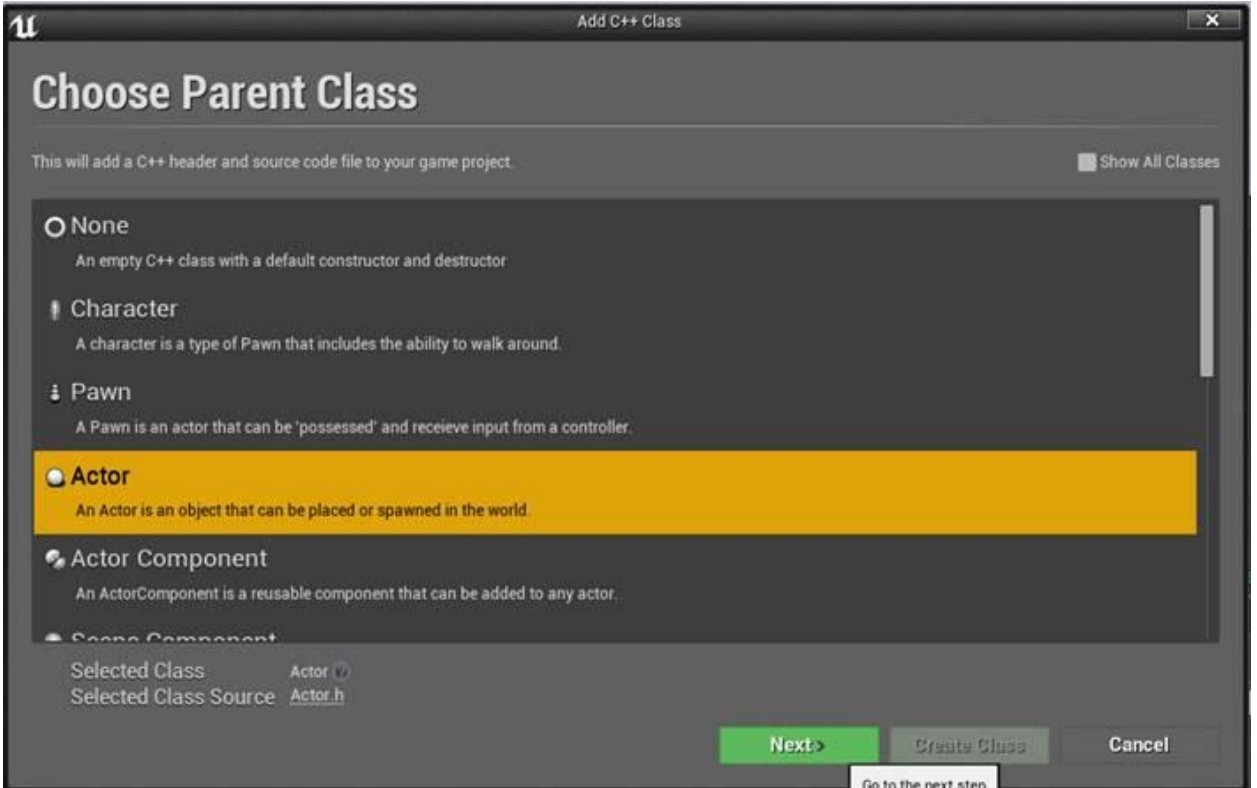
Sounds ▶

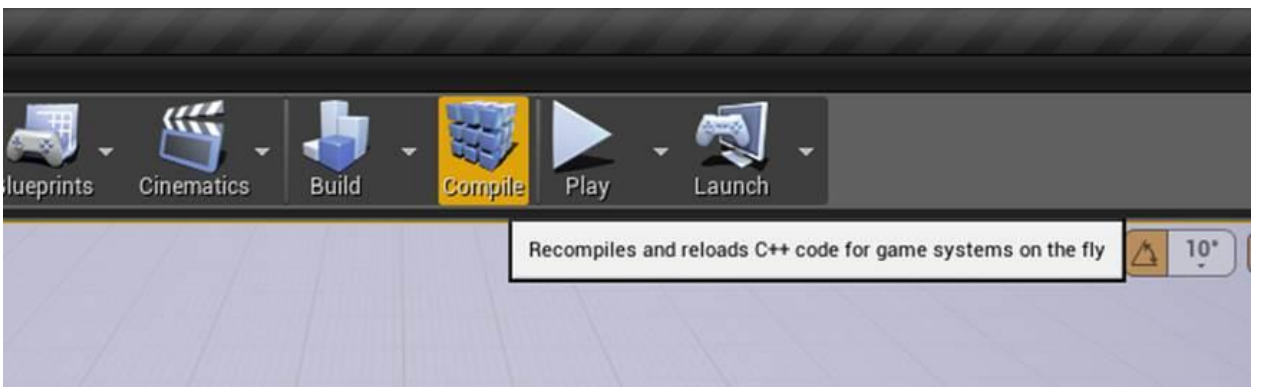
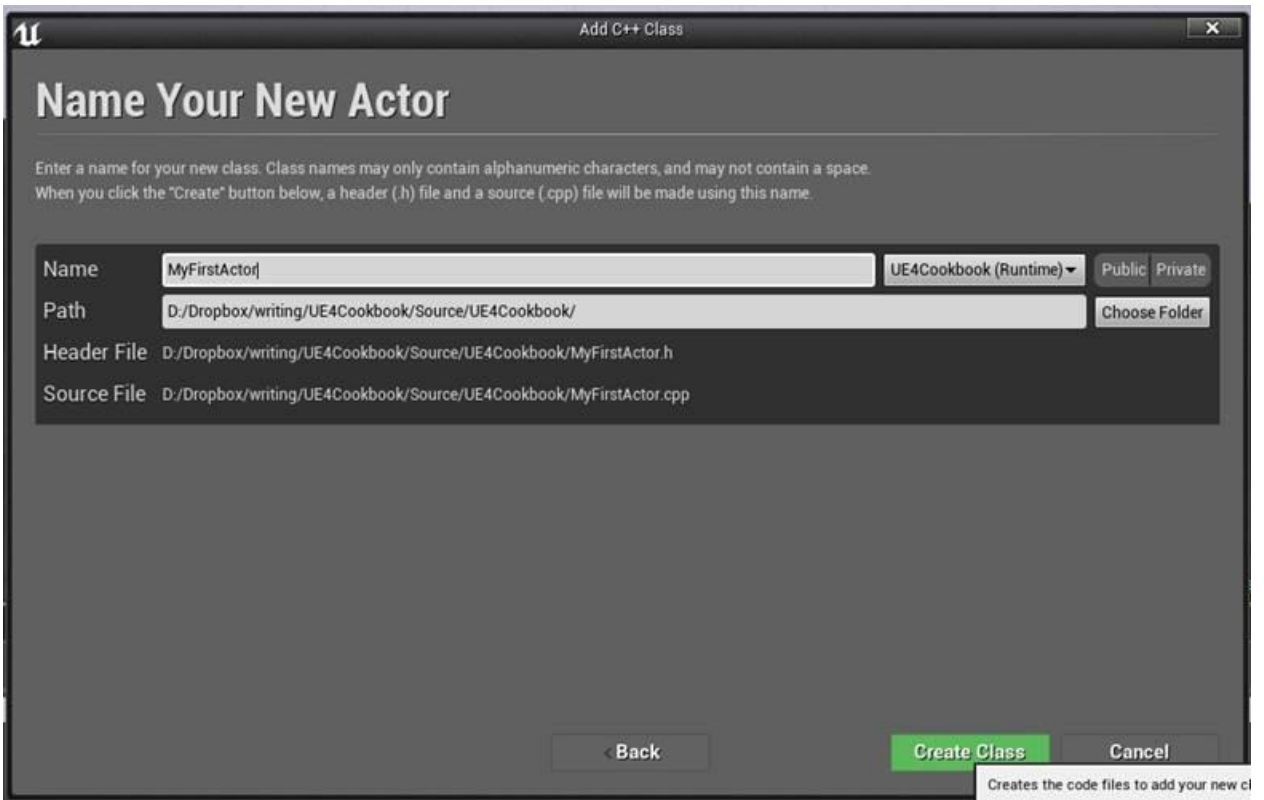
Physics ▶

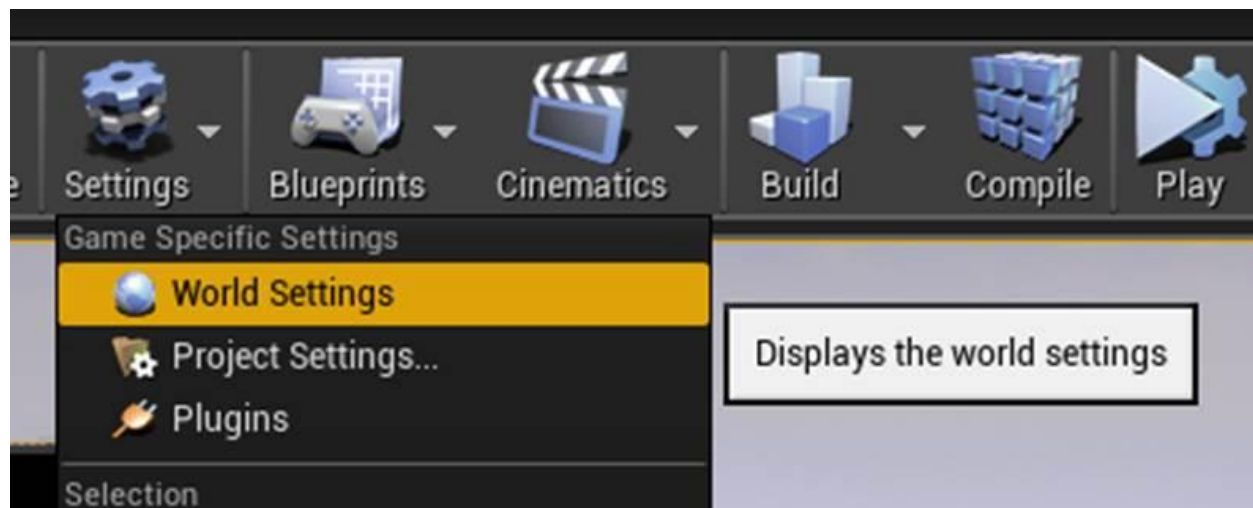
User Interface ▶

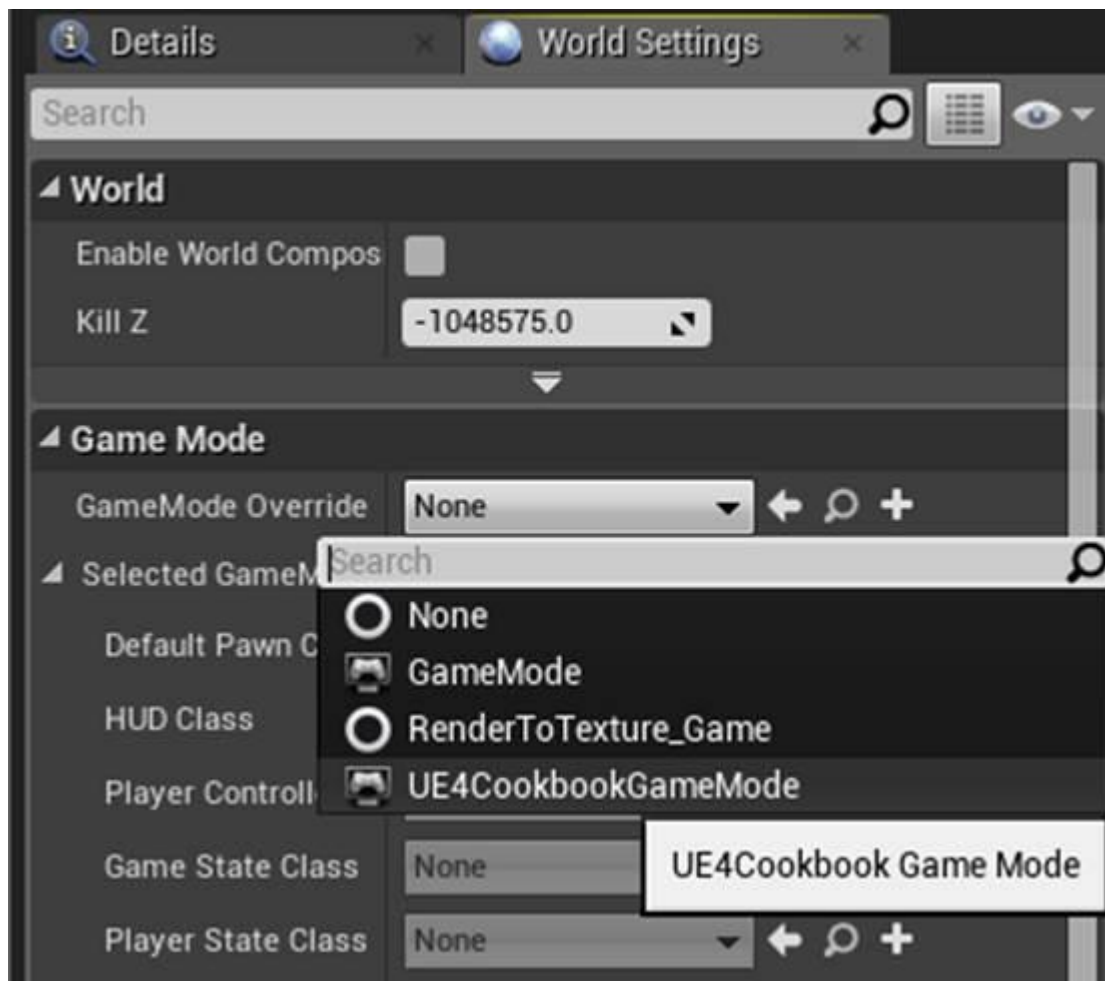
Miscellaneous ▶

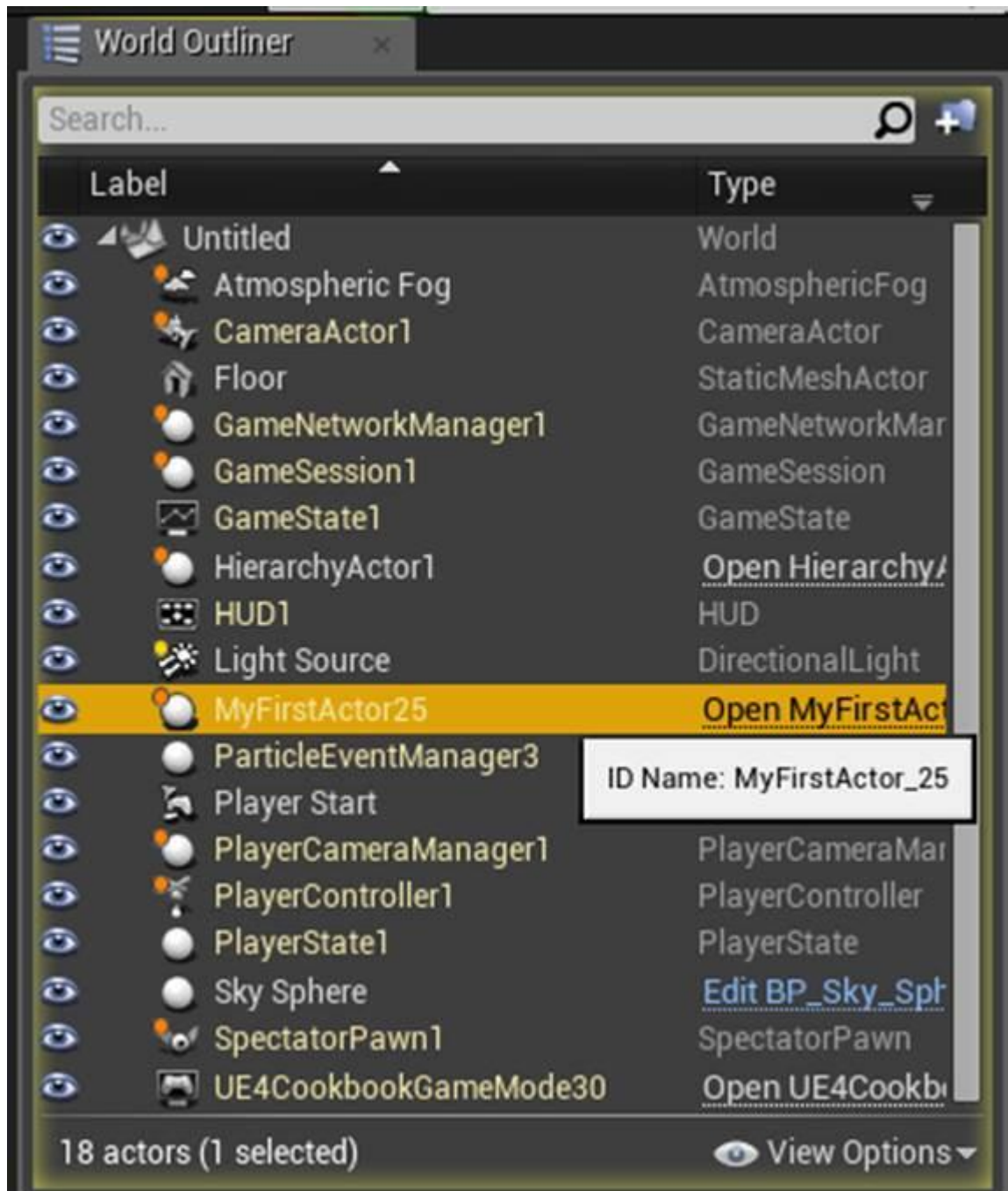
Blendables ▶

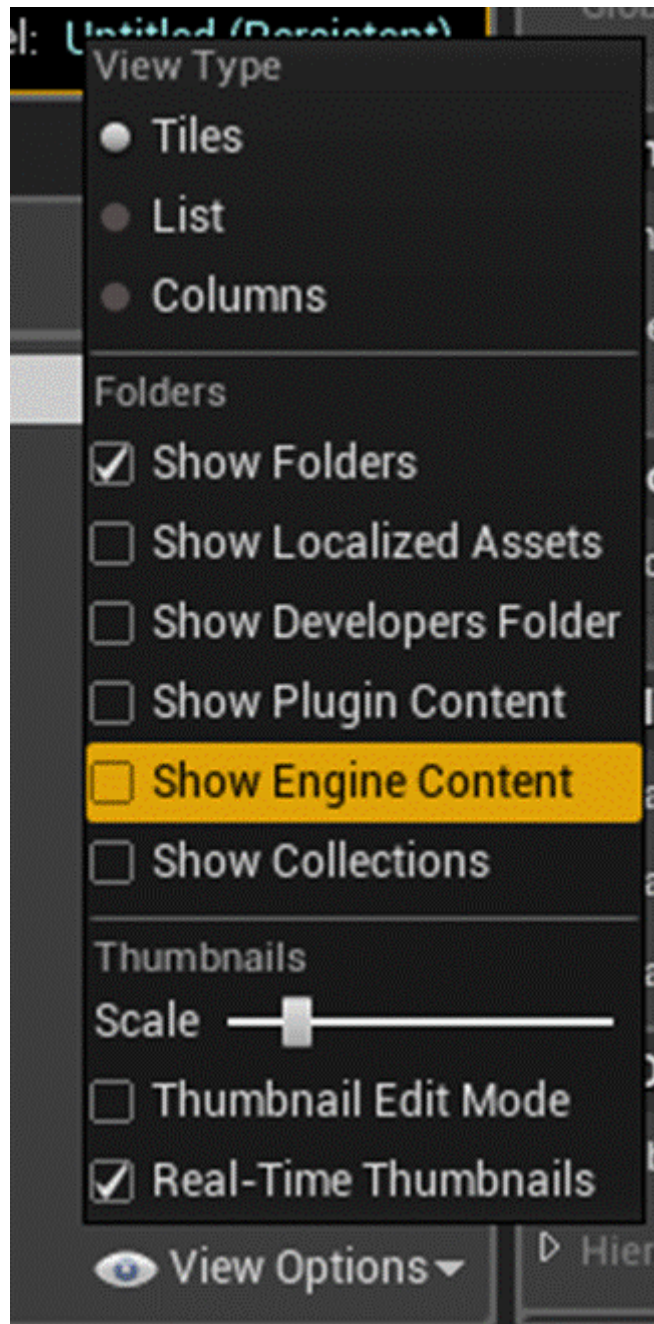


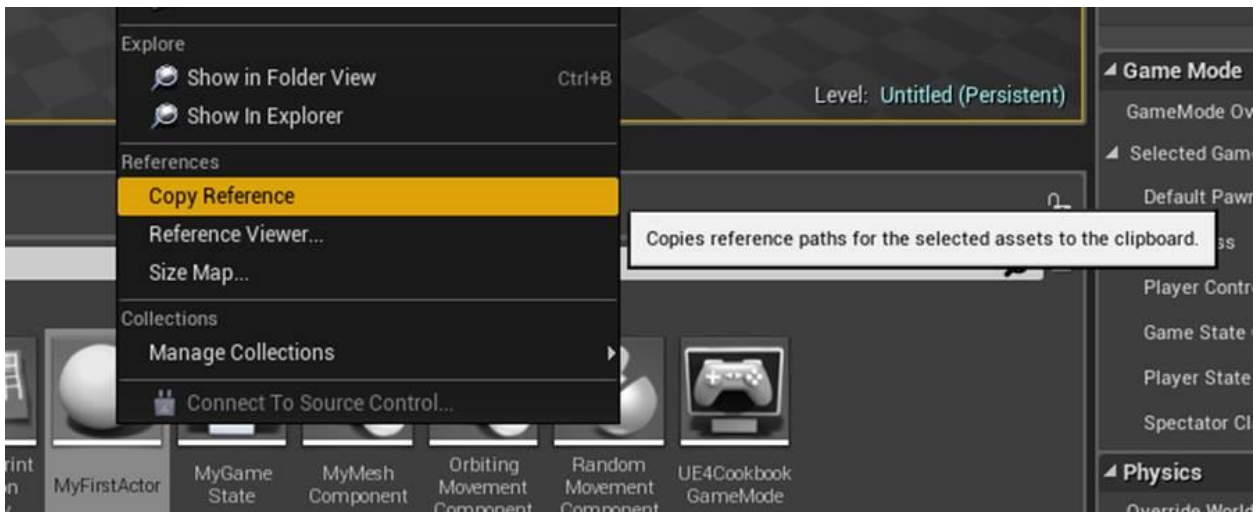
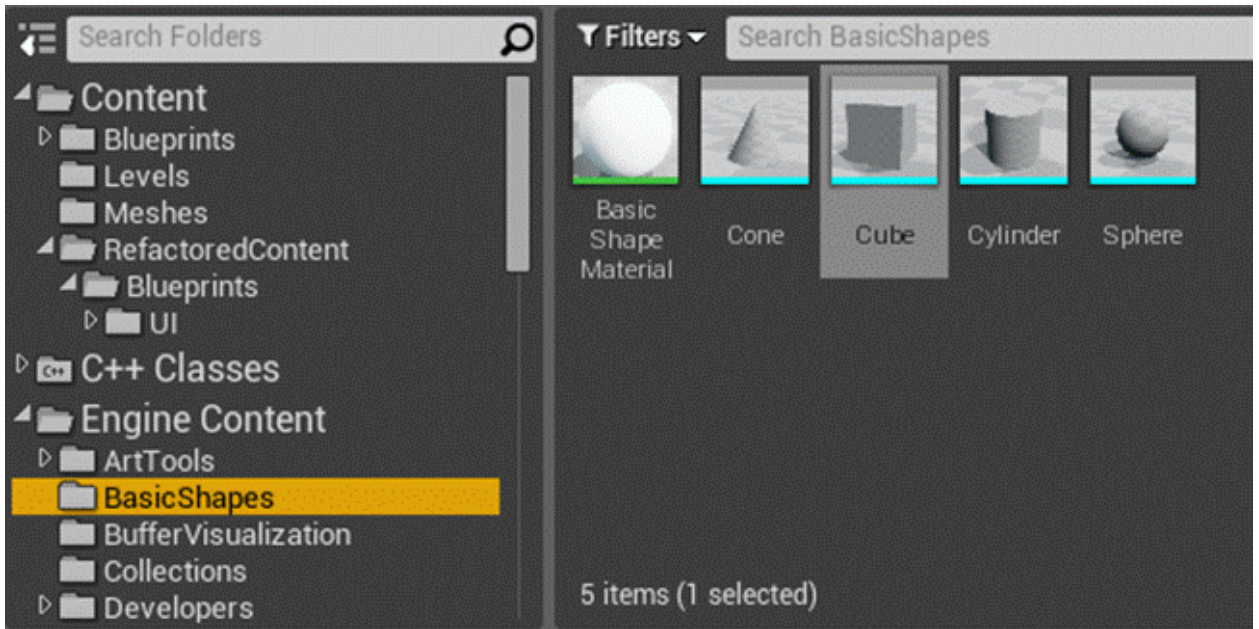


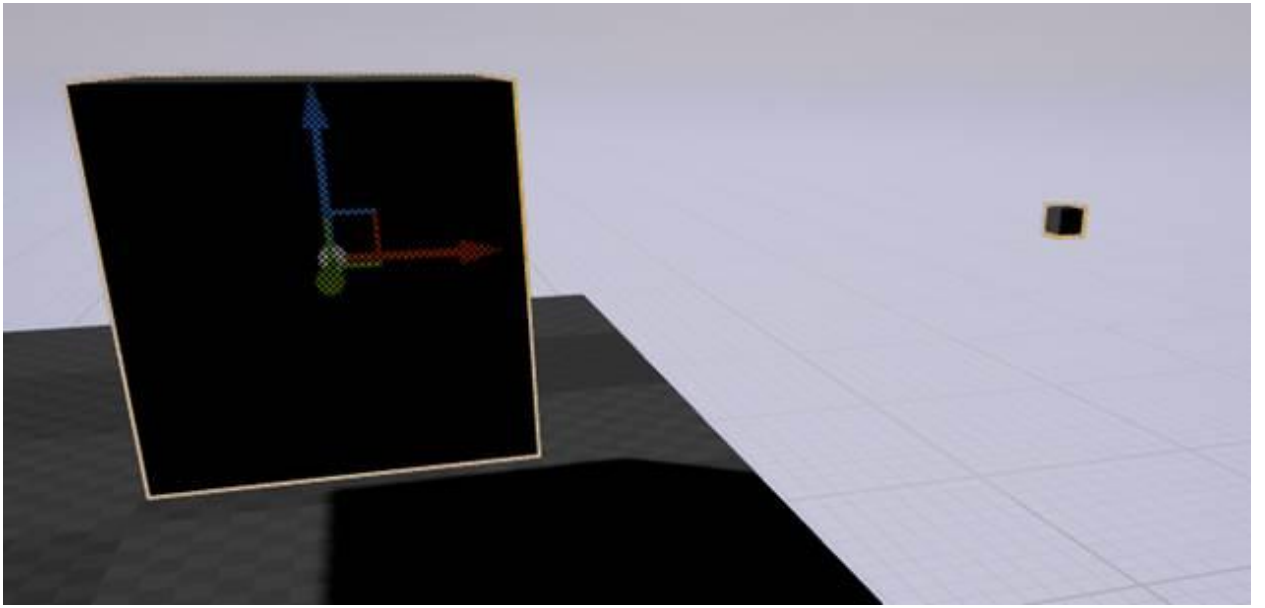


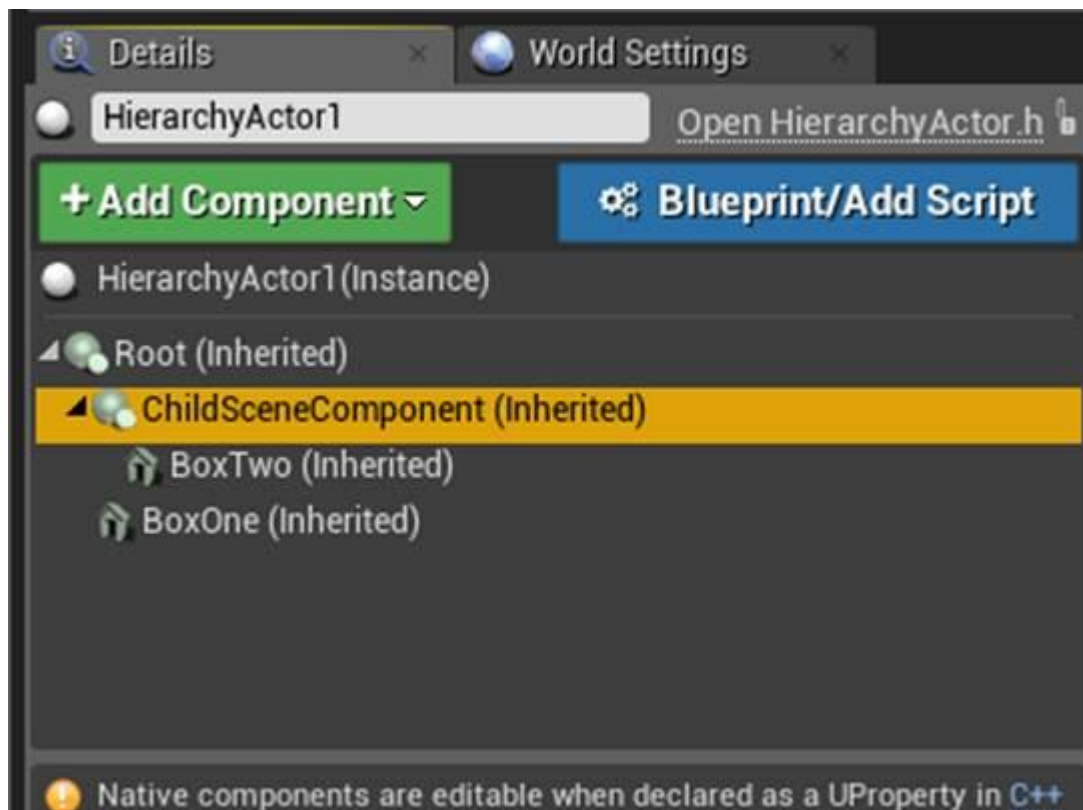




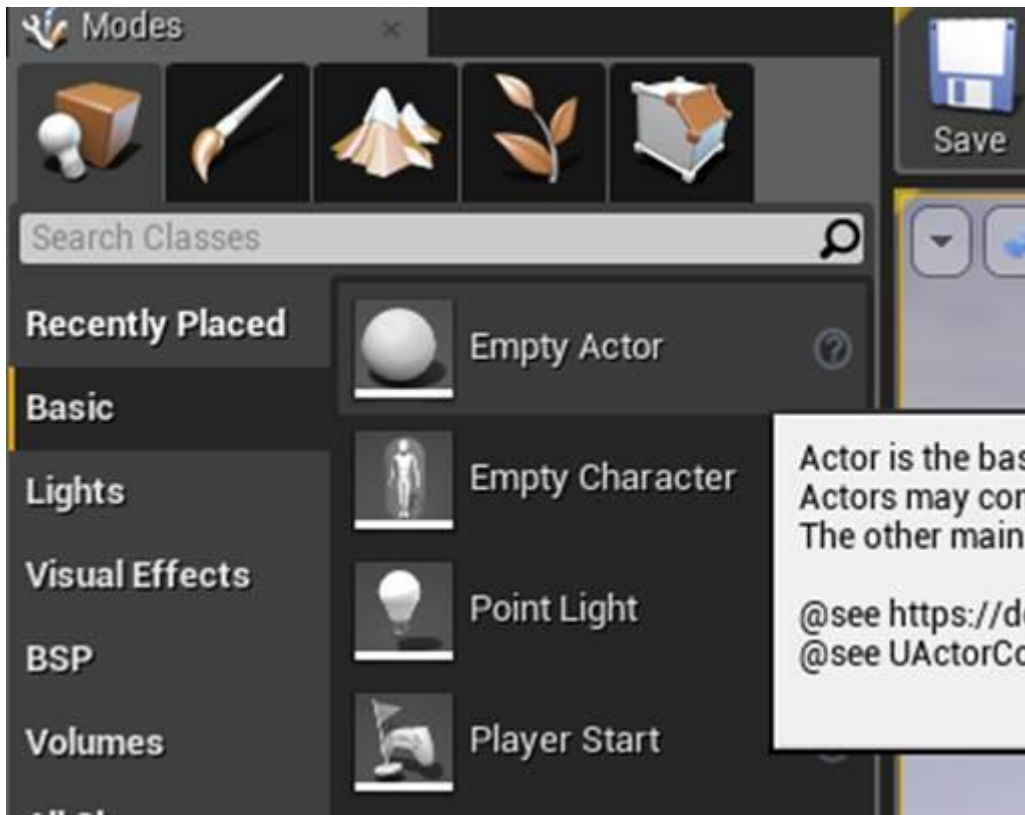


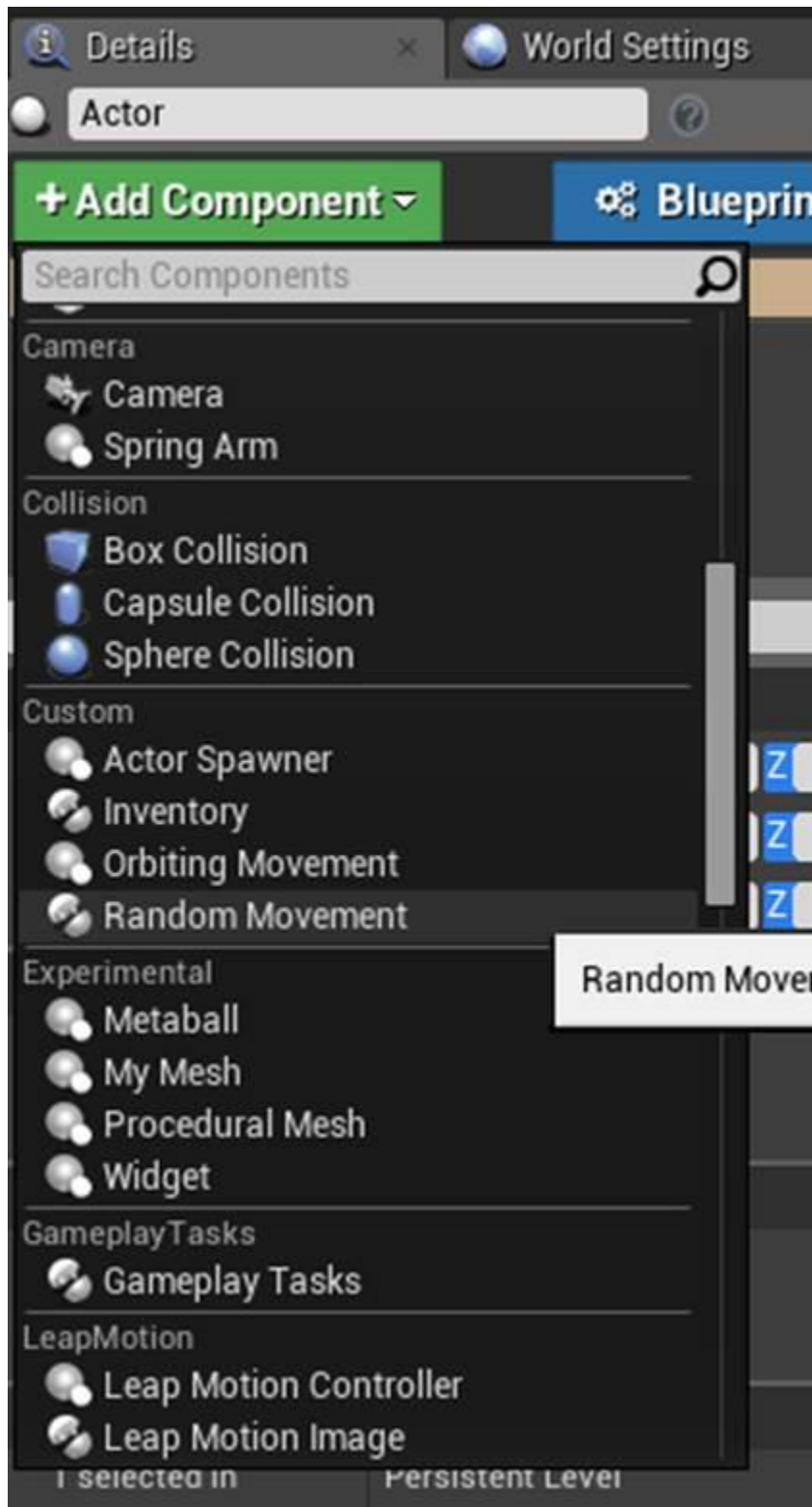


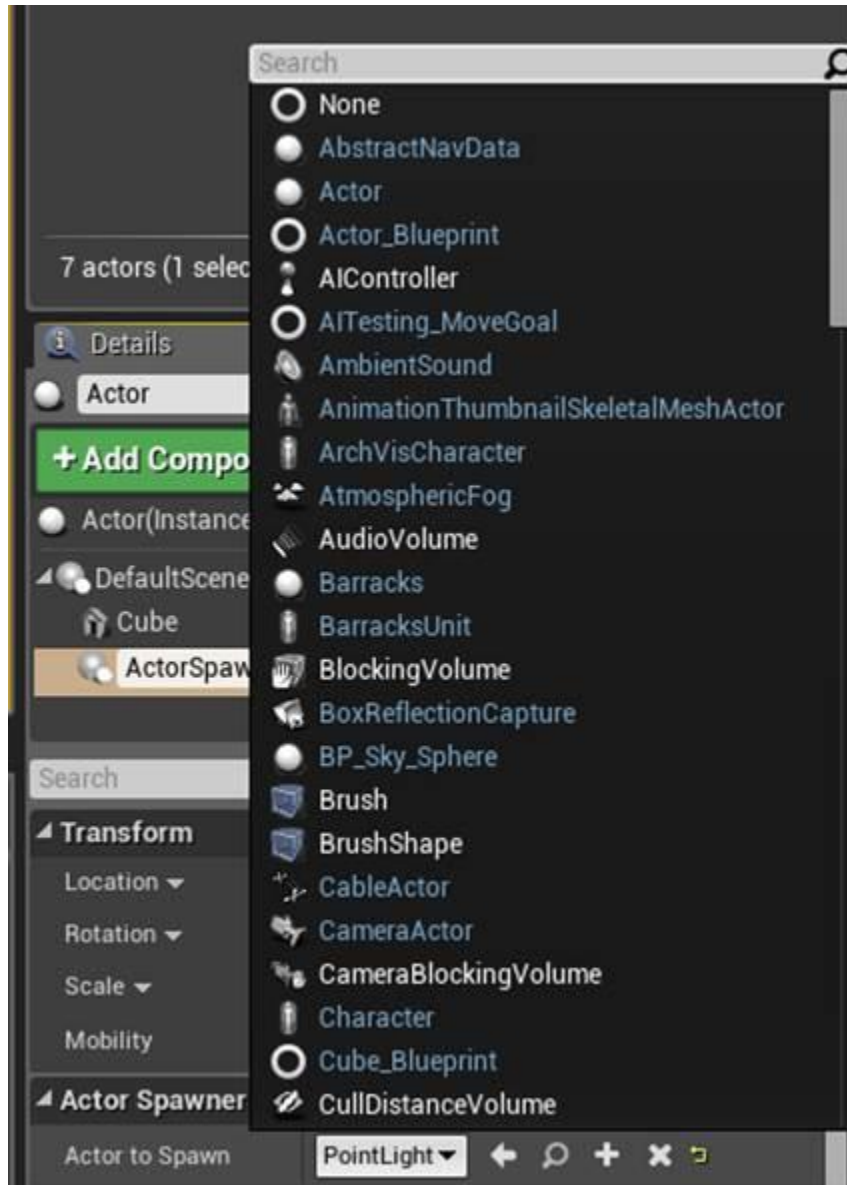


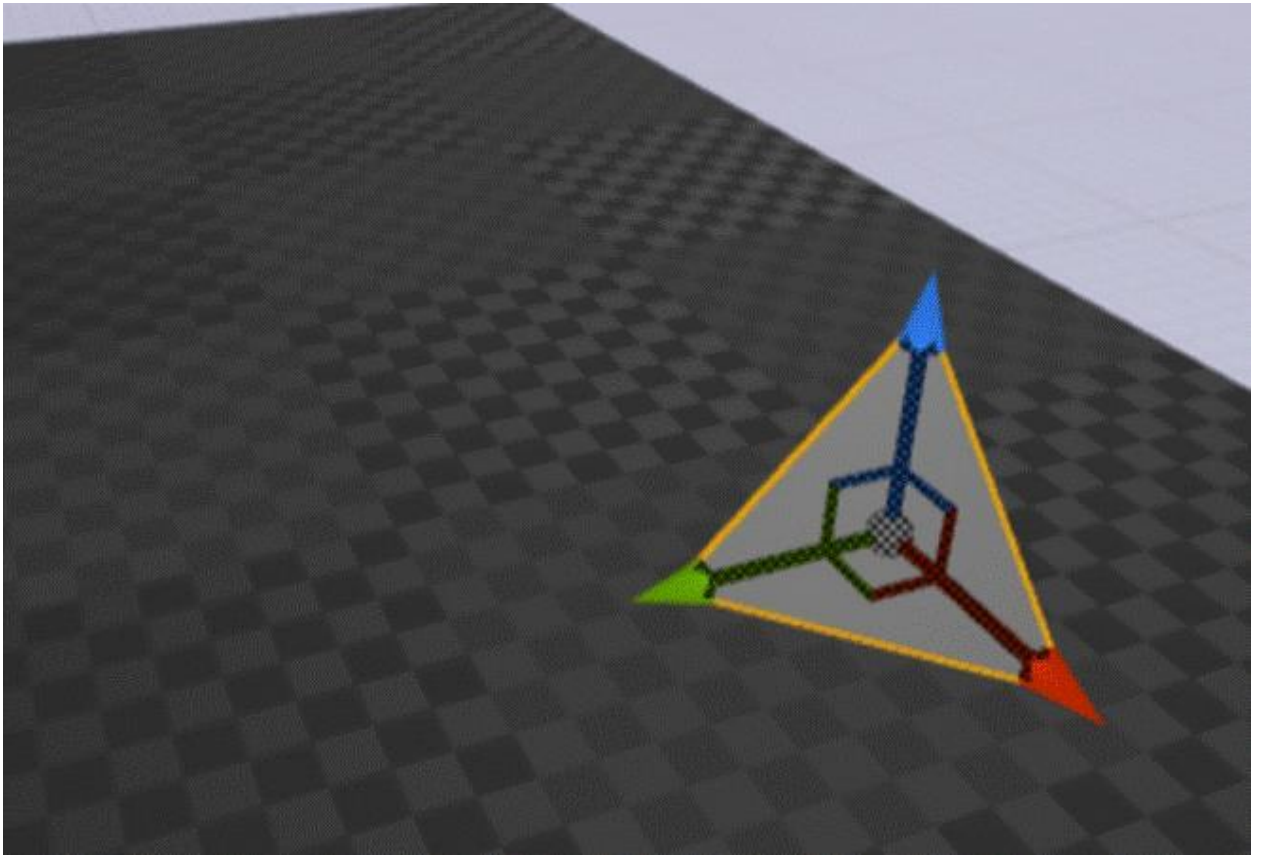


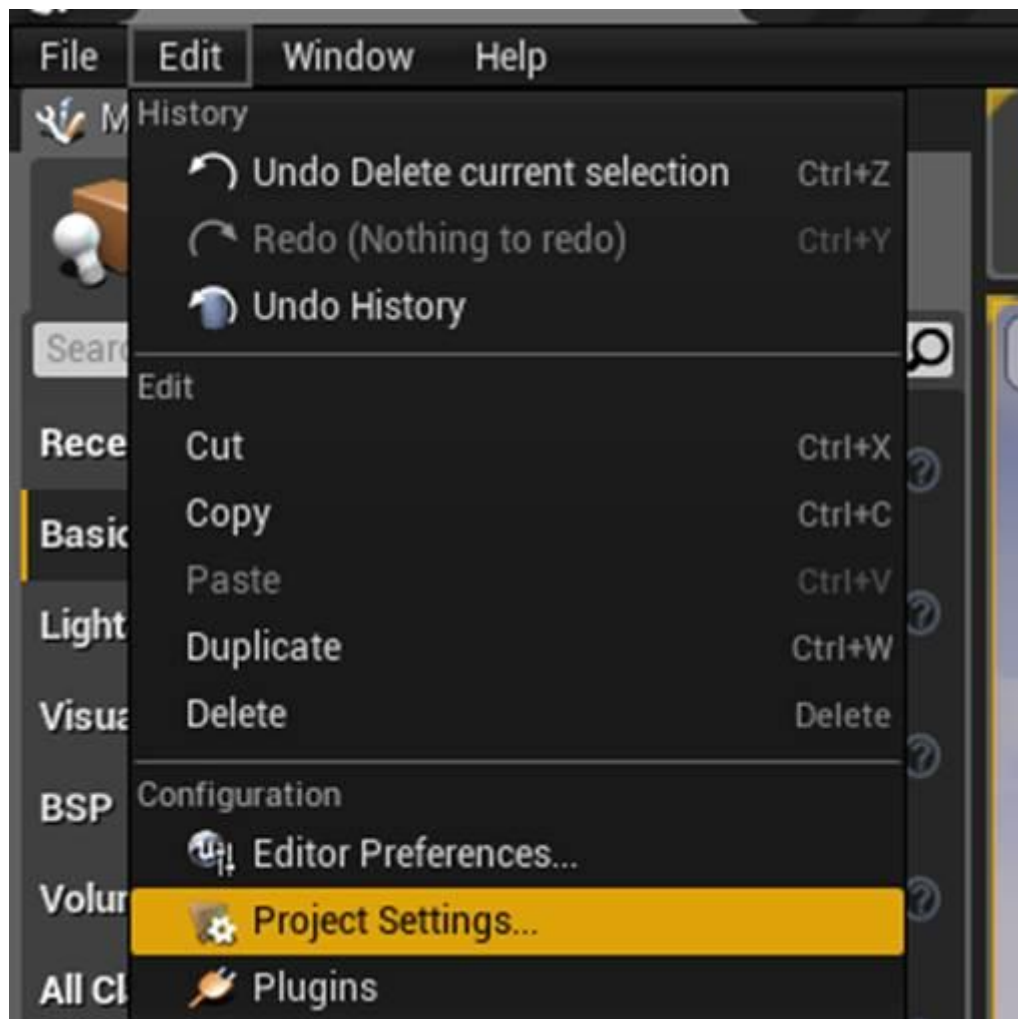
Native components are editable when declared as a UProperty in C++











Engine - Input

Input settings, including default input action and axis bindings.

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

Search

▲ Bindings

Action and Axis Mappings provide a mechanism to conveniently map keys and axes to actions. Action Mappings are for key presses and releases, while Axis Mappings allow for inputs that have a continuous range.

▲ Action Mappings +

▲ Dropltem +  

 E

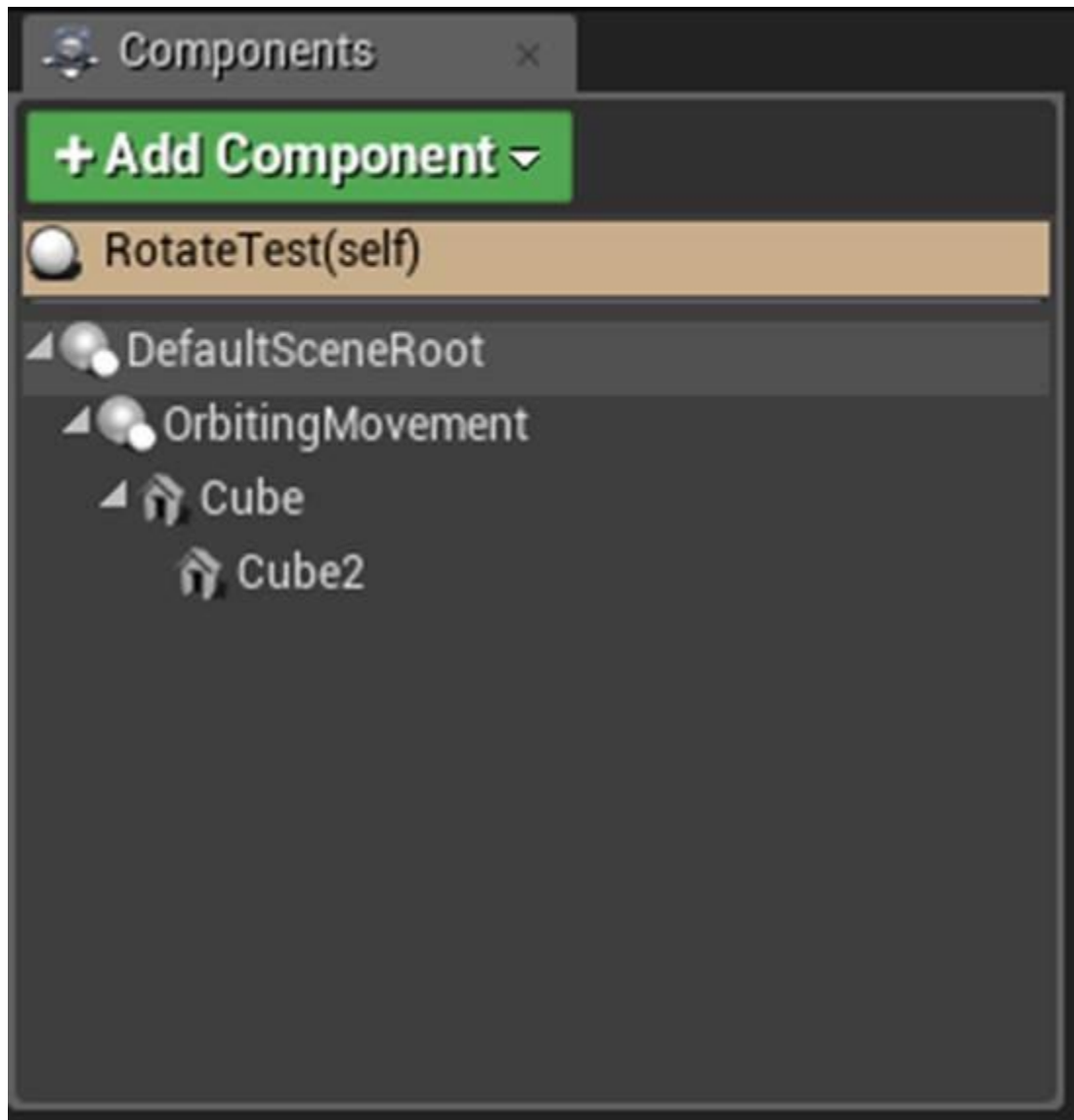
Shift

Ctrl

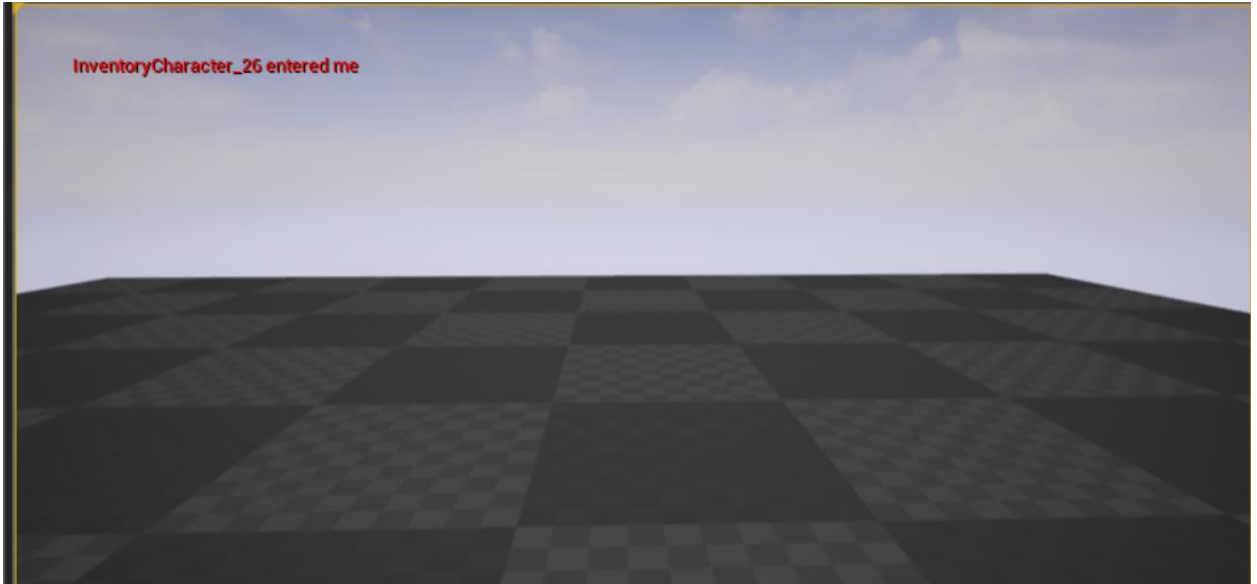
Alt

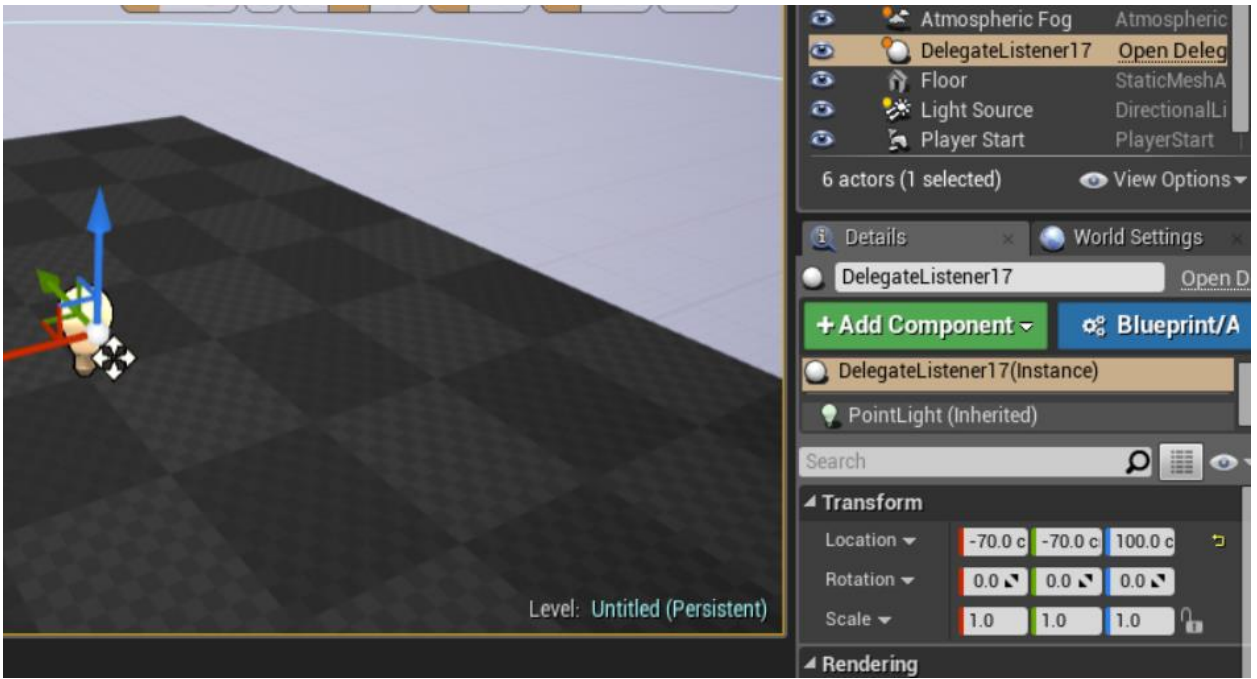
Cmd

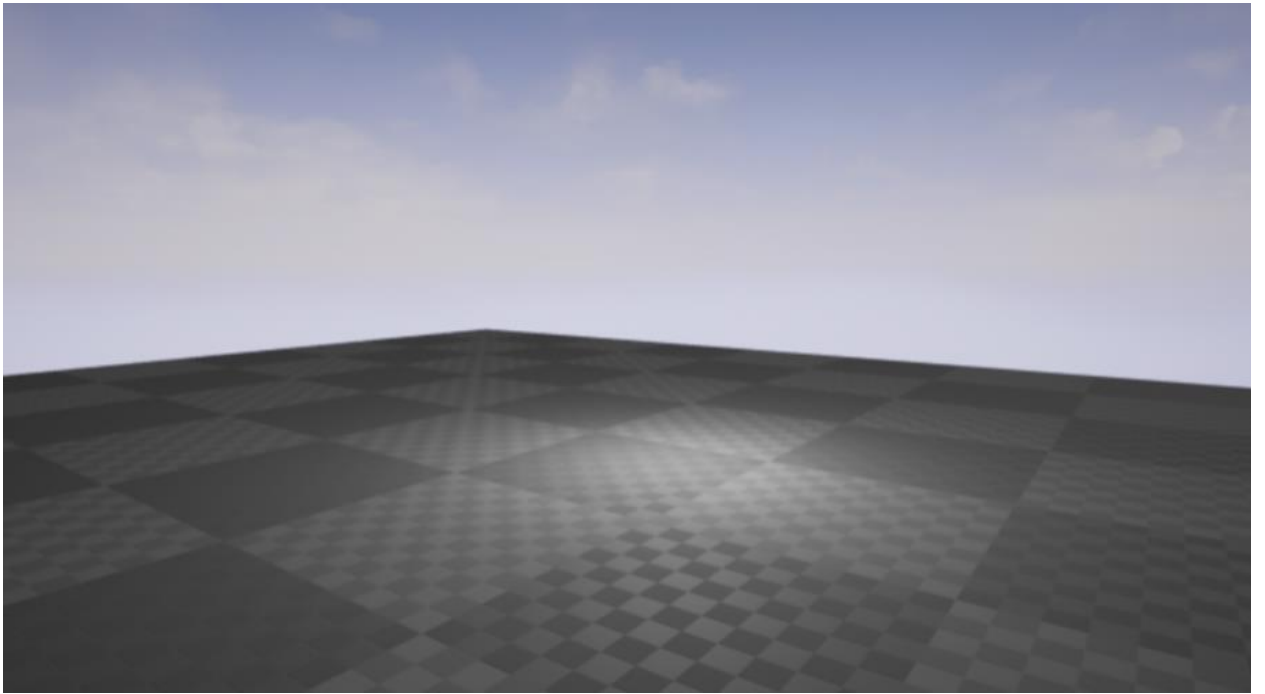


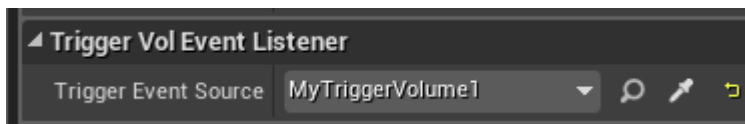
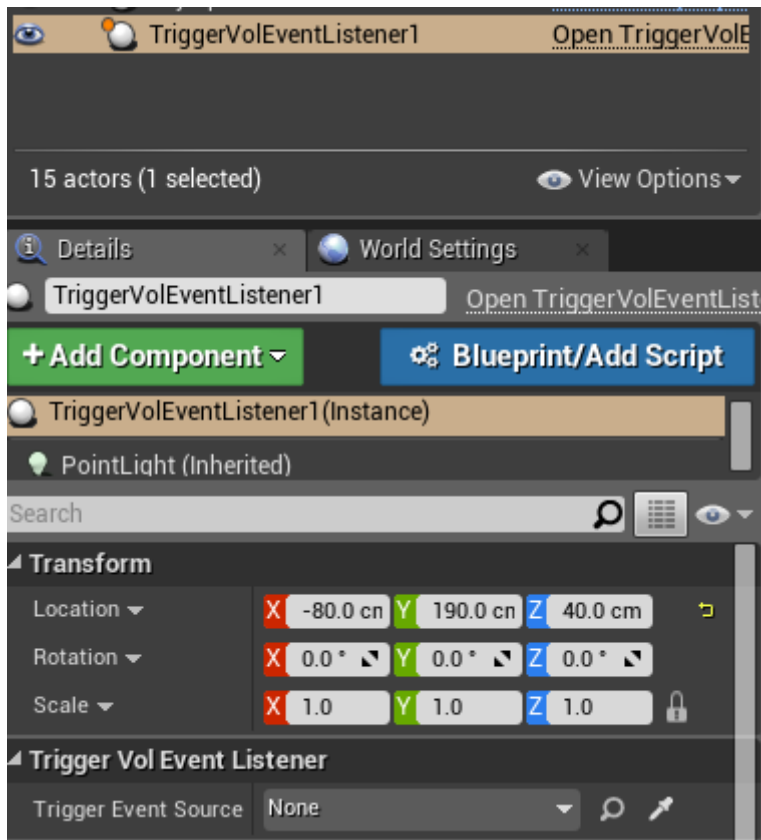


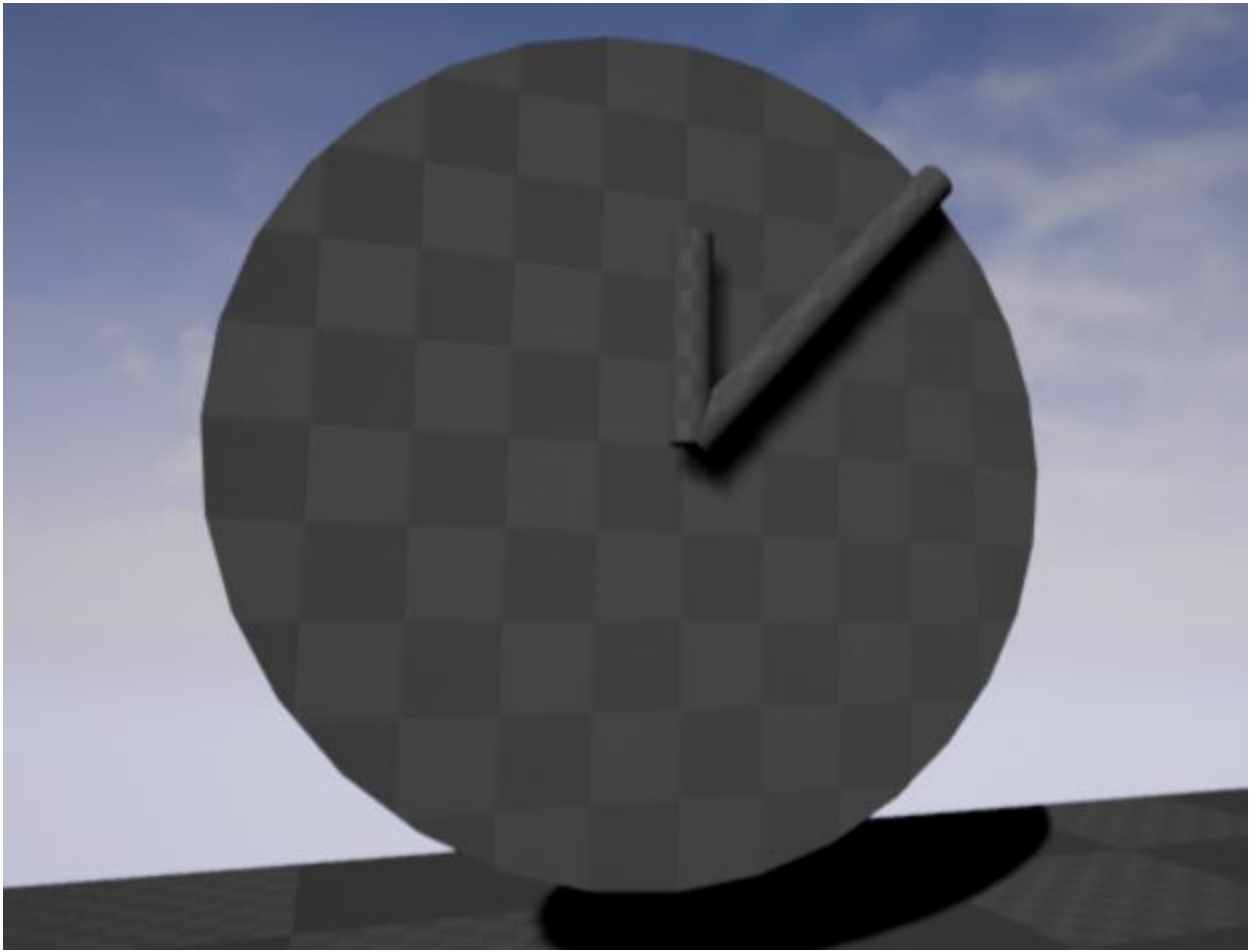
Chapter 5: Handling Events and Delegates

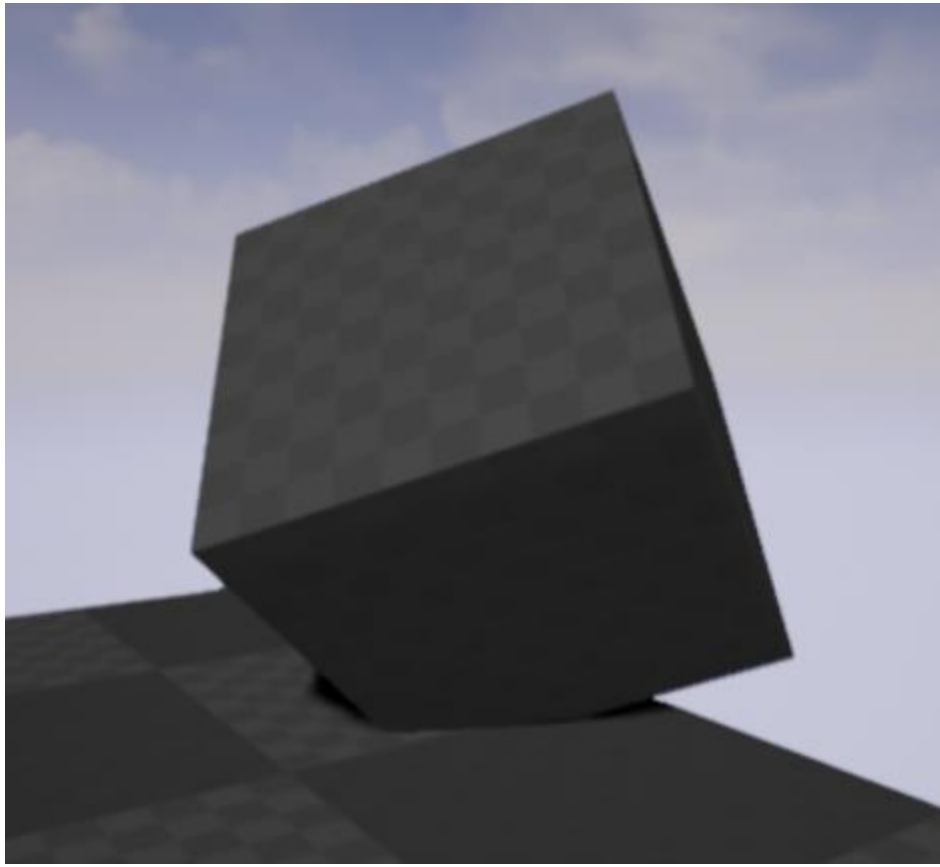




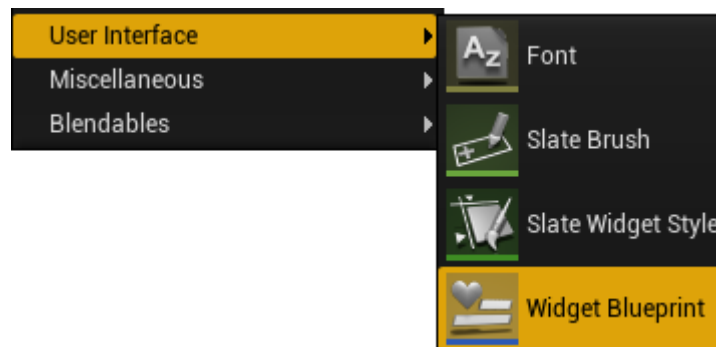
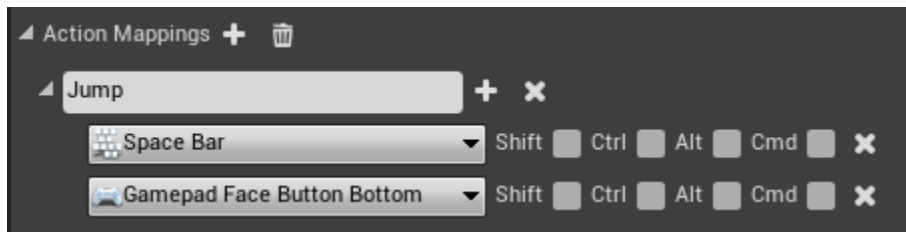








Chapter 6: Input and Collision



Events	
OnClicked	+
OnPressed	+
OnReleased	+

Collision

Simulation Generates Hit Events

Phys Material Override  

Generate Overlap Events

Collision Presets

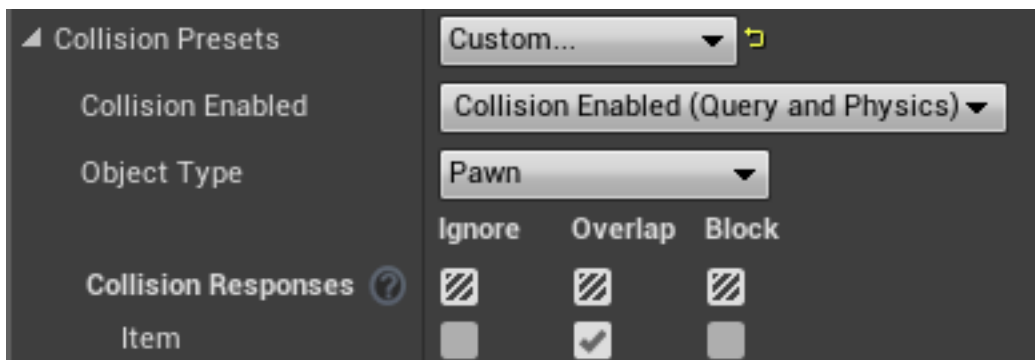
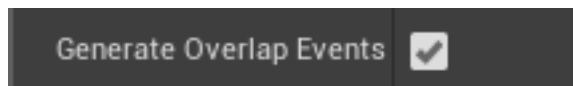
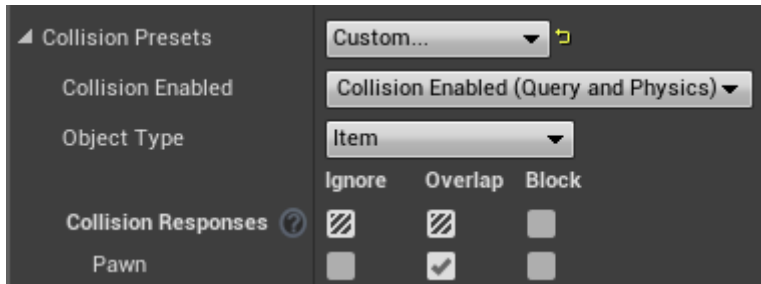
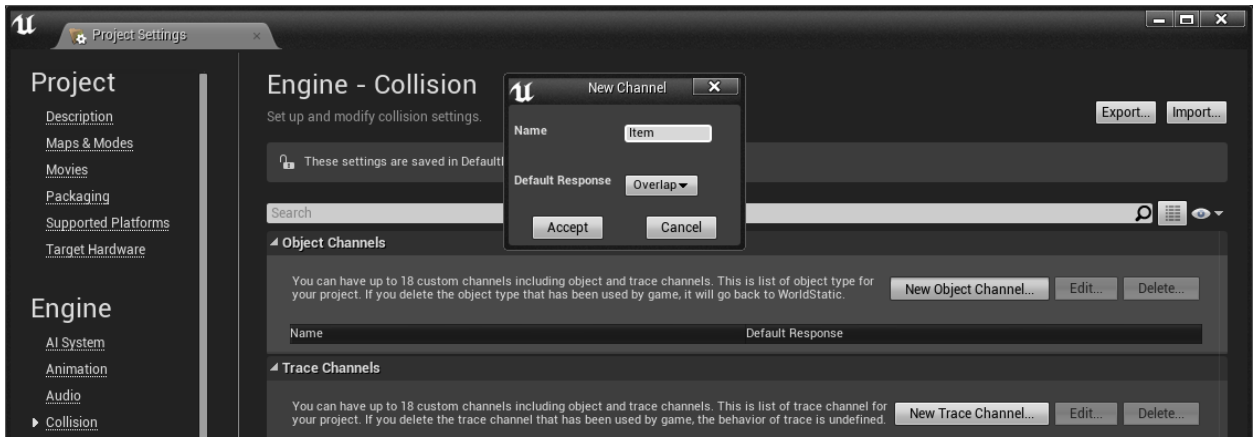
Collision Enabled 

Collision Enabled (Query 

Object Type

	Ignore	Overlap	Block
Collision Responses 		<input type="checkbox"/>	
Trace Responses			
Visibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>


Can Character Step Up On



Events

On Component Hit	<input type="checkbox"/>
On Component Begin Overlap	<input type="checkbox"/>
On Component End Overlap	<input type="checkbox"/>

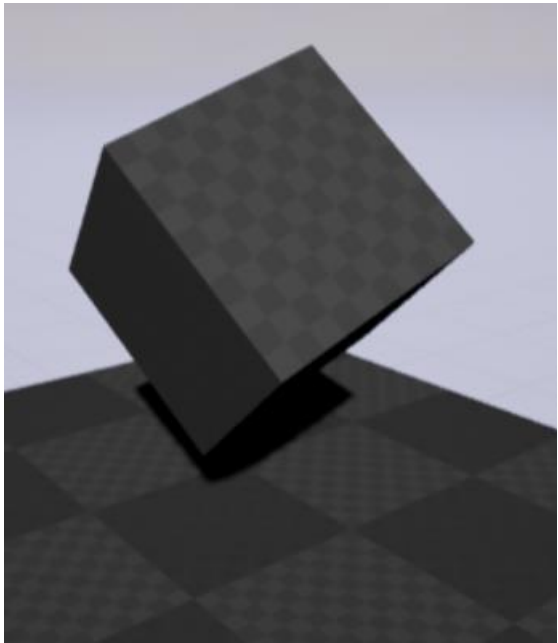
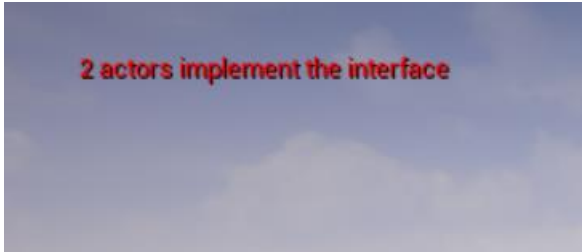
Collision Presets

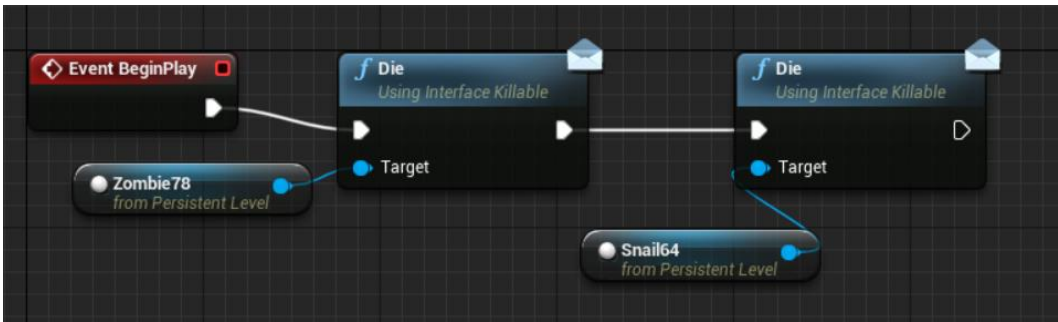
Collision Enabled: Custom... 

Object Type: Pawn

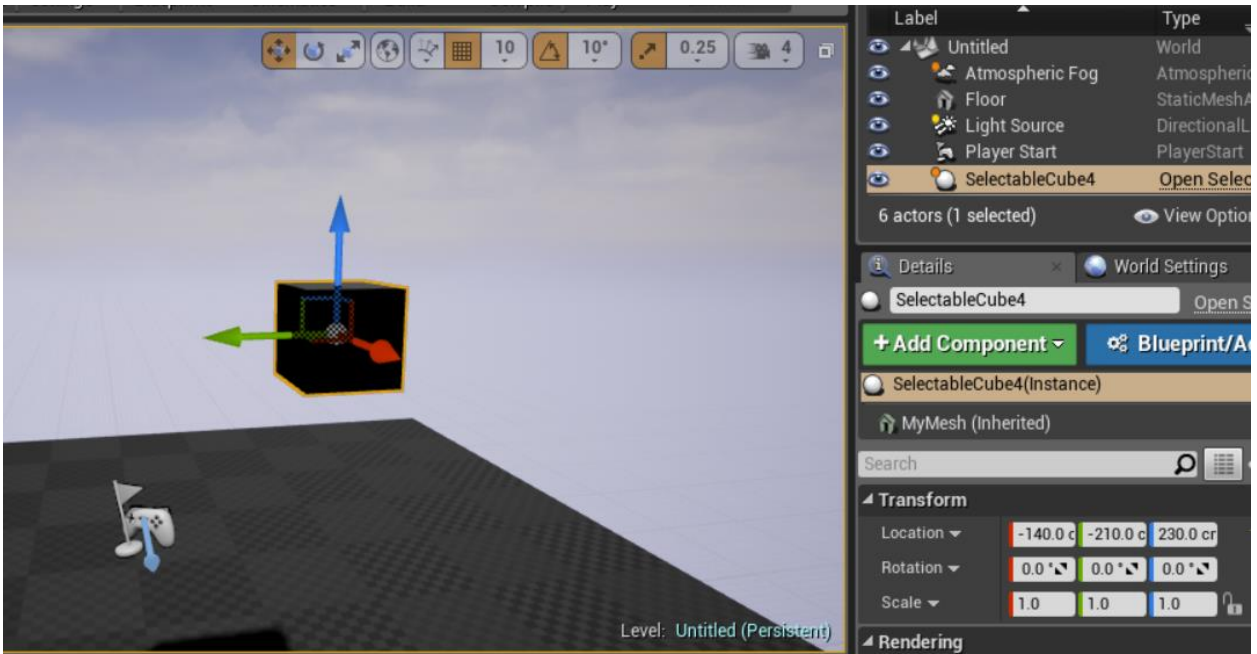
	Ignore	Overlap	Block
Collision Responses	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pawn	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

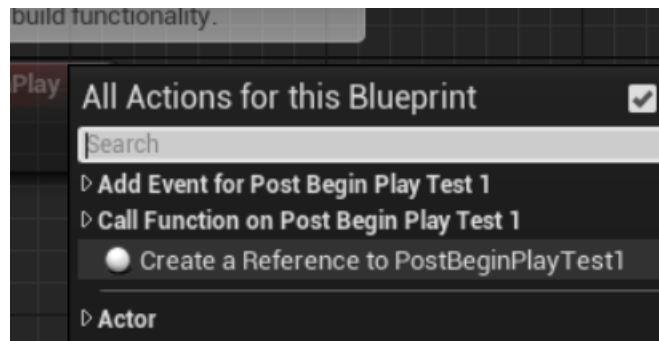
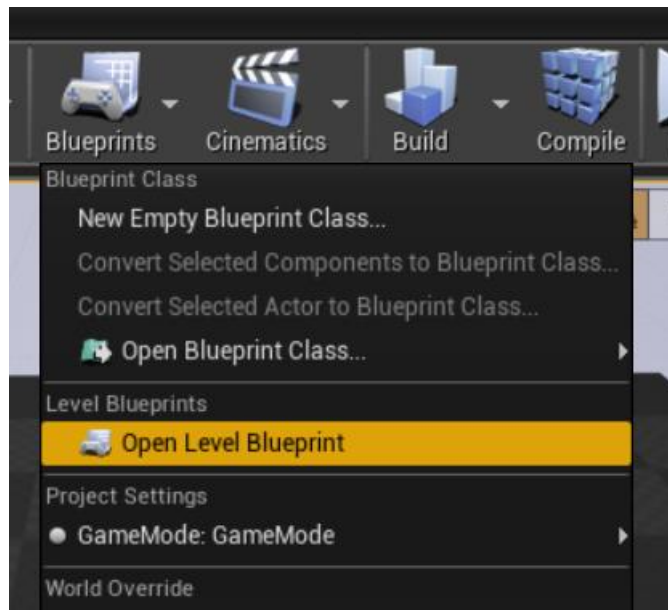
Chapter 7: Communication between Classes and Interfaces

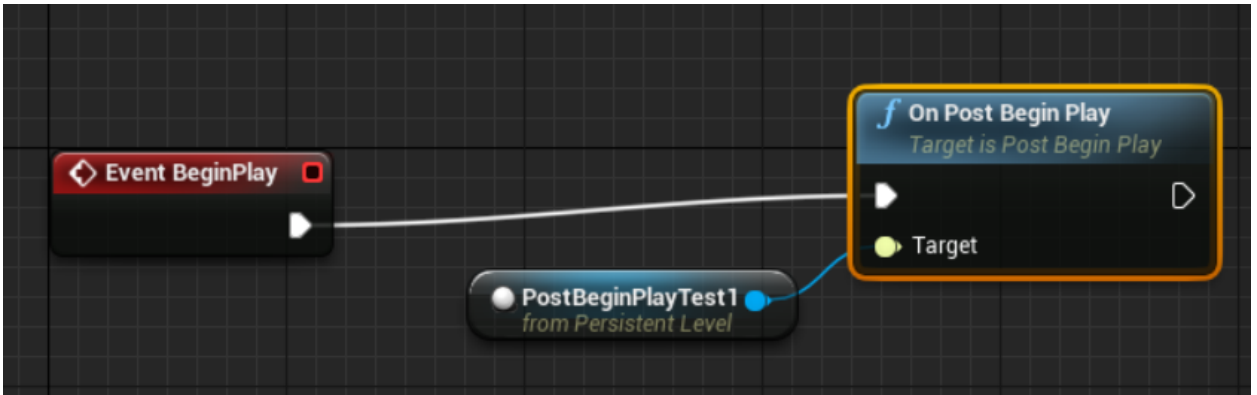
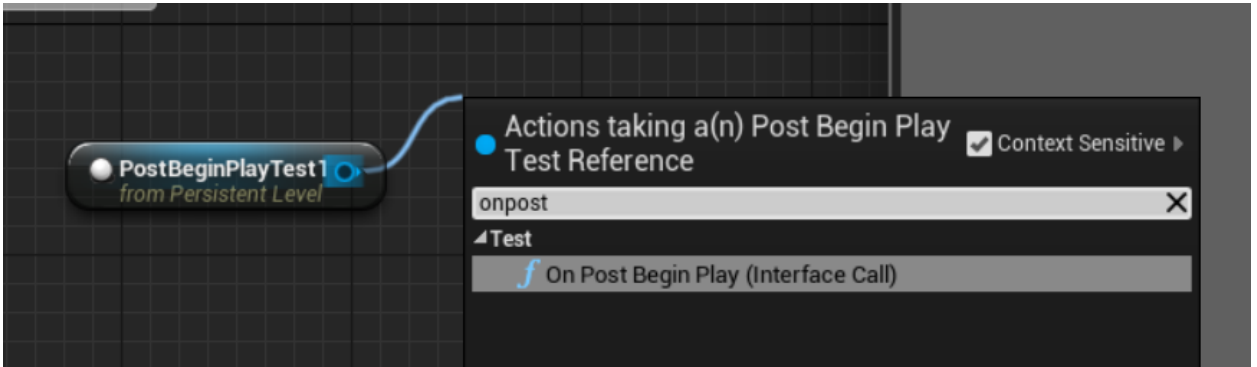


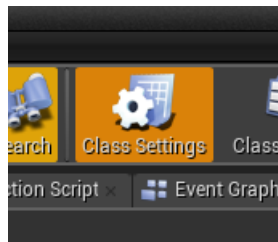
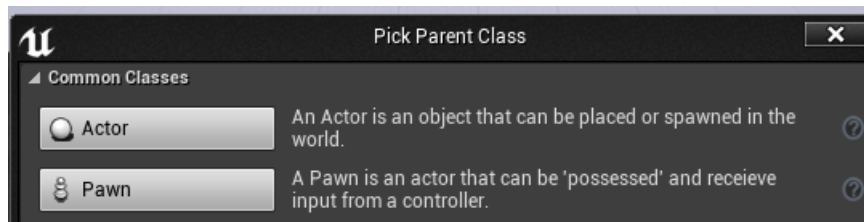
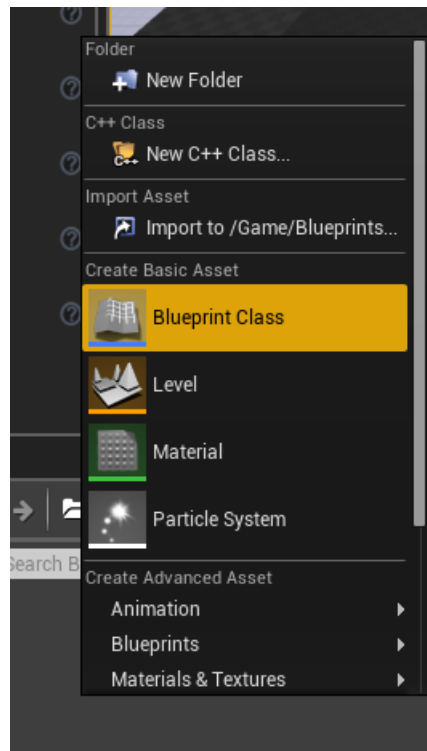


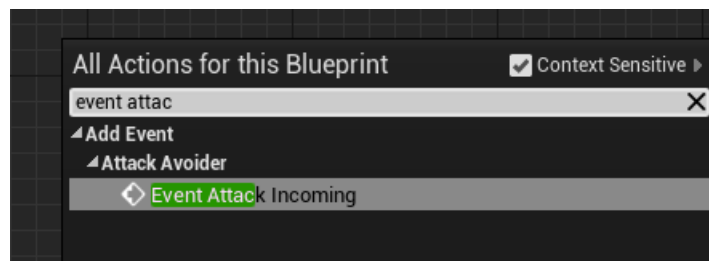
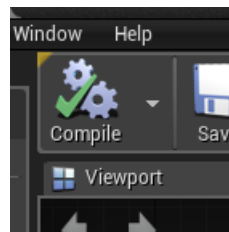
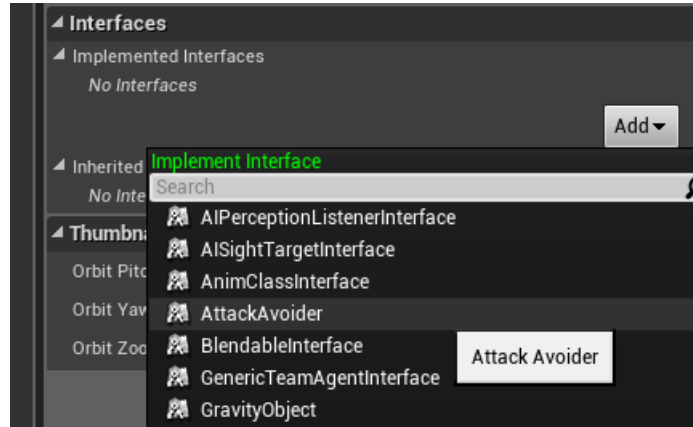
Arrrgh
 You can't kill what is already dead. Mwahaha

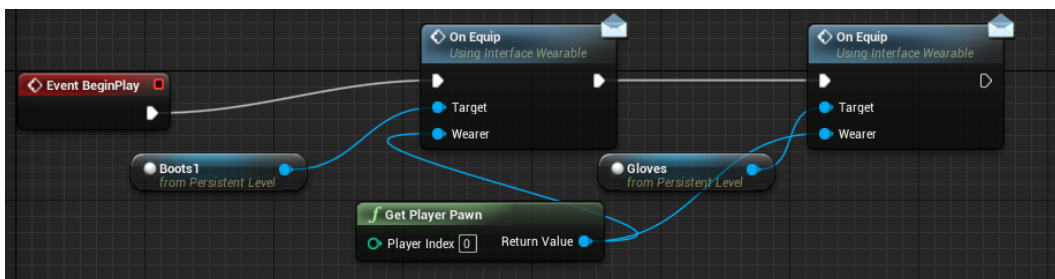
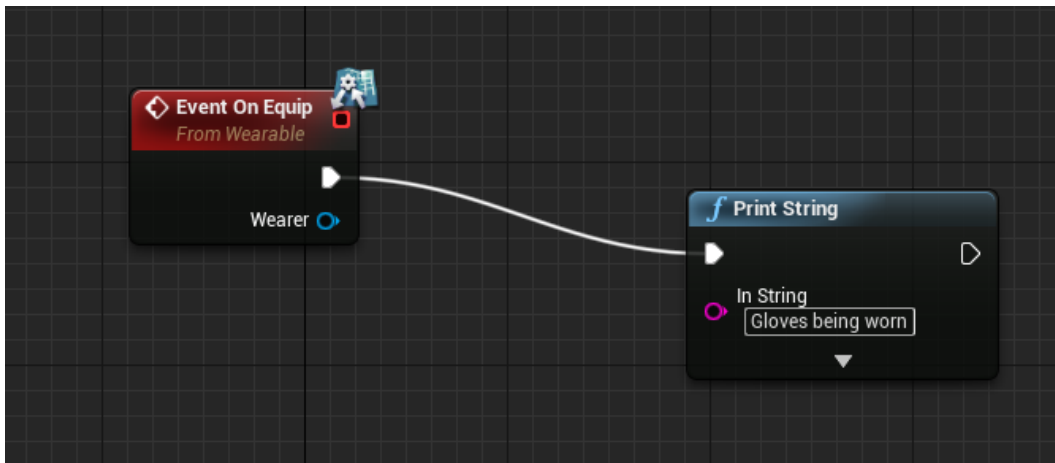
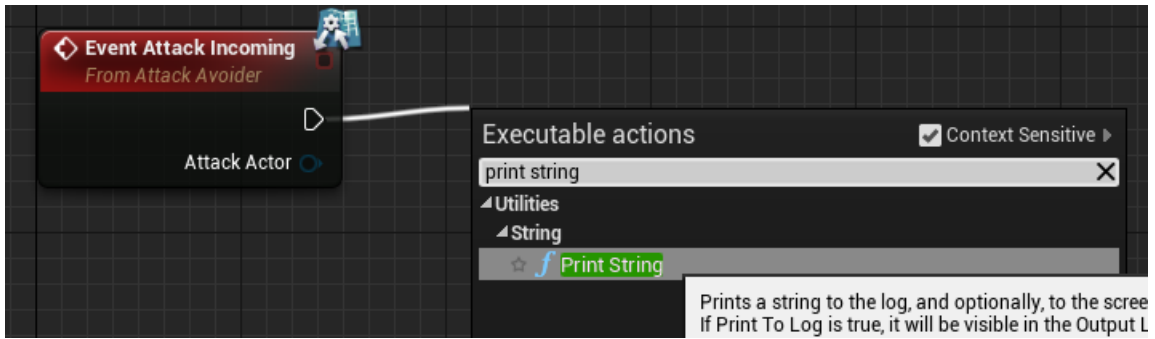




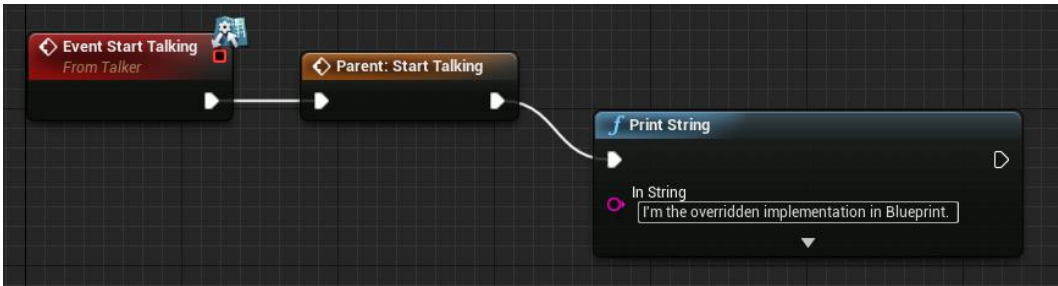
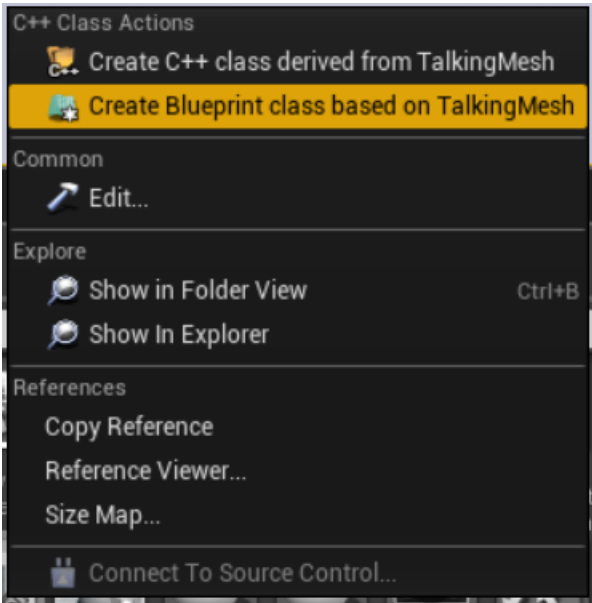




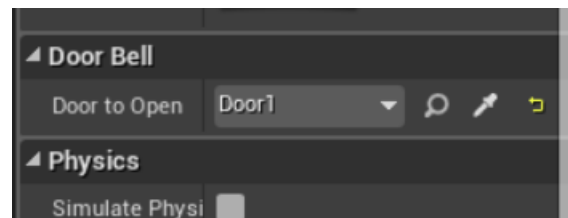
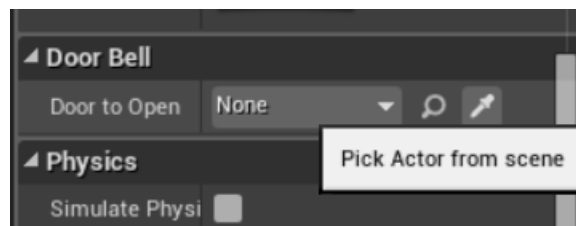
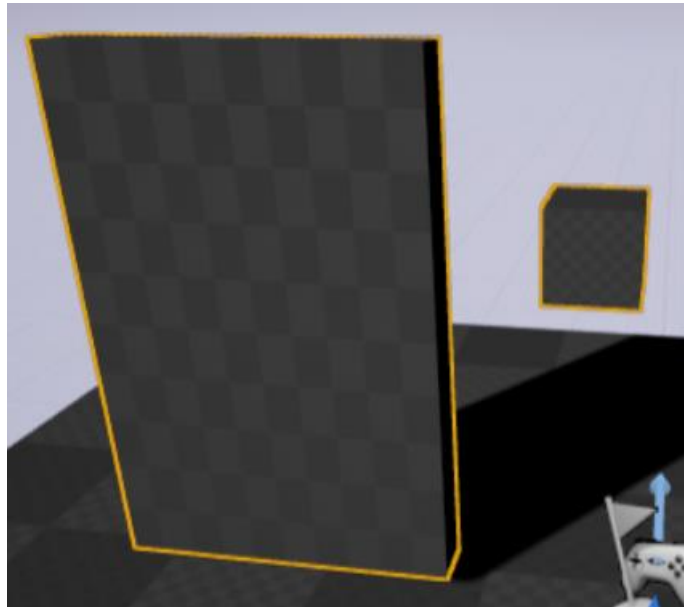




Gloves being worn
Item being worn



I'm the overridden implementation in Blueprint.
Hello there. What is your name?



▲ Bindings

Action and Axis Mappings provide a mechanism to conveniently map keys and axes to actions. Action Mappings are for key presses and releases, while Axis Mappings are for axis movements.

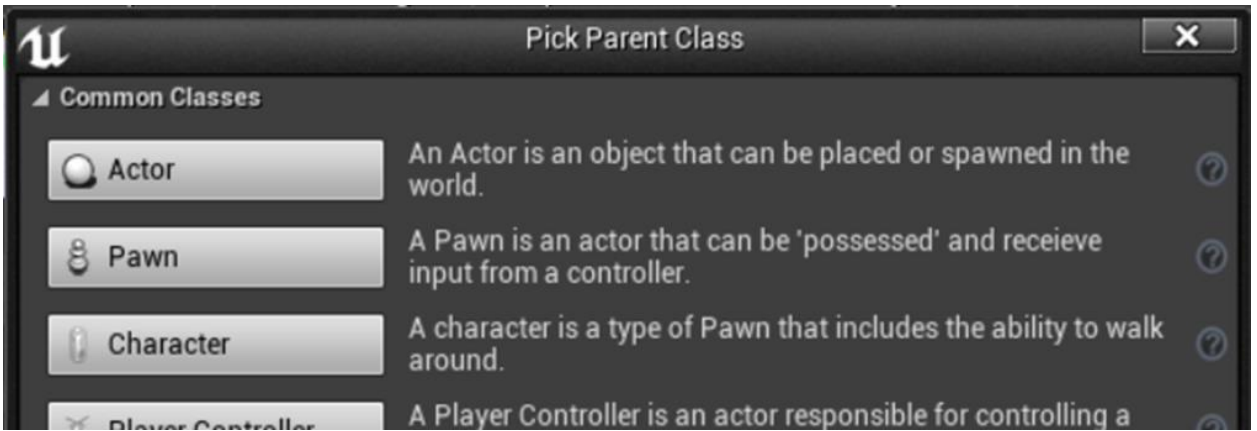
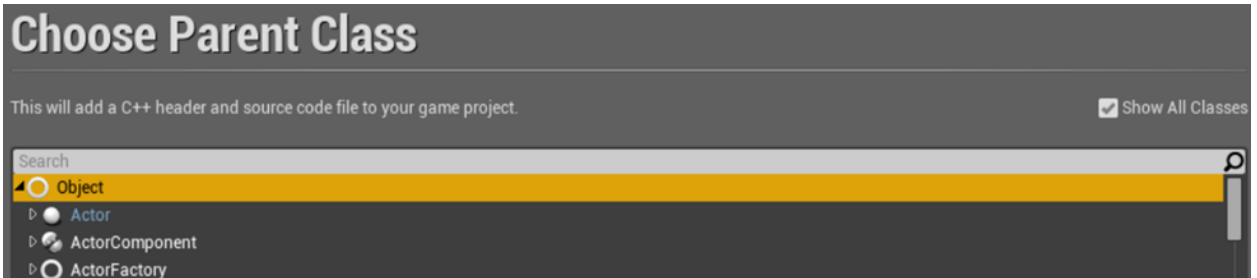
▲ Action Mappings + 🗑️

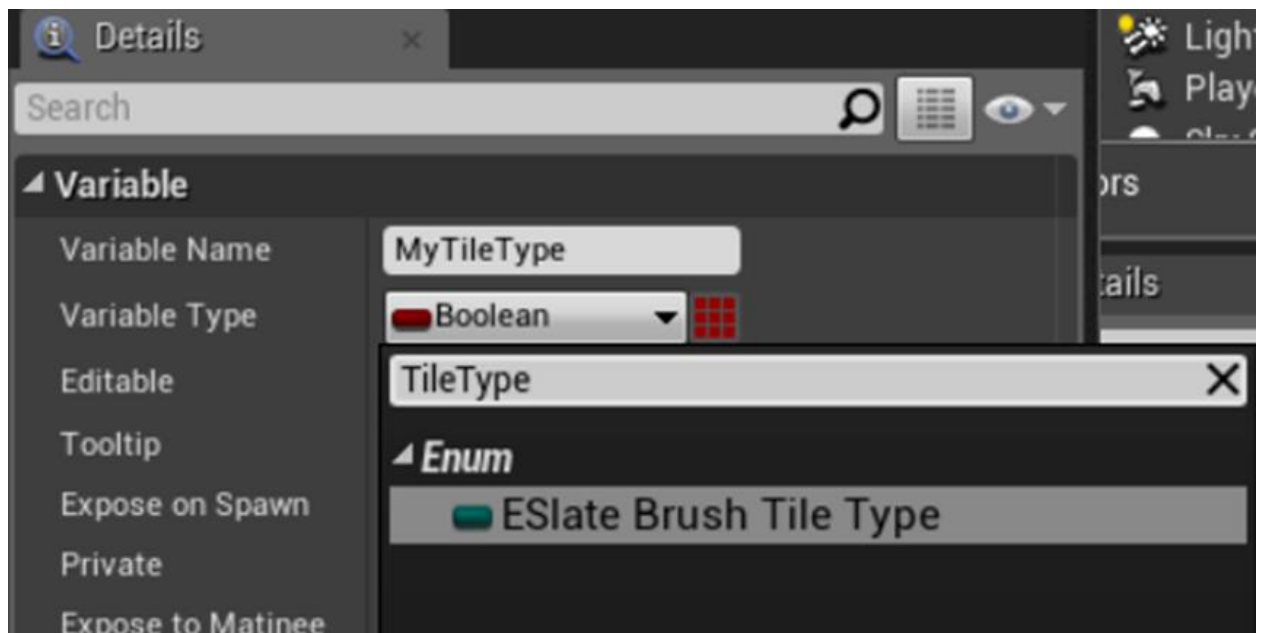
▷ Dropltem + ✕

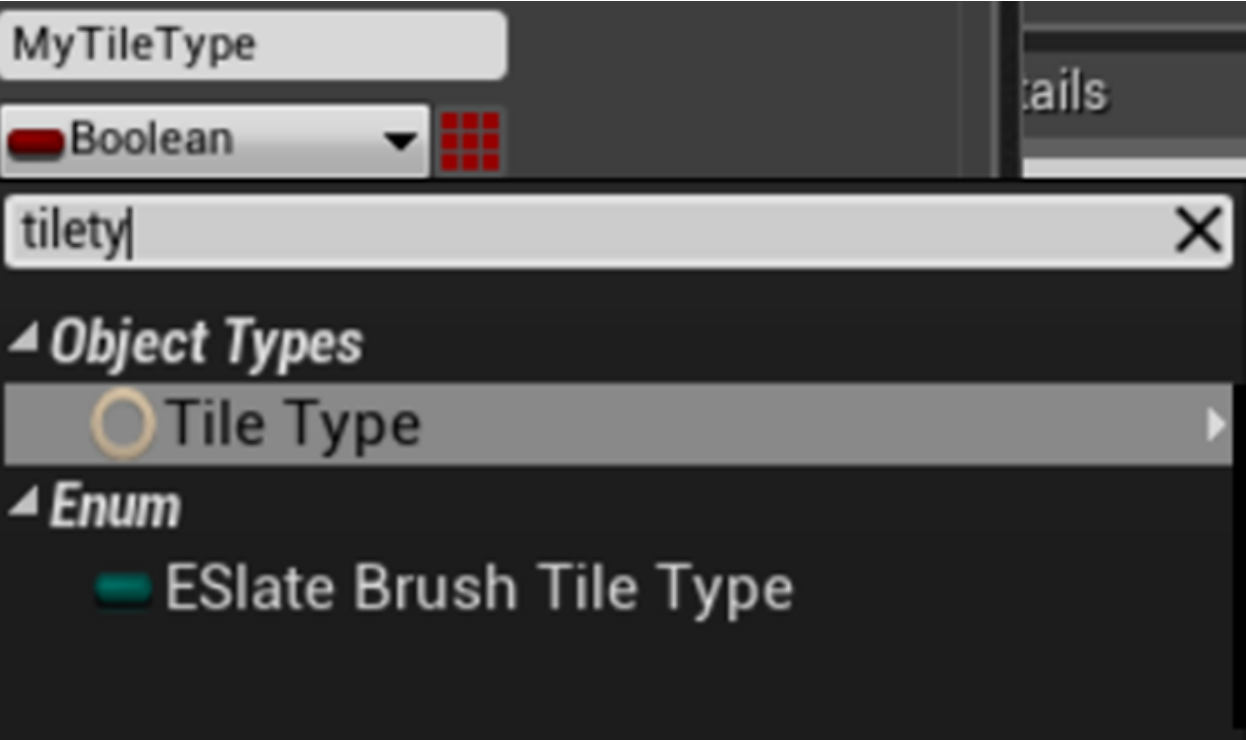
▲ Interact + ✕

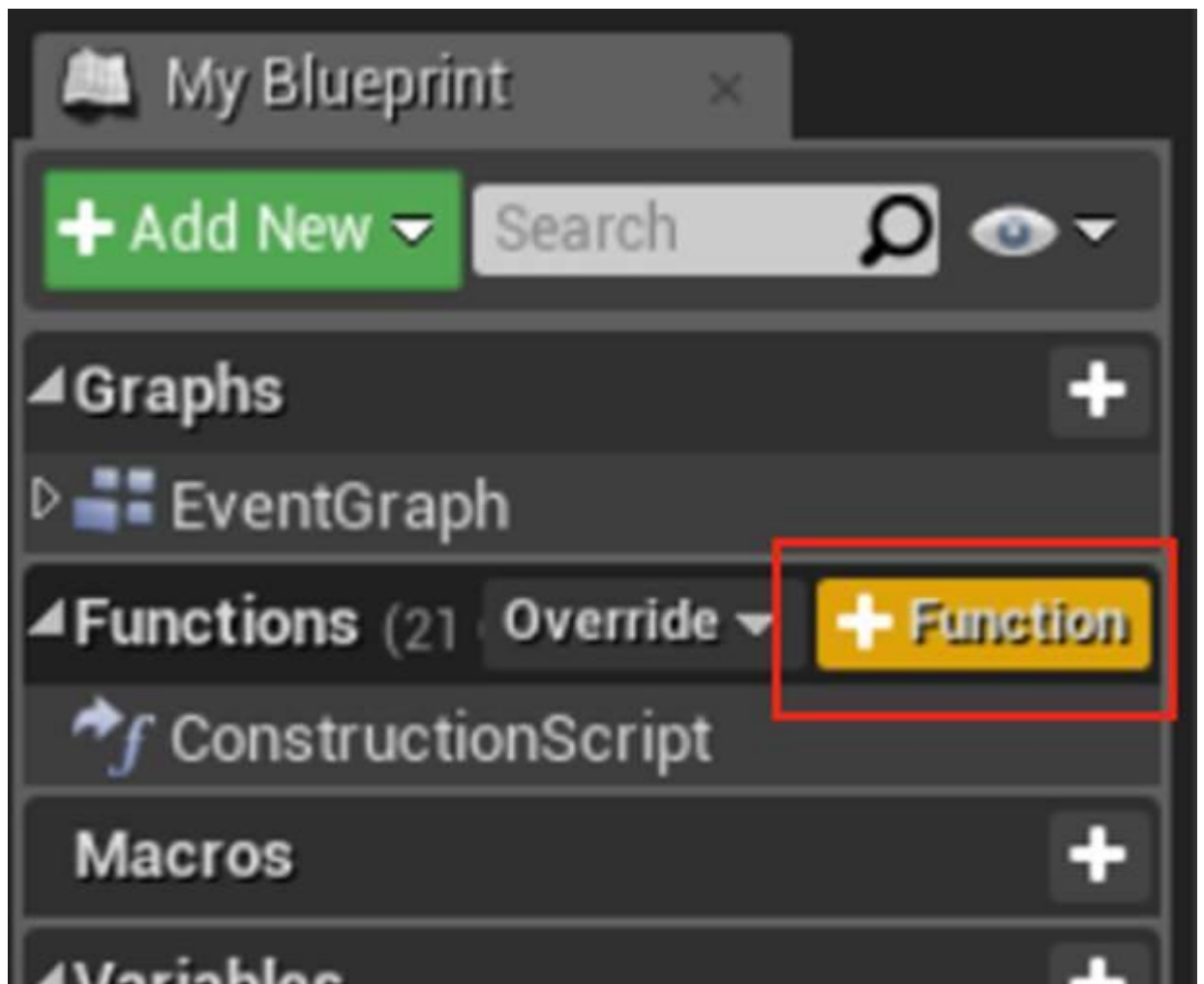
🗃️ F ▾ Shift Ctrl Alt Cmd ✕

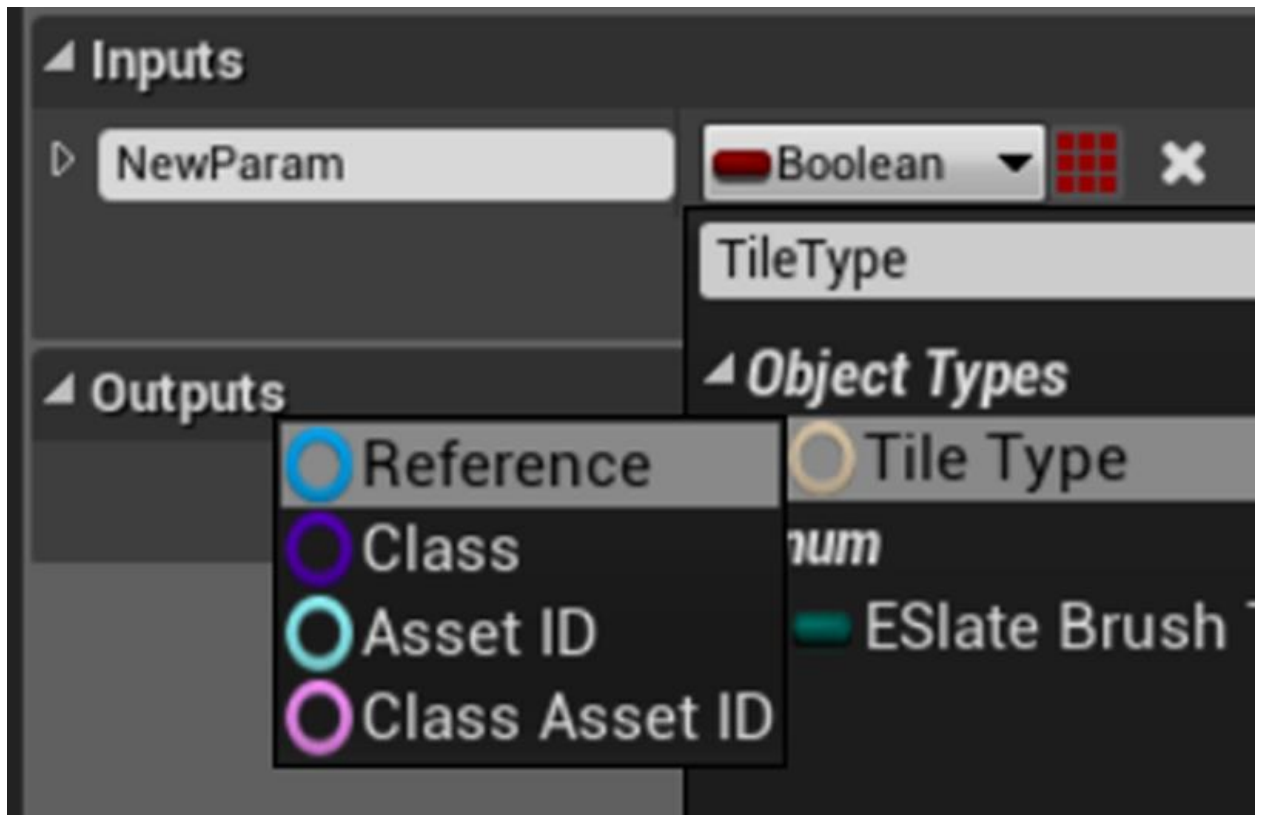
Chapter 8: Integrating C++ and the Unreal Editor

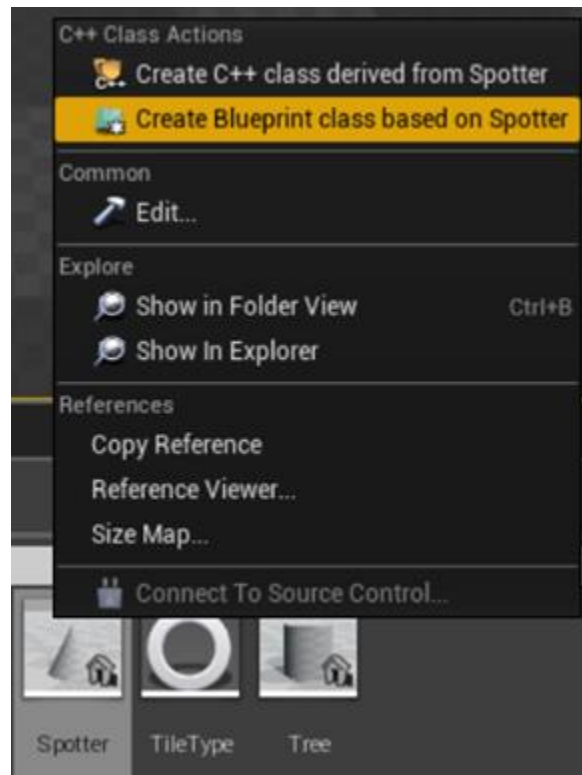


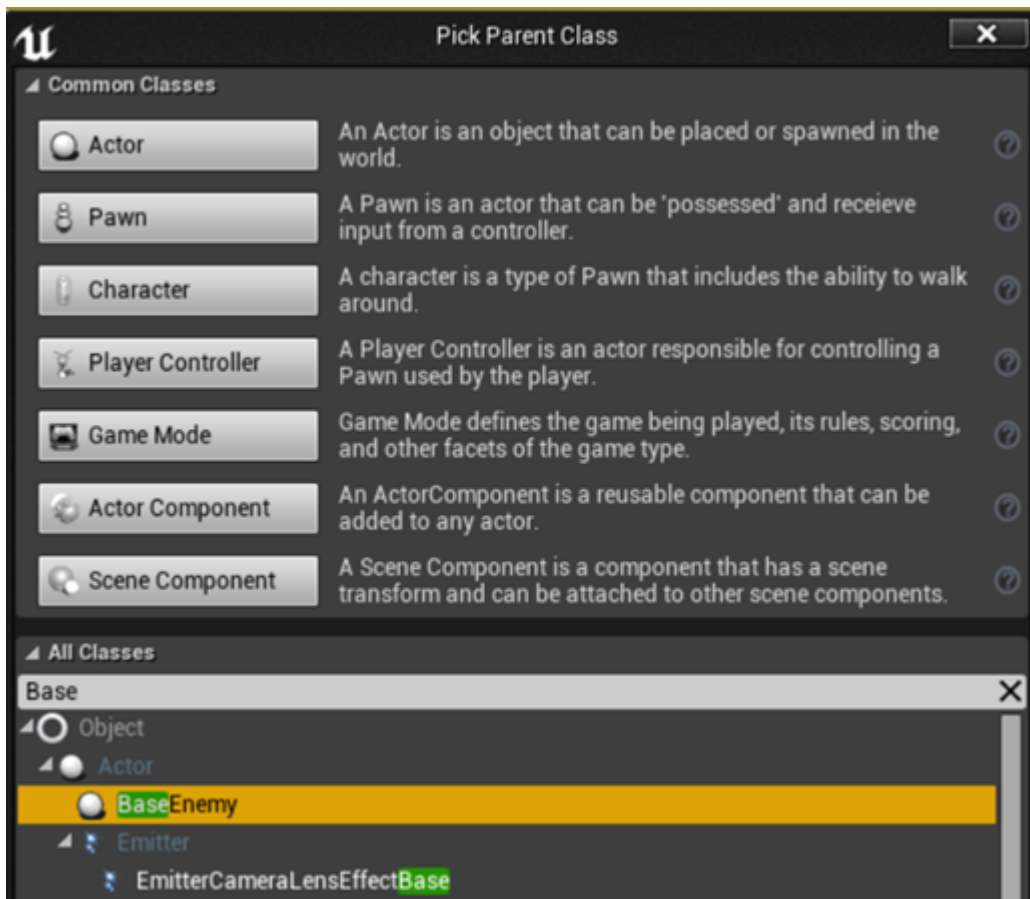












All Actions for this Blueprint

Search

▷ Add Event for Sliding Door 1

◀ Call Function on Sliding Door 1

▷ Actor

▷ AI

▷ Collision

▷ Door

▷ Game

▷ Networking

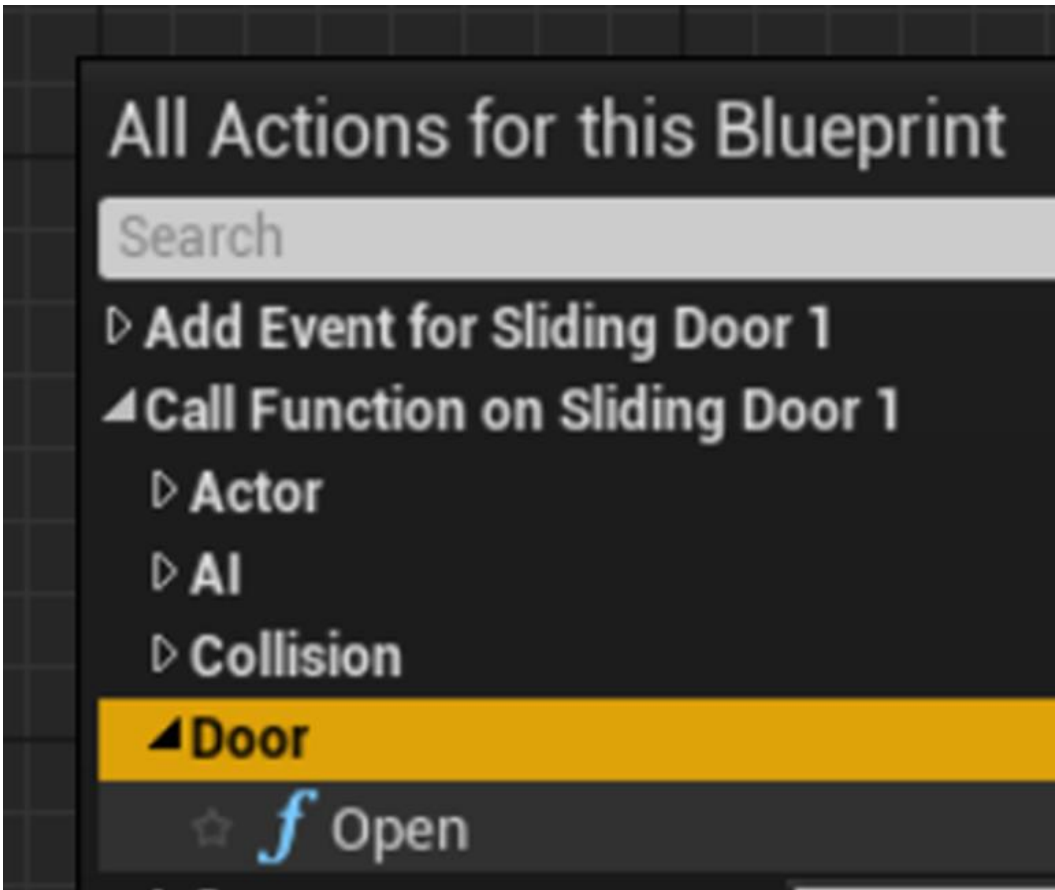
▷ Rendering

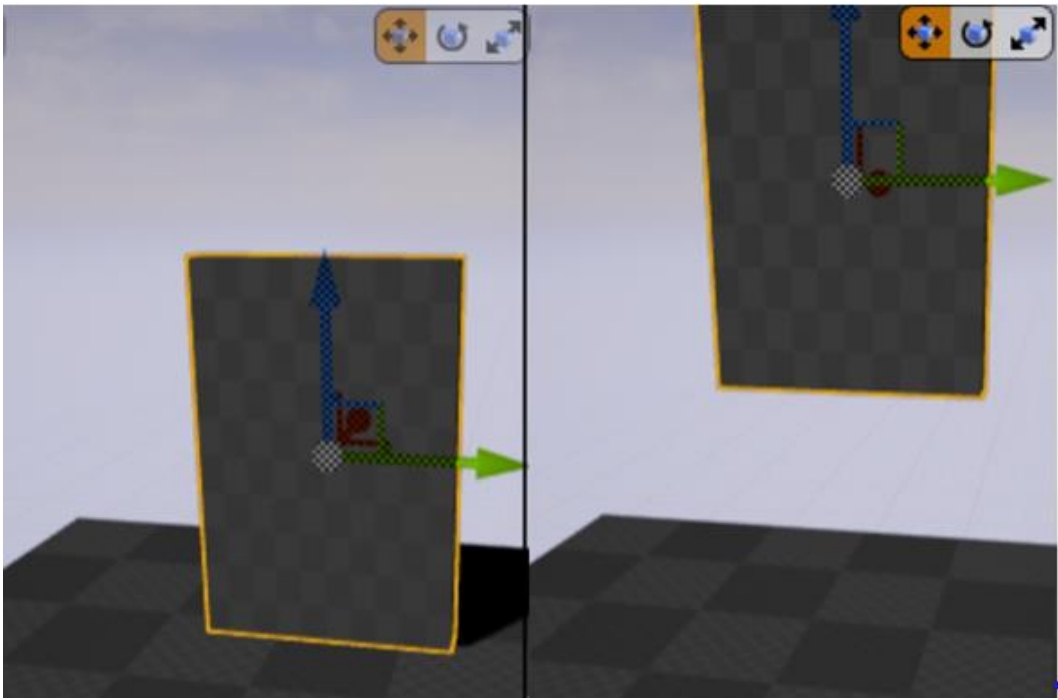
▷ Replication

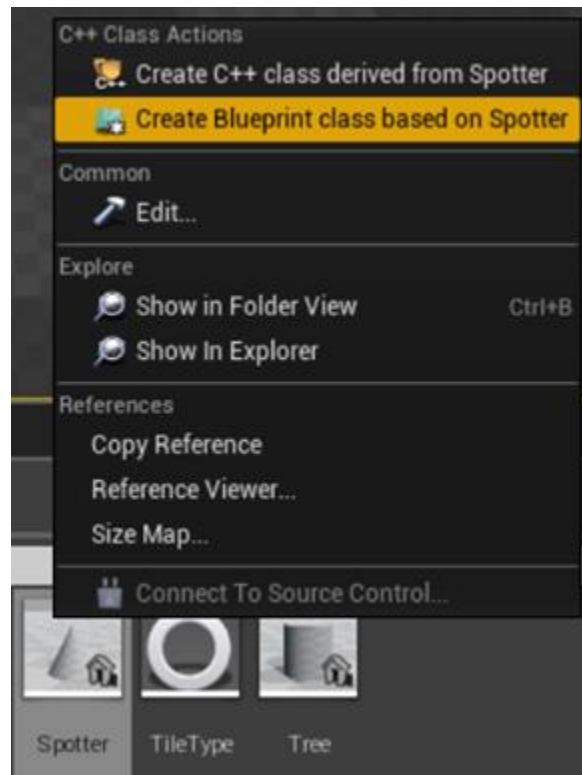
▷ Utilities

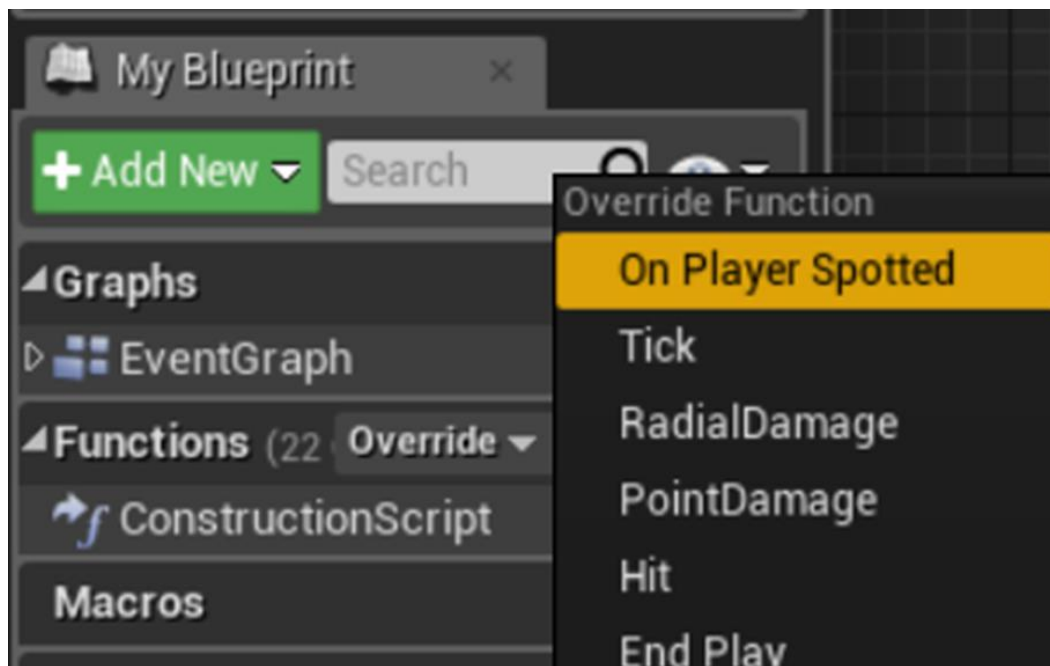
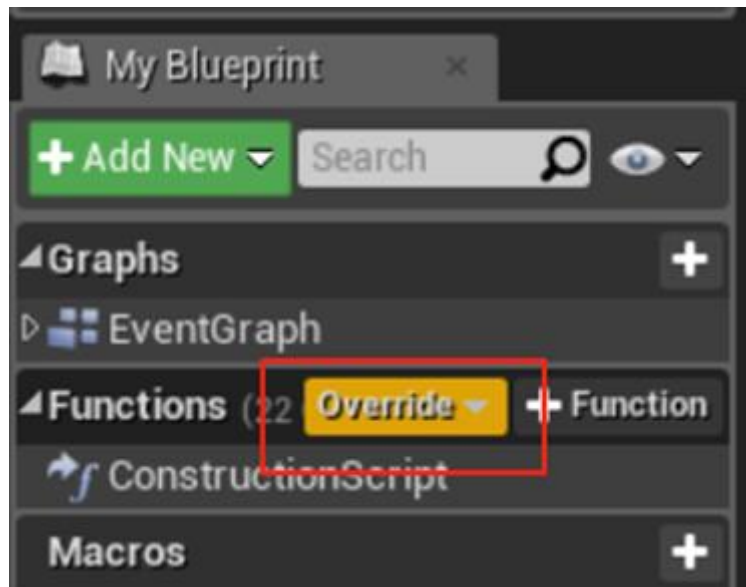


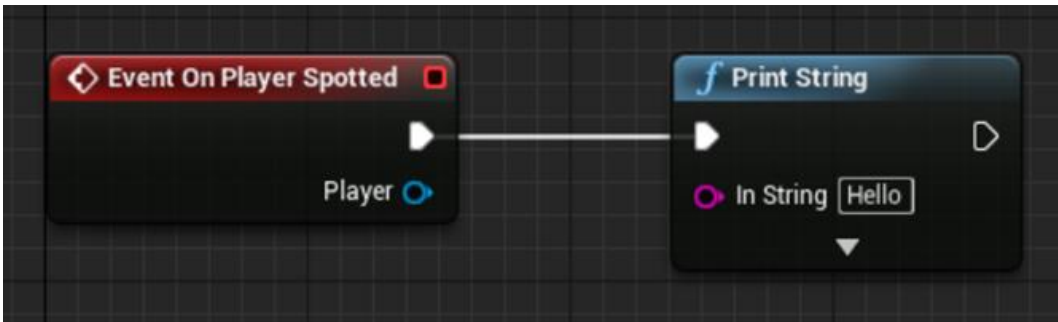
Create a Reference to SlidingDoor

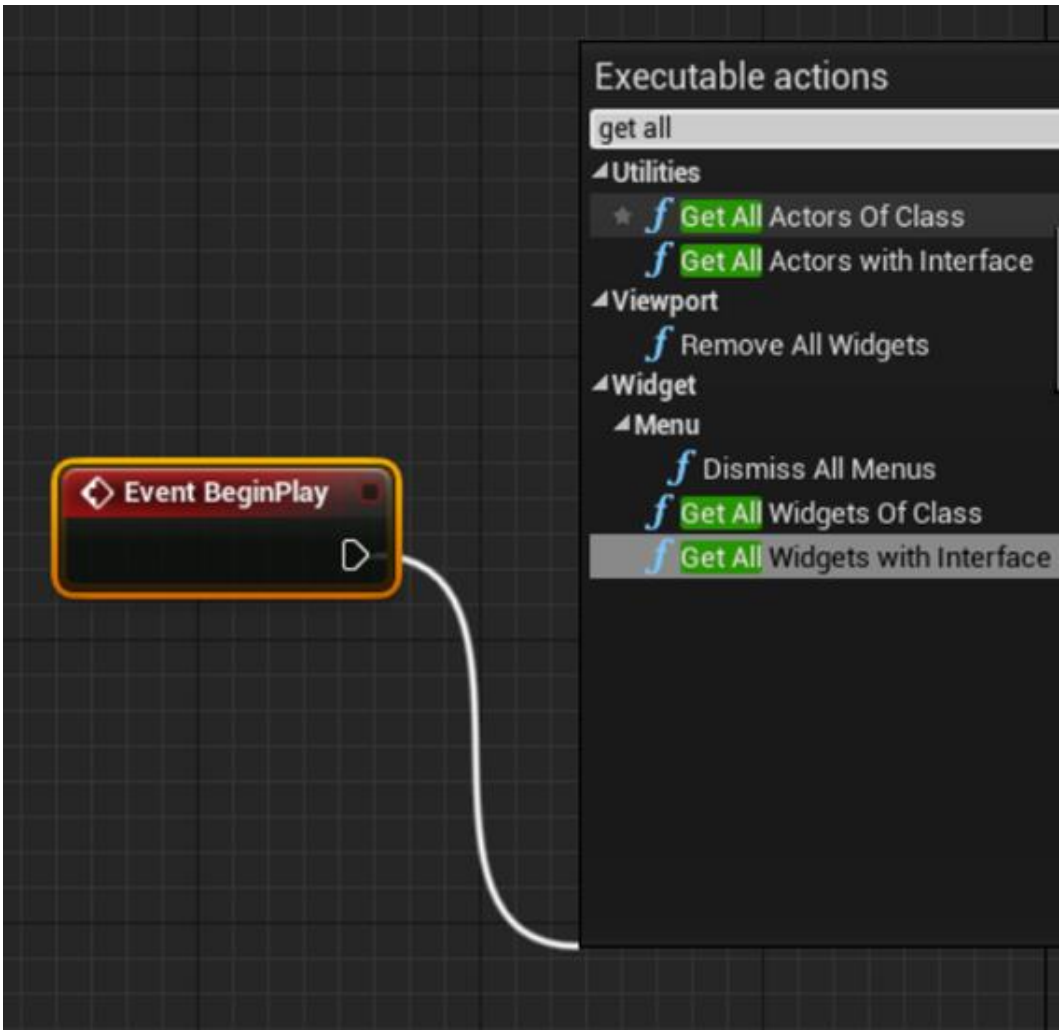


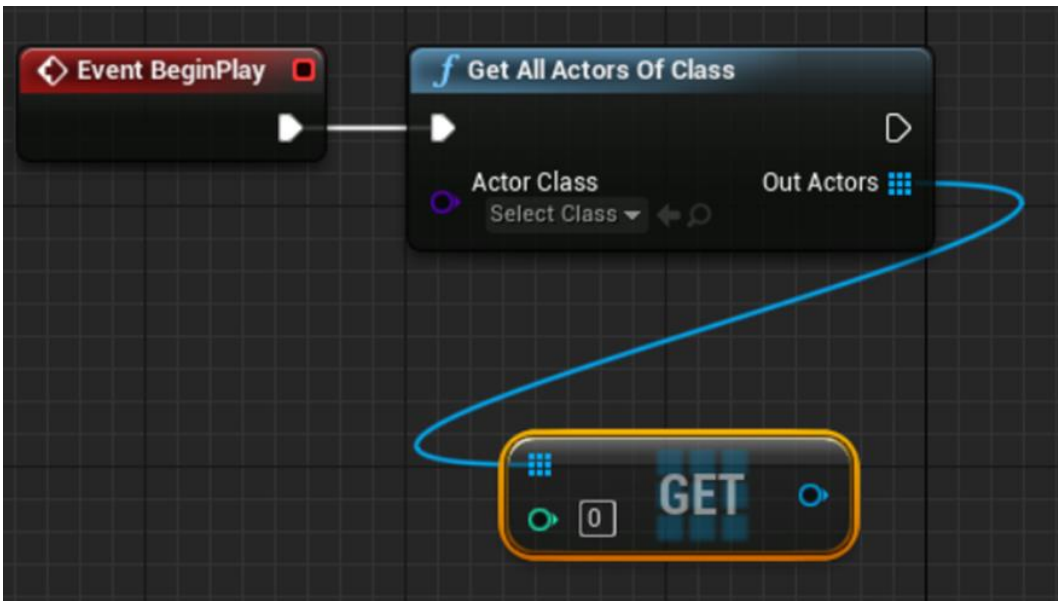
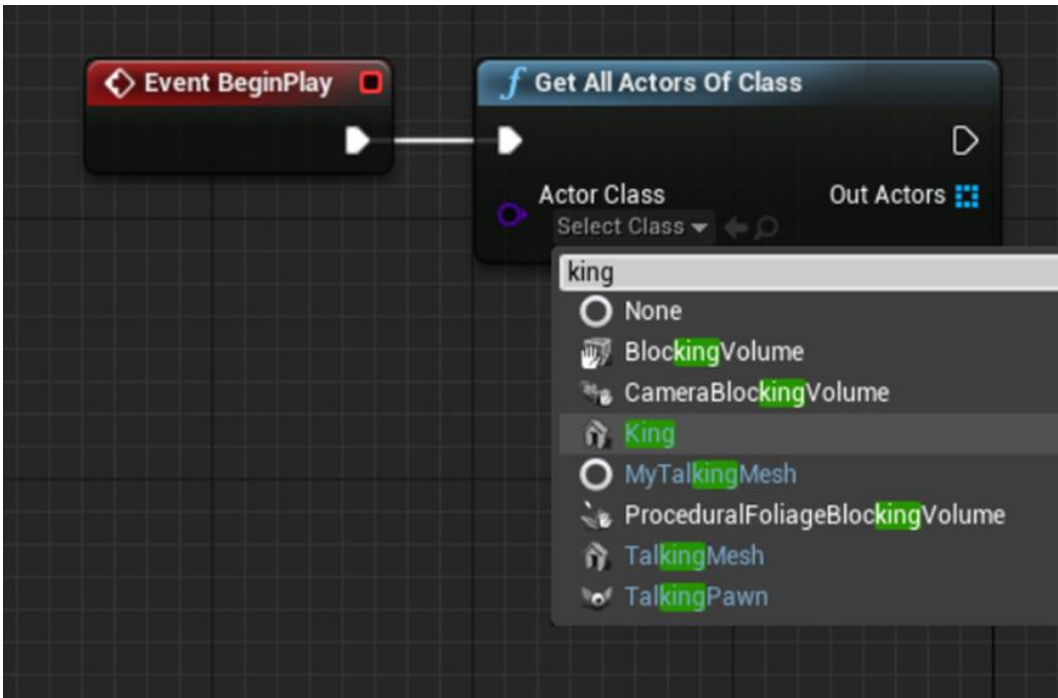


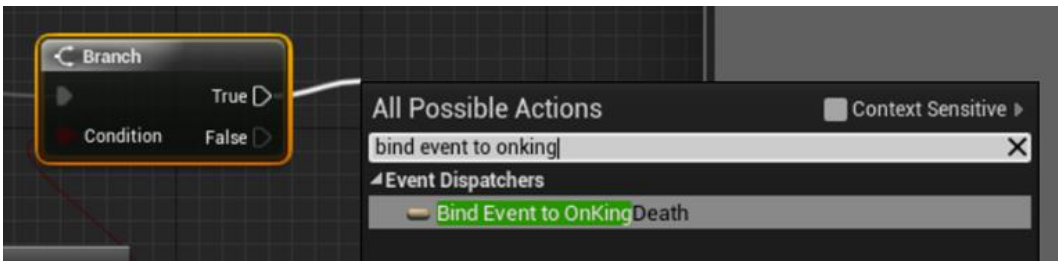
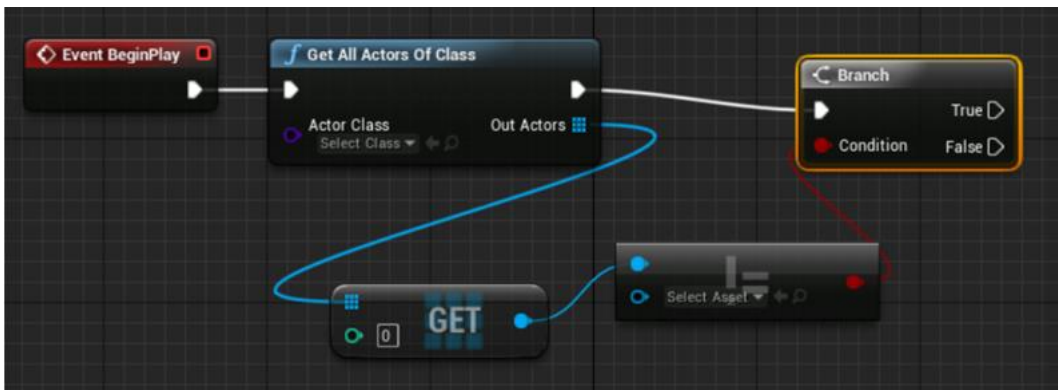
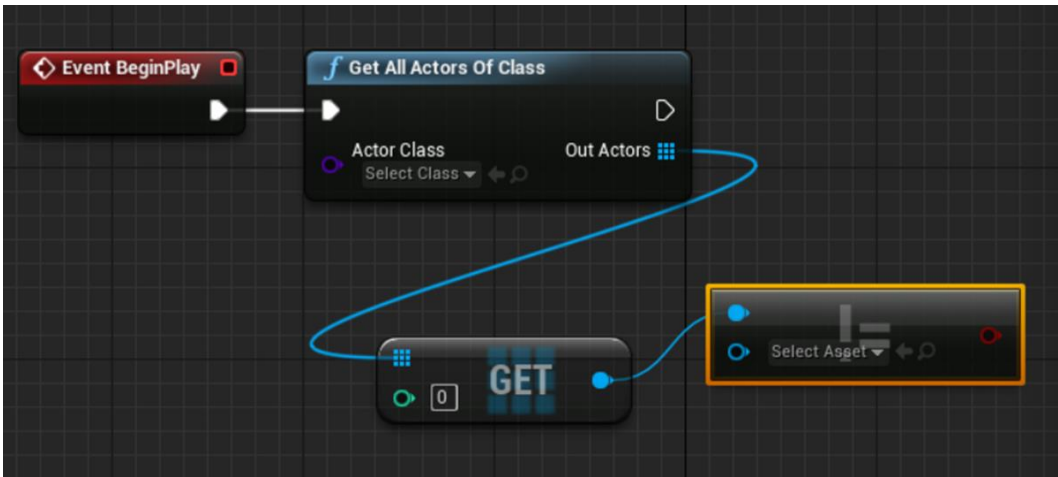


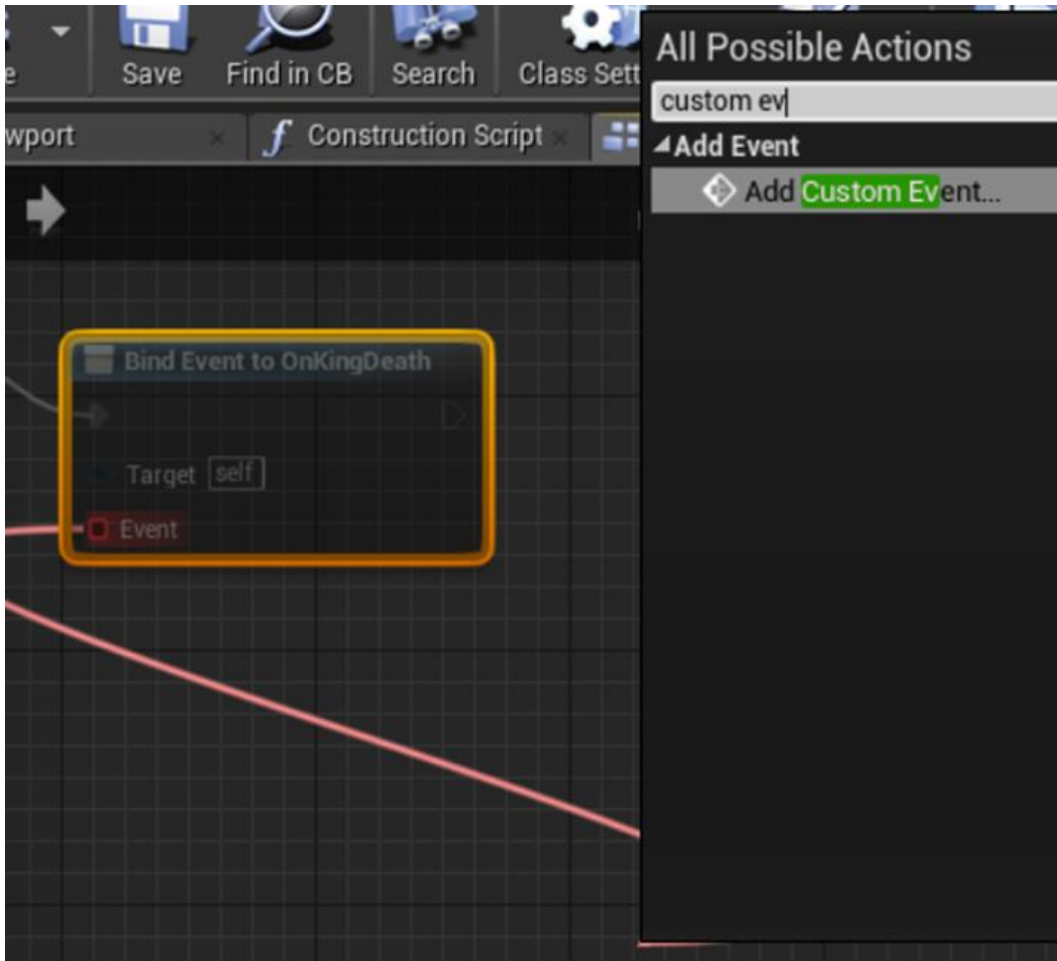


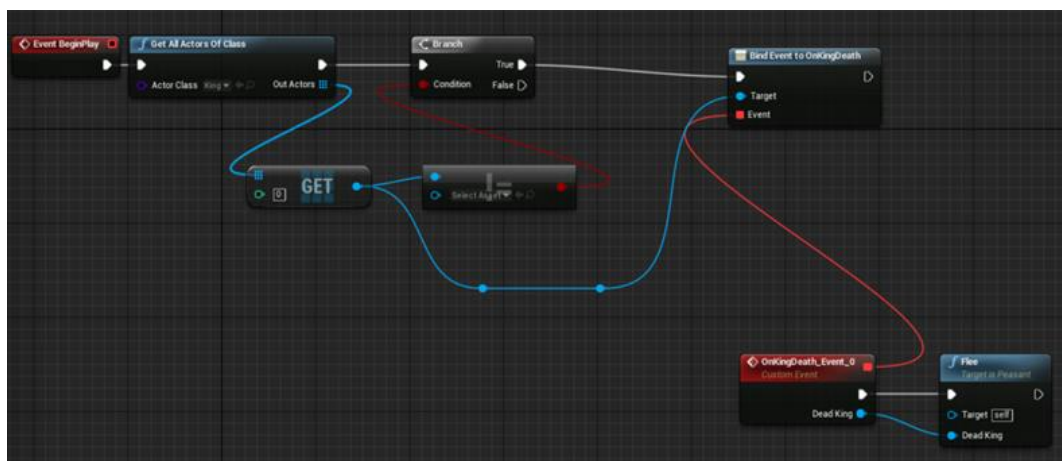
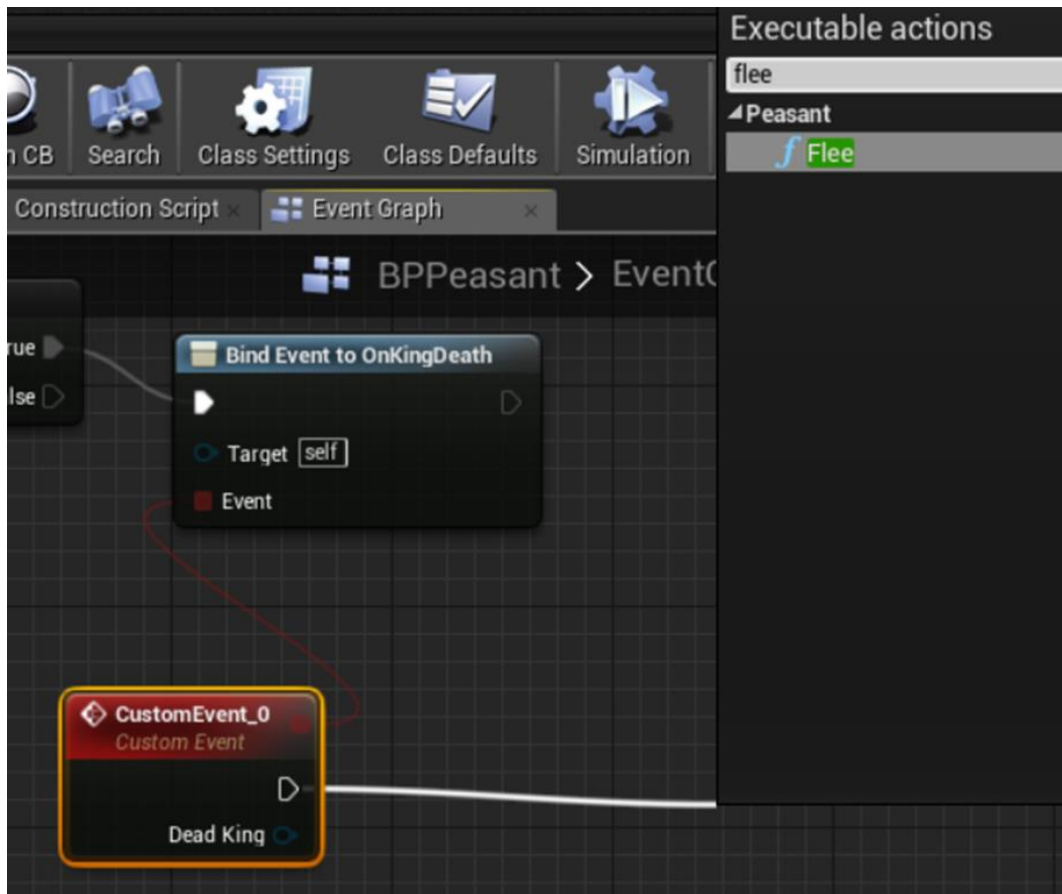














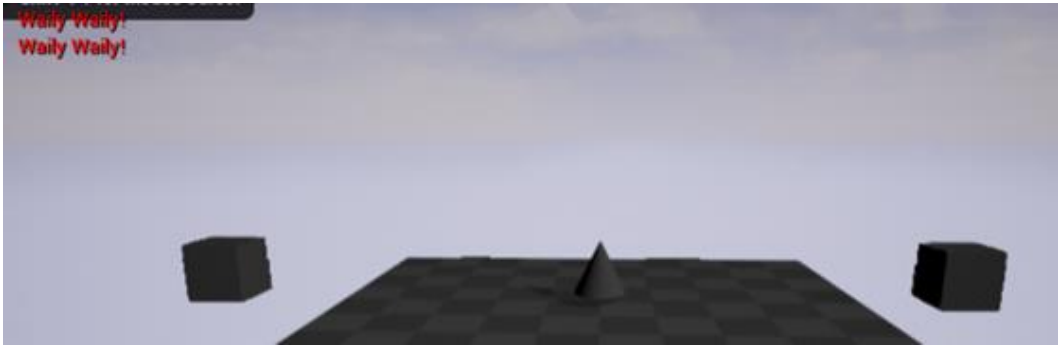
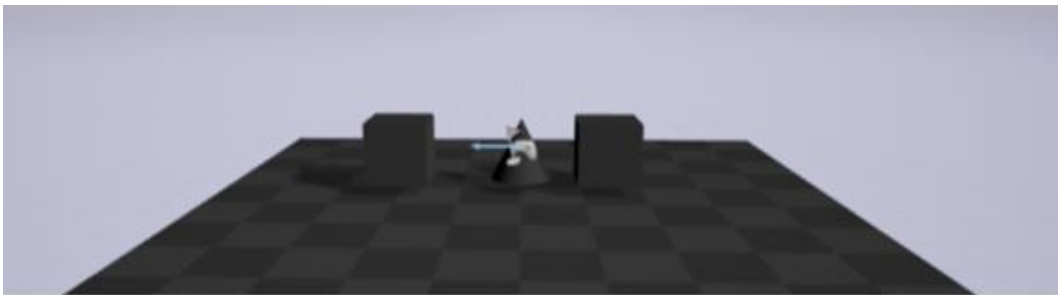
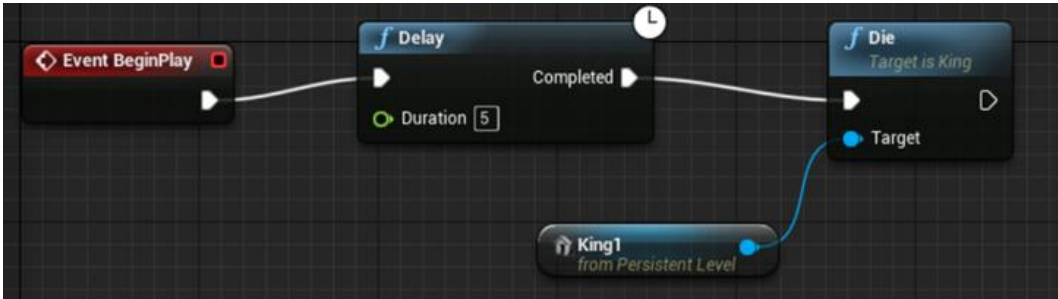
All Actions for this Blueprint Context Sensitive ▶

Search 🔍

- ▶ Add Event for King 1
- ◀ Call Function on King 1
 - ▶ Actor
 - ▶ AI
 - ▶ Collision
 - ▶ Game
 - ◀ King
 - ☆ *f* Die
- ▶ Networking
- ▶ Rendering
- ▶ Replication
- ▶ Utilities
- 🏠 Create a Reference to King1

Die

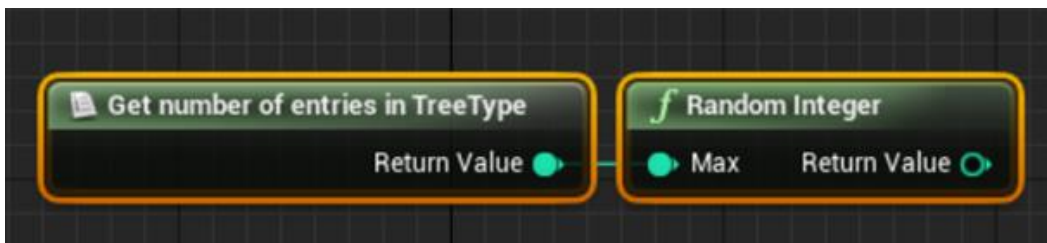
Target is King



All Actions for this Blueprint Context Sensitive ▶

treetype| X

- Utilities
 - Enum
 - Byte to Enum **TreeType**
 - ForEach **TreeType**
 - Get number of entries in **TreeType**
 - Literal enum **TreeType**
 - Flow Control
 - Switch
 - Switch on **TreeType**



● Actions taking a(n) Integer Context Sensitive ▶

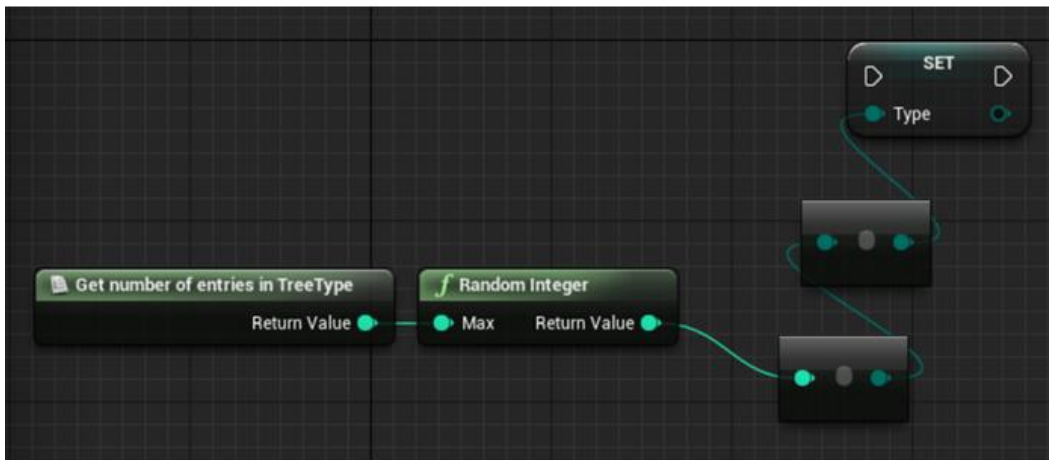
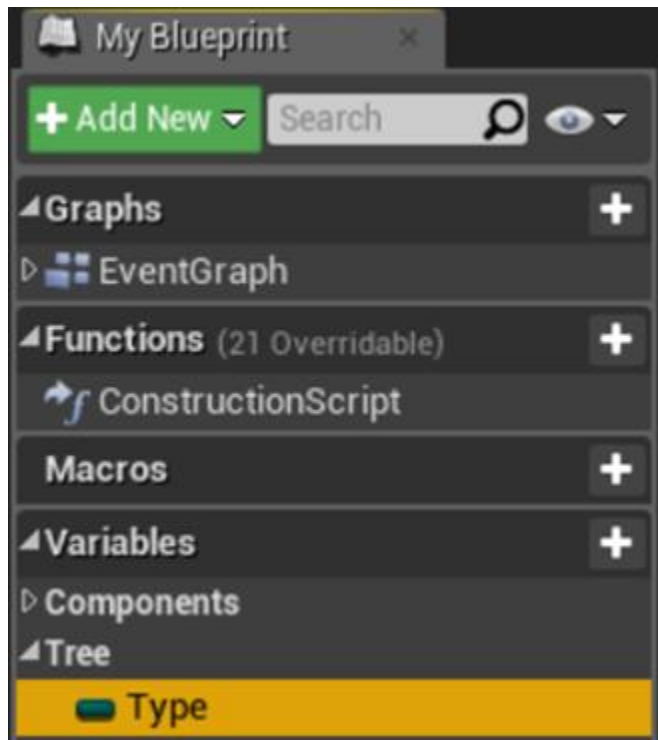
Search 🔍

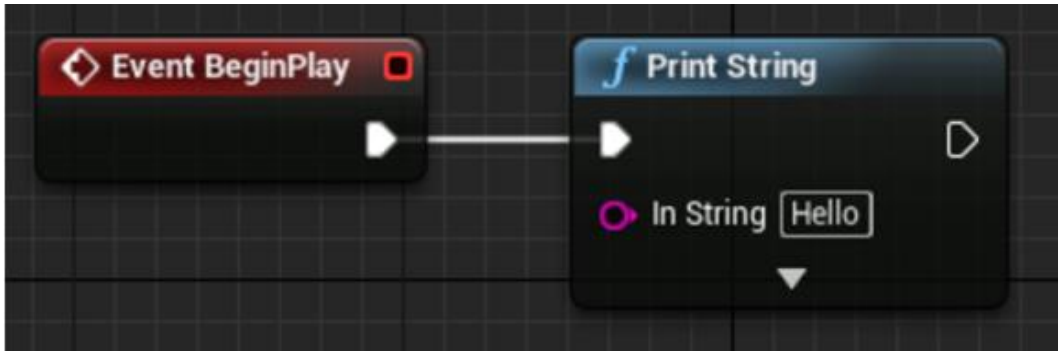
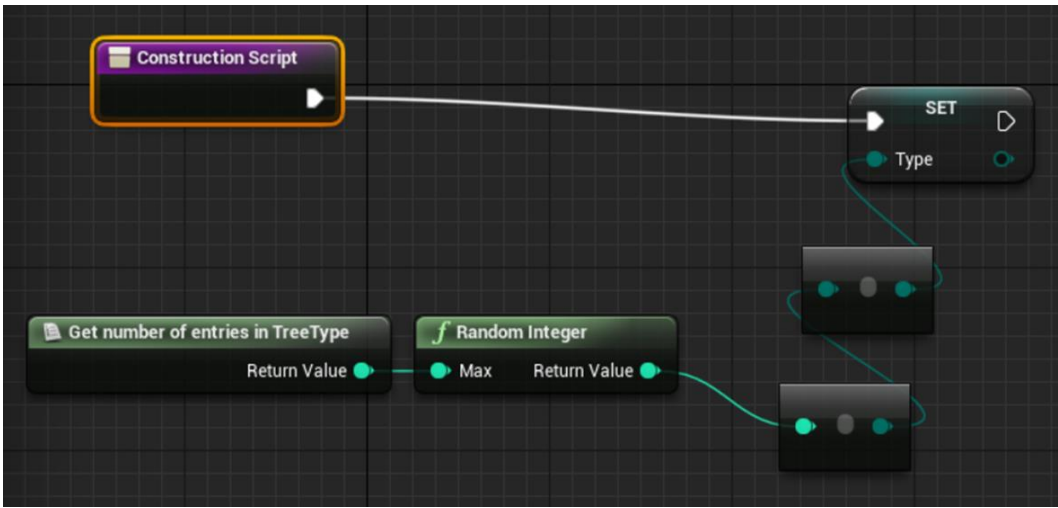
Select a Component to see available Events & Functions

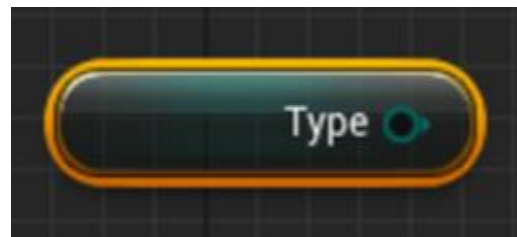
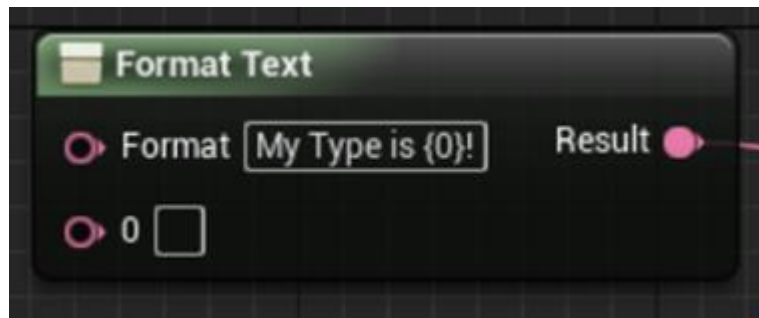
Promote to local variable
Promote to variable

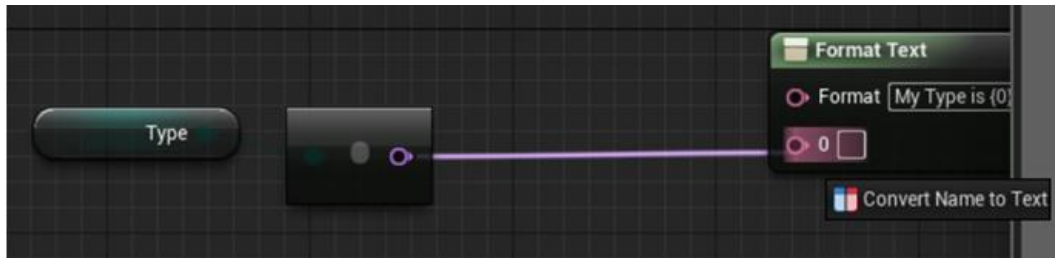
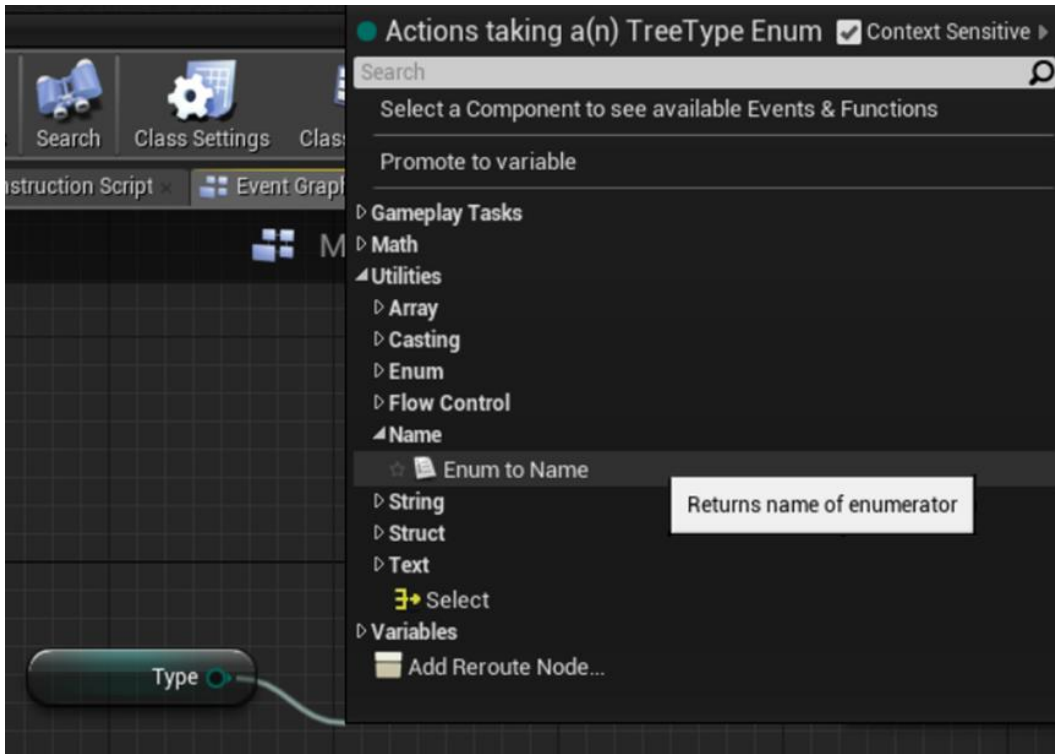
▷ Canvas Render Target 2D
▷ Components
▷ Cookbook
▷ Game
▷ Game Options
▷ Leap Motion
▷ Live Streaming
▲ Math
 ▲ Conversions
 f ToBool (int)
 ☆ *f* ToByte (int)
 f ToFloat (int)
▷ Date Time
▷ Float
▷ Integer

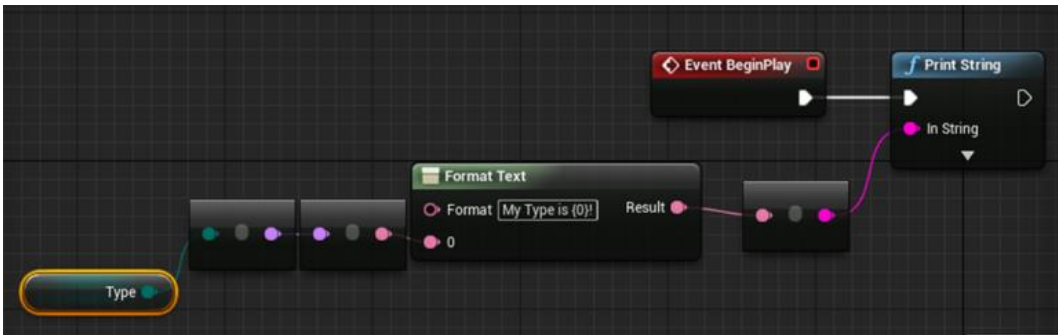
Converts an integer to a byte (if the integer is too large, returns the low 8 bits)
Target is Kismet Math Library



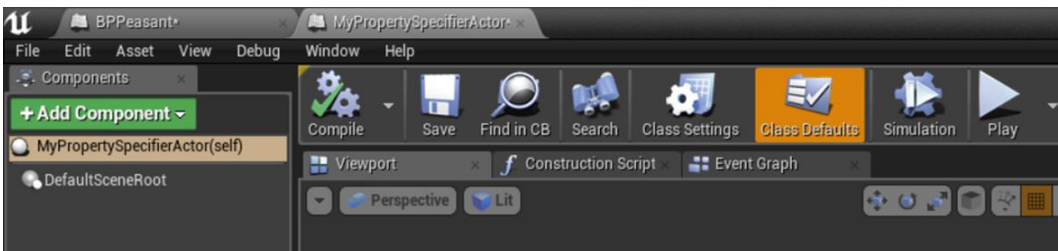


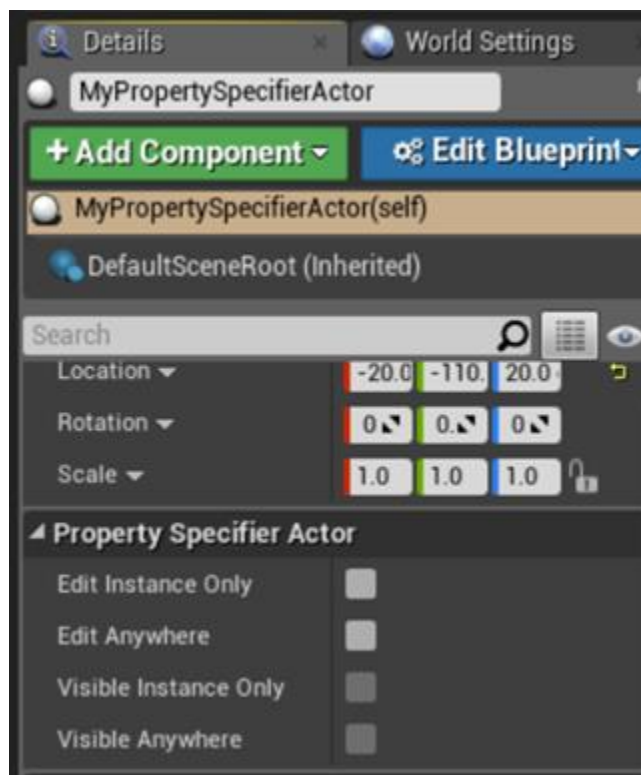
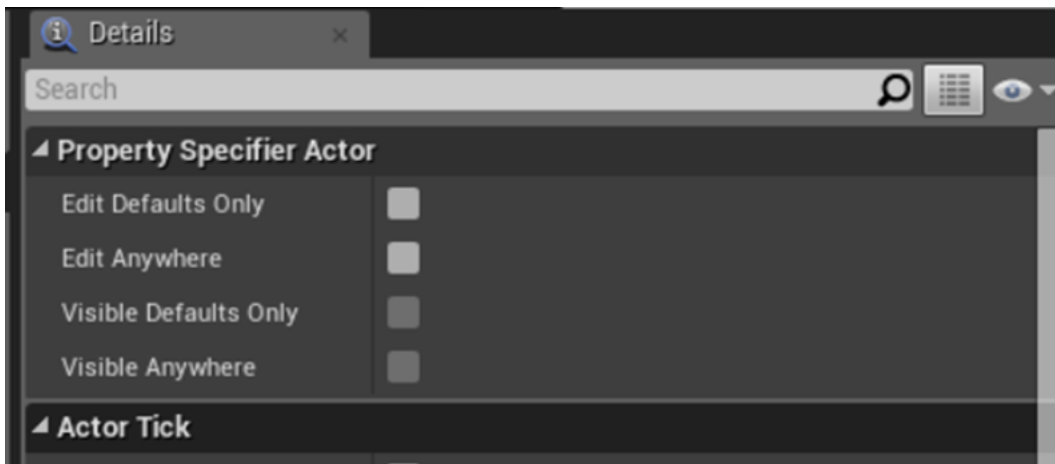


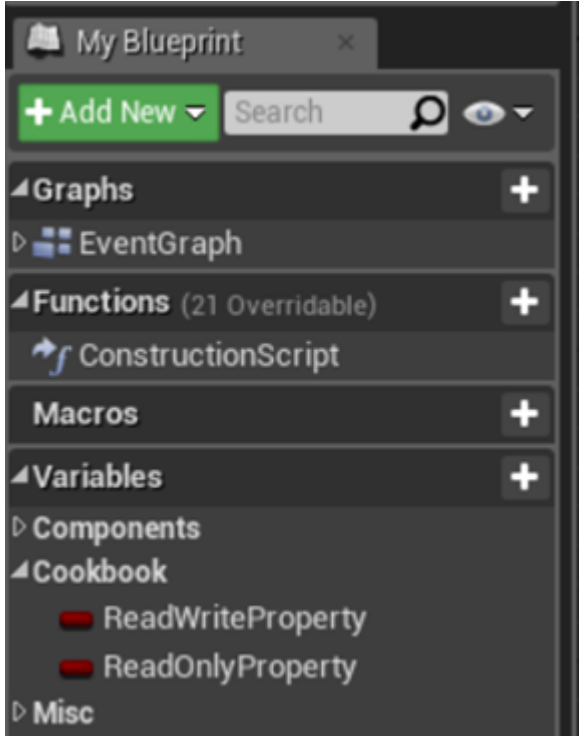




My Type is Tree_Spruce!
My Type is Tree_Poplar!
My Type is Tree_Redwood!



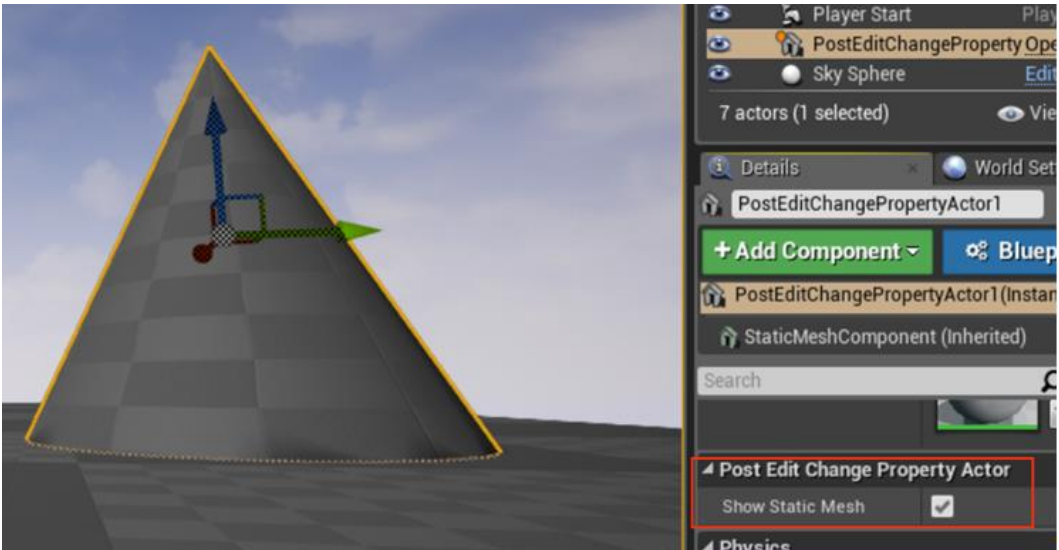


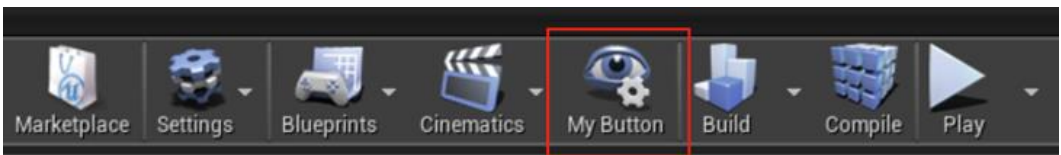
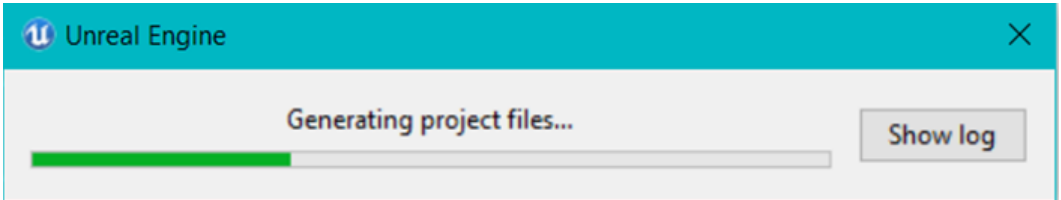
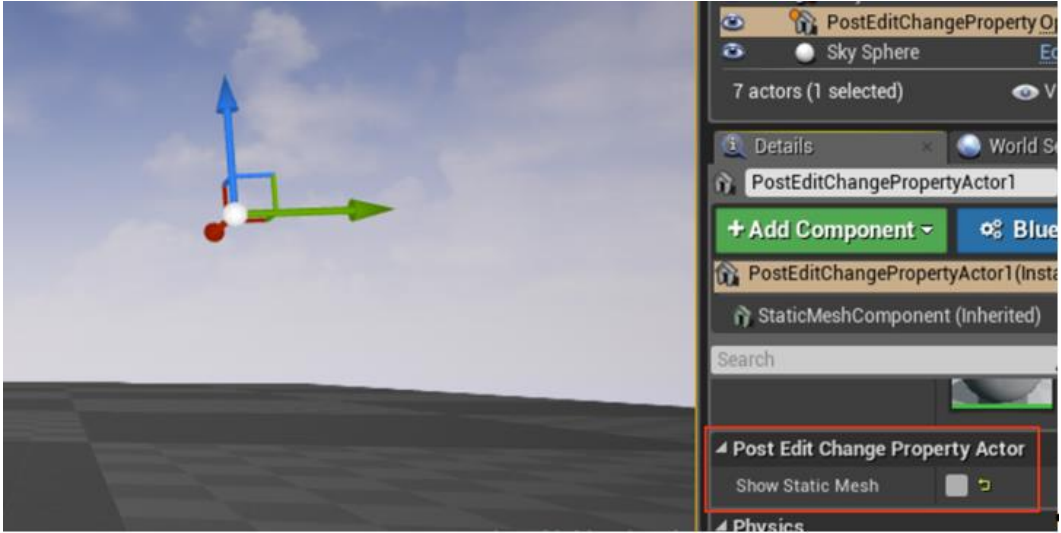


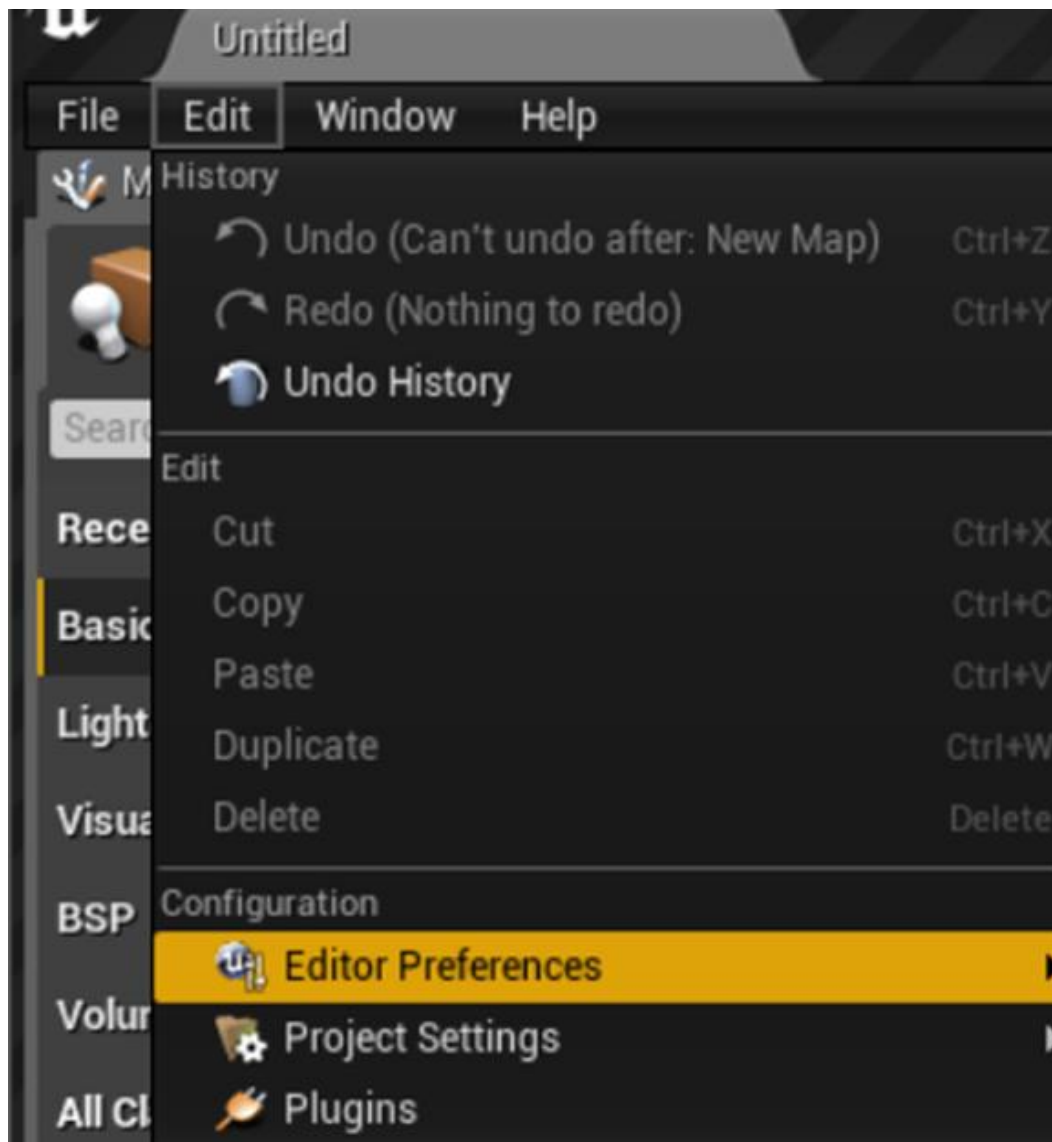
ReadWriteProperty

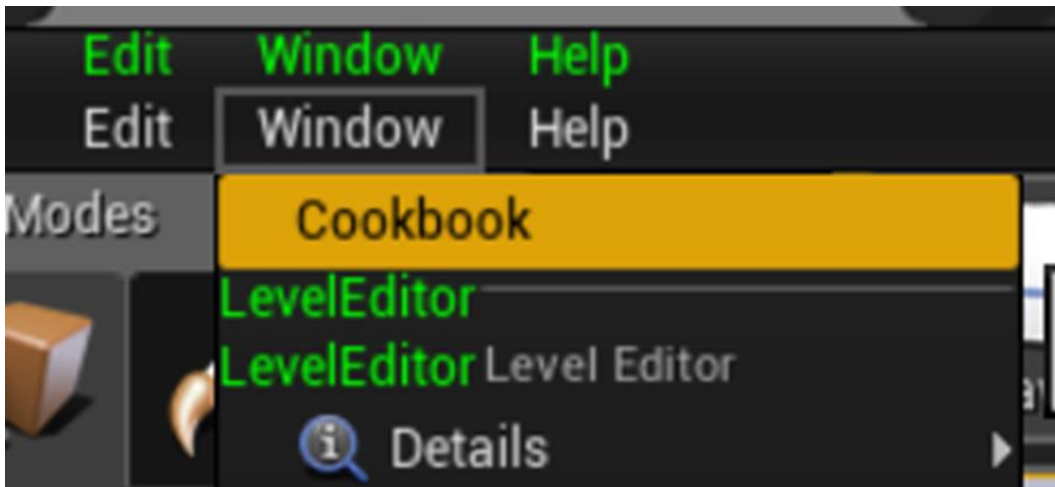
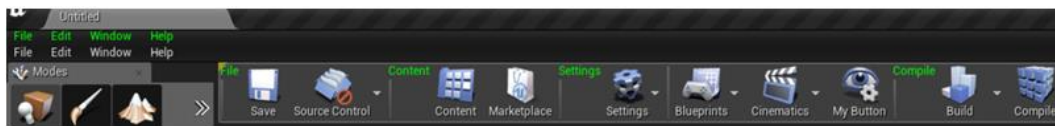
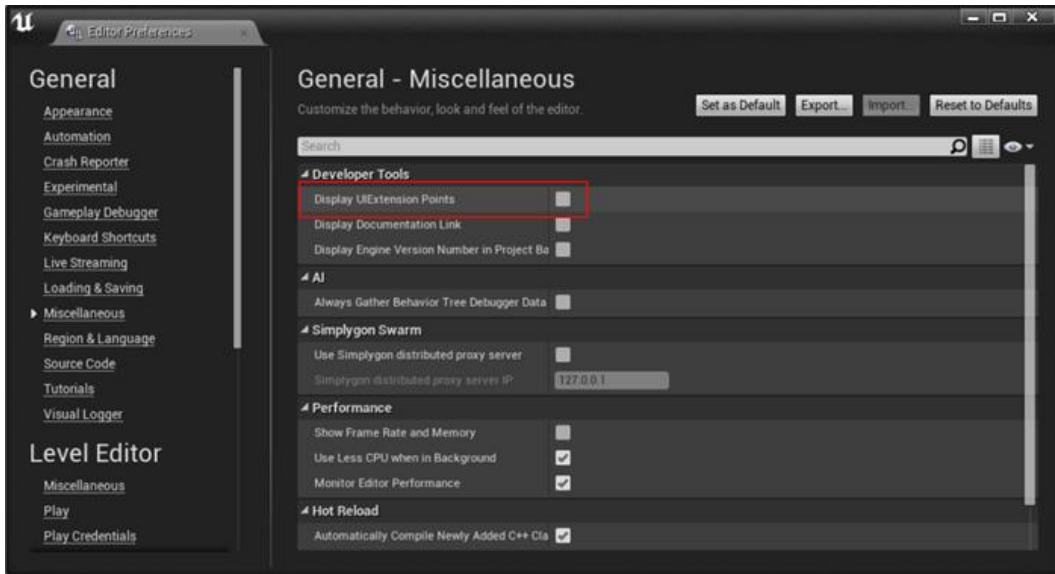
Get

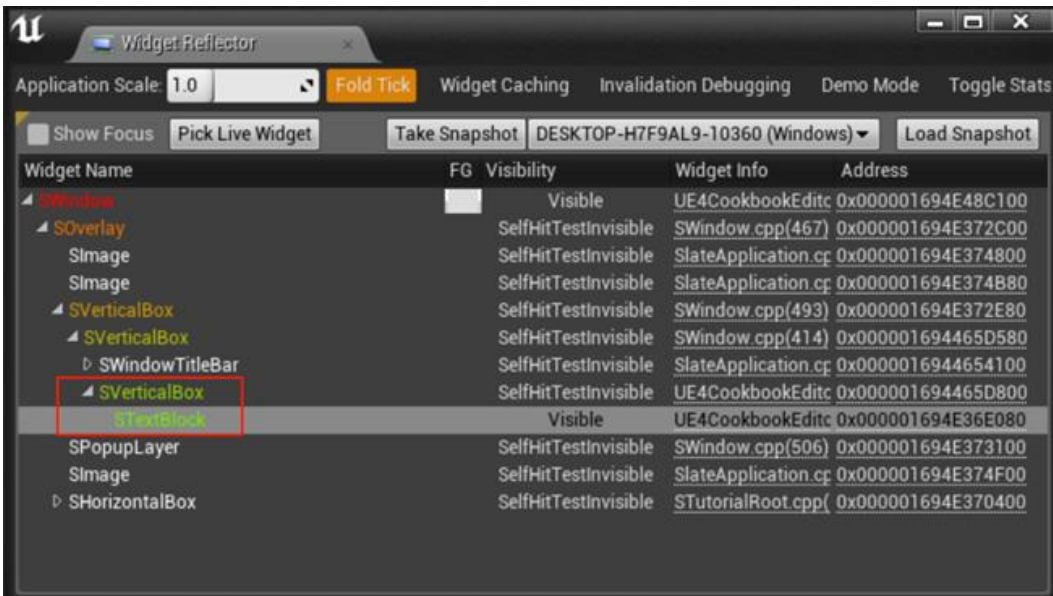
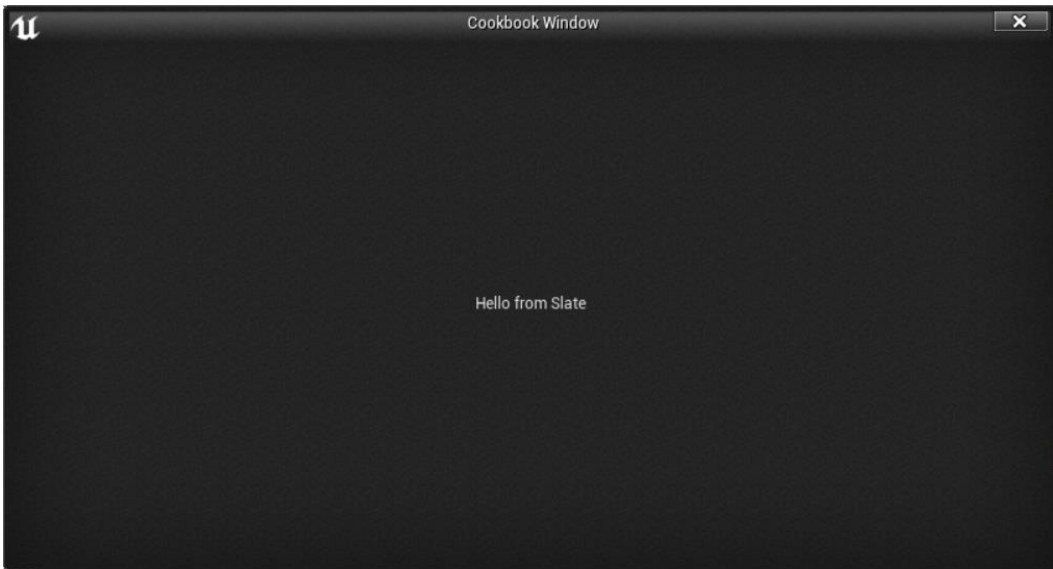
Set

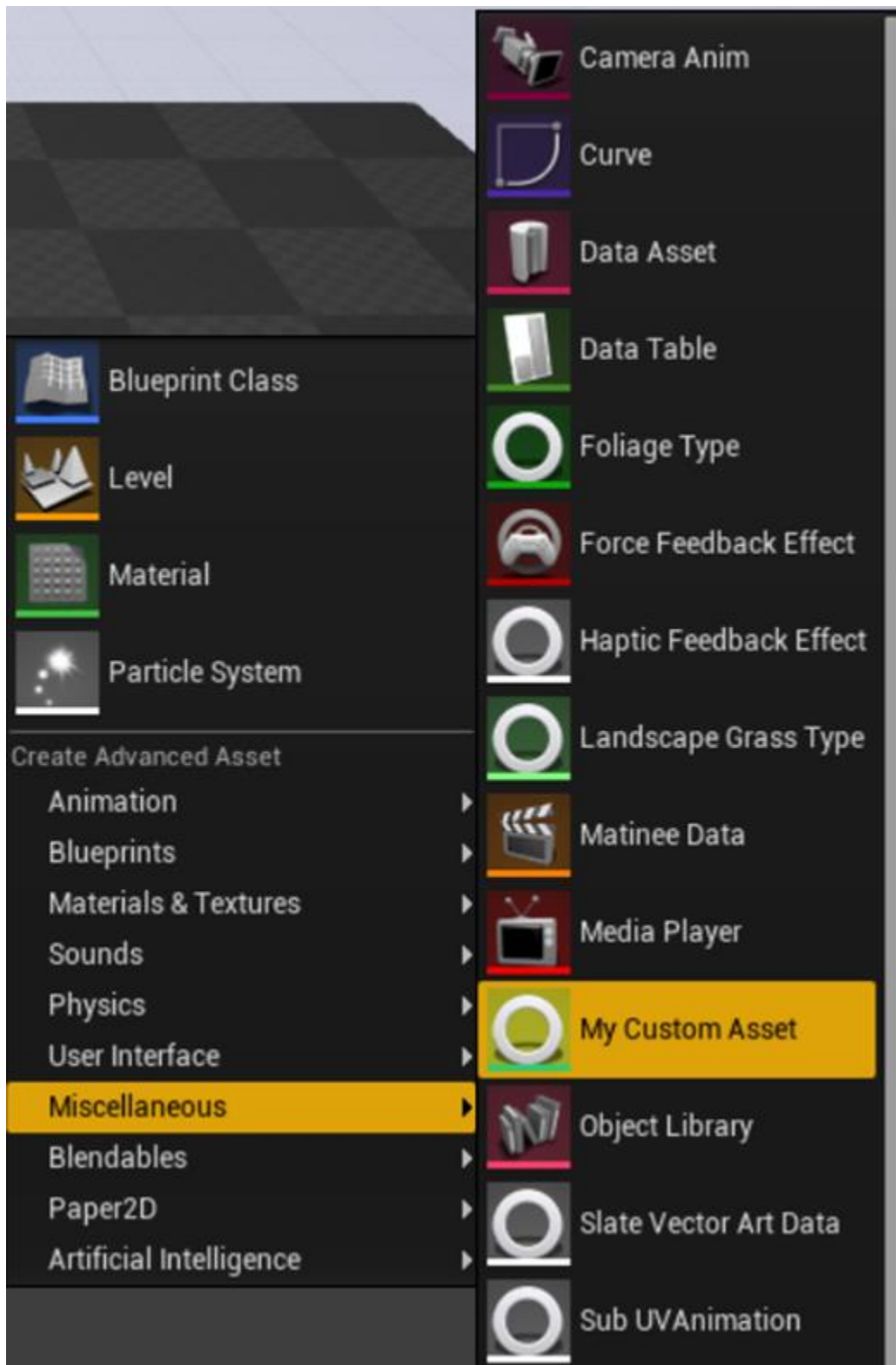



















My Custom Asset Actions

 CustomAssetAction


Common

-  Edit...
-  Rename F2
-  Duplicate Ctrl+W
-  Save
-  Delete Delete
-  Asset Actions ▶

Explore

-  Show in Folder View Ctrl+B
-  Show In Explorer

References

- Copy Reference
- Reference Viewer...
- Size Map...
-  Open MyCustomAsset.h

 Connect To Source Control...

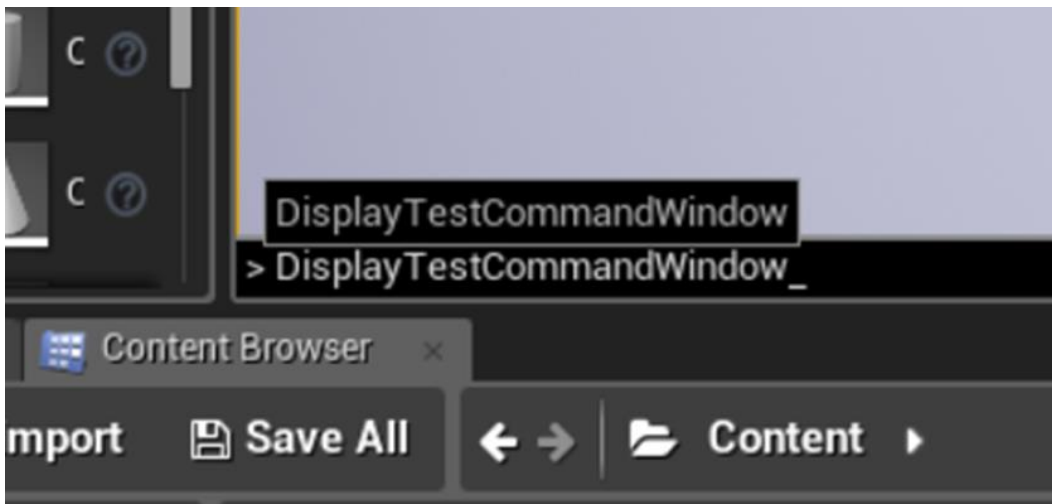
Custom
Asset

NewMy
Custom
Asset

PP_
Outline
Colored

PPI_
Outline
Colored

RotateTest








Some Function
Target is Untitled



Target

Custom Uobject Input



Select Asset   

◀ Some Function

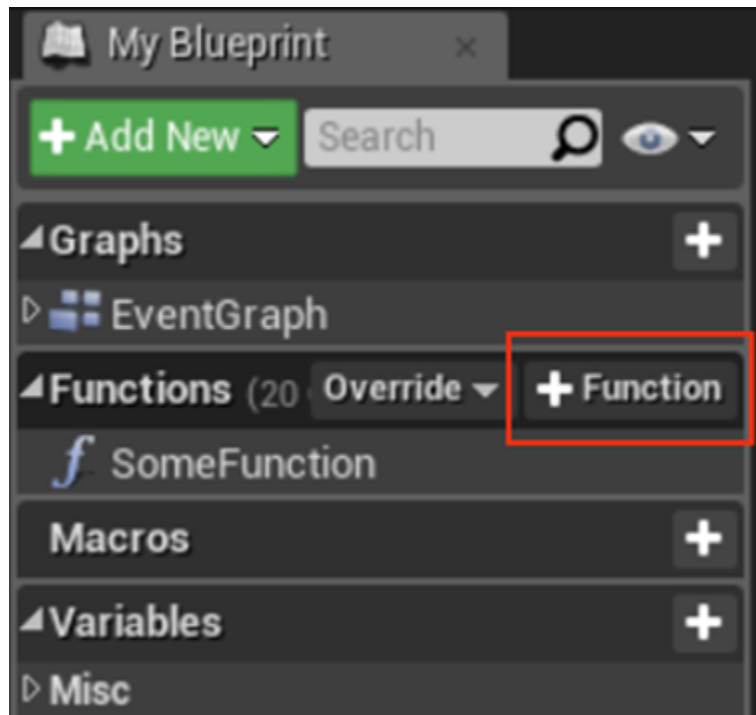
Target is Untitled



Target

FVector Input





Details

Search

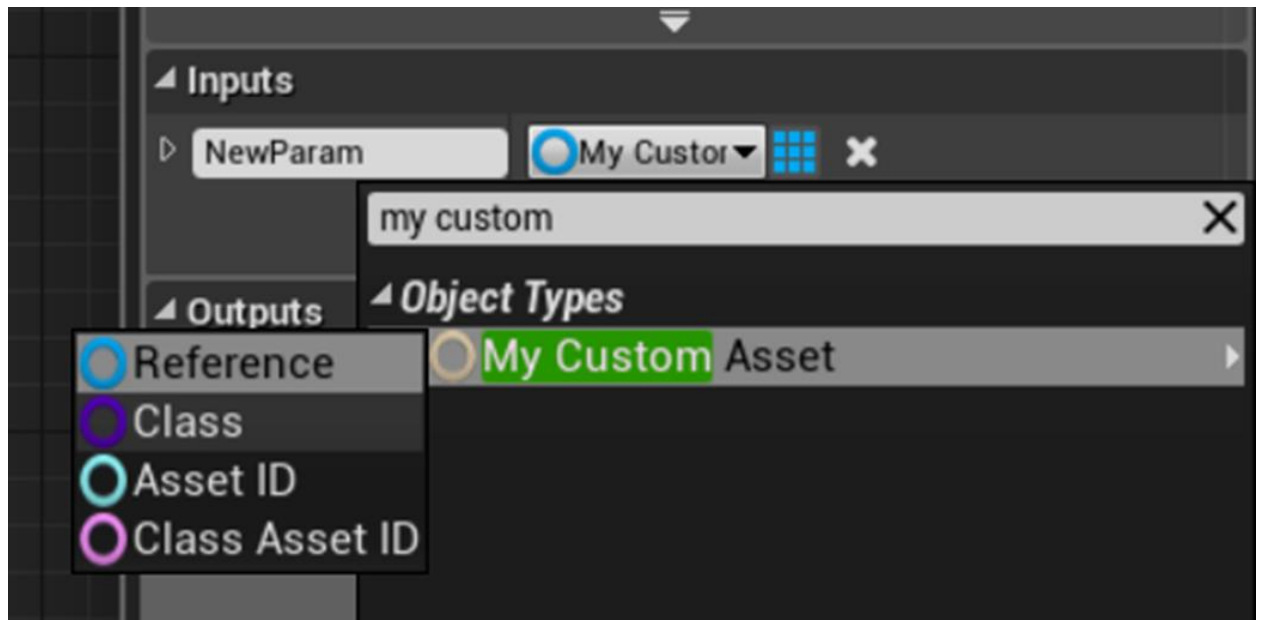
Graph

Description	<input type="text"/>
Category	Default
Keywords	<input type="text"/>
Compact Node Title	<input type="text"/>
Access Specifier	Public
Pure	<input type="checkbox"/>

Inputs

Outputs

New



Some Function

Target is Untitled

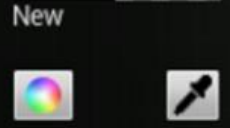


Target self

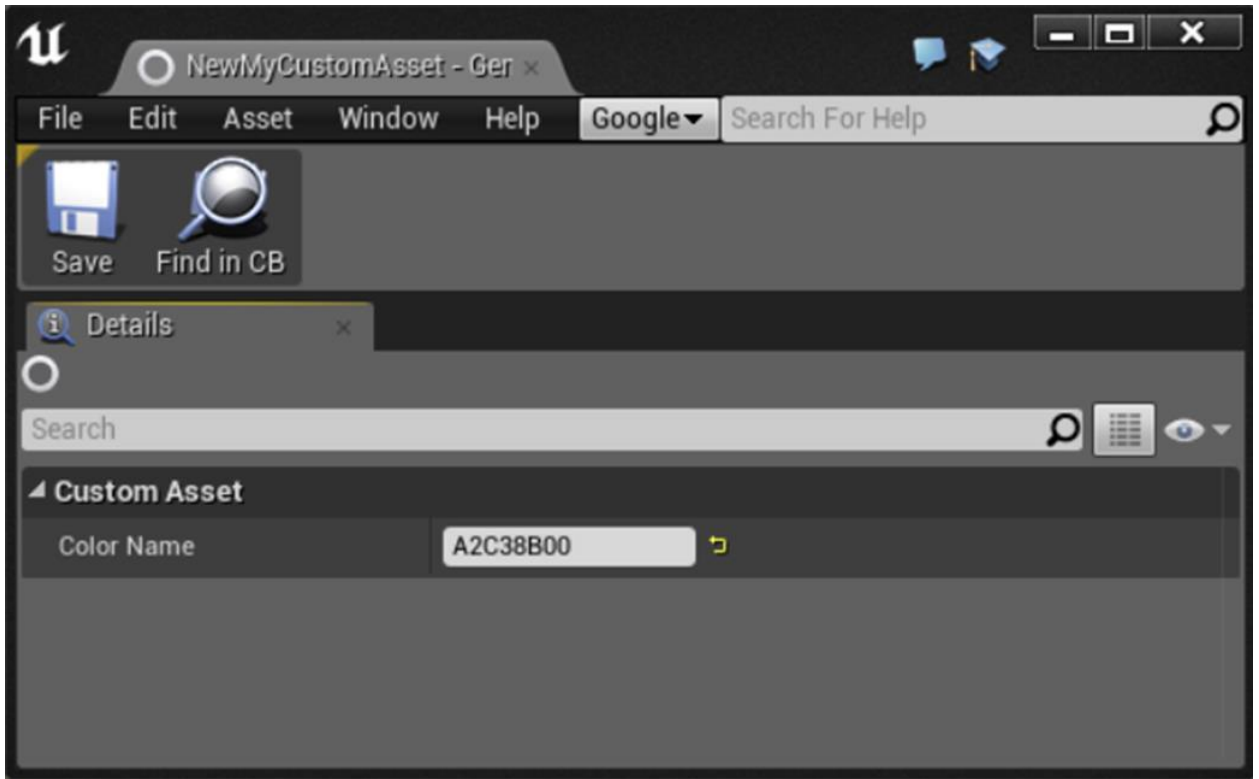
Custom Uobject Input

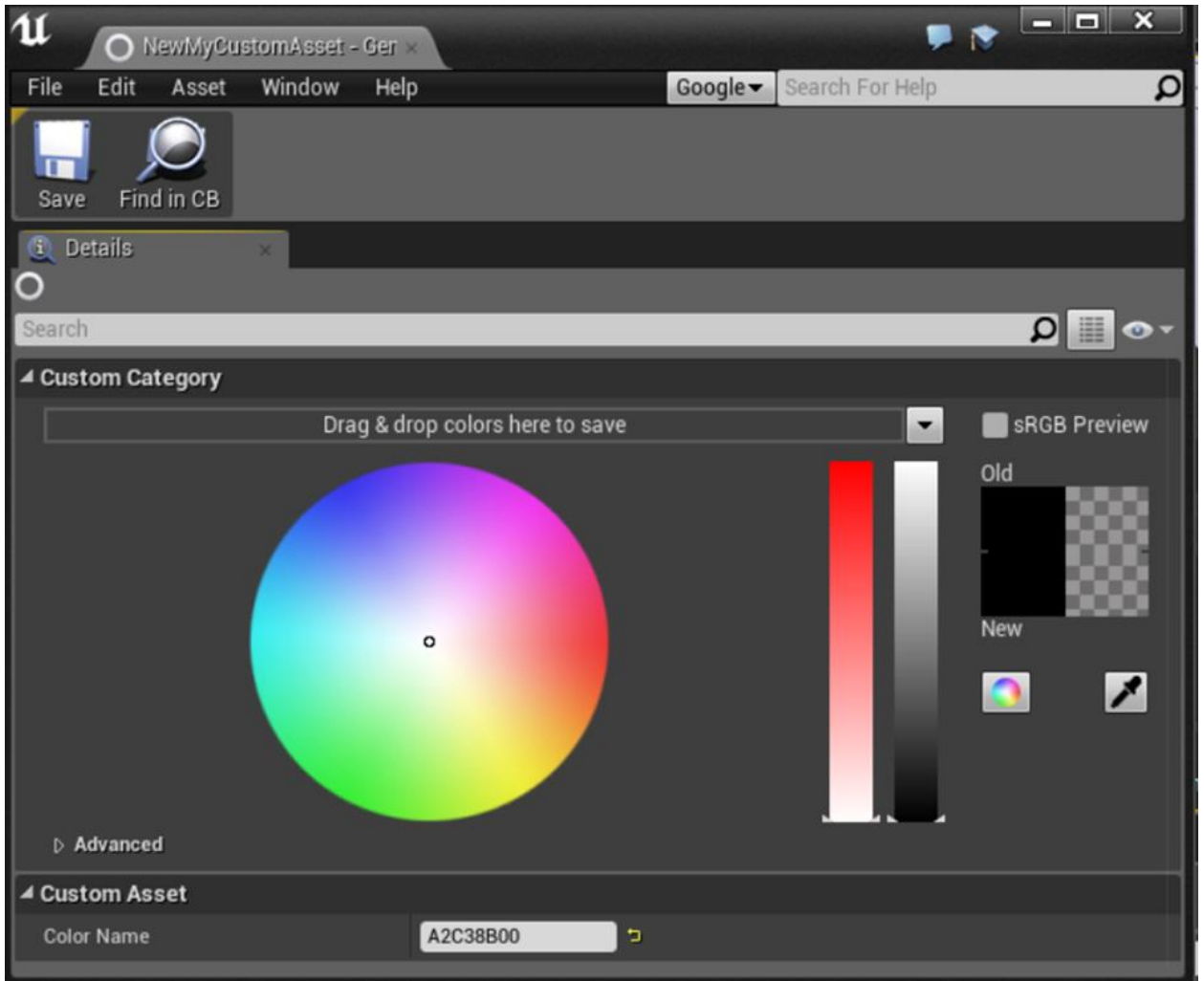
Drag & drop colors here to save

sRGB Preview



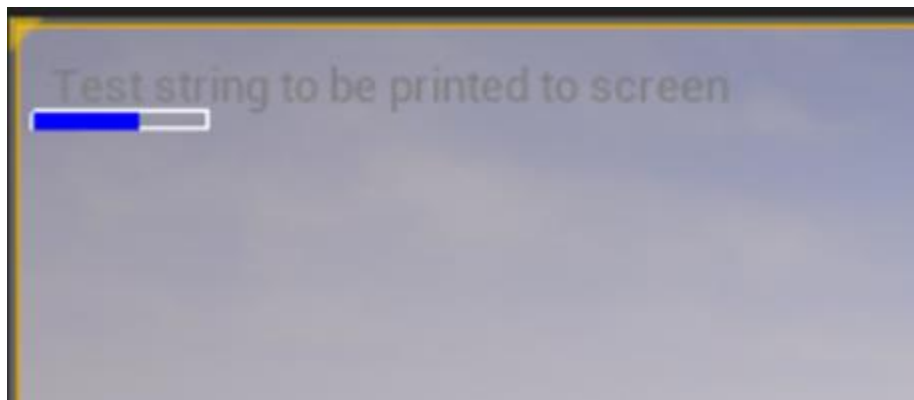
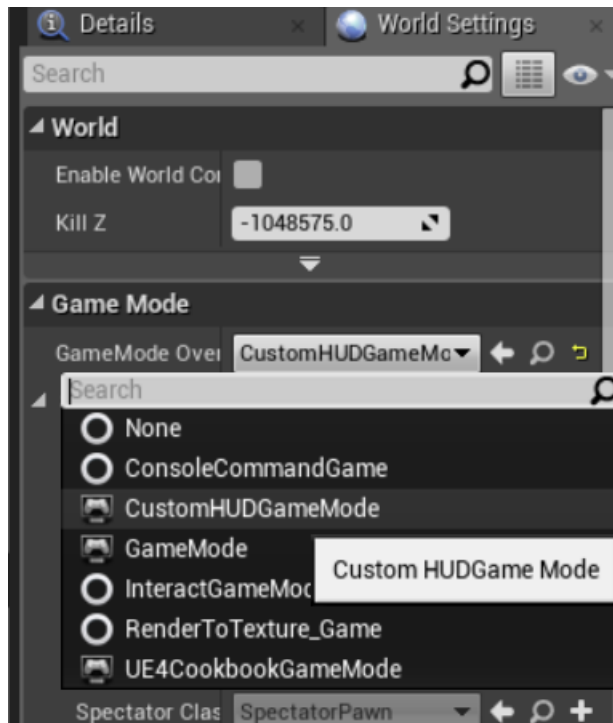
Advanced

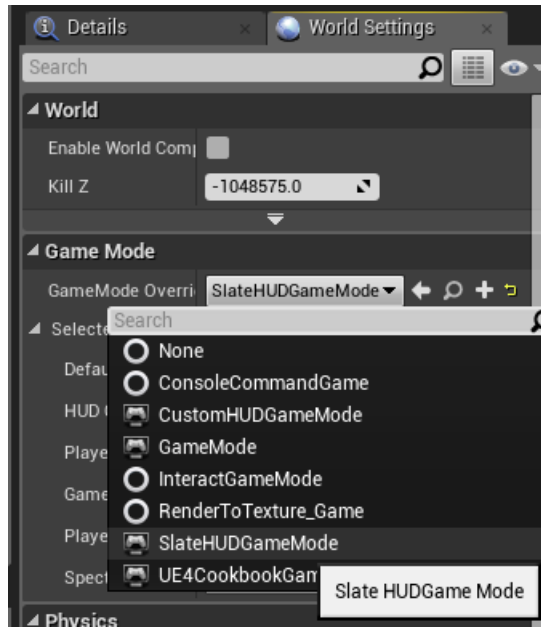
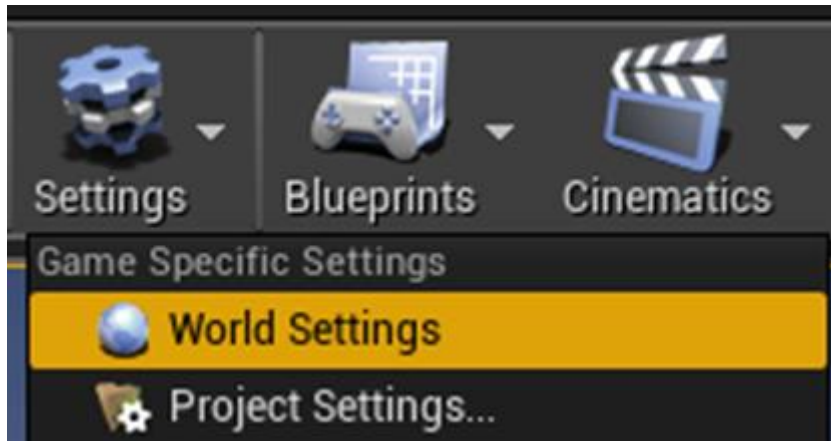


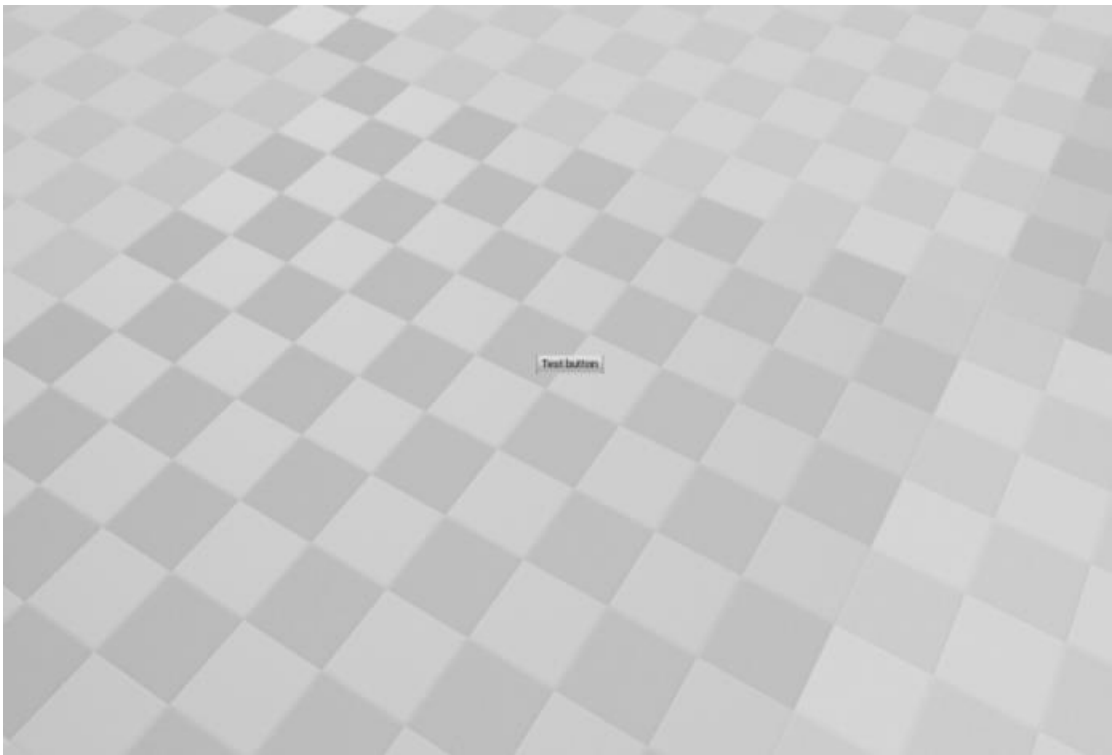
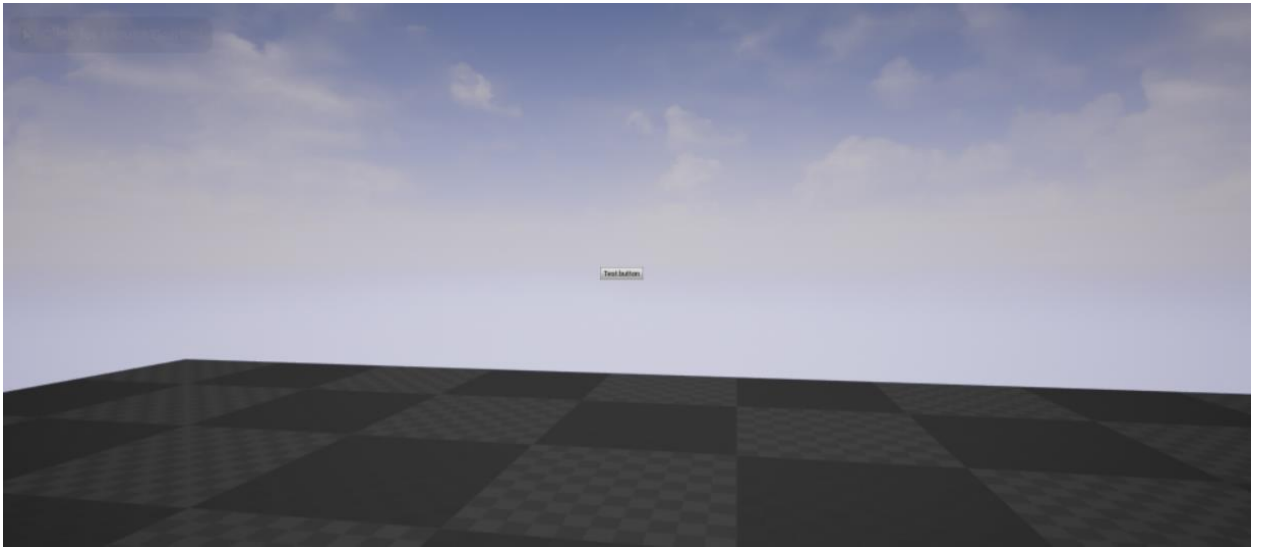


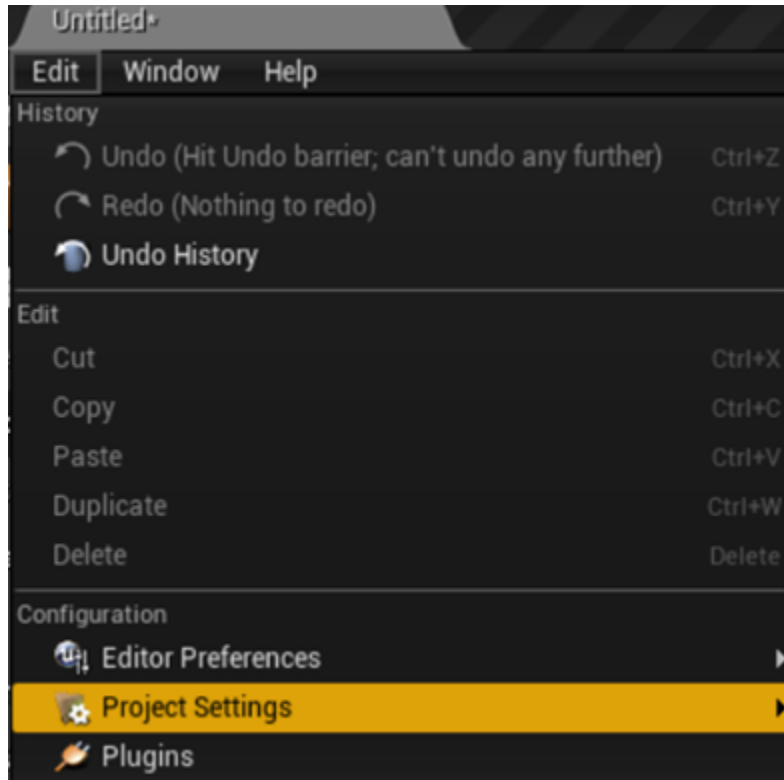
Chapter 9: User Interfaces—UI and UMG











Project Settings

Engine - User Interface
User Interface settings that control Slate and UMG.

Export... Import...

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

Search

Focus
Render Focus Rule: Navigation Only

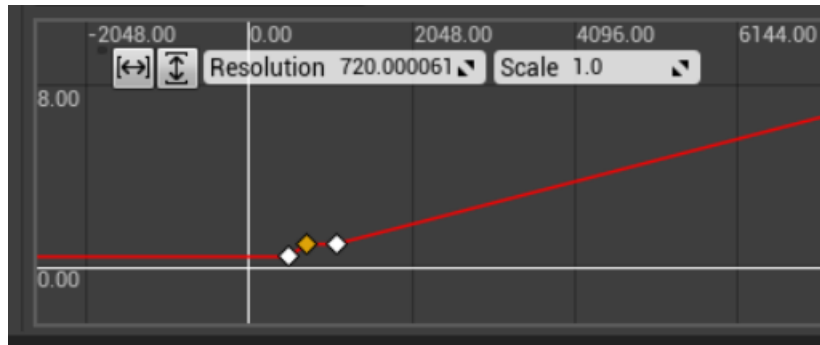
Cursors

Default Cursor	None	←	↻	+	×
Text Edit Beam Cursor	None	←	↻	+	×
Crosshairs Cursor	None	←	↻	+	×
Grab Hand Cursor	None	←	↻	+	×
Grab Hand Closed Cursor	None	←	↻	+	×
Slashed Circle Cursor	None	←	↻	+	×





DPI Scaling

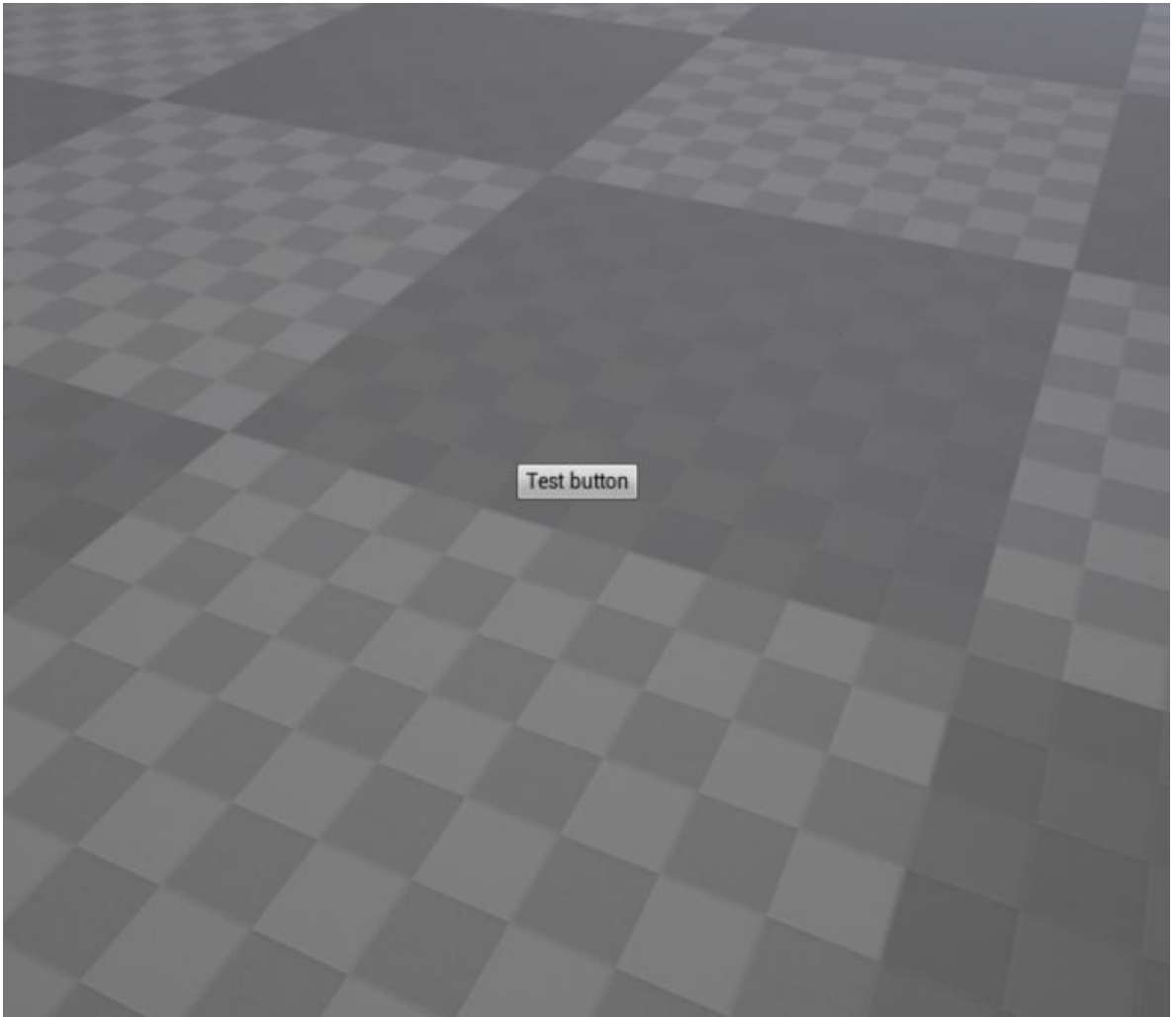
Application Scale: 1.0
DPI Scale Rule: Shortest Side
Custom Scaling Rule Class: None

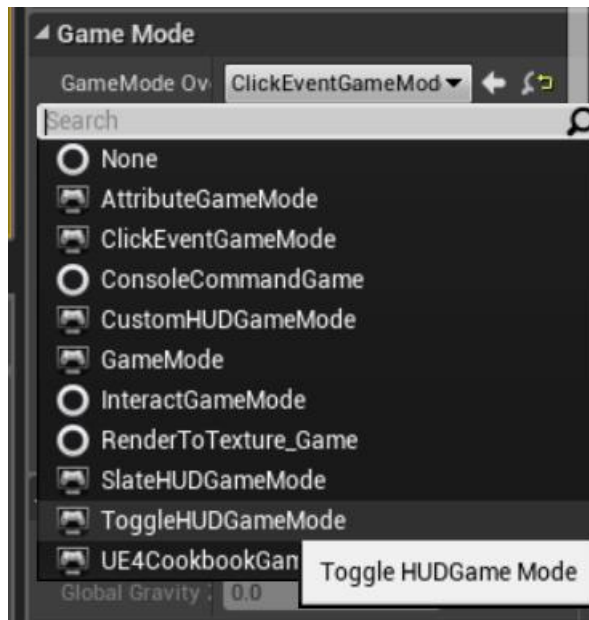
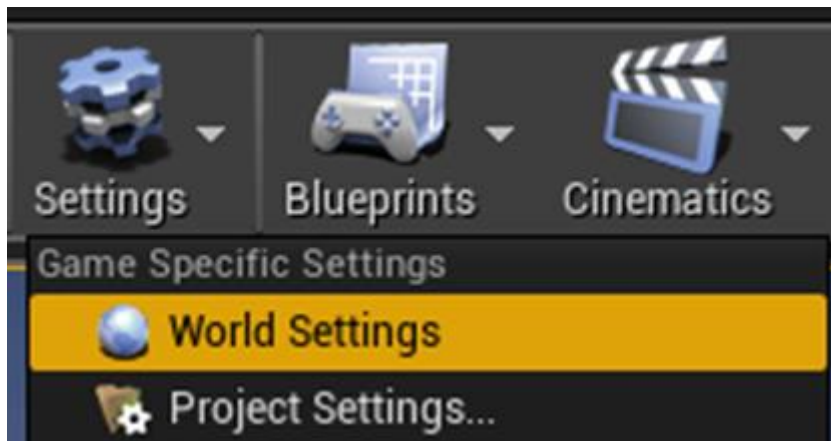
DPI Curve

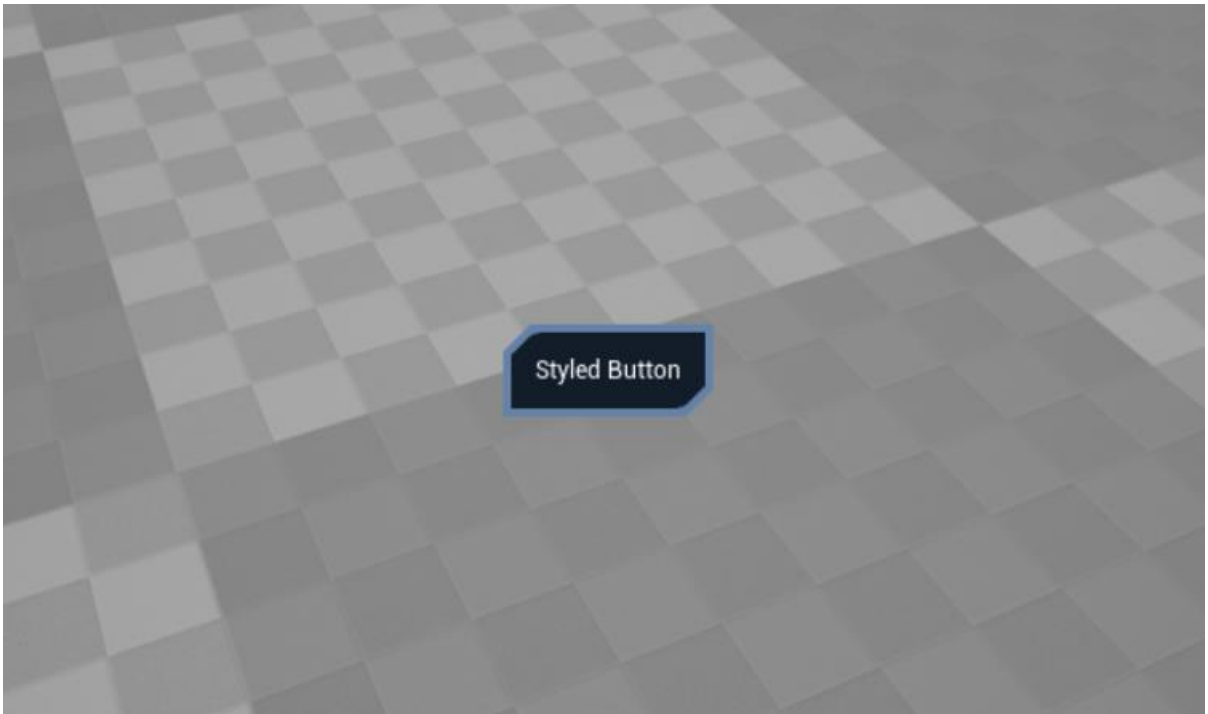
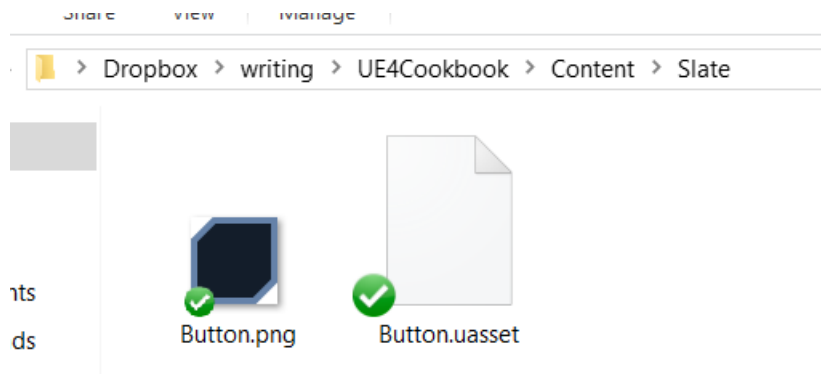


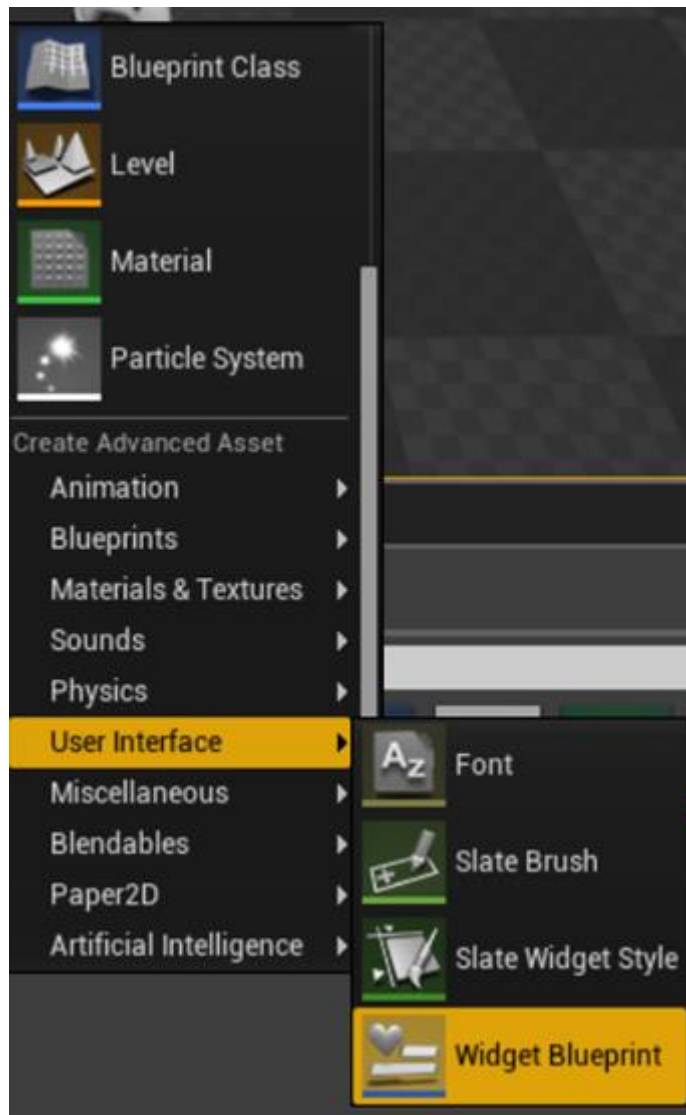
> Dropbox > writing > UE4Cookbook > Config

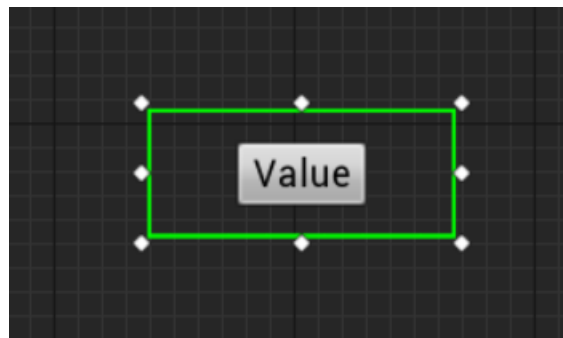
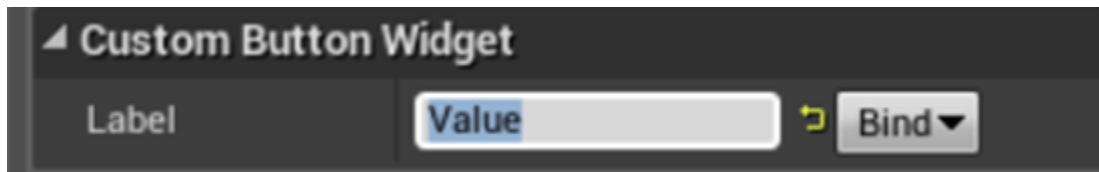
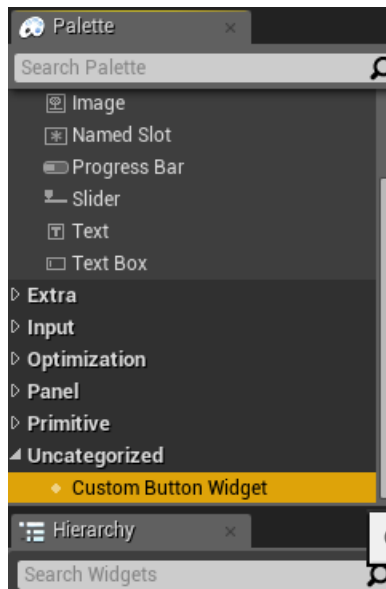
Name	Date modified	Type	Size
 DefaultEditor.ini	12/02/2016 11:26 ...	Notepad++ Docu...	1 KB
 DefaultEngine.ini	16/05/2016 9:42 A...	Notepad++ Docu...	3 KB
 DefaultGame.ini	12/02/2016 11:26 ...	Notepad++ Docu...	1 KB
 DefaultInput.ini	13/04/2016 11:42 ...	Notepad++ Docu...	3 KB

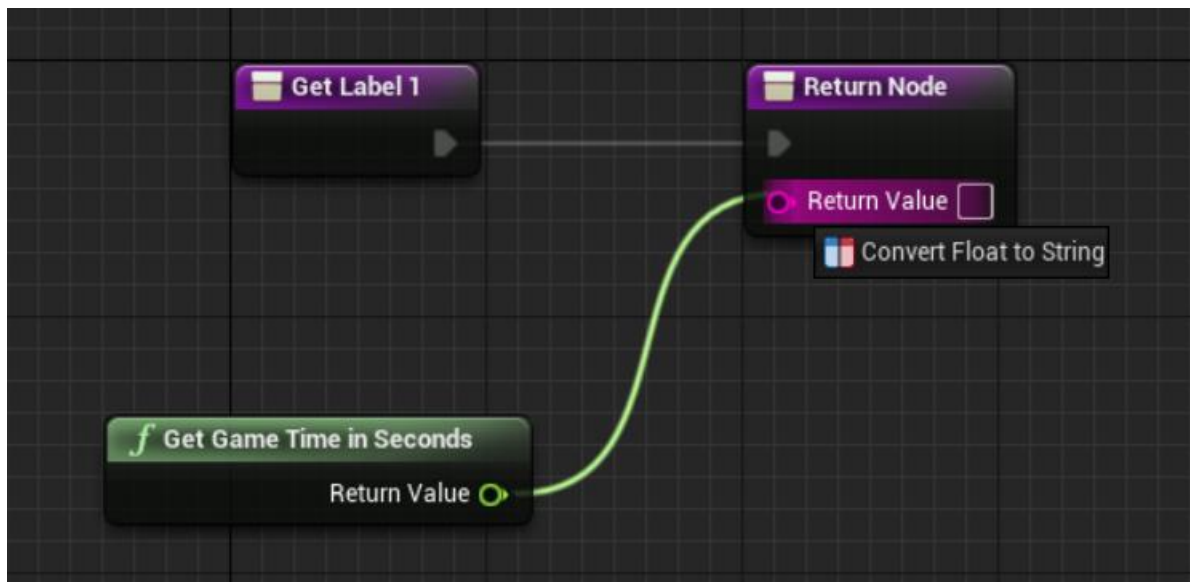
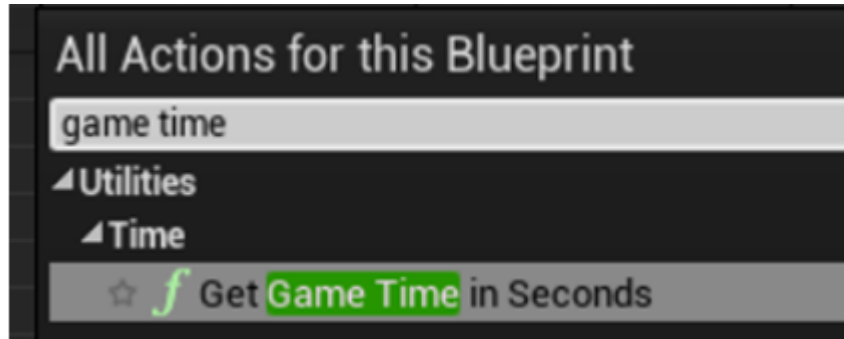
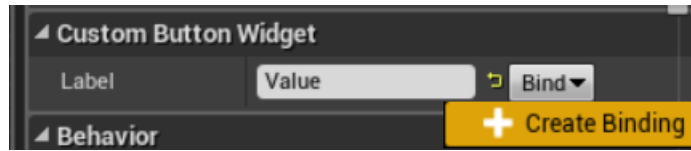


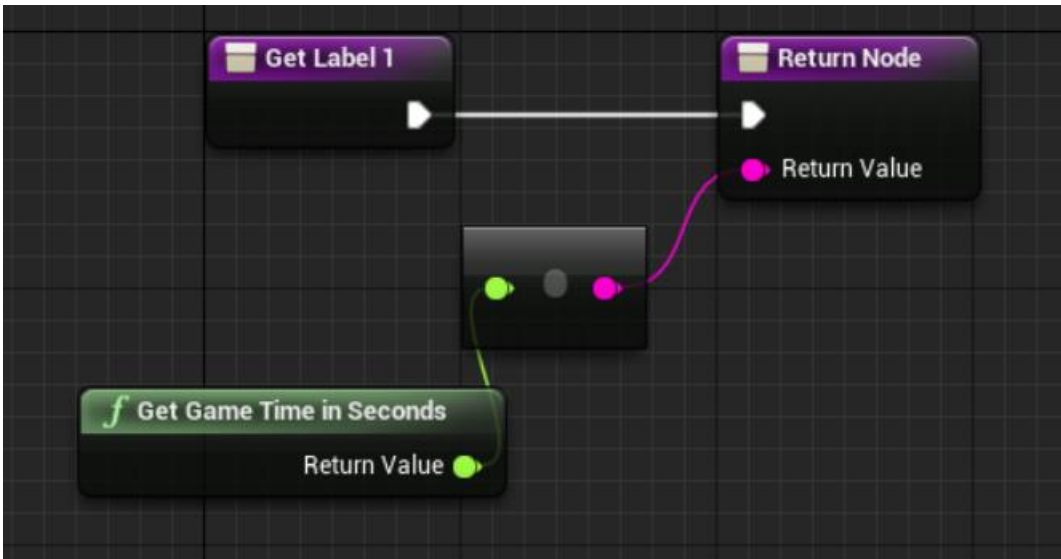


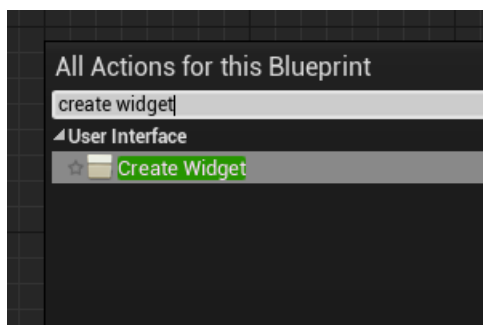
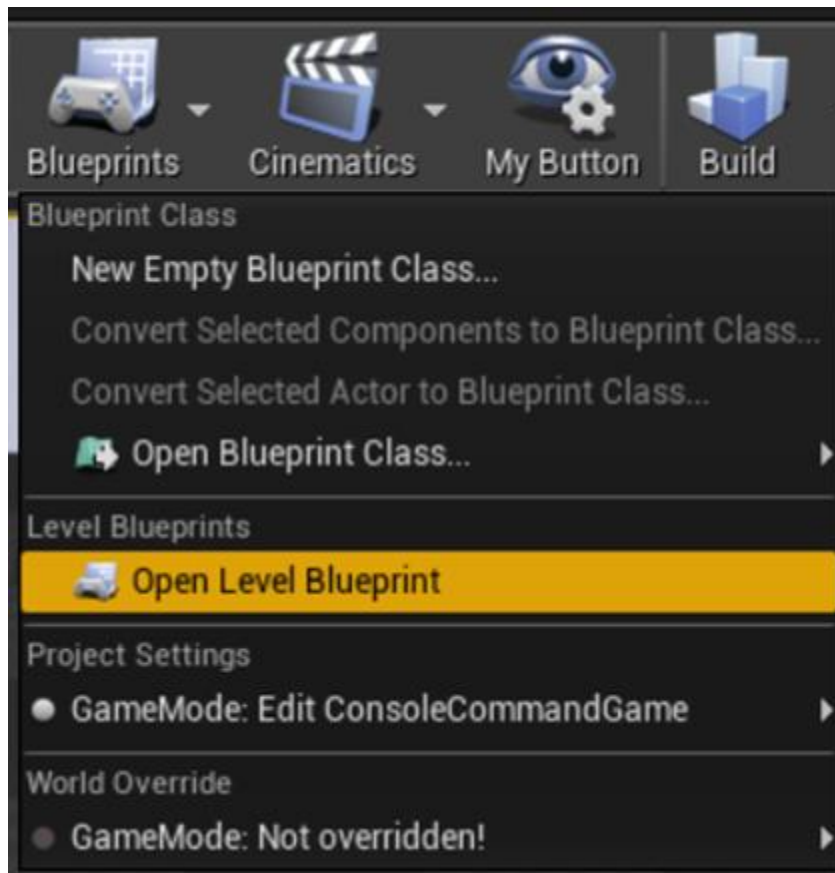


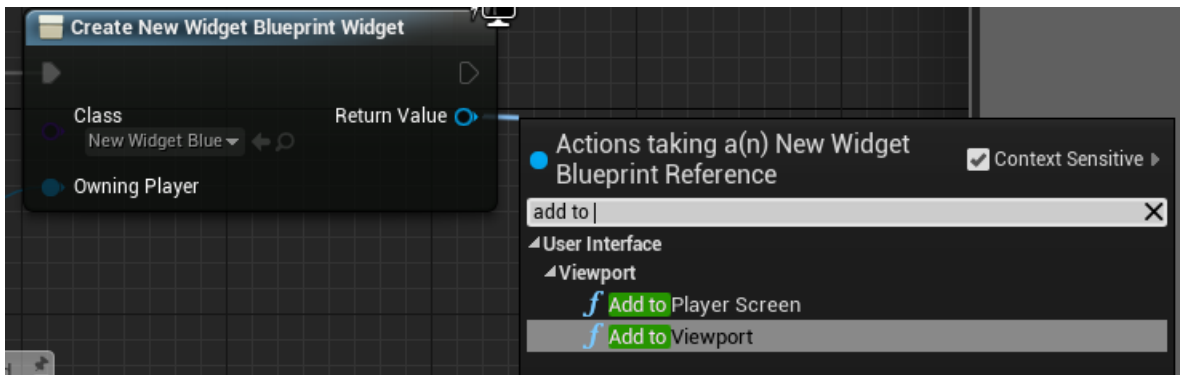
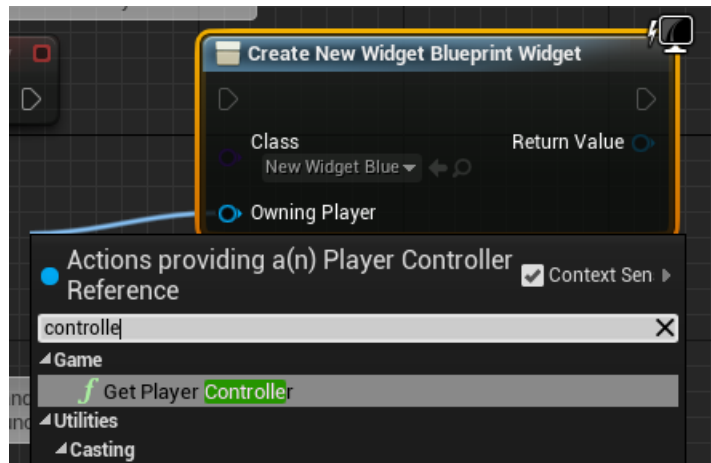
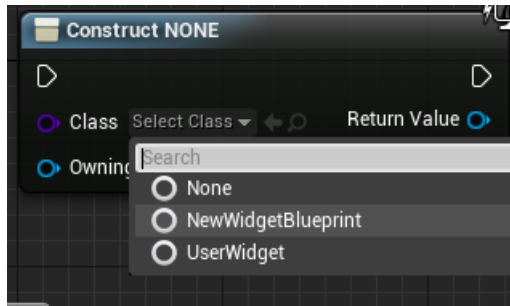


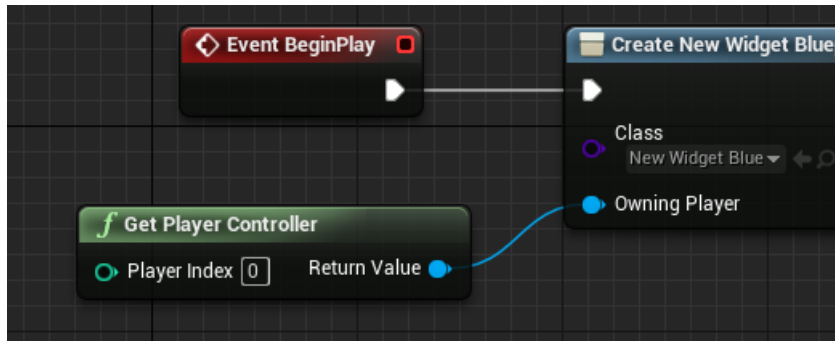




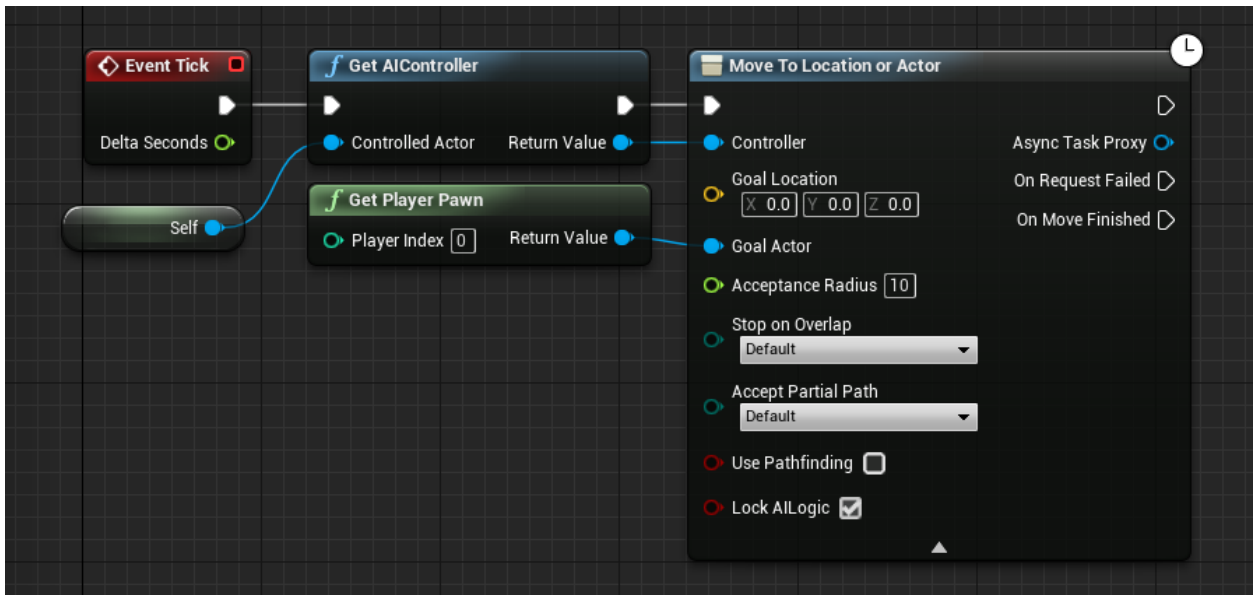
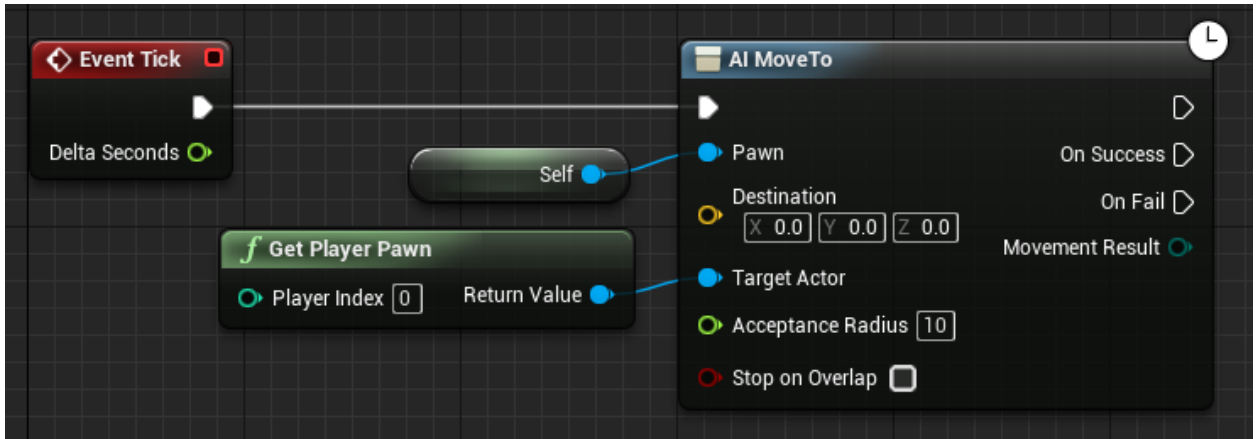


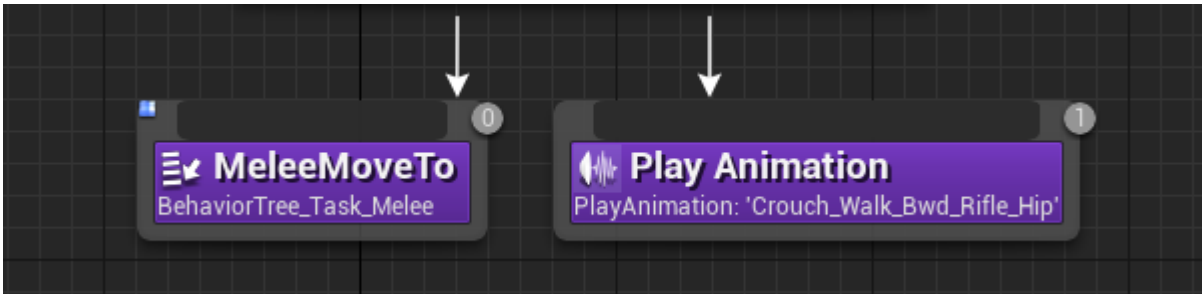
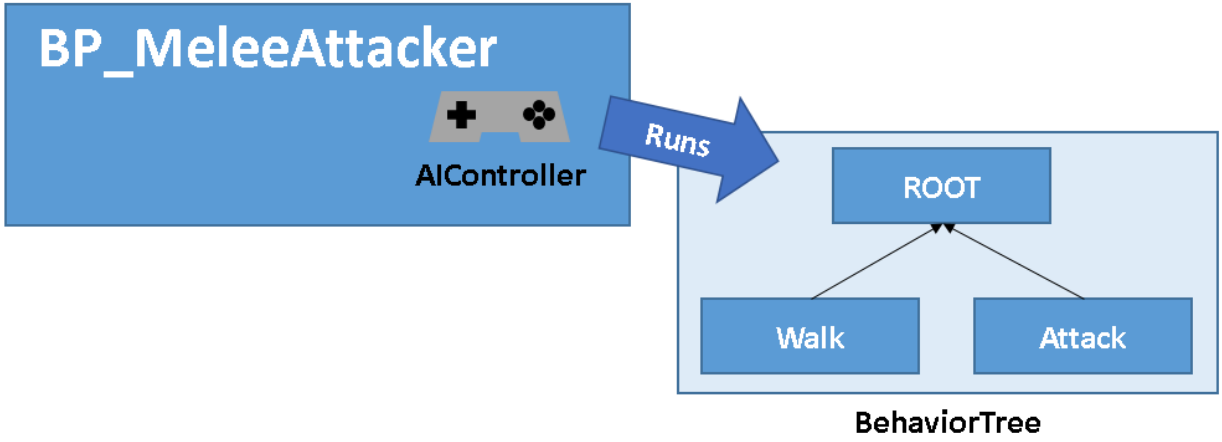


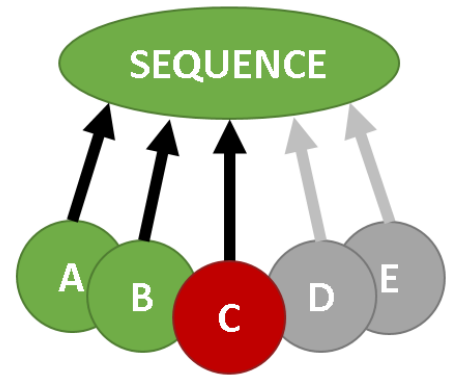
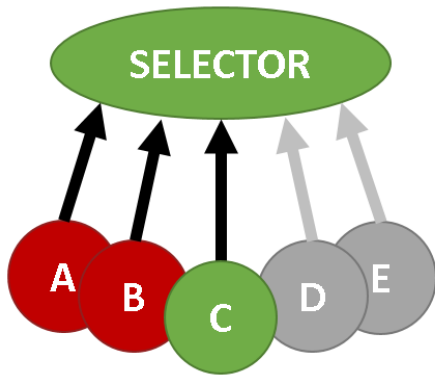
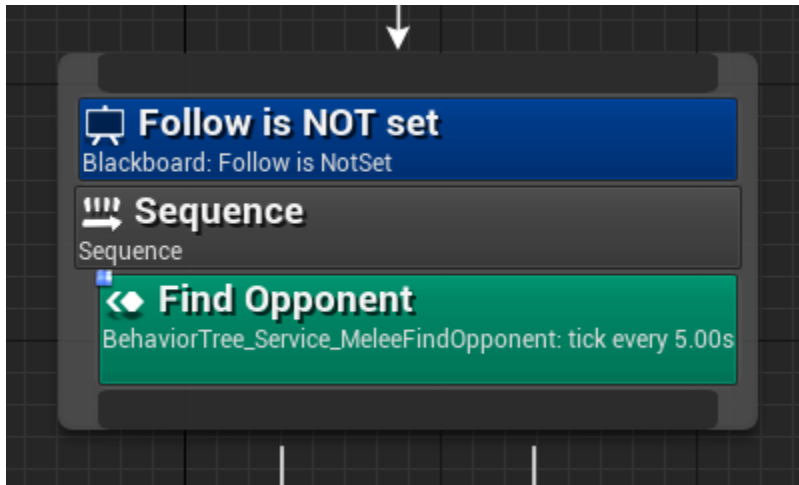


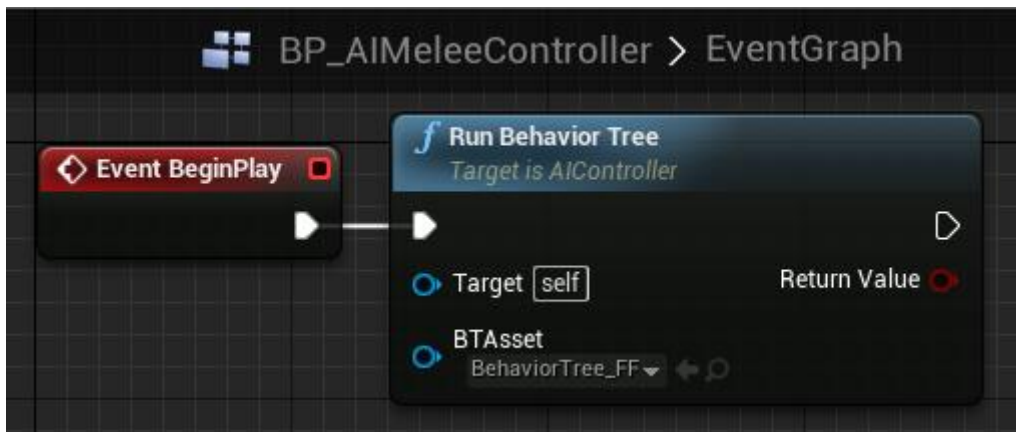
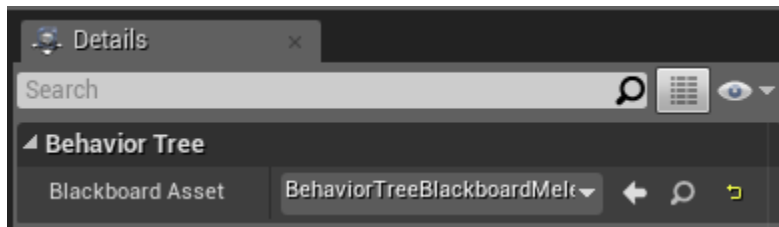
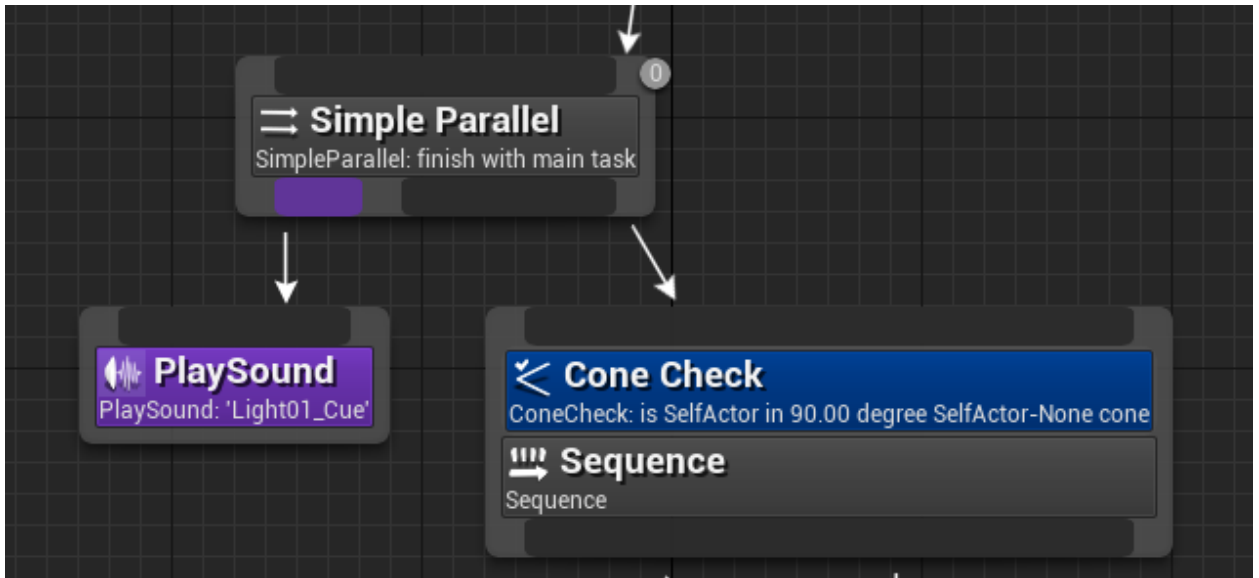


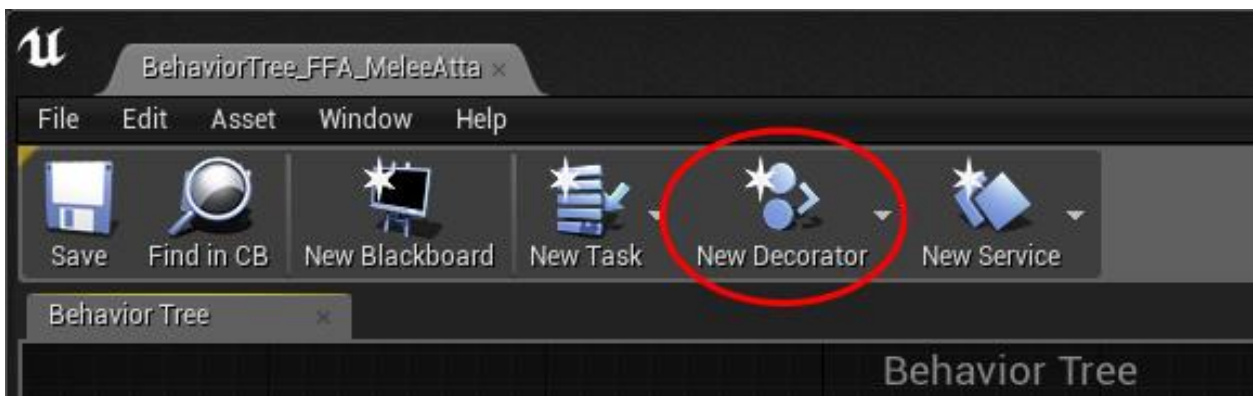
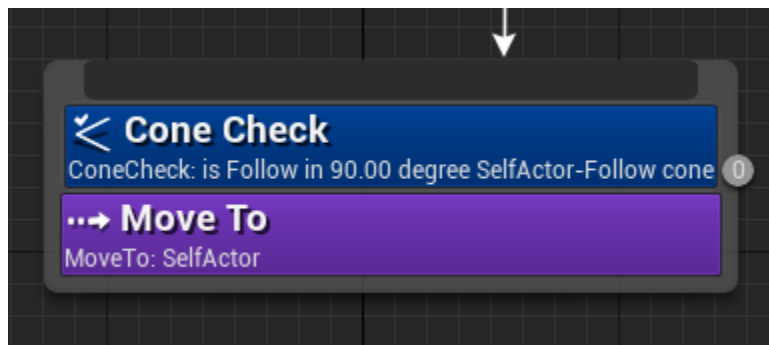
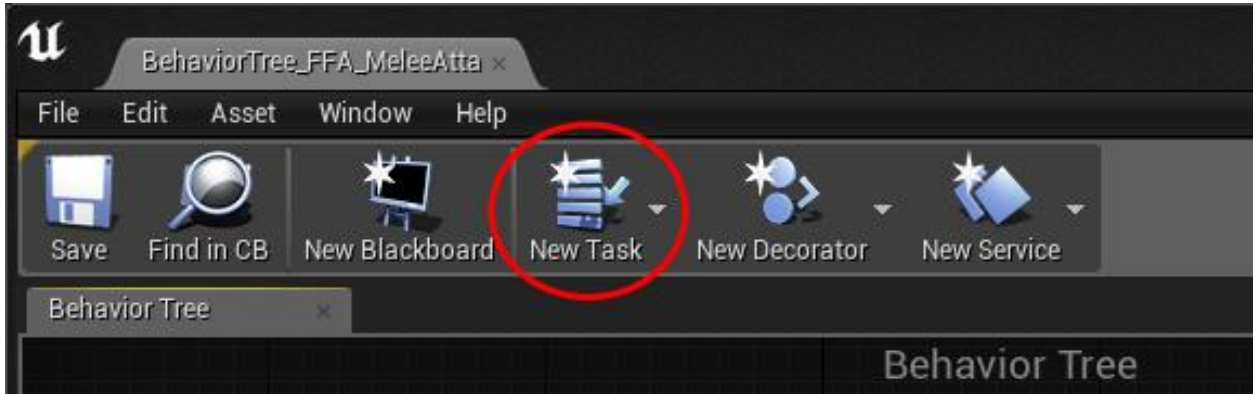
Chapter 10: AI for Controlling NPCs

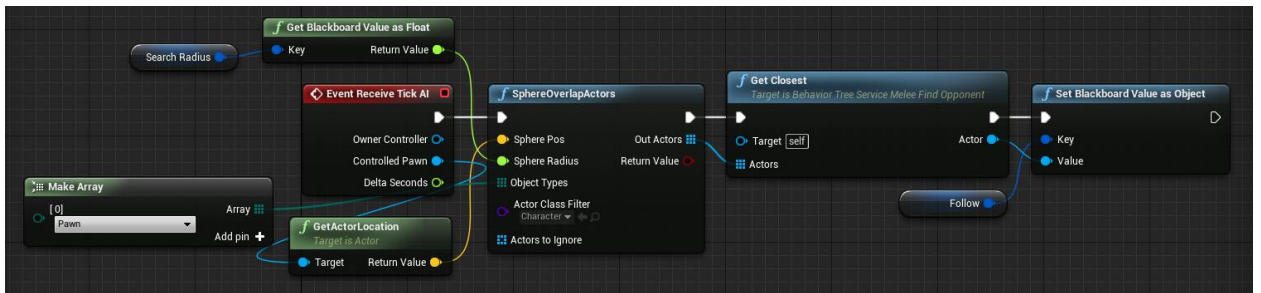
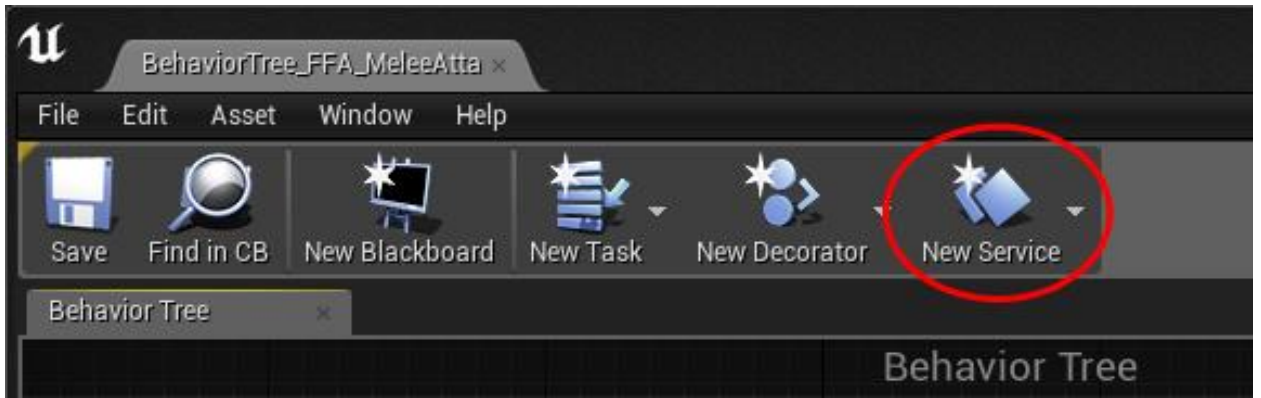
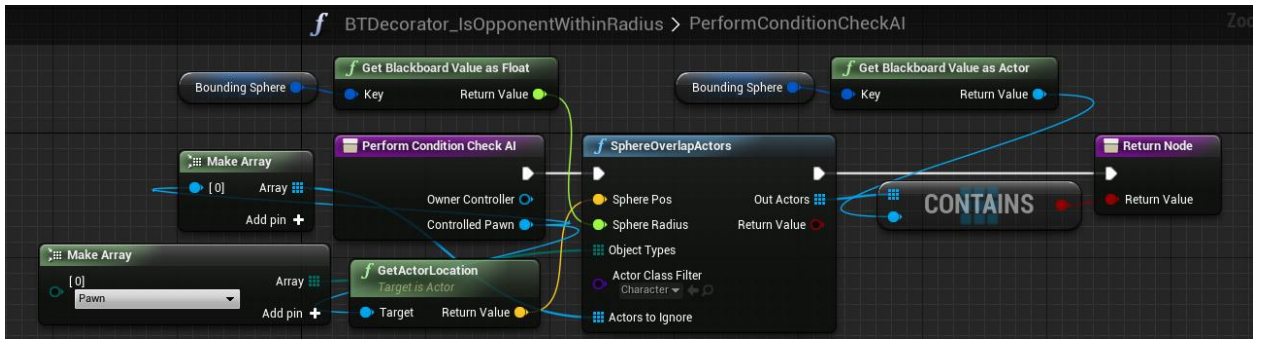


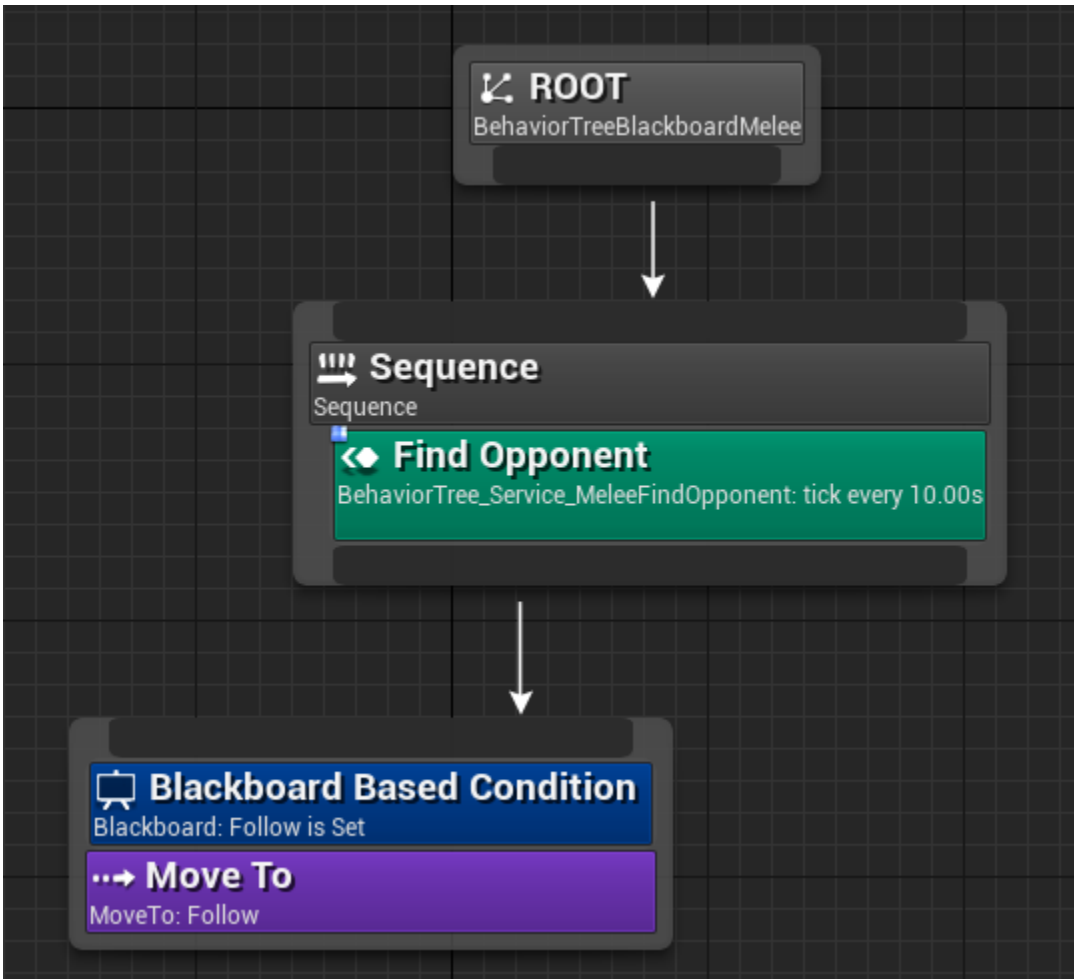


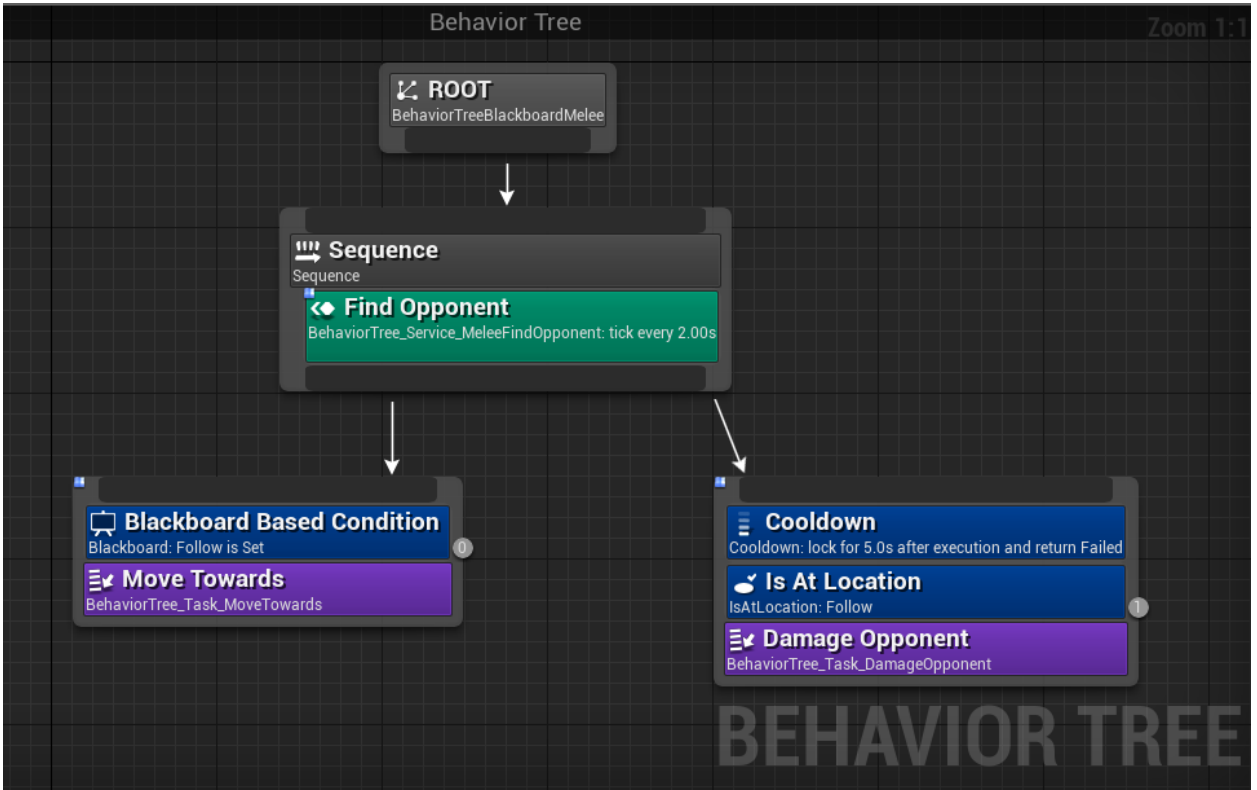




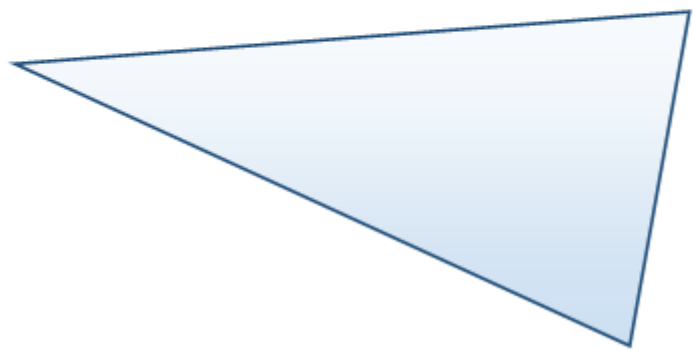








Chapter 11: Custom Materials and Shaders



Create Basic Asset



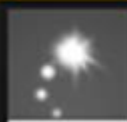
Blueprint Class



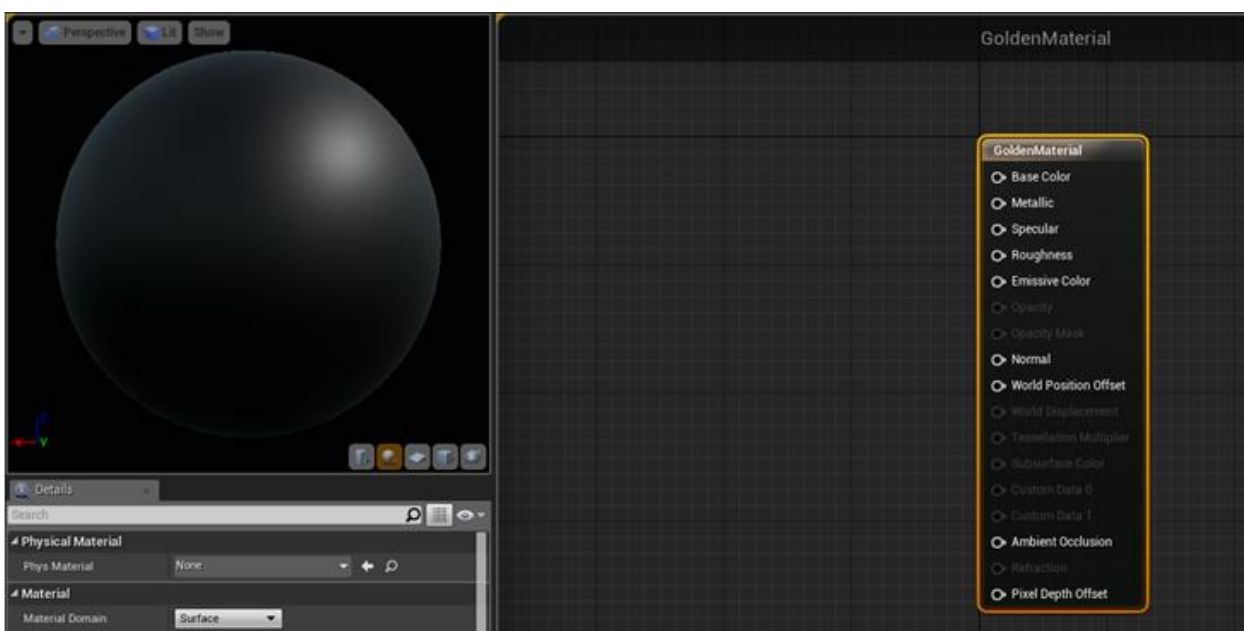
Level



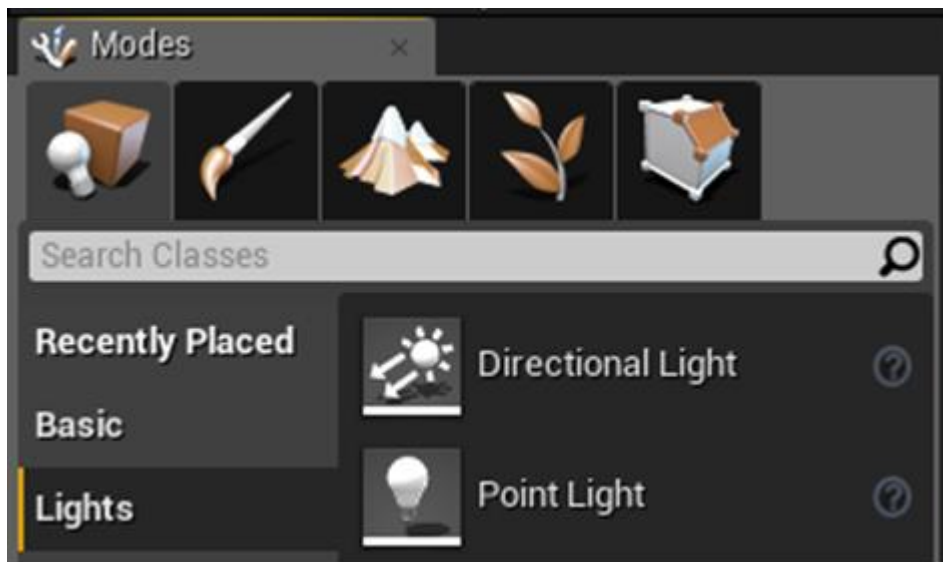
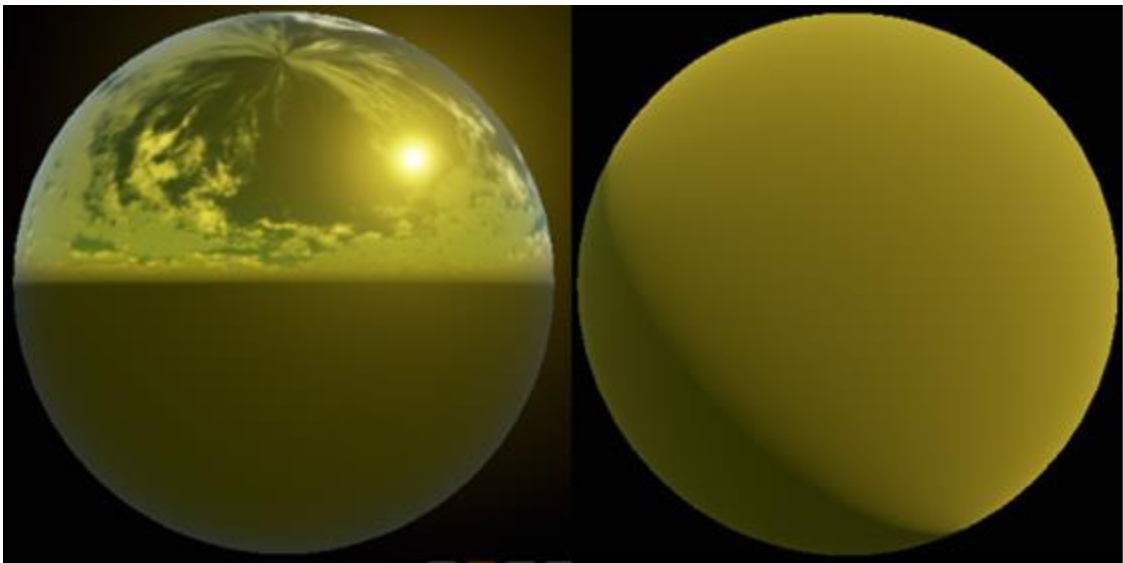
Material

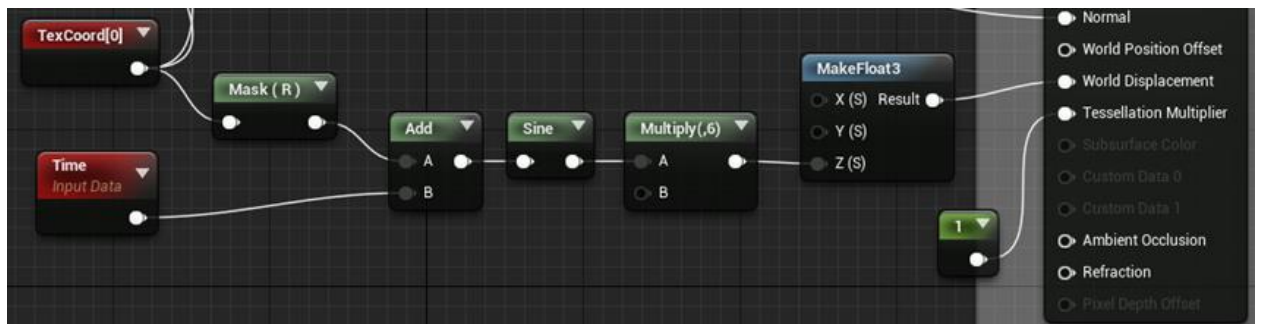
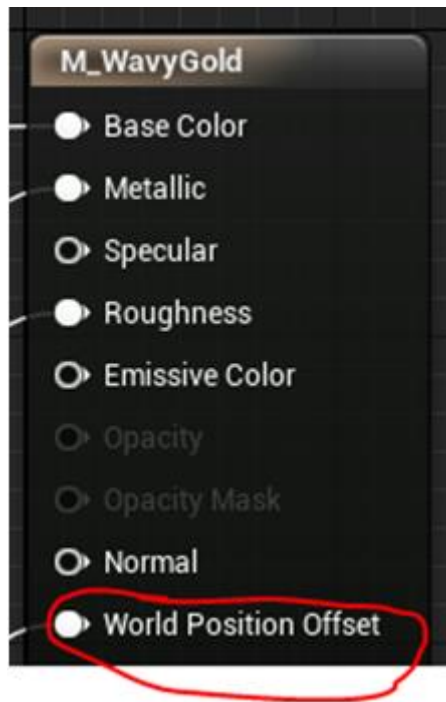


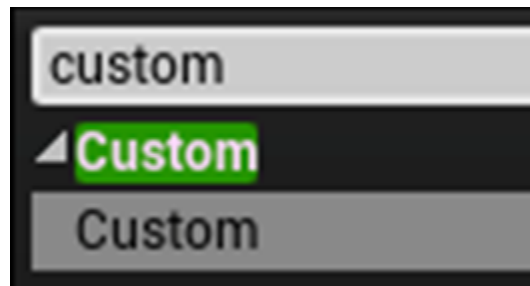
Particle System

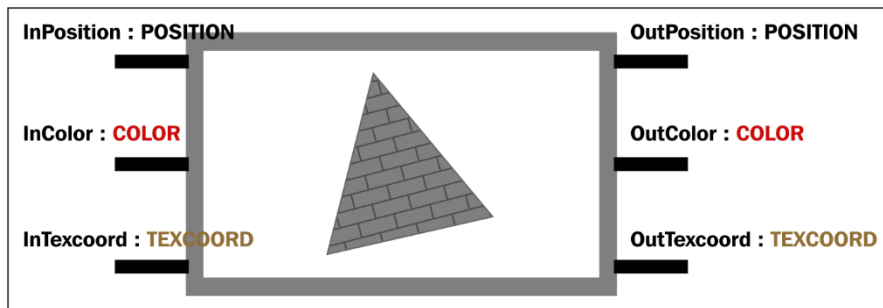
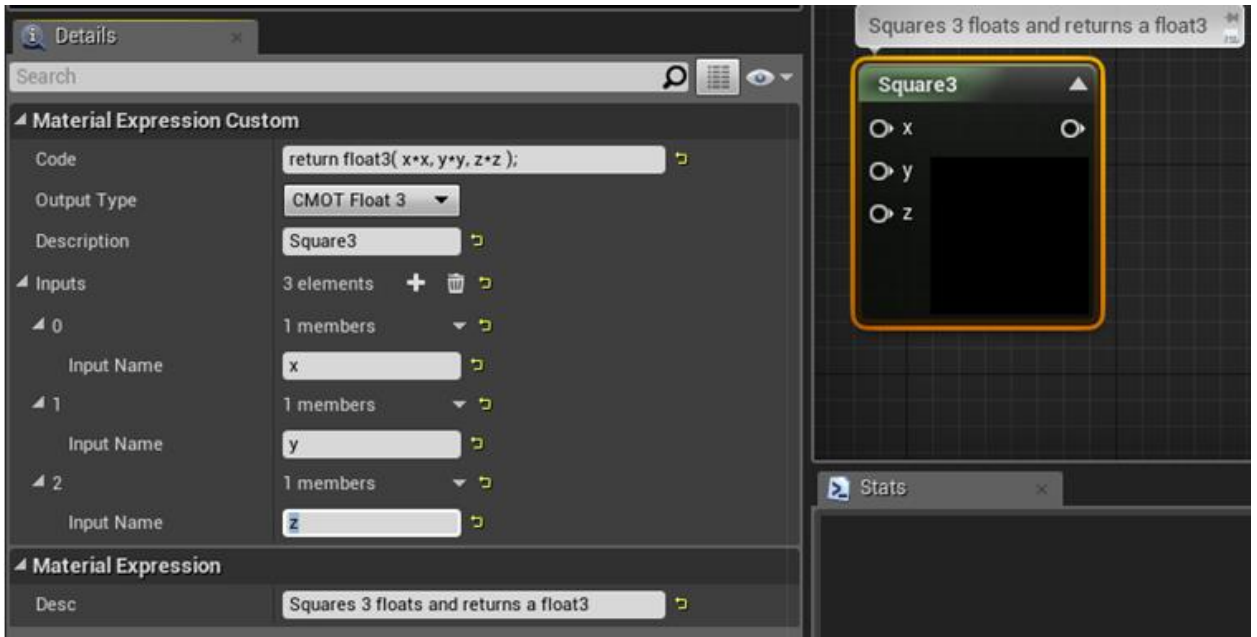


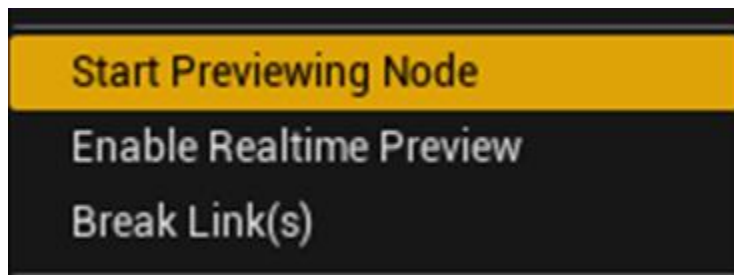
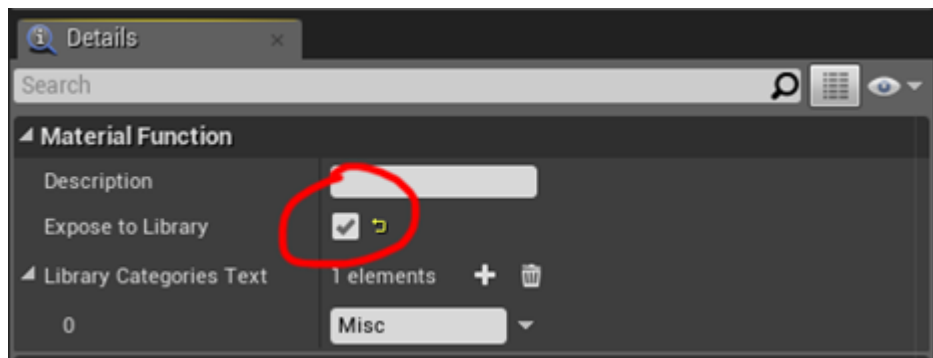
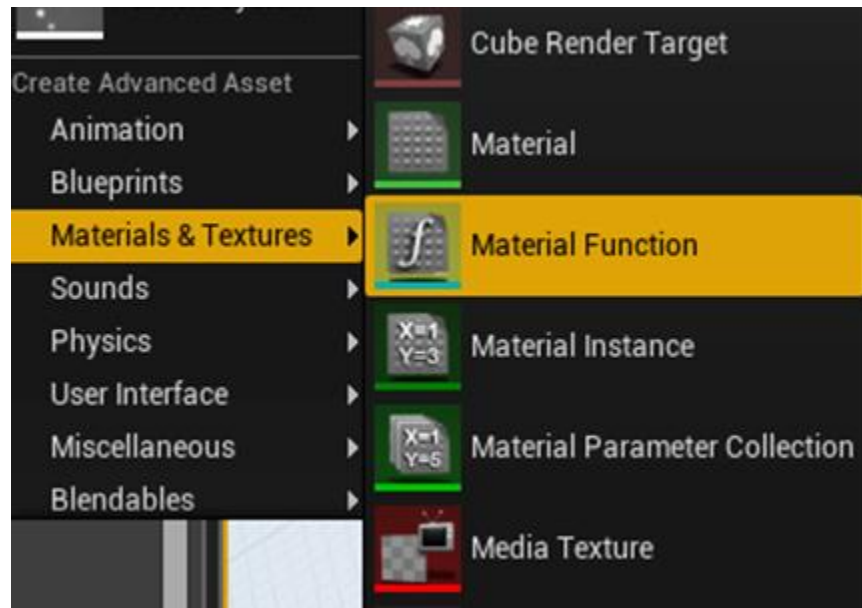


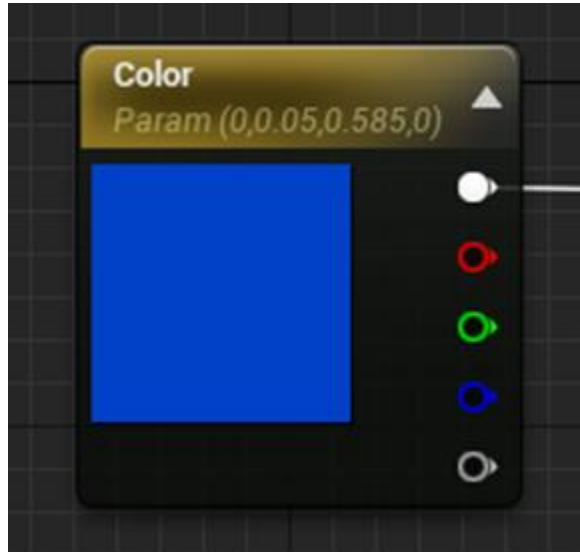












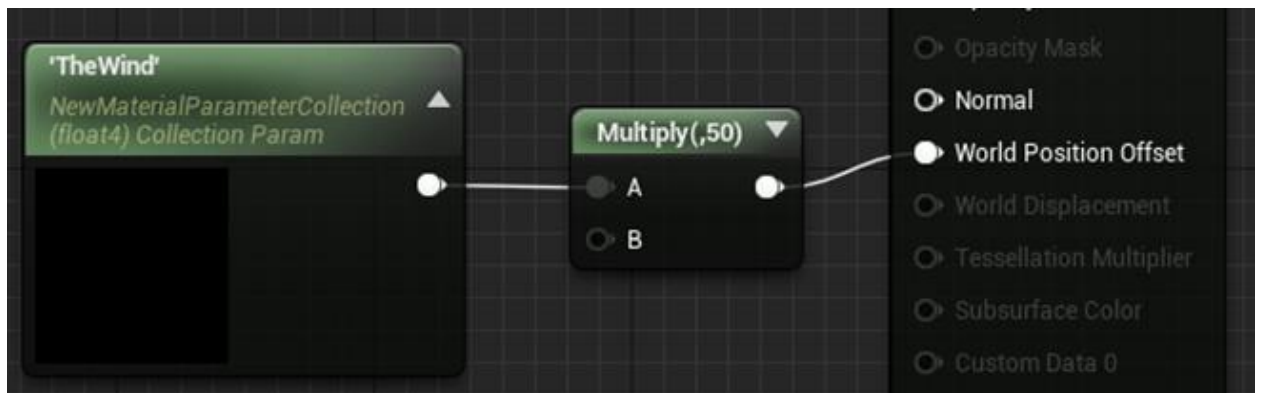
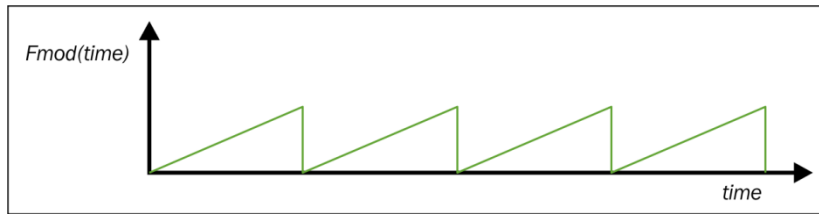
Parameter Groups

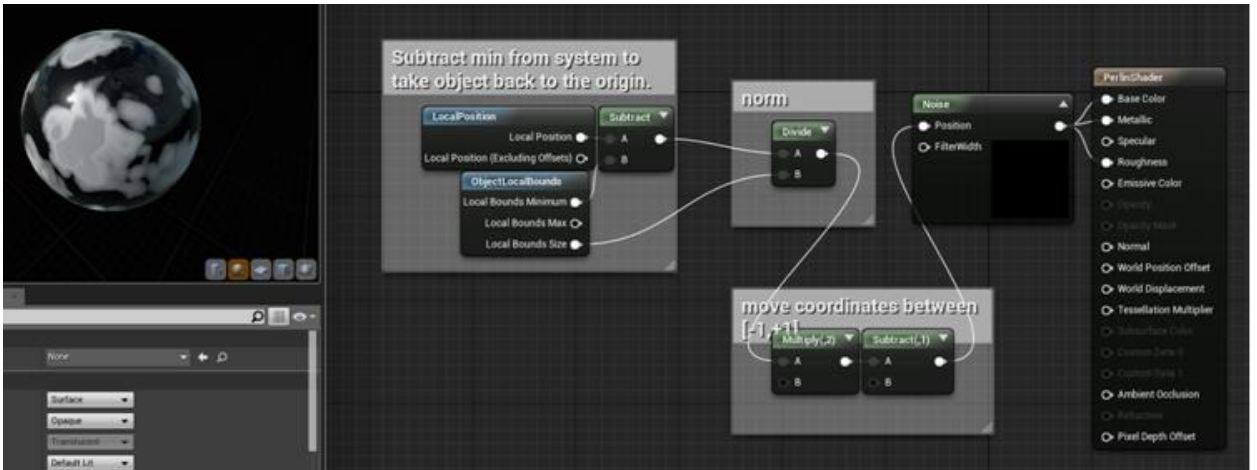
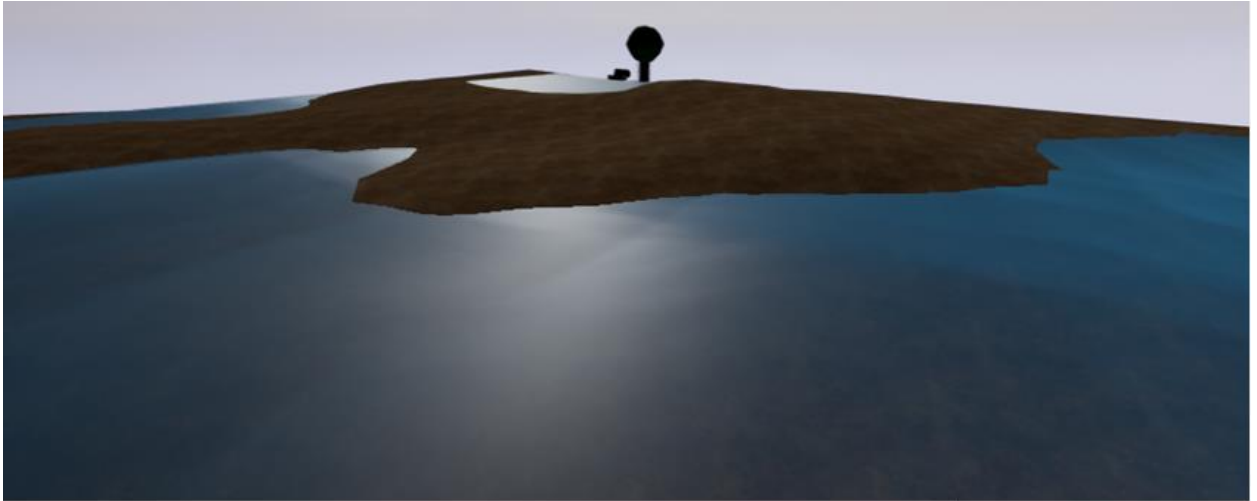
Vector Parameter Values

Color

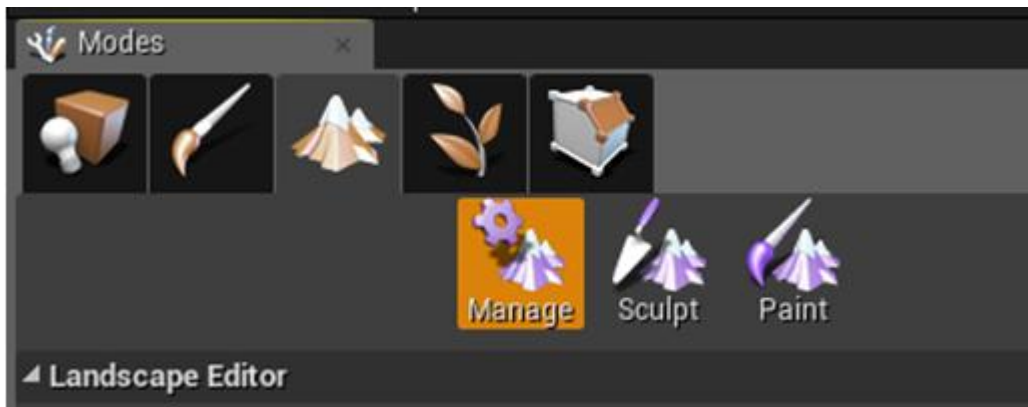
R	0.0	
G	0.75	↻
B	0.585	↻
A	0.0	

A horizontal color bar showing a gradient from black and white to cyan, with a yellow handle on the right.

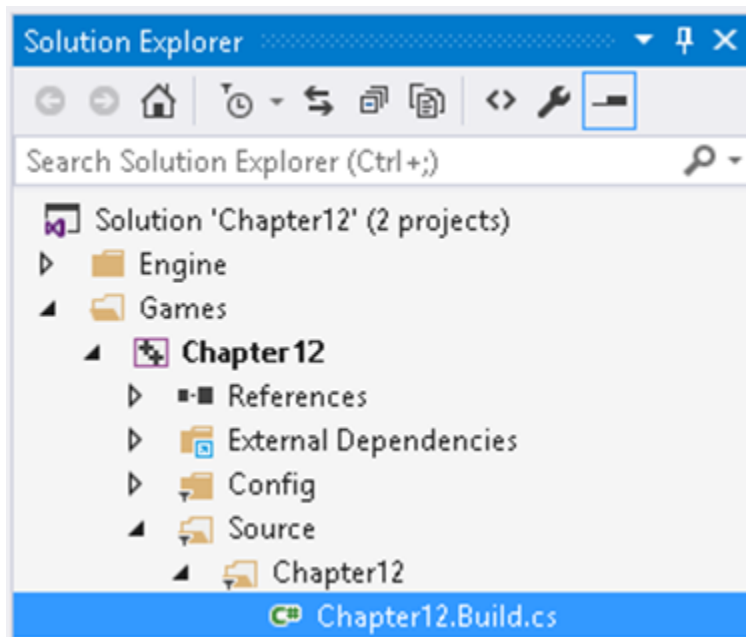




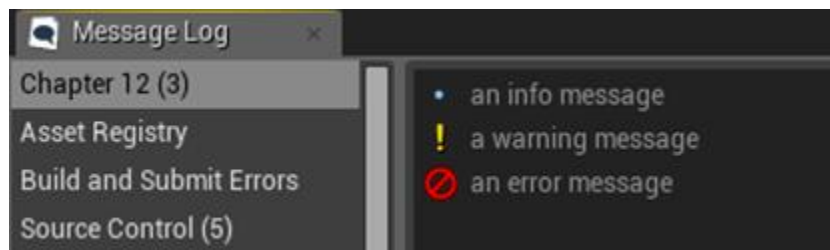
$$-1 \leq x \leq +1$$

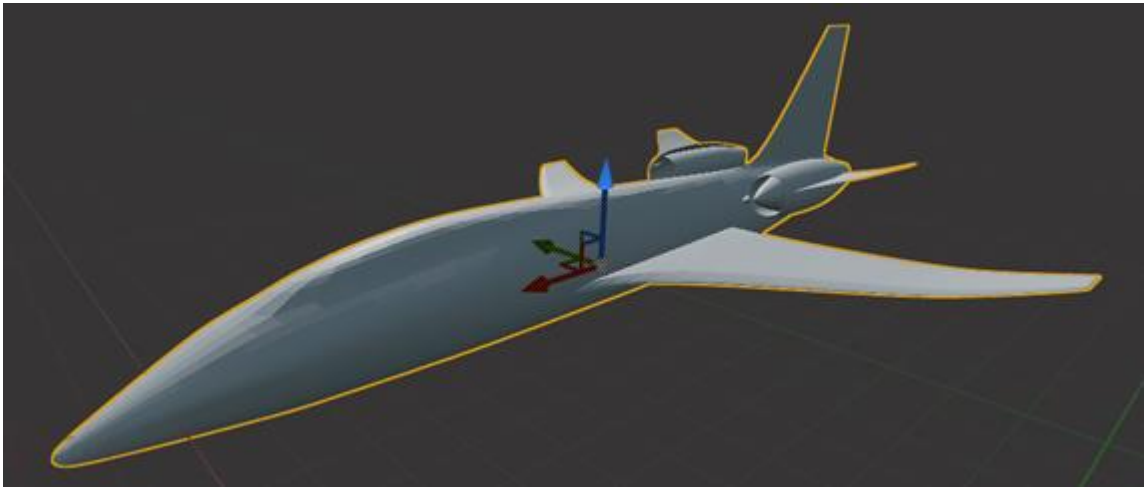


Chapter 12: Working with UE4 APIs



```
LogCh12:Display: A display message, log is working  
LogCh12:Warning: A warning message  
LogCh12:Error: An error message
```





θ

$$x = v_x \sin\left(\frac{\theta}{2}\right)$$

$$y = v_y \sin\left(\frac{\theta}{2}\right)$$

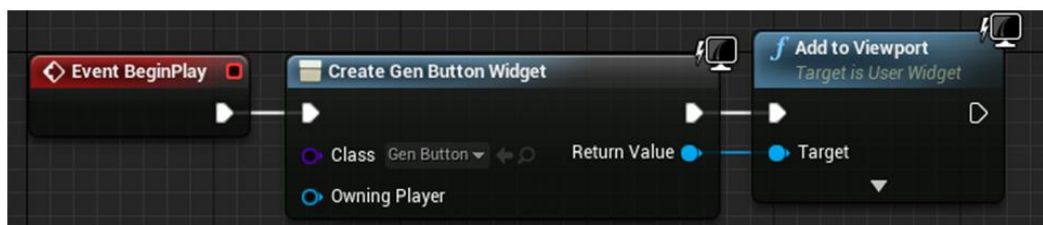
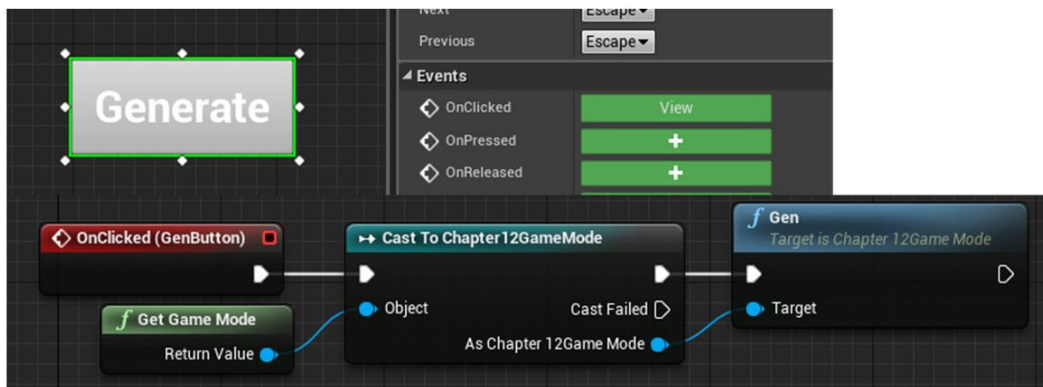
$$z = v_z \sin\left(\frac{\theta}{2}\right)$$

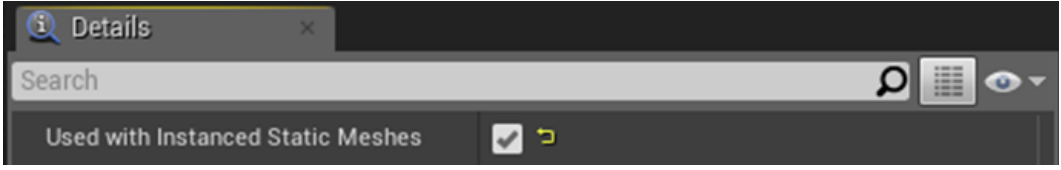
$$w = \cos\left(\frac{\theta}{2}\right)$$

$$v = (1, 2, 1) = \left(\frac{1}{\sqrt{5}}, \frac{2}{\sqrt{5}}, \frac{1}{\sqrt{5}}\right)$$

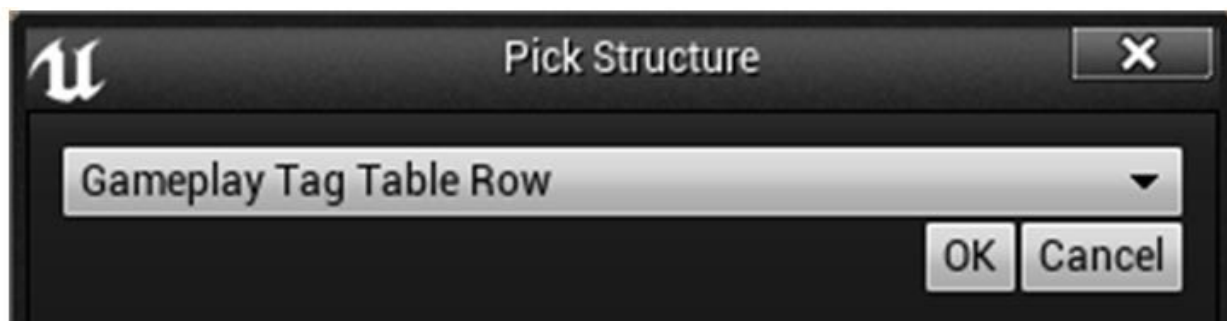
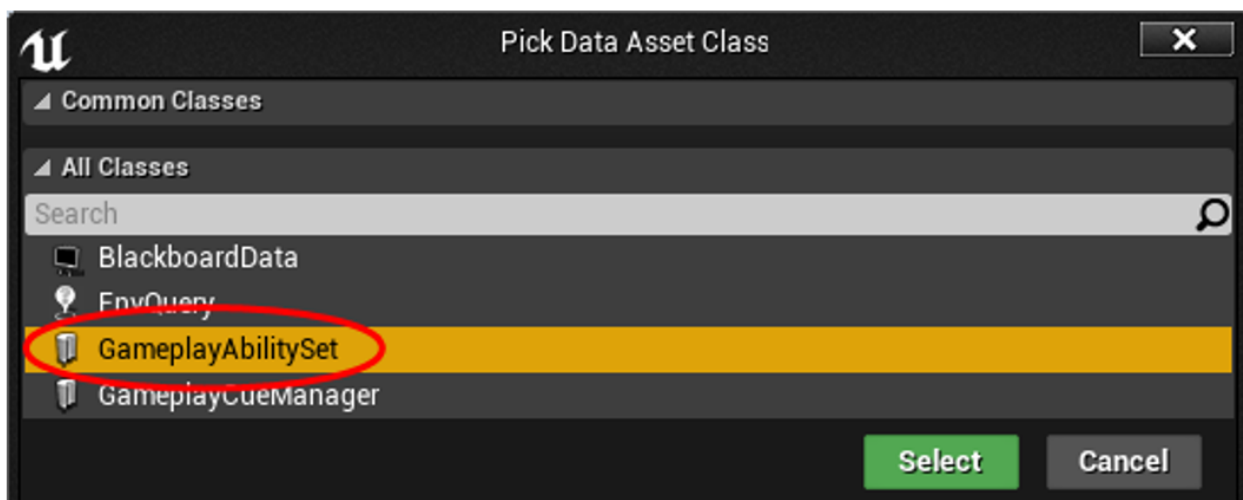
$\frac{\pi}{2}$

$$(x, y, z, w) = \left(\frac{1}{\sqrt{10}}, \frac{2}{\sqrt{10}}, \frac{1}{\sqrt{10}}, \frac{1}{\sqrt{2}} \right)$$









◀ Tags

Ability Tags

Edit...

Cancel Abilities with Tag

Edit...

Block Abilities with Tag

Edit...

Activation Owned Tags

Edit...

Activation Required Tags

Edit...