Table of Contents

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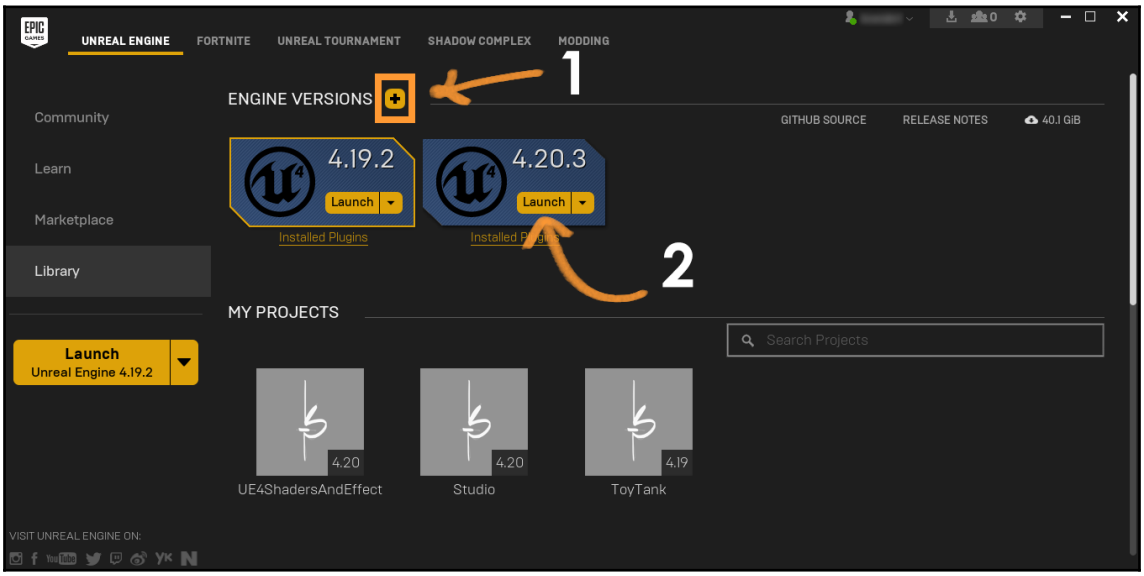
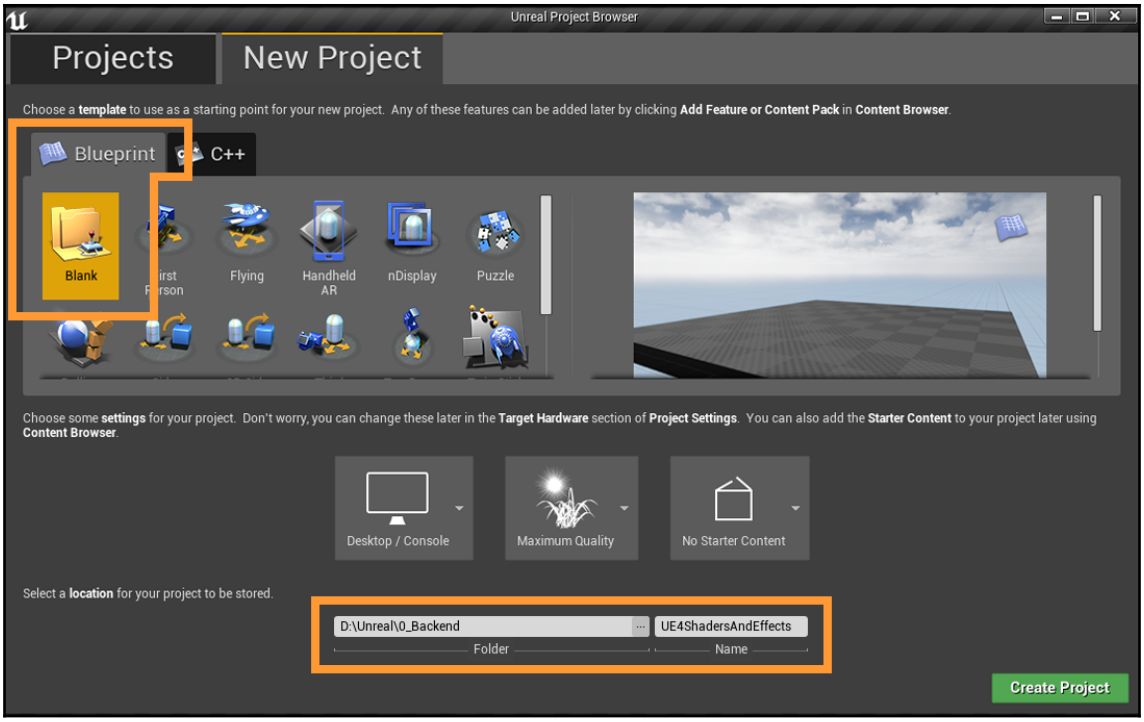
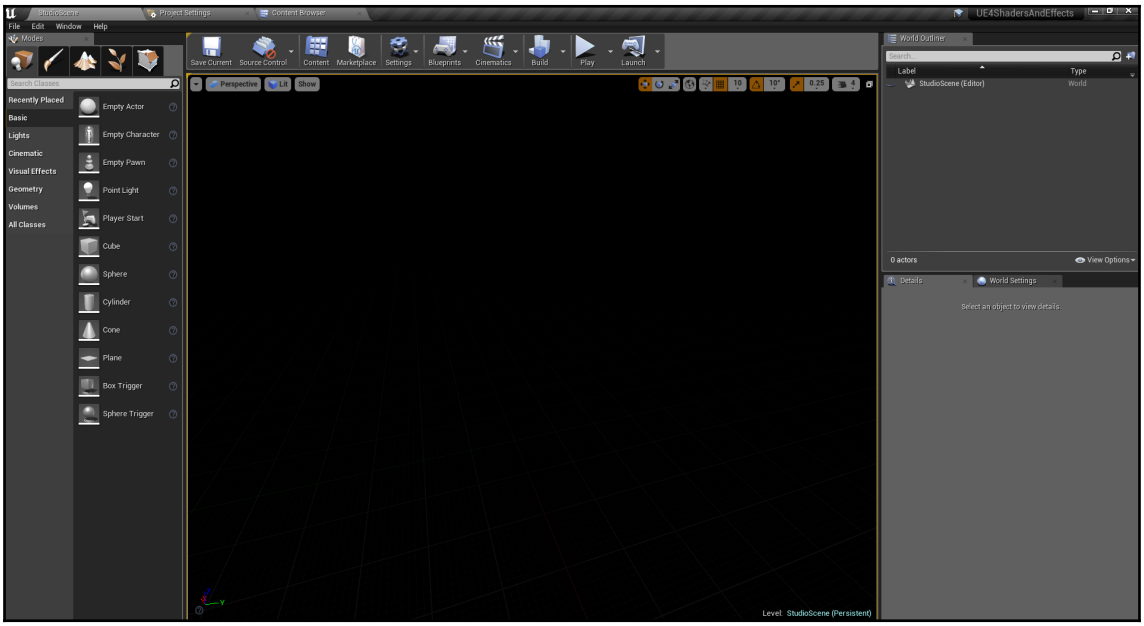
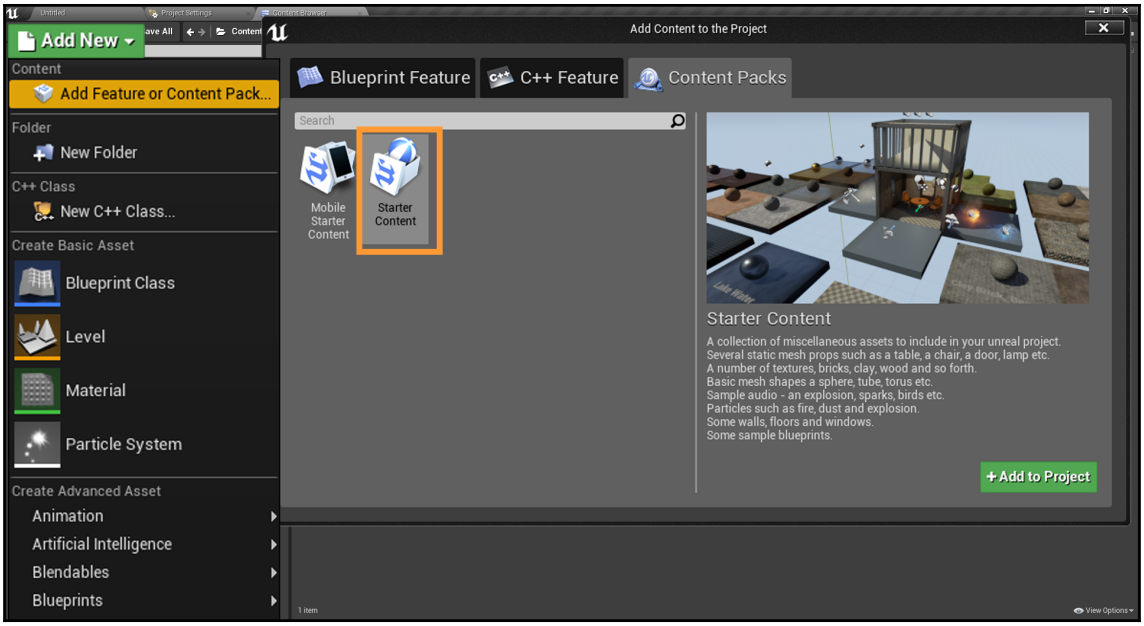
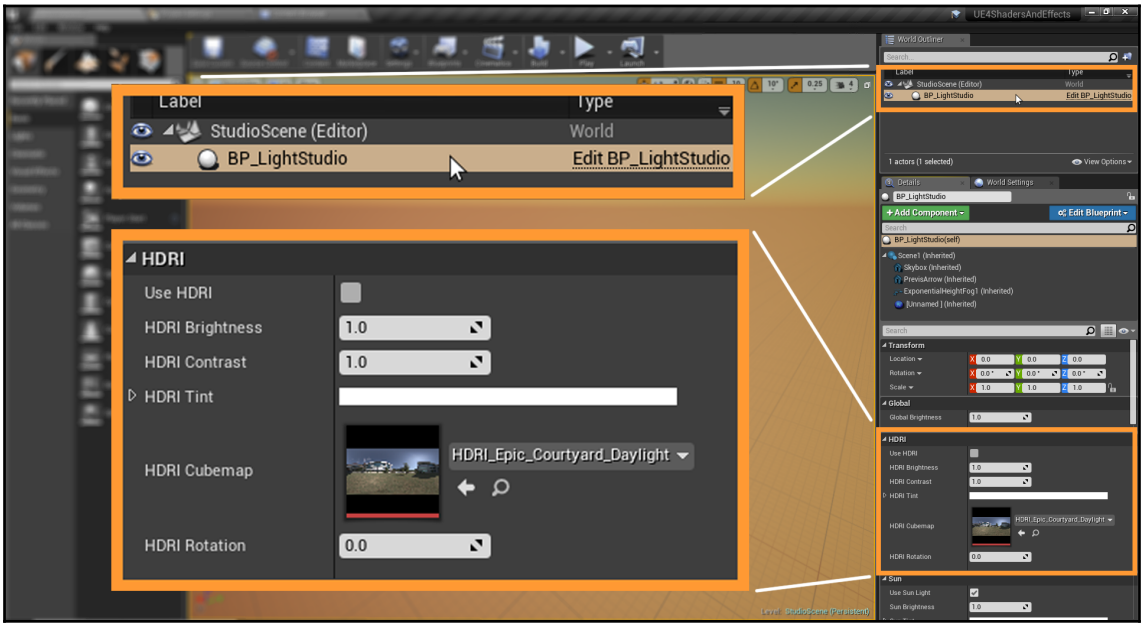
Chapter 1: Physically Based Rendering

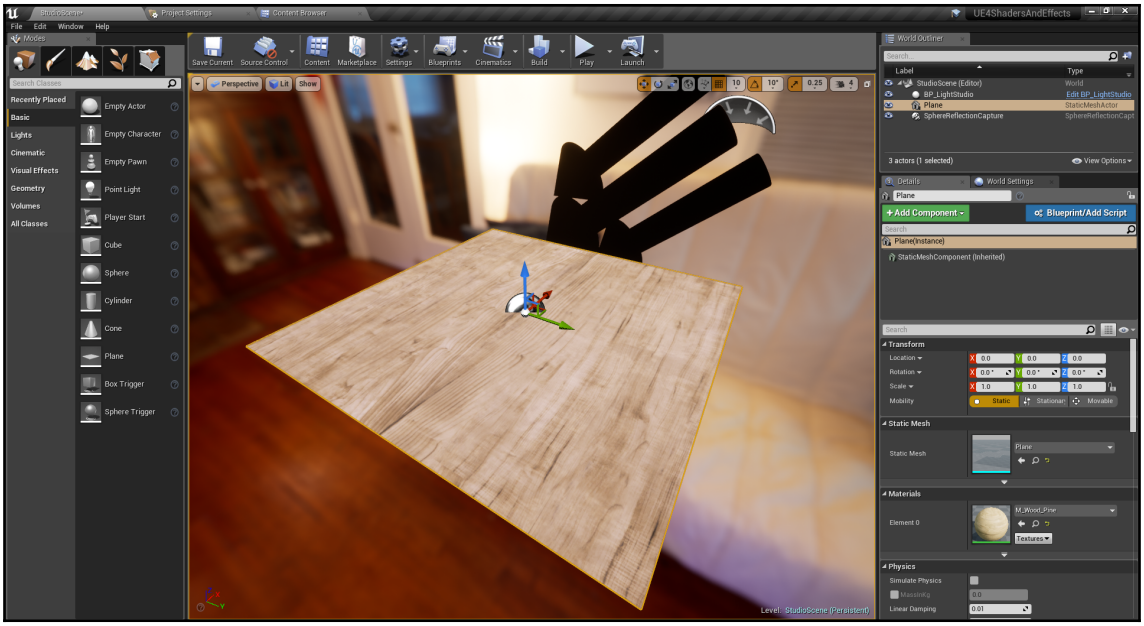


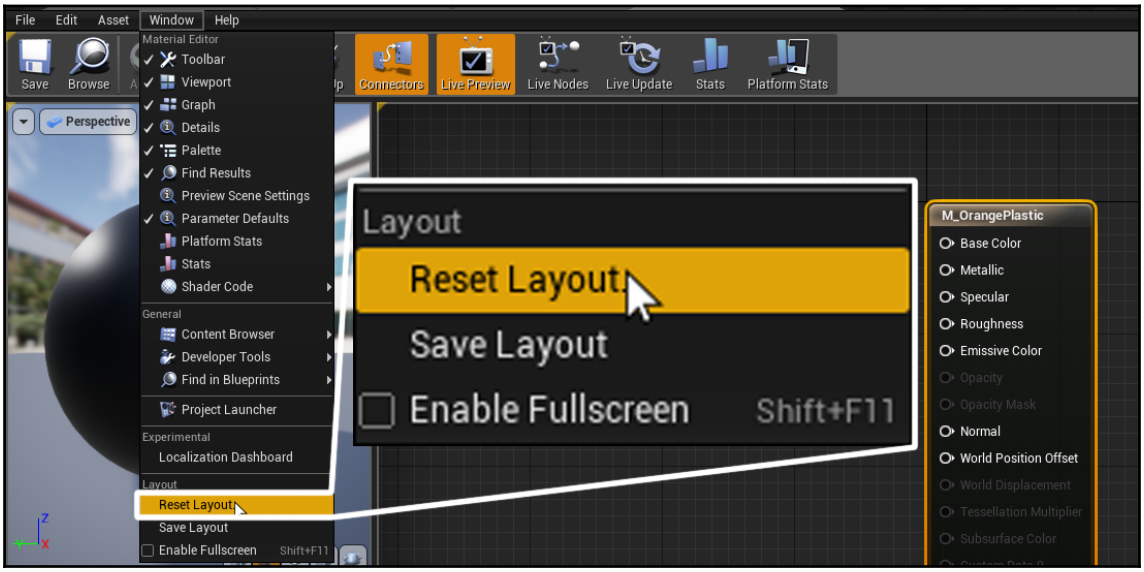

Unreal Project Browser
Projects
New Project
Choose a template to use as a starting point for your new project. Any of these features can be added later by clicking Add Feature or Content Pack in Content Browser.
Blueprint
C++
Blank
First Person
Flying
Handheld AR
nDisplay
Puzzle
Choose some settings for your project. Don't worry, you can change these later in the Target Hardware section of Project Settings. You can also add the Starter Content to your project later using Content Browser.
Desktop / Console
Maximum Quality
No Starter Content
Select a location for your project to be stored.
D:\Unreal\0_Backend
Folder
UE4ShadersAndEffects
Name
Create Project

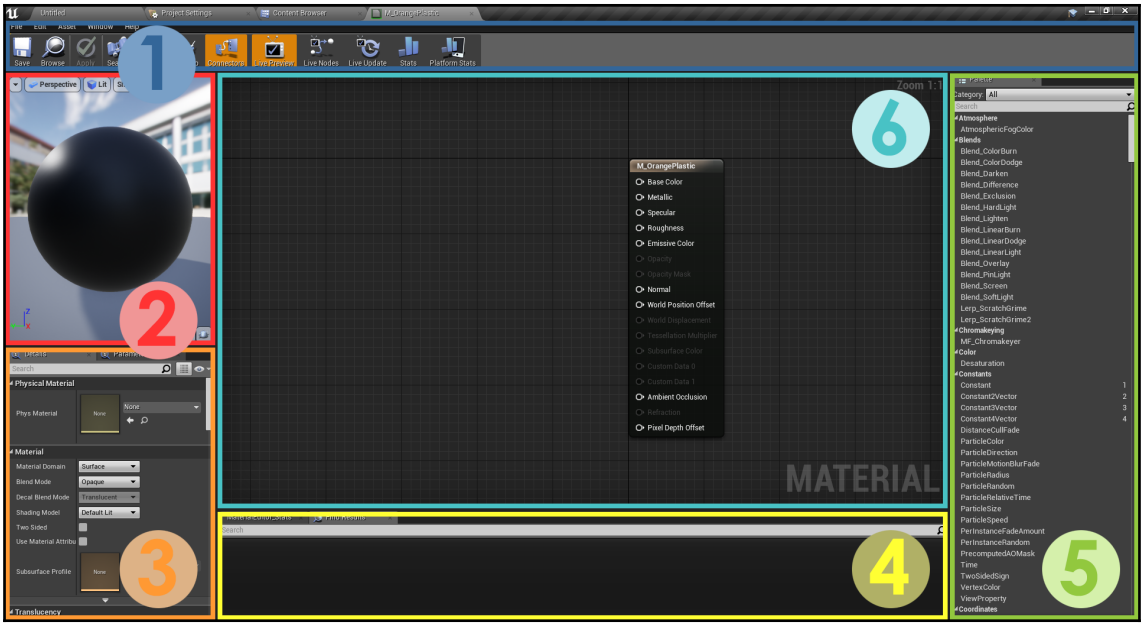

File
Edit
Window
Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
Perspective
Lit
Show
World Outliner
Label
Type
StudioScene (Editor)
World
0 actors
View Options
Details
World Settings
Select an object to view details
Level: StudioScene (Persistent)

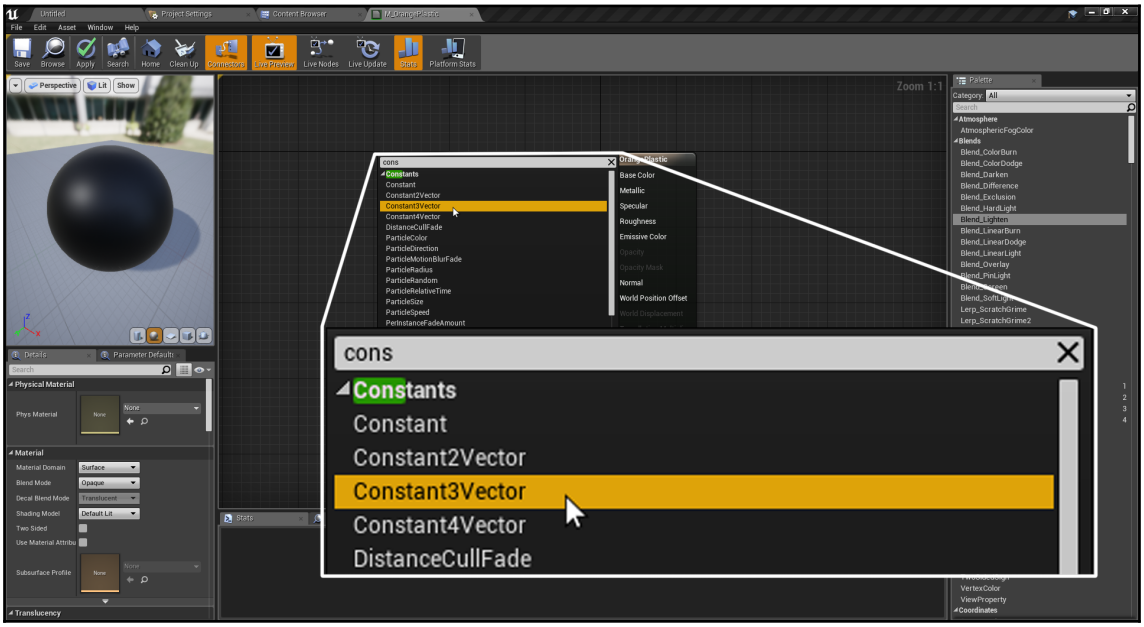

Add New
Content
Add Feature or Content Pack...
Folder
New Folder
C++ Class
New C++ Class...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Add Content to the Project
Blueprint Feature
C++ Feature
Content Packs
Search
Mobile Starter Content
Starter Content
Starter Content
A collection of miscellaneous assets to include in your unreal project.
Several static mesh props such as a table, a chair, a door, lamp etc.
A number of textures, bricks, clay, wood and so forth.
Basic mesh shapes a sphere, tube, torus etc.
Sample audio - an explosion, sparks, birds etc.
Particles such as fire, dust and explosion.
Some walls, floors and windows.
Some sample blueprints.
+ Add to Project
1 item
View Options


Label
Type
StudioScene (Editor)
World
BP_LightStudio
Edit BP_LightStudio
HDRI
Use HDRI
HDRI Brightness
1.0
HDRI Contrast
1.0
HDRI Tint
HDRI Cubemap
HDRI_Epic_Courtyard_Daylight
HDRI Rotation
0.0

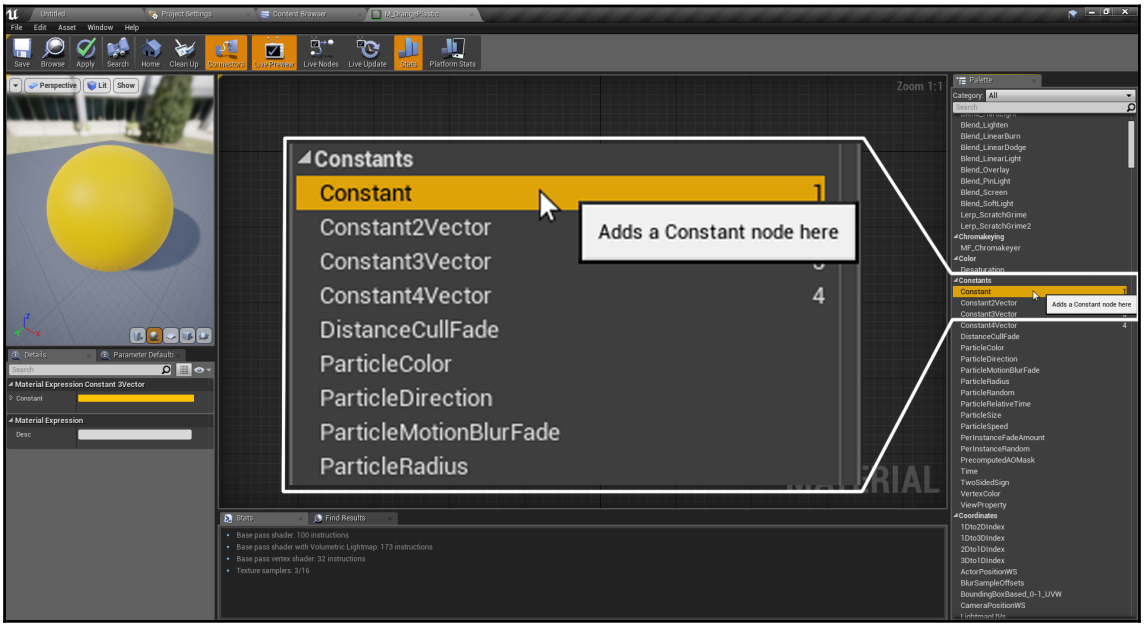


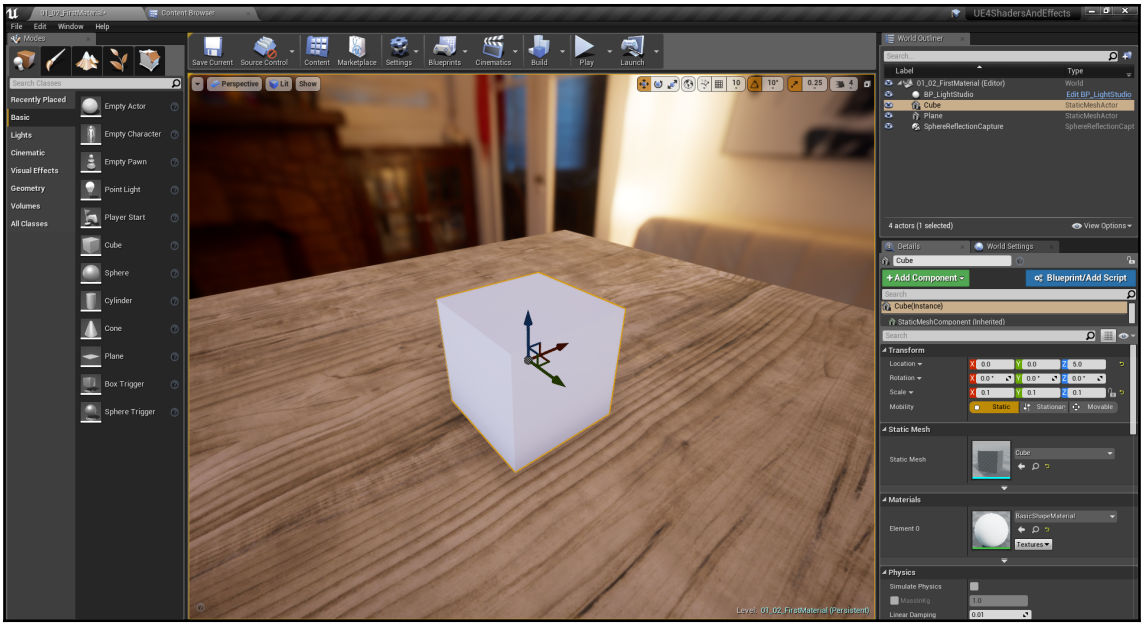

File
Edit
Asset
Window
Help
Material Editor
Toolbar
Viewport
Graph
Details
Palette
Find Results
Preview Scene Settings
Parameter Defaults
Platform Stats
Stats
Shader Code
General
Content Browser
Developer Tools
Find in Blueprints
Project Launcher
Experimental
Localization Dashboard
Layout
Reset Layout
Save Layout
Enable Fullscreen
Shift+F11
Save
Browse
Connectors
Live Preview
Live Nodes
Live Update
Stats
Platform Stats
Perspective
Layout
Reset Layout
Save Layout
Enable Fullscreen
Shift+F11
M_OrangePlastic
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color

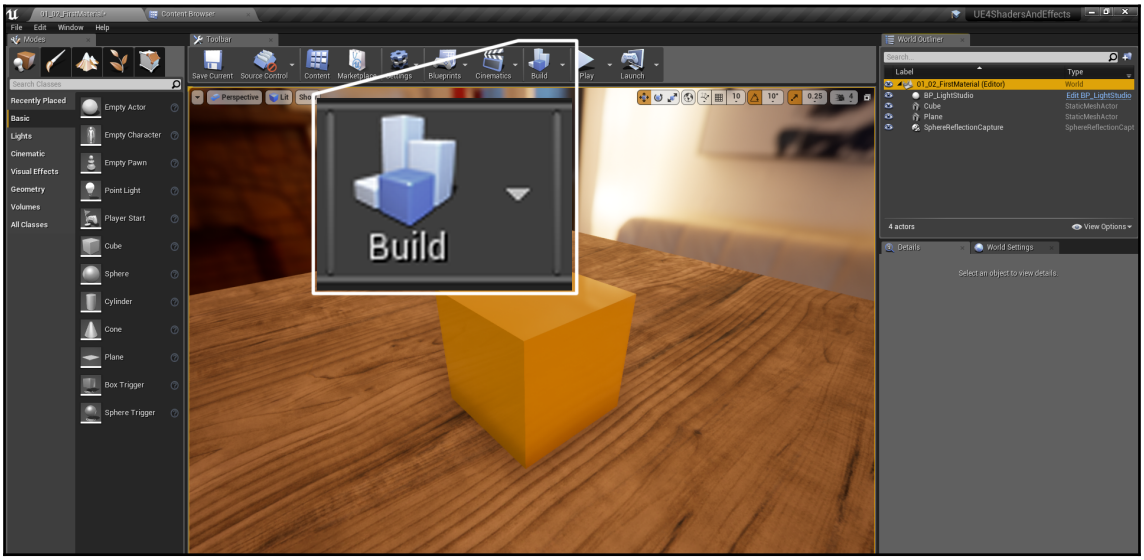

1
2
3
4
5
6
MATERIAL

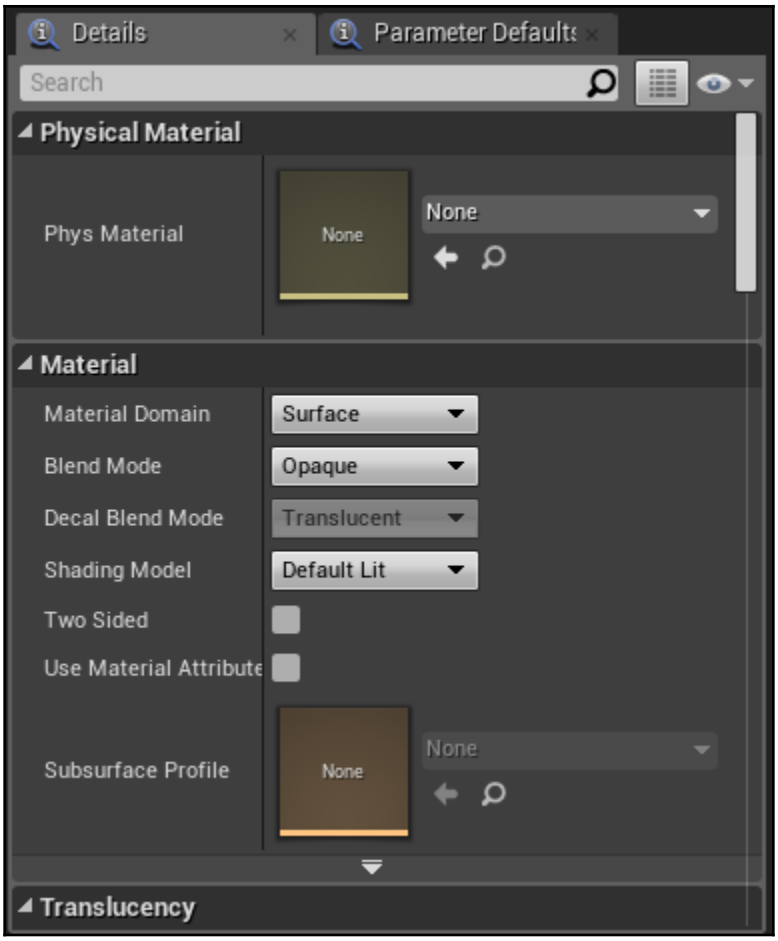

cons
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade

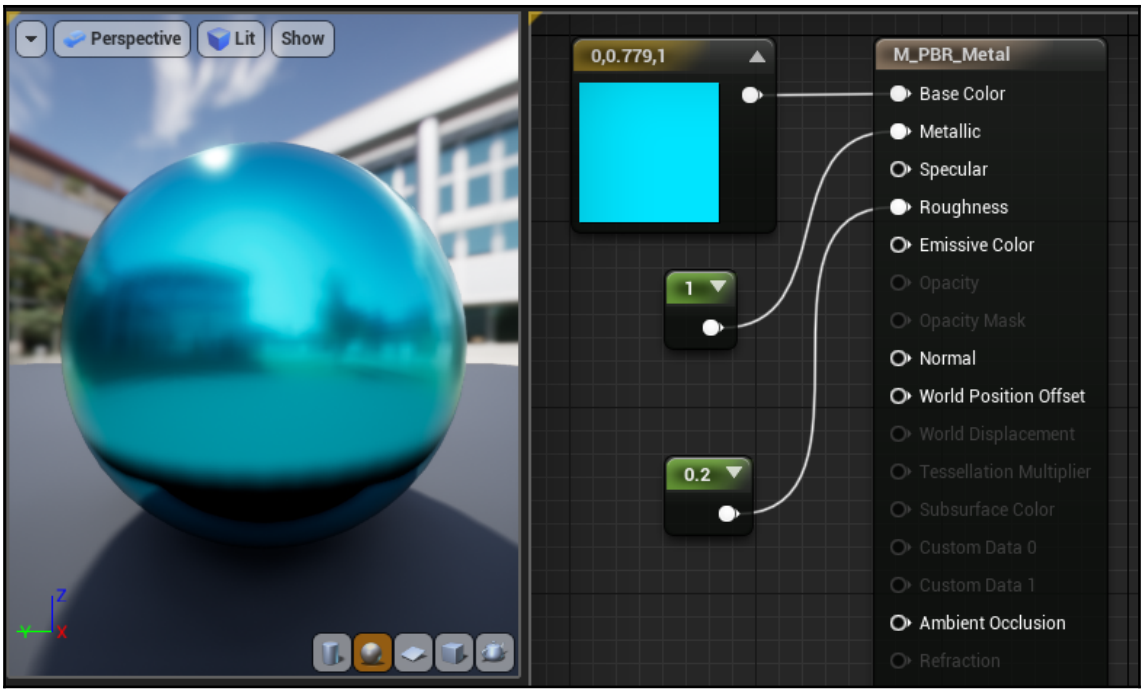
Color Picker
Drag & drop colors here to save
sRGB Preview
Old
New
Advanced
R 1.0
G 0.5325
B 0.0
H 31.949991
S 1.0
V 1.0
Hex Linear FF880000
Hex sRGB FFC10000
OK
Cancel

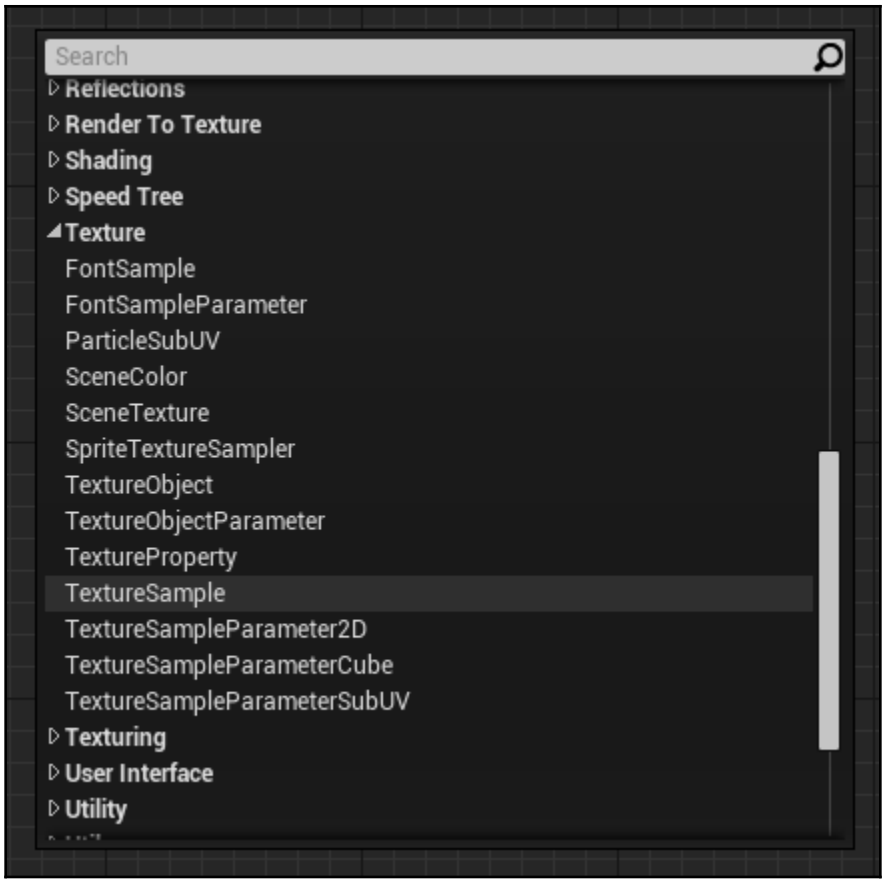

Constants
Constant 1
Constant2Vector
Constant3Vector
Constant4Vector 4
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
Adds a Constant node here

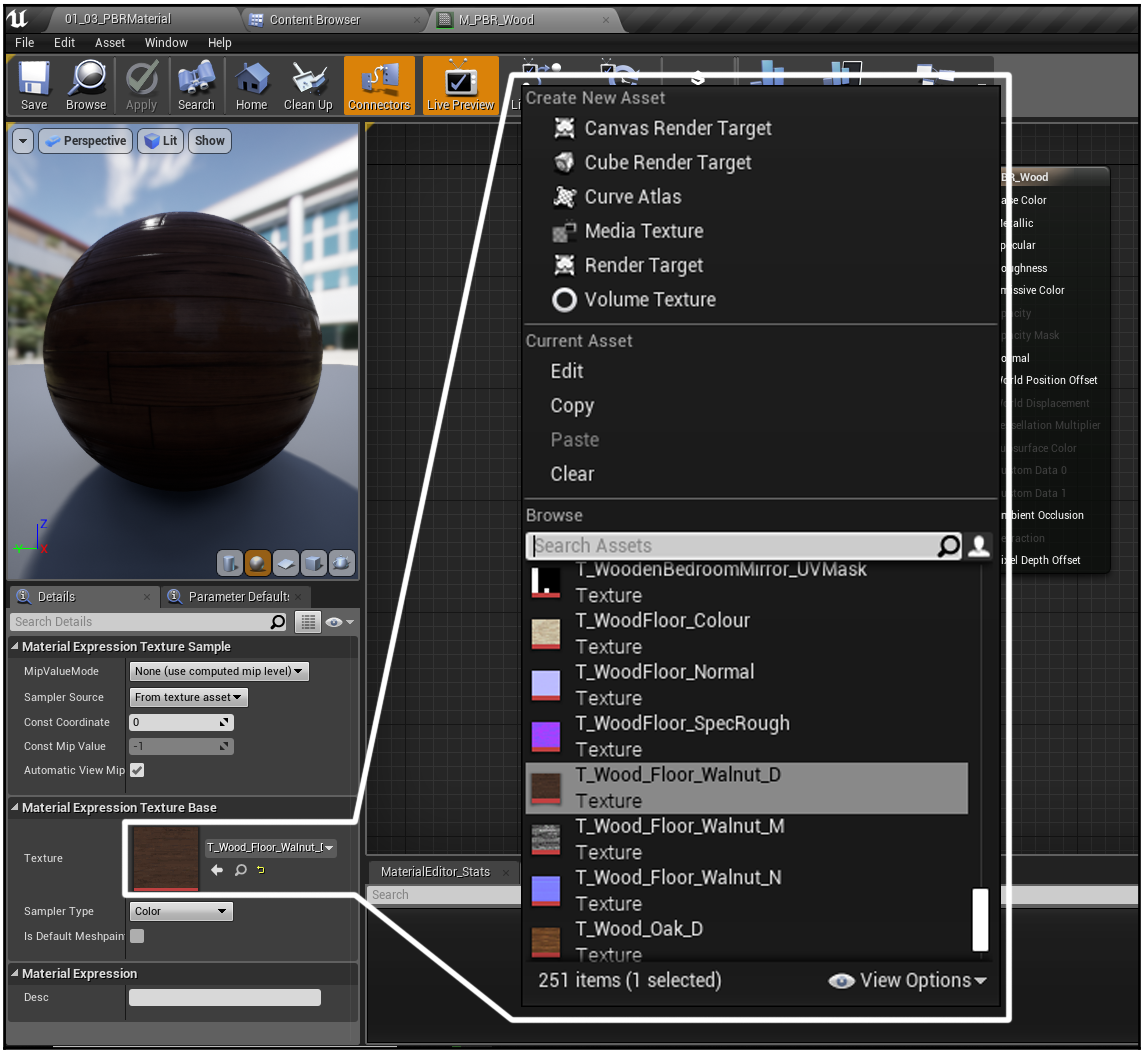

UE4ShadersAndEffects
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
World Outliner
01_02_FirstMaterial (Editor)
BP_LightStudio
Edit BP_LightStudio
Cube
Plane
SphereReflectionCapture
4 actors (1 selected)
View Options
Details
World Settings
+ Add Component
Blueprint/Add Script
Cube(Instance)
StaticMeshComponent (Inherited)
Transform
Location
Rotation
Scale
Mobility
Static Mesh
Materials
Element 0
Physics
Simulate Physics
Linear Damping
Level: 01_02_FirstMaterial (Persistent)

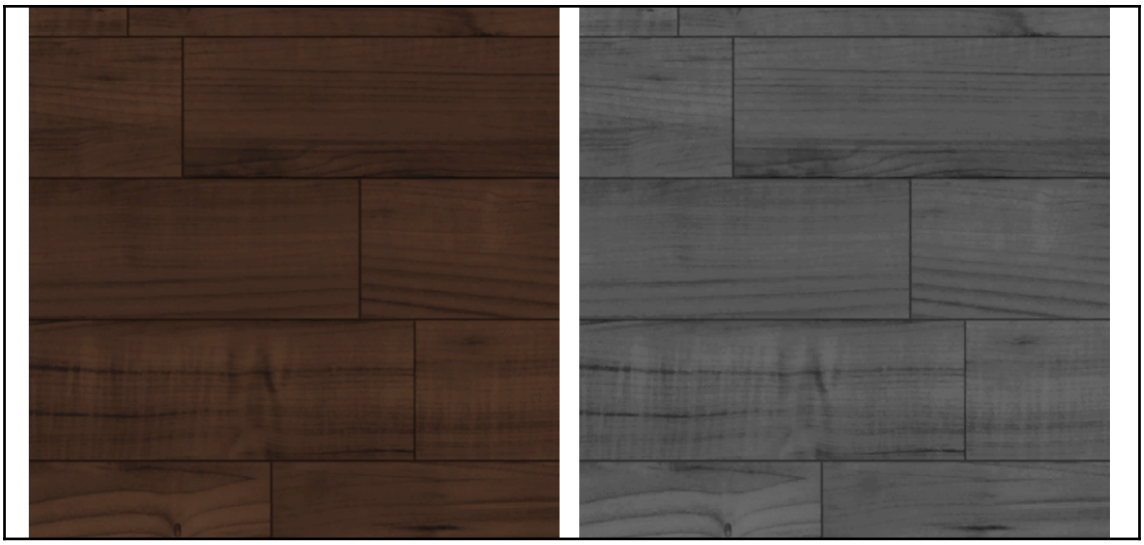

UE4ShadersAndEffects
Toolbar
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Build
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
World Outliner
01_02_FirstMaterial (Editor)
BP_LightStudio
Edit BP_LightStudio
Cube
Plane
SphereReflectionCapture
4 actors
View Options
Details
World Settings
Select an object to view details

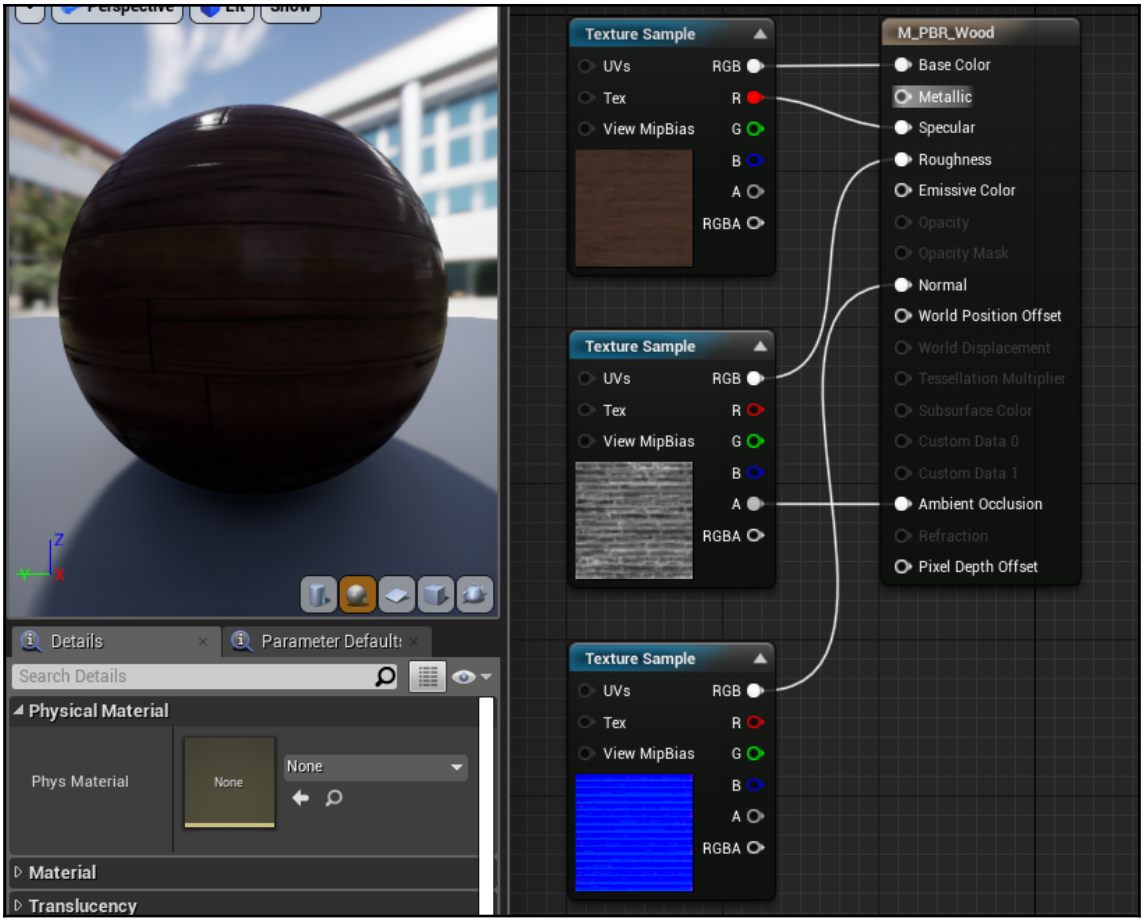

Details
Parameter Defaults
Search
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attribute
Subsurface Profile
None
None
Translucency

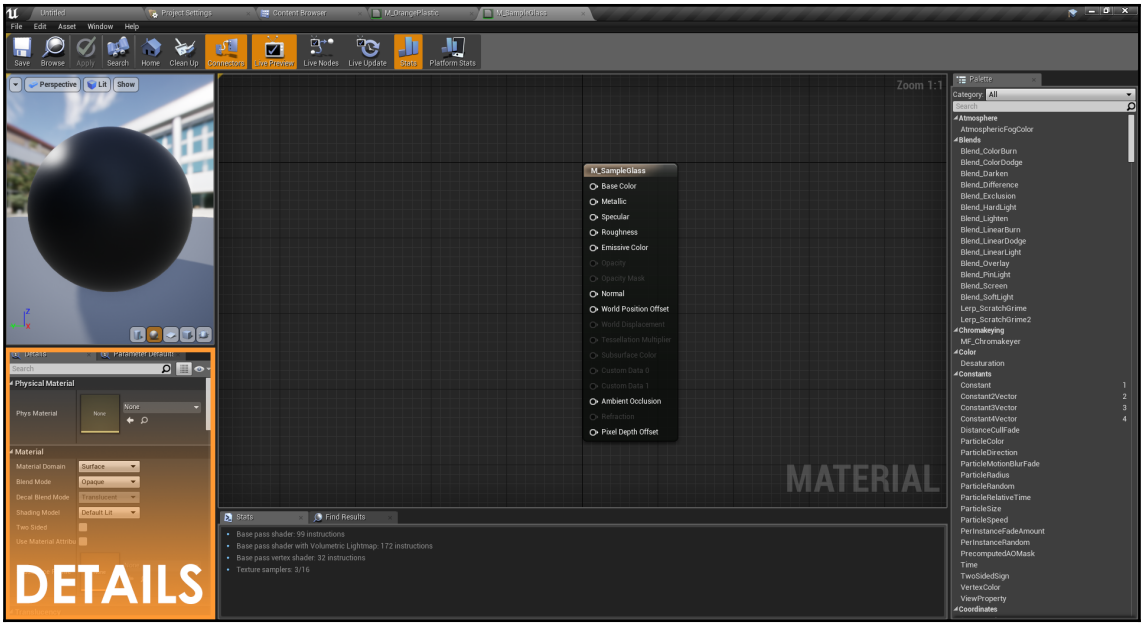

Perspective
Lit
Show
0,0.779,1
1
0.2
M_PBR_Metal
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction

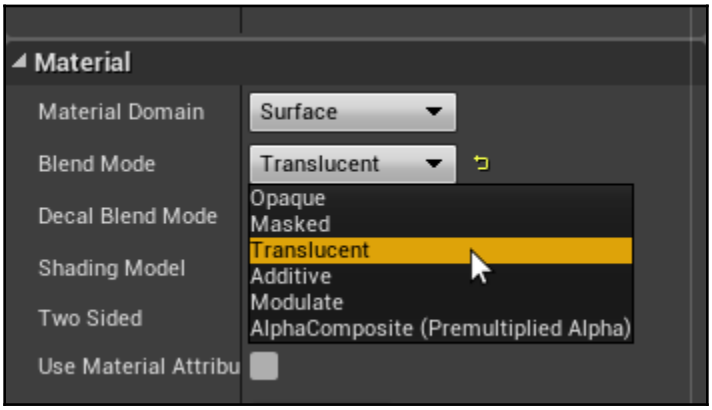

Search
Reflections
Render To Texture
Shading
Speed Tree
Texture
FontSample
FontSampleParameter
ParticleSubUV
SceneColor
SceneTexture
SpriteTextureSampler
TextureObject
TextureObjectParameter
TextureProperty
TextureSample
TextureSampleParameter2D
TextureSampleParameterCube
TextureSampleParameterSubUV
Texturing
User Interface
Utility

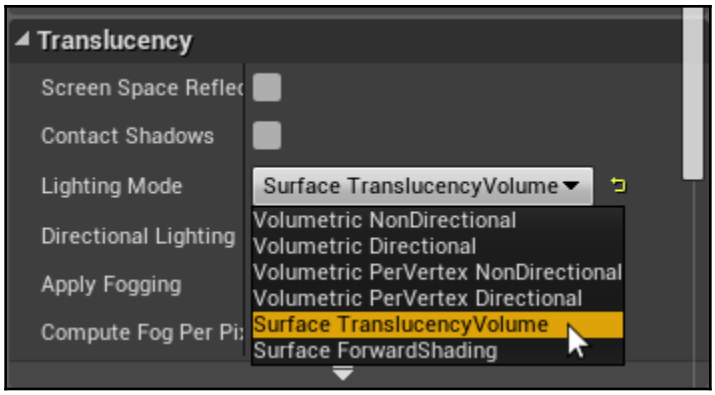

01_03_PBRMaterial
Content Browser
M_PBR_Wood
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Perspective
Lit
Show
Create New Asset
Canvas Render Target
Cube Render Target
Curve Atlas
Media Texture
Render Target
Volume Texture
Current Asset
Edit
Copy
Paste
Clear
Browse
Search Assets
T_WoodenBedroomMirror_UVMask
Texture
T_WoodFloor_Colour
Texture
T_WoodFloor_Normal
Texture
T_WoodFloor_SpecRough
Texture
T_Wood_Floor_Walnut_D
Texture
T_Wood_Floor_Walnut_M
Texture
T_Wood_Floor_Walnut_N
Texture
T_Wood_Oak_D
Texture
251 items (1 selected)
View Options
Details
Parameter Defaults
Search Details
Material Expression Texture Sample
MipValueMode
None (use computed mip level)
Sampler Source
From texture asset
Const Coordinate
0
Const Mip Value
-1
Automatic View Mip
Material Expression Texture Base
Texture
Sampler Type
Color
Is Default Meshpain
Material Expression
Desc
MaterialEditor_Stats
Search

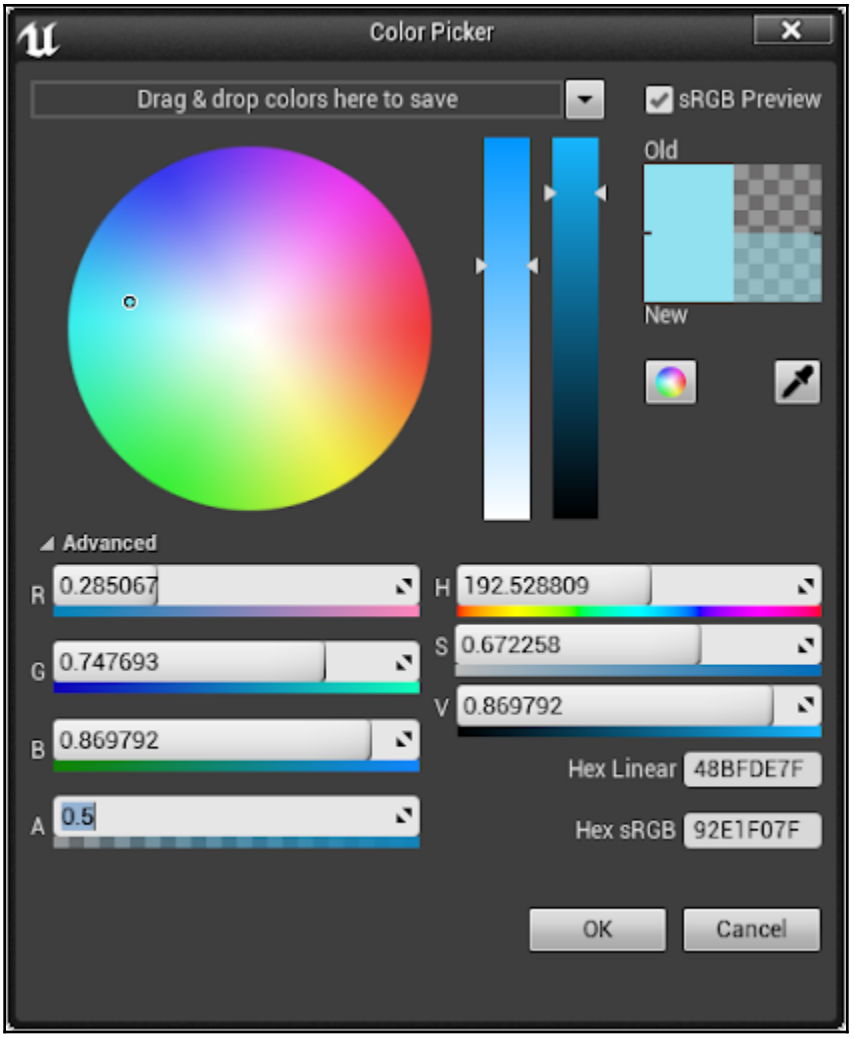


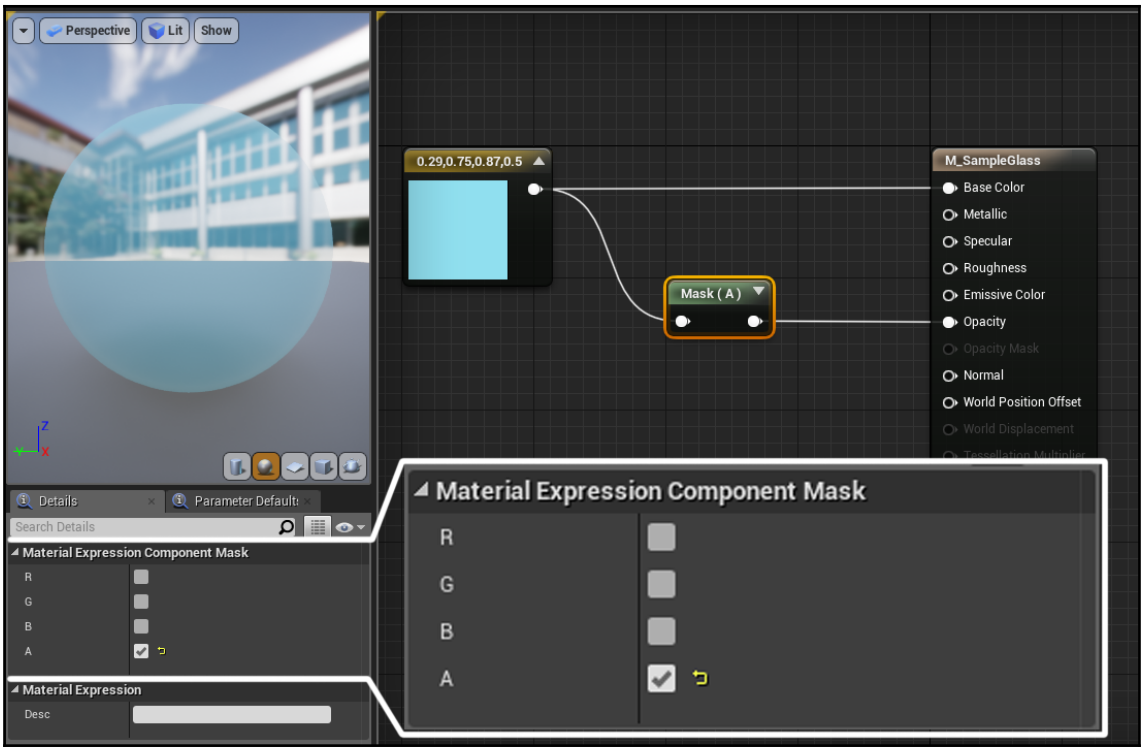

Texture Sample
UVs
Tex
View MipBias
RGB
R
G
B
A
RGBA
Texture Sample
UVs
Tex
View MipBias
RGB
R
G
B
A
RGBA
Texture Sample
UVs
Tex
View MipBias
RGB
R
G
B
A
RGBA
M_PBR_Wood
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
None
Material
Translucency

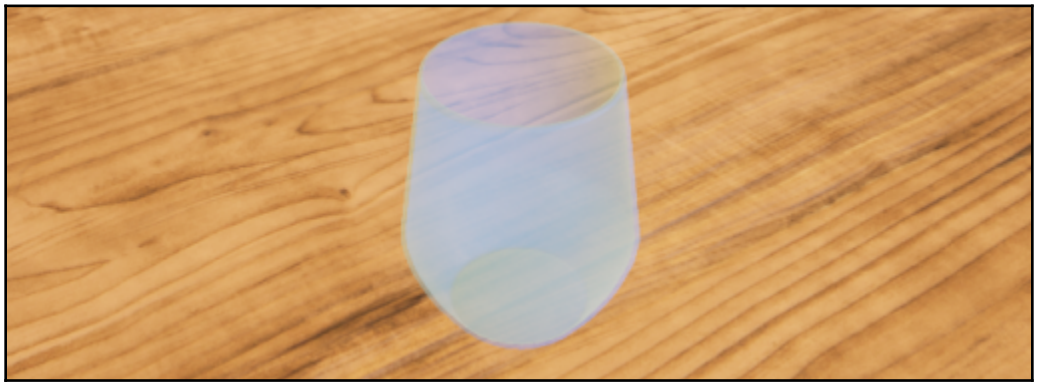

Perspective
Lit
Show
Zoom 1:1
M_SampleGlass
Base Color
Metallic
Specular
Roughness
Emissive Color
Normal
World Position Offset
Ambient Occlusion
Pixel Depth Offset
MATERIAL
Physical Material
Material
Material Domain
Blend Mode
Decal Blend Mode
Shading Model
Two Sided
DETAILS
Base pass shader: 99 instructions
Base pass shader with Volumetric Lightmap: 172 instructions
Base pass vertex shader: 32 instructions
Texture samplers: 3/16

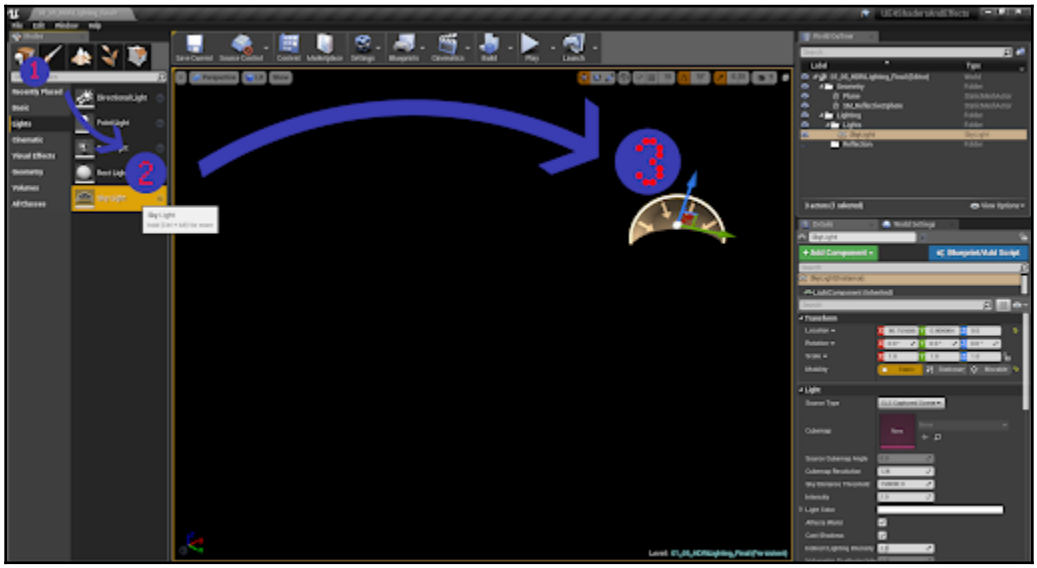

Material
Material Domain
Surface
Blend Mode
Translucent
Decal Blend Mode
Shading Model
Two Sided
Use Material Attribu
Opaque
Masked
Translucent
Additive
Modulate
AlphaComposite (Premultiplied Alpha)

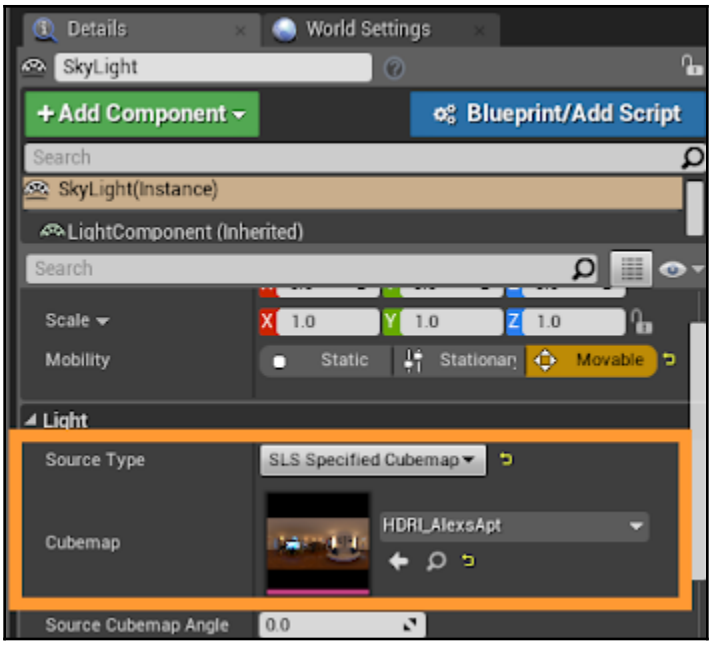

Translucency
Screen Space Reflec
Contact Shadows
Lighting Mode
Surface TranslucencyVolume
Directional Lighting
Apply Fogging
Compute Fog Per Pi
Volumetric NonDirectional
Volumetric Directional
Volumetric PerVertex NonDirectional
Volumetric PerVertex Directional
Surface TranslucencyVolume
Surface ForwardShading

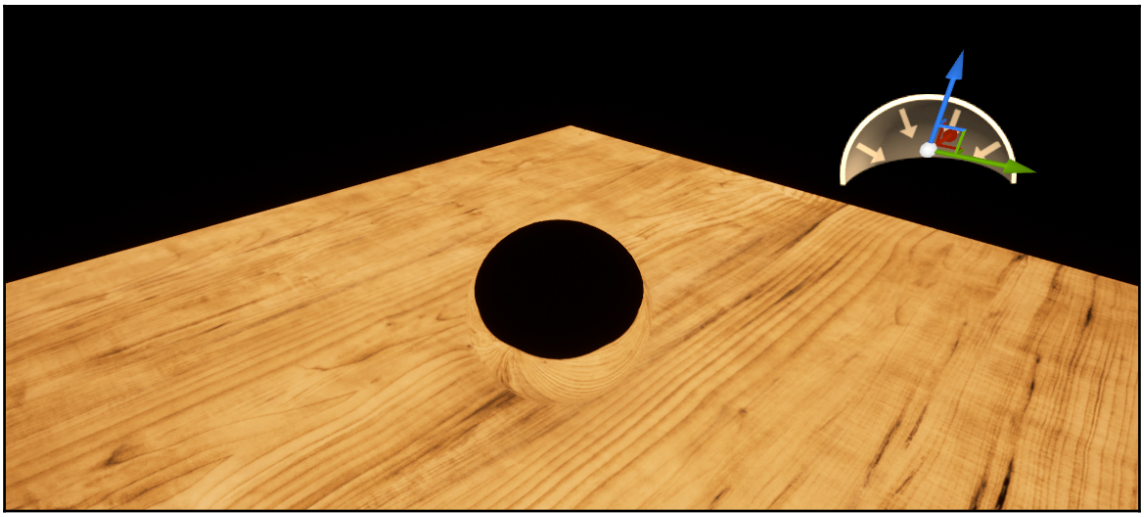

Color Picker
Drag & drop colors here to save
sRGB Preview
Old
New
Advanced
R 0.285067
G 0.747693
B 0.869792
A 0.5
H 192.528809
S 0.672258
V 0.869792
Hex Linear 48BFDE7F
Hex sRGB 92E1F07F
OK
Cancel

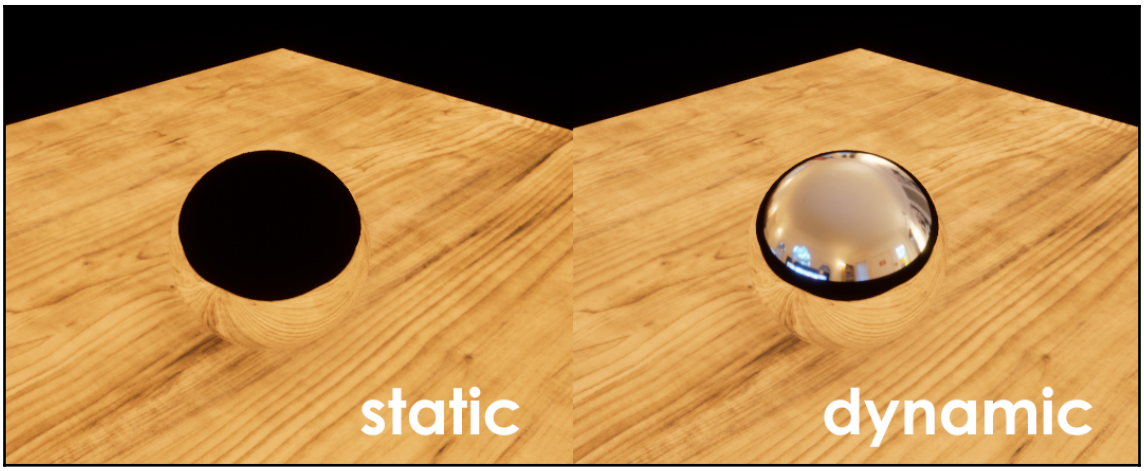

Perspective
Lit
Show
0.29,0.75,0.87,0.5
M_SampleGlass
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Mask (A)
Details
Parameter Default
Search Details
Material Expression Component Mask
R
G
B
A
Material Expression
Desc
Material Expression Component Mask
R
G
B
A

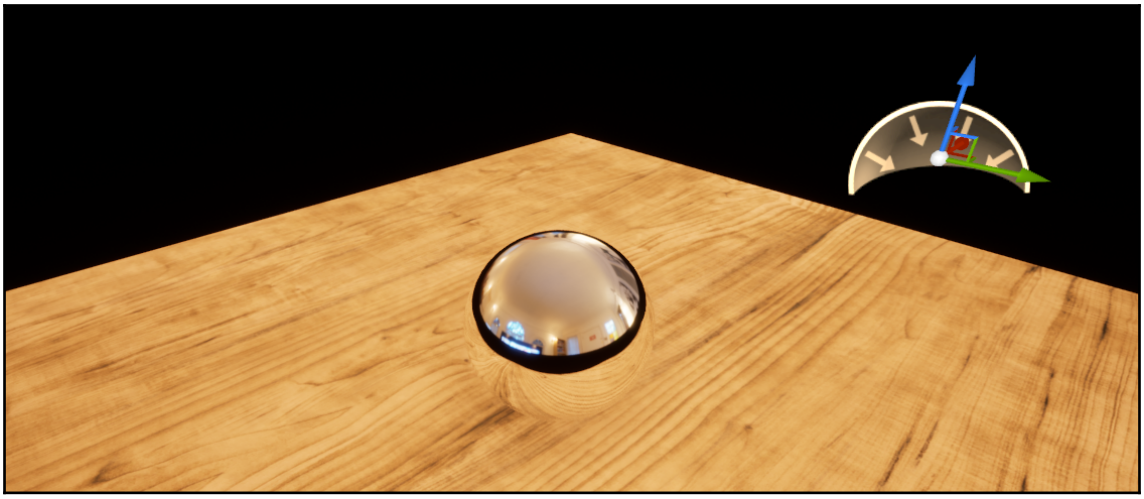



1
2
3

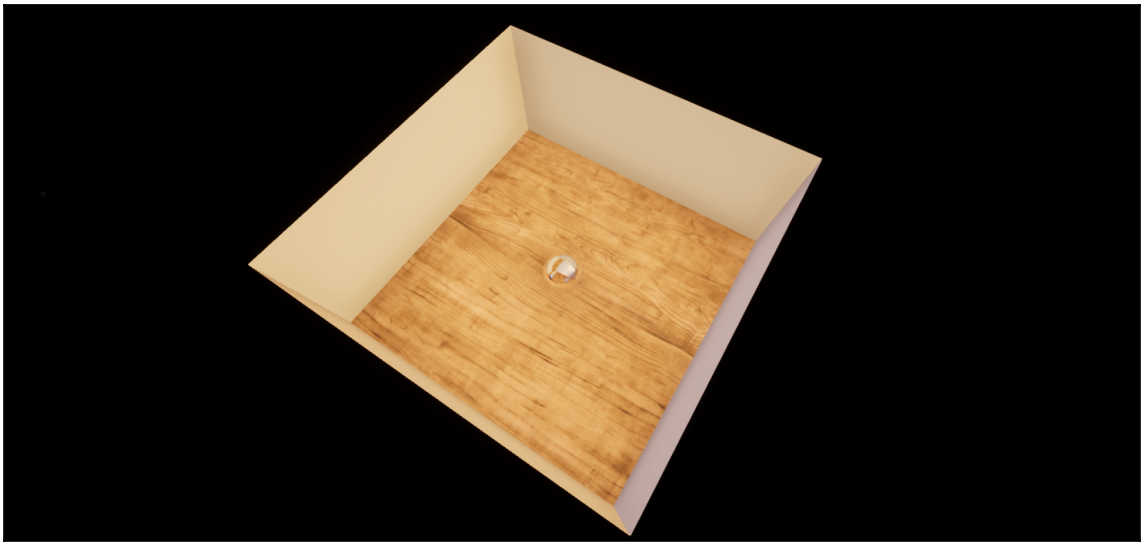

Details
World Settings
SkyLight
+ Add Component
Blueprint/Add Script
Search
SkyLight(Instance)
LightComponent (Inherited)
Search
Scale
X 1.0
Y 1.0
Z 1.0
Mobility
Static
Stationary
Movable
Light
Source Type
SLS Specified Cubemap
Cubemap
HDRI_AlexsApt
Source Cubemap Angle
0.0

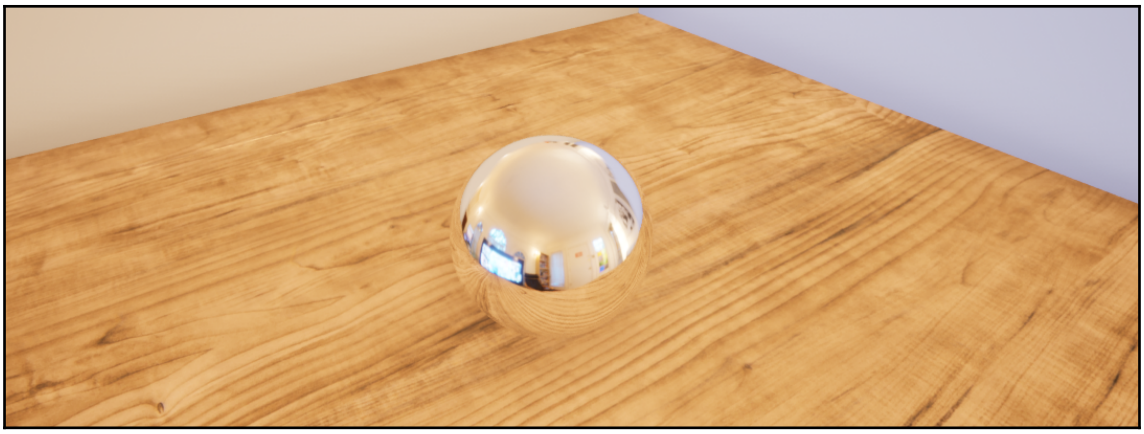



static
dynamic

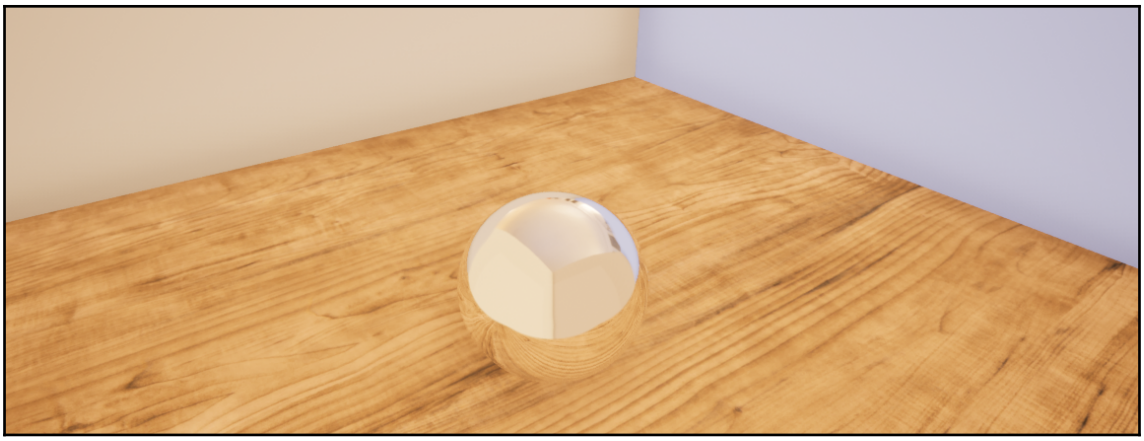


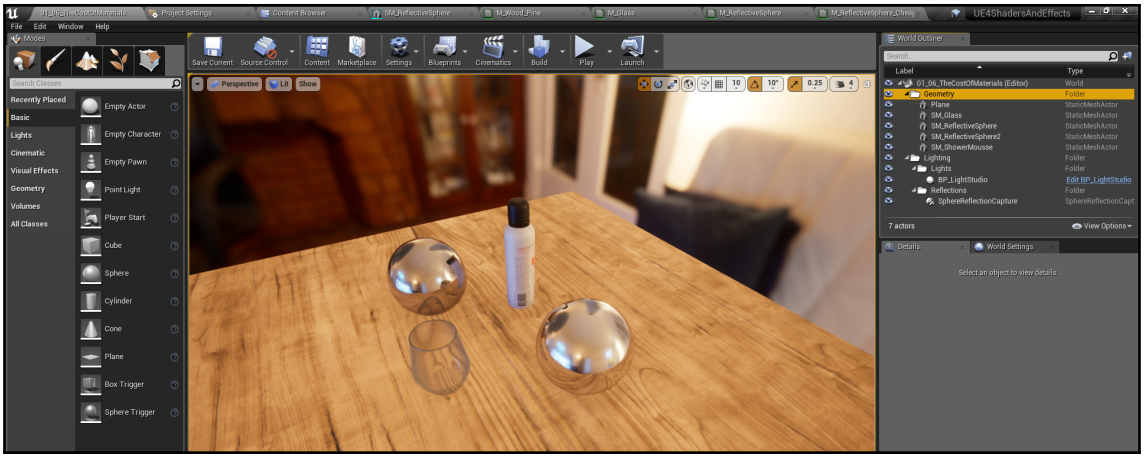
Lower Hemisphere Is Solic
Details
World Settings
SkyLight
+ Add Component
Blueprint/Add Scri
Search
SkyLight(Instance)
LightComponent (Inherited)
Search
Cubemap Resolution
128
Sky Distance Threshold
150000.0
Intensity
1.0
Light Color
Affects World
Cast Shadows
Indirect Lighting Intensity
1.0
Volumetric Scattering Inte
1.0
Capture Emissive Only
Lower Hemisphere Is Solic
Lower Hemisphere Color
Cast Static Shadows
Cast Dynamic Shadows

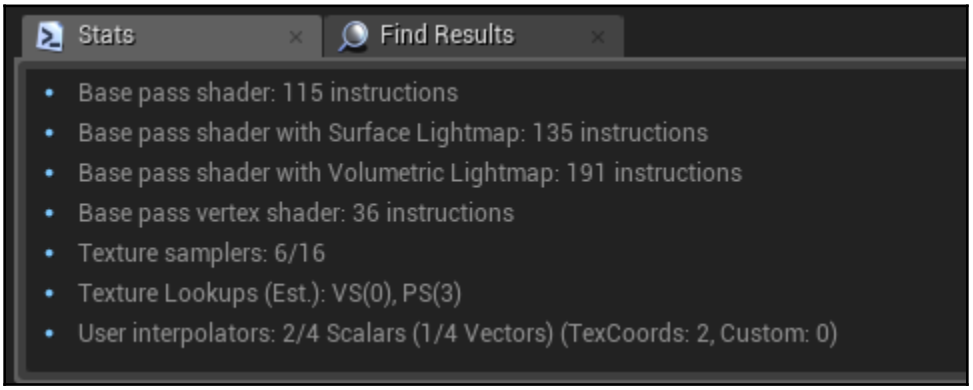


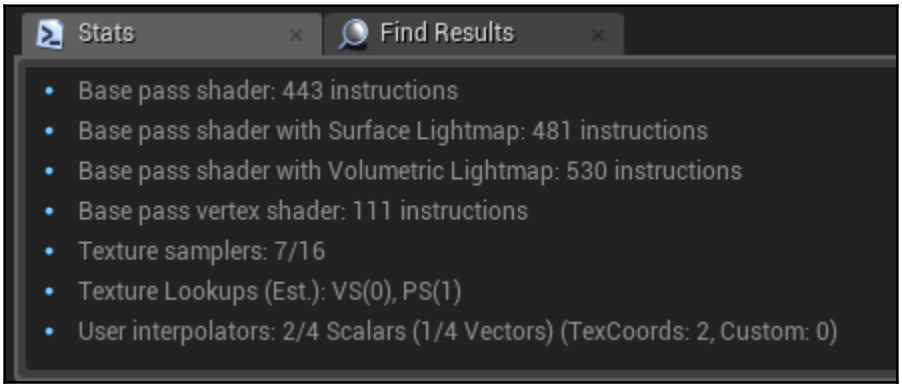


01_05_HDRILighting_Final
Content Browser
M_Chrome
M_PBR_Metal
File
Edit
Window
Help
Modes
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual E
Geomet
Volume
All Classes
Empty Actor
Empty Character
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Perspective
Lit
Show
Lighting
Build Lighting Only
Ctrl+Shift+Semicolon
Lighting Quality
Lighting Info
Use Error Coloring
Show Lighting Stats
Reflections
Build Reflection Captures
Visibility
Precompute Static Visibility
Geometry
Build Geometry
Build Geometry (Current Level)
Navigation
Build Paths
Hierarchical LOD
Build LODs
Texture Streaming
Build Texture Streaming
Automation
Build and Submit...
Verification
Map Check
Build Reflection Captures



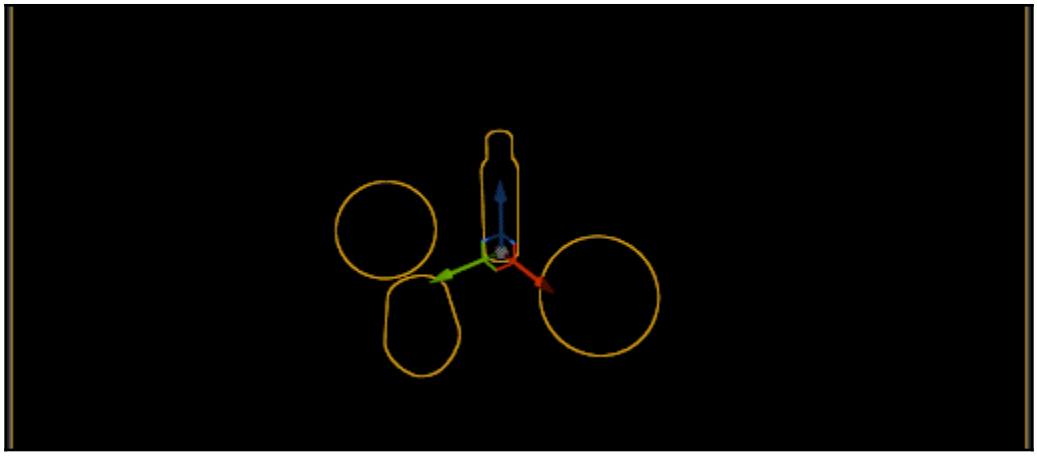

UE4ShadersAndEffects
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
World Outliner
Label
Type
Geometry
Folder
Plane
SM_Glass
SM_ReflectiveSphere
SM_ReflectiveSphere2
SM_ShowerMousse
Lighting
Folder
Lights
BP_LightStudio
Edit BP_LightStudio
Reflections
SphereReflectionCapture
7 actors
View Options
Details
World Settings
Select an object to view details

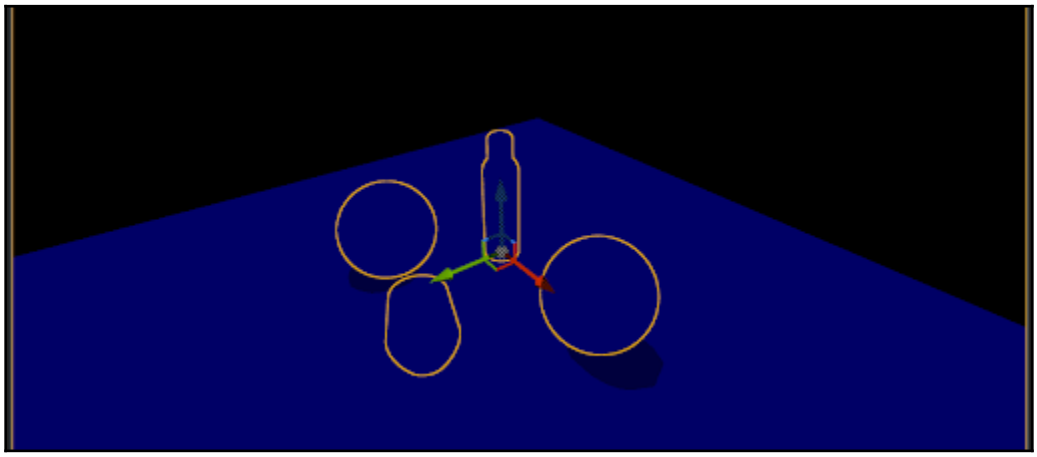

Stats
Find Results
Base pass shader: 115 instructions
Base pass shader with Surface Lightmap: 135 instructions
Base pass shader with Volumetric Lightmap: 191 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 6/16
Texture Lookups (Est.): VS(0), PS(3)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

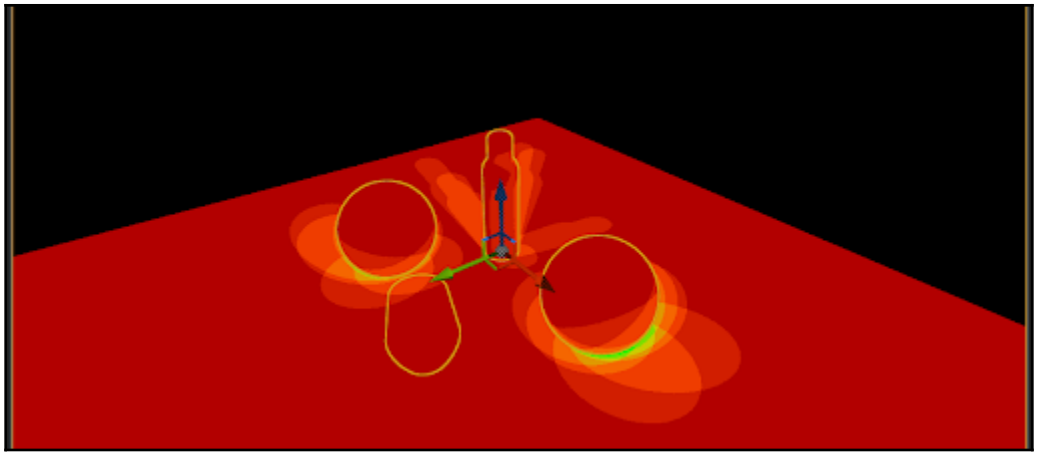

Stats
Find Results
Base pass shader: 443 instructions
Base pass shader with Surface Lightmap: 481 instructions
Base pass shader with Volumetric Lightmap: 530 instructions
Base pass vertex shader: 111 instructions
Texture samplers: 7/16
Texture Lookups (Est.): VS(0), PS(1)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

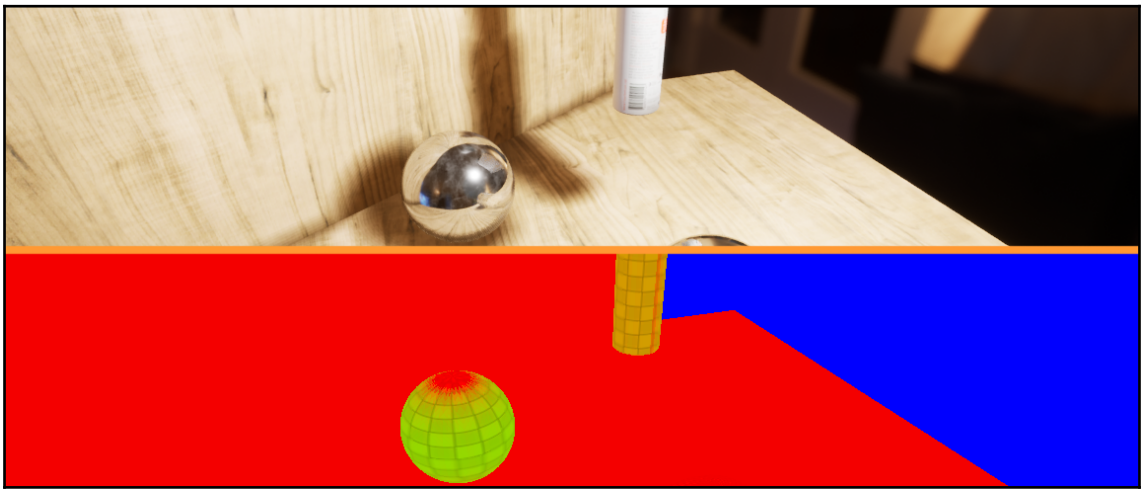
Perspective
Lit
Show
View Mode
Lit Alt+4
Unlit Alt+3
Wireframe Alt+2
Detail Lighting Alt+5
Lighting Only Alt+6
Reflections
Player Collision
Visibility Collision
Optimization Viewmodes
Level of Detail Coloration
Buffer Visualization
Landscape
Visualizers
LOD
Exposure
Game Settings
EV100 1.0
Optimization Viewmodes
Light Complexity Alt+7
Lightmap Density Alt+0
Stationary Light Overlap
Shader Complexity Alt+8
Shader Complexity & Quads
Quad Overdraw
Texture Streaming Accuracy
Primitive Distance
Mesh UV Densities
Material Texture Scales
Required Texture Resolution
Shader Complexity Alt+8
01_06_TheCostOfMaterials (Editor) World
Geometry Folder
Plane
SM_Glass
SM_ReflectiveSphere
SM_ReflectiveSphere2
SM_ShowerMousse
Lighting Folder
Lights Folder
BP_LightStudio
Reflections Folder
SphereReflectionCapture

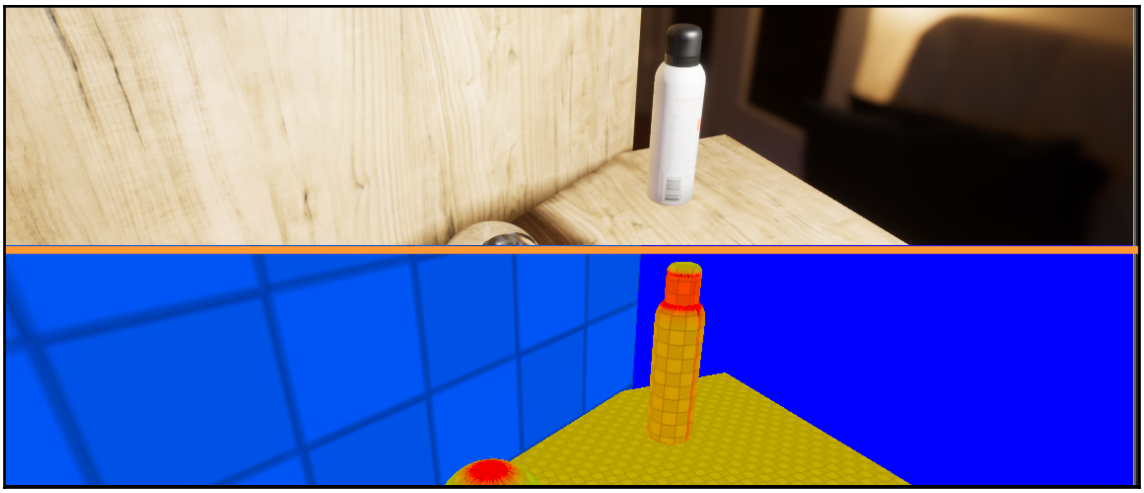
Perspective
Shader Complexity
Show
MaxShaderComplexityCount=2000
Good
Bad
Extremely bad
Level: 01_06_TheCostOfMaterials (Persistent)



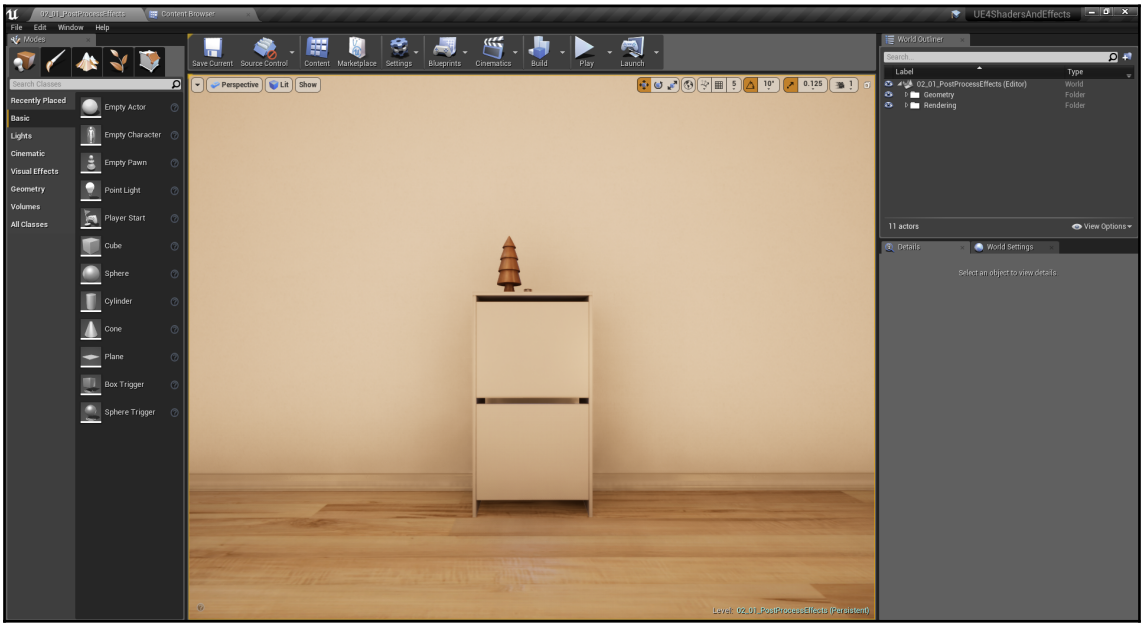


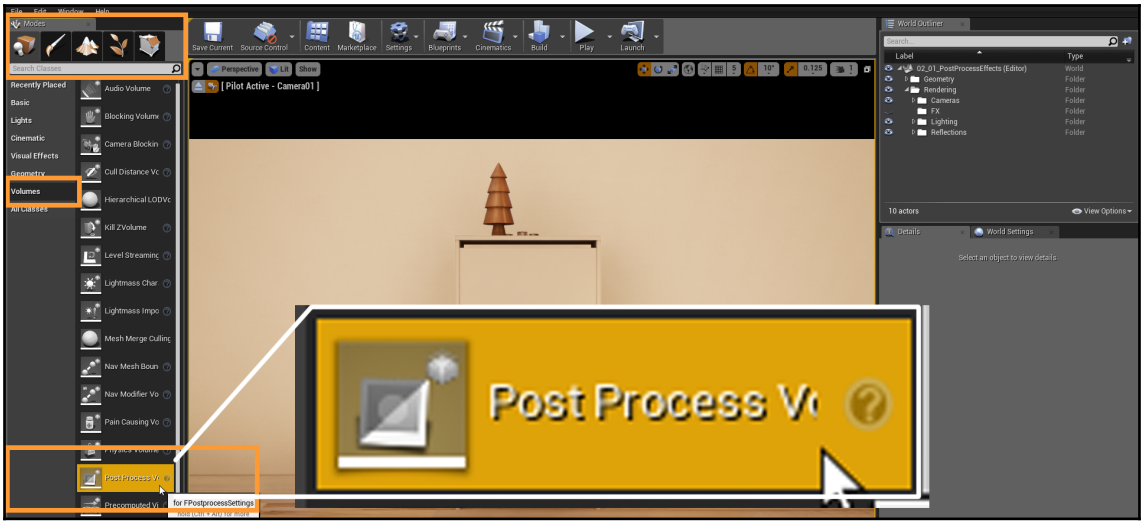


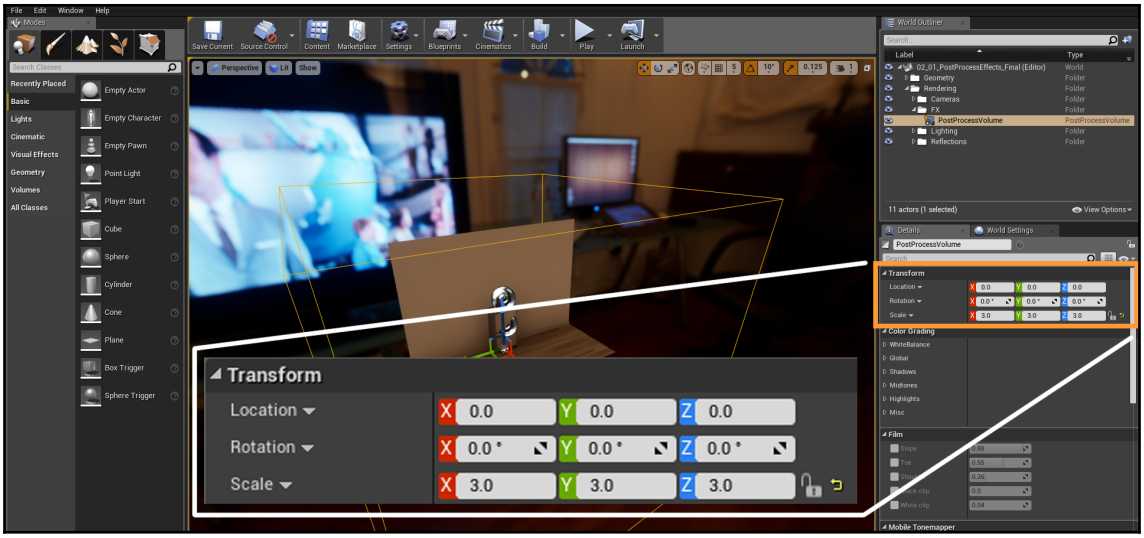


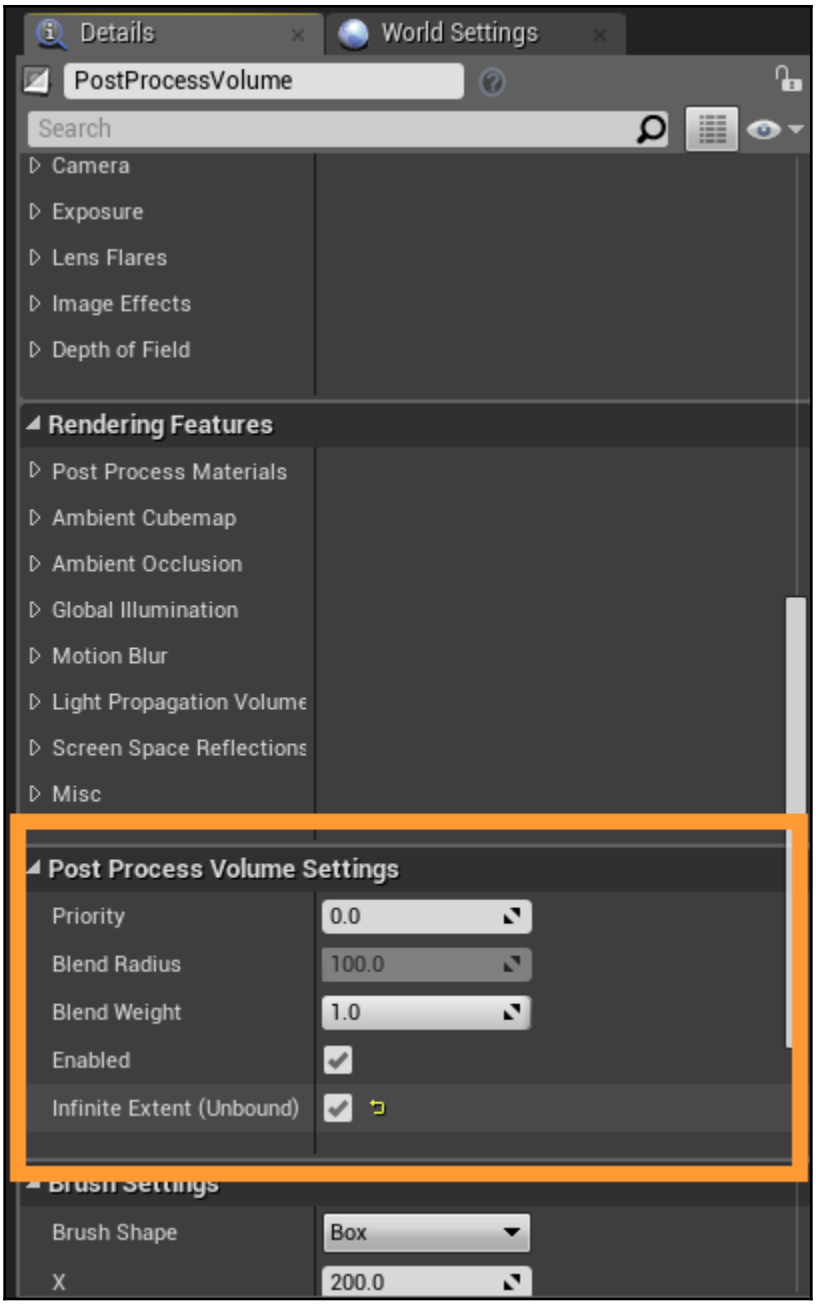


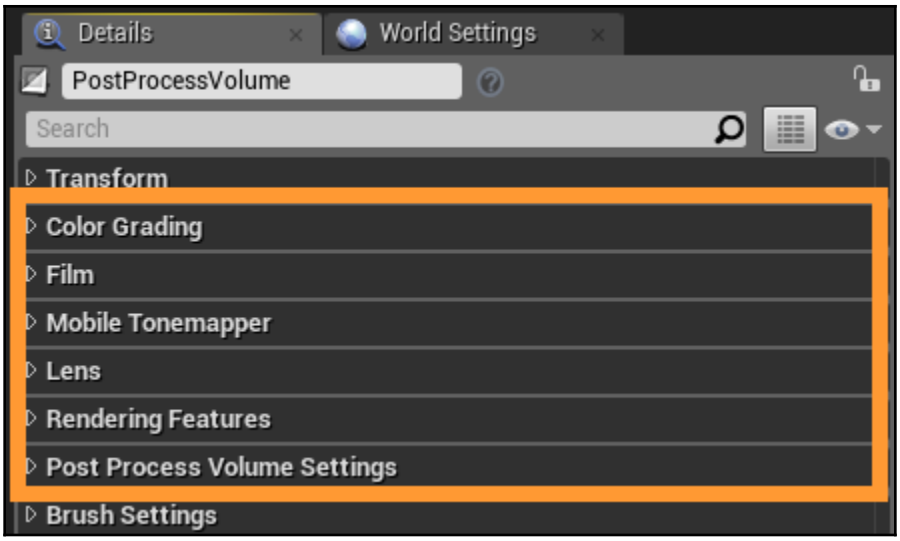
Chapter 2: Post-Processing Effects

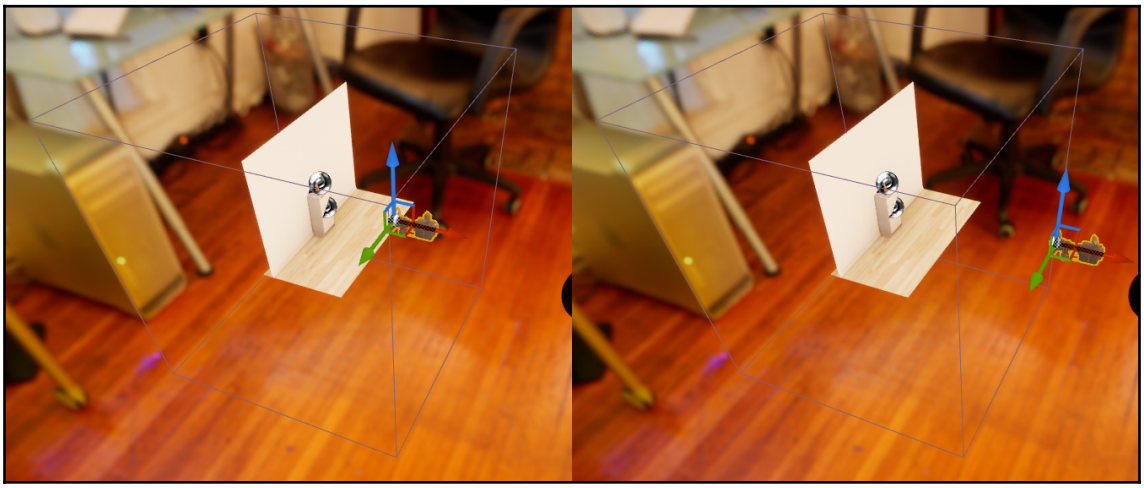




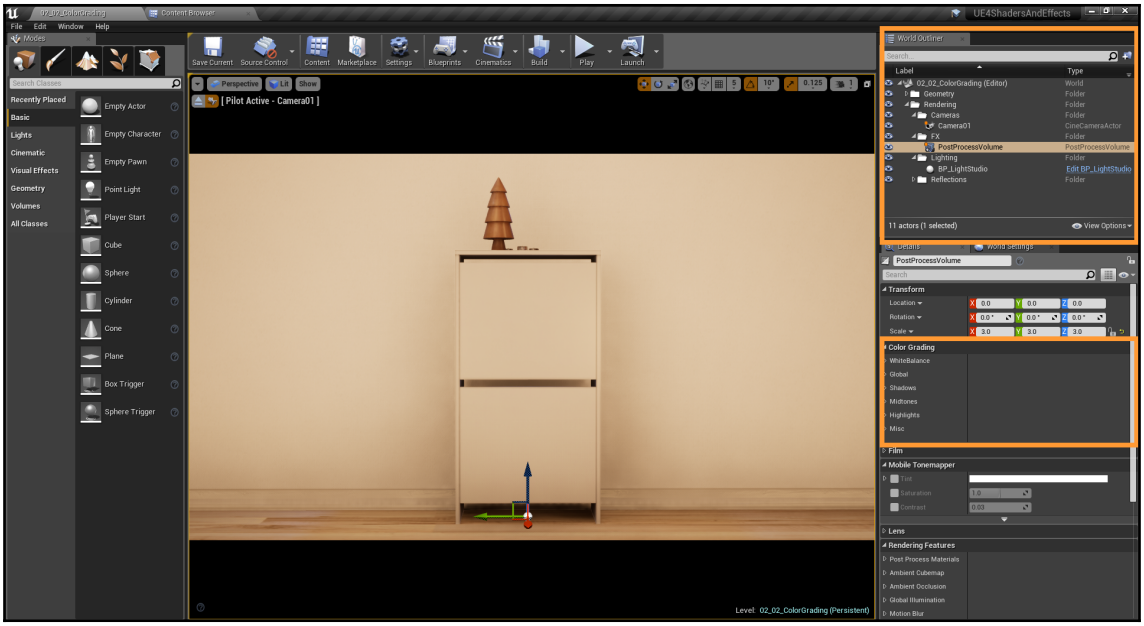

File Edit Window Help
Modes
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
Perspective
Lit
Show
World Outliner
Label
Type
02_01_PostProcessEffects_Final (Editor)
Geometry
Rendering
Cameras
FX
PostProcessVolume
Lighting
Reflections
11 actors (1 selected)
View Options
Details
World Settings
PostProcessVolume
Transform
Location
Rotation
Scale
Color Grading
WhiteBalance
Global
Shadows
Midtones
Highlights
Misc
Film
Mobile Tonemapper
Transform
Location
Rotation
Scale
X 0.0
Y 0.0
Z 0.0
X 0.0 °
Y 0.0 °
Z 0.0 °
X 3.0
Y 3.0
Z 3.0

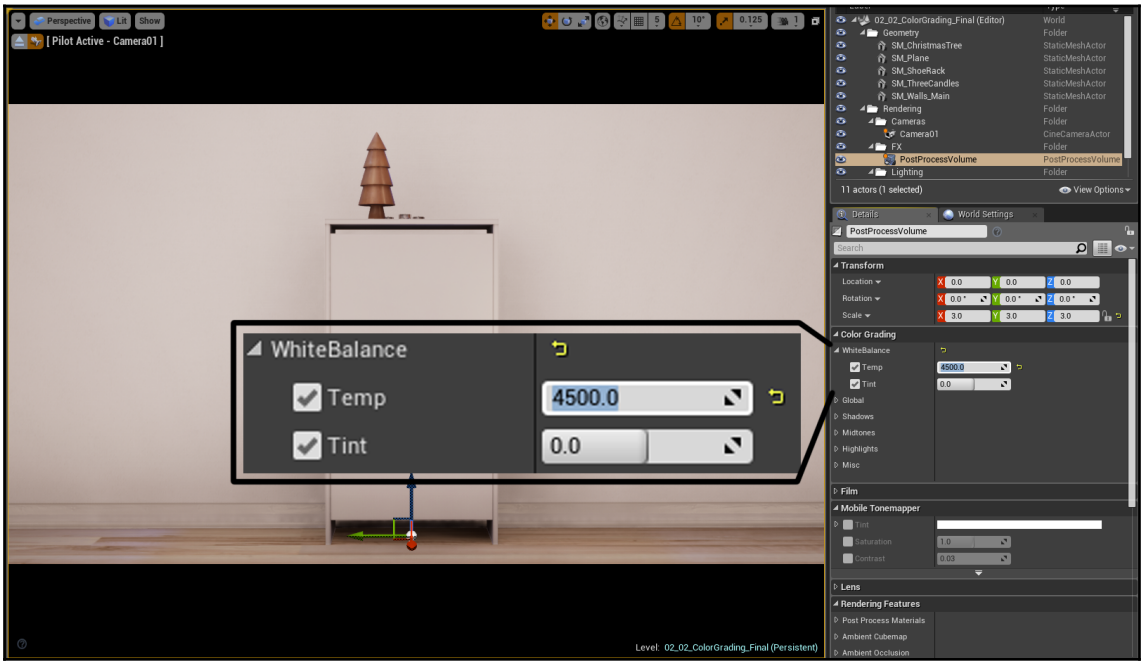

Details
World Settings
PostProcessVolume
Search
Camera
Exposure
Lens Flares
Image Effects
Depth of Field
Rendering Features
Post Process Materials
Ambient Cubemap
Ambient Occlusion
Global Illumination
Motion Blur
Light Propagation Volume
Screen Space Reflections
Misc
Post Process Volume Settings
Priority
0.0
Blend Radius
100.0
Blend Weight
1.0
Enabled
Infinite Extent (Unbound)
Brush Shape
Box
X
200.0


Details
World Settings
PostProcessVolume
Search
Transform
Color Grading
Film
Mobile Tonemapper
Lens
Rendering Features
Post Process Volume Settings
Brush Settings



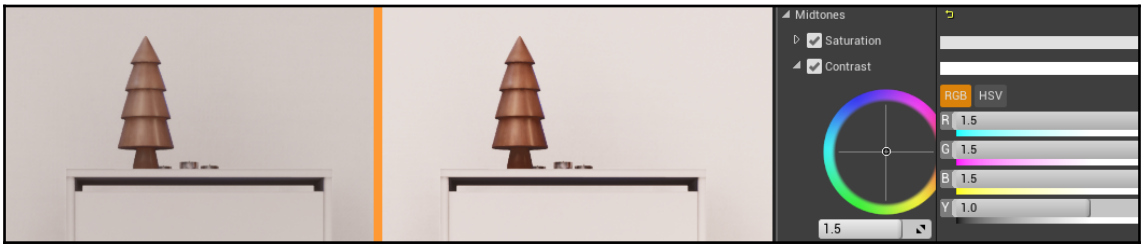
Perspective
Lit
Show
Perspective Alt+G
Orthographic
Top Alt+J
Bottom Alt+Shift+J
Left Alt+K
Right Alt+Shift+K
Front Alt+H
Back Alt+Shift+H
Placed Cameras
Camera01
Viewport Type
Default Viewport
Cinematic Viewport
Look through and pilot Camera01
Camera01

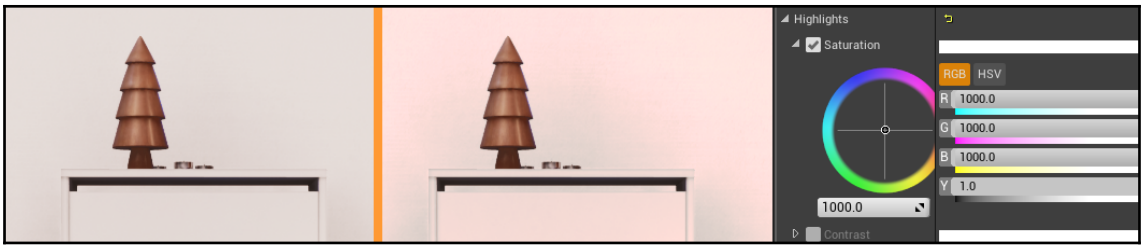

UE4ShadersAndEffects
Content Browser
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show
[Pilot Active - Camera01]
World Outliner
Label
Type
02_02_ColorGrading (Editor)
Geometry
Rendering
Cameras
Camera01
FX
PostProcessVolume
Lighting
BP_LightStudio
Reflections
11 actors (1 selected)
View Options
Details
World Settings
PostProcessVolume
Transform
Location
Rotation
Scale
Color Grading
WhiteBalance
Global
Shadows
Midtones
Highlights
Misc
Film
Mobile Tonemapper
Lens
Rendering Features
Post Process Materials
Ambient Cubemap
Ambient Occlusion
Global Illumination
Motion Blur
Level: 02_02_ColorGrading (Persistent)

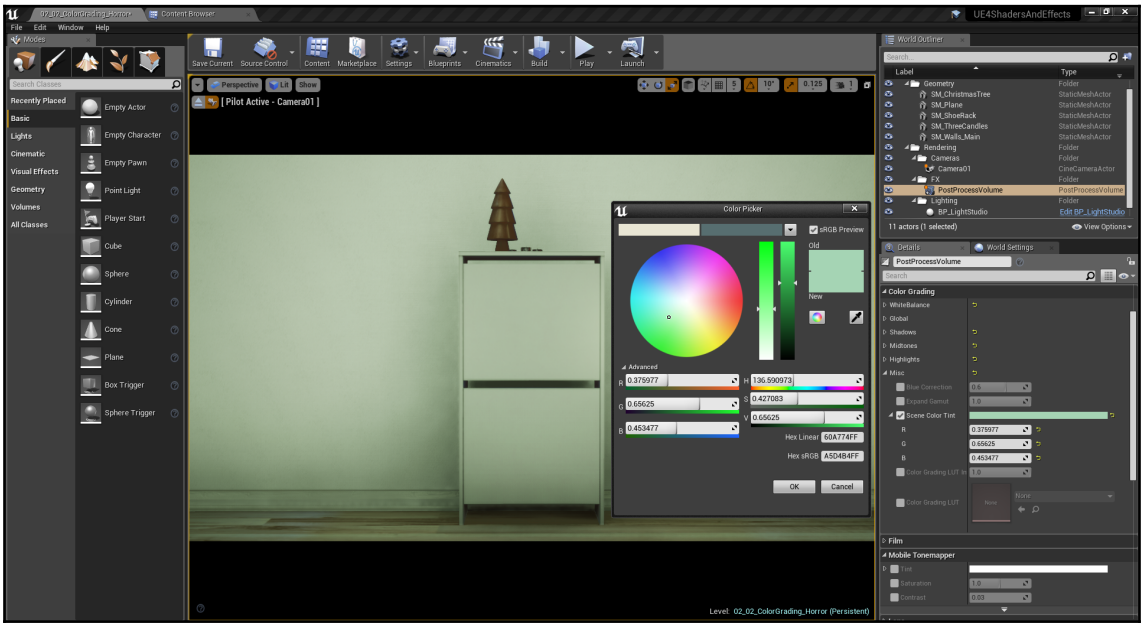

Perspective
Lit
Show
[Pilot Active - Camera01]
WhiteBalance
Temp
4500.0
Tint
0.0
02_02_ColorGrading_Final (Editor)
Geometry
SM_ChristmasTree
SM_Plane
SM_ShoeRack
SM_ThreeCandles
SM_Walls_Main
Rendering
Cameras
Camera01
FX
PostProcessVolume
Lighting
11 actors (1 selected)
View Options
Details
World Settings
PostProcessVolume
Transform
Location
Rotation
Scale
Color Grading
WhiteBalance
Temp
4500.0
Tint
0.0
Global
Shadows
Midtones
Highlights
Misc
Film
Mobile Tonemapper
Lens
Rendering Features
Post Process Materials
Ambient Cubemap
Ambient Occlusion
Level: 02_02_ColorGrading_Final (Persistent)

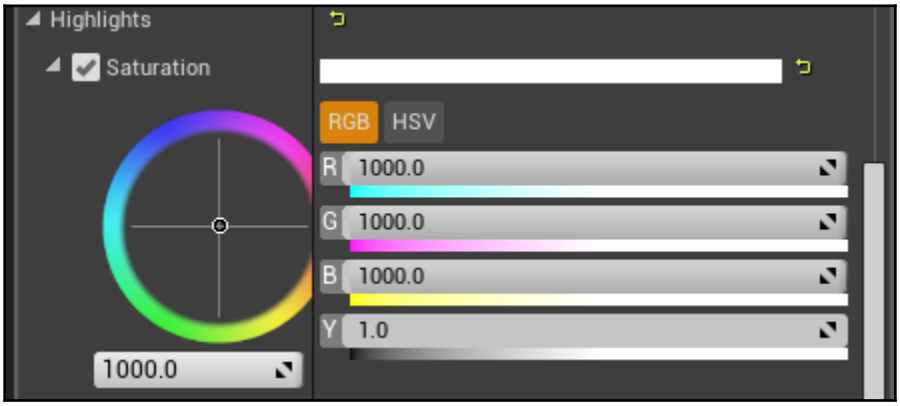
Gain
RGB
HSV
R 2.0
G 2.0
B 2.0
Y 1.0
2.0
Offset

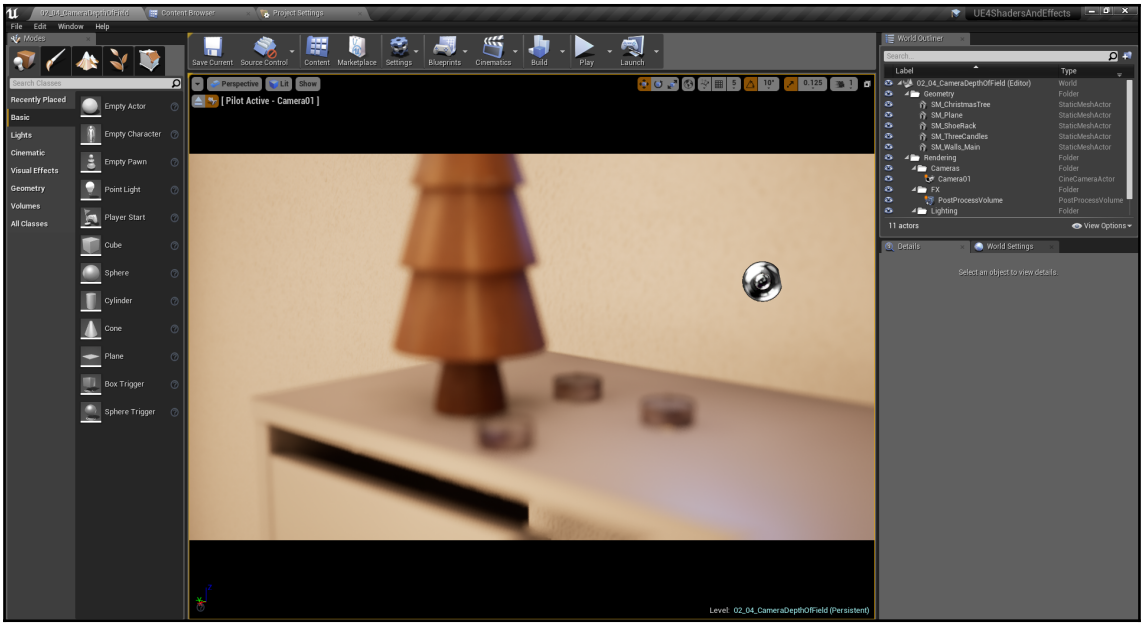
Midtones
Saturation
RGB
HSV
R 0.75
G 0.75
B 0.75
Y 1.0
0.75
Contrast

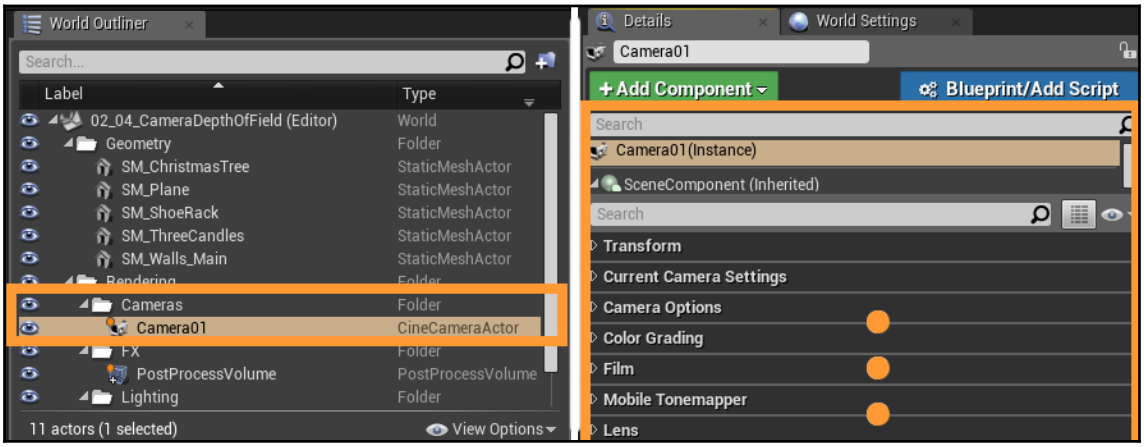

Midtones
Saturation
Contrast
RGB
HSV
R 1.5
G 1.5
B 1.5
Y 1.0
1.5

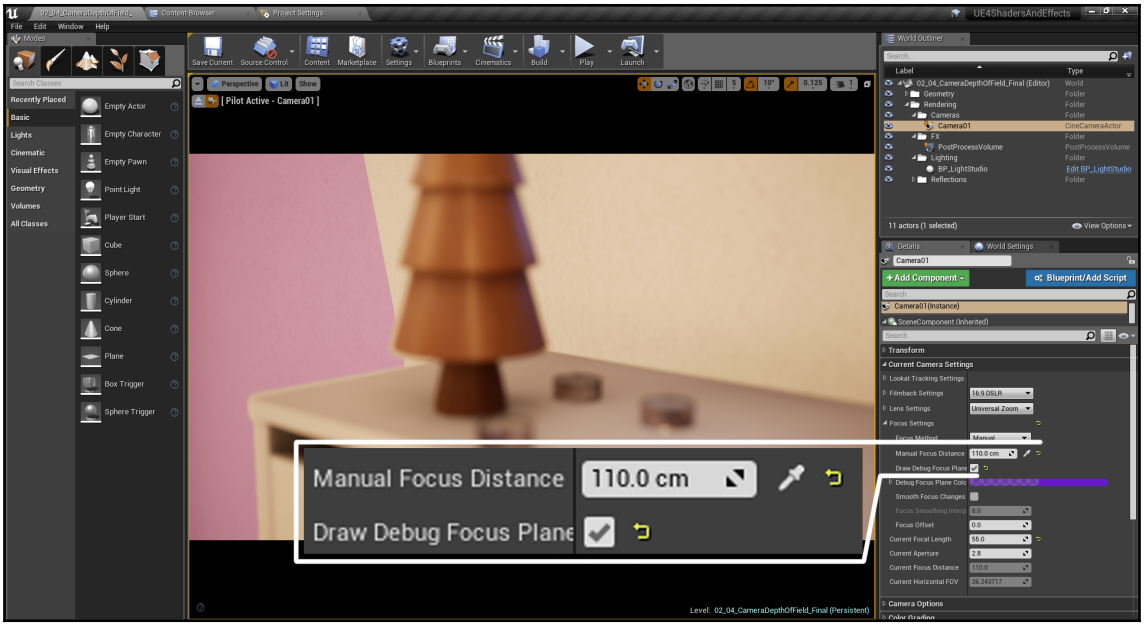

Highlights
Saturation
RGB
HSV
R 1000.0
G 1000.0
B 1000.0
Y 1.0
1000.0
Contrast

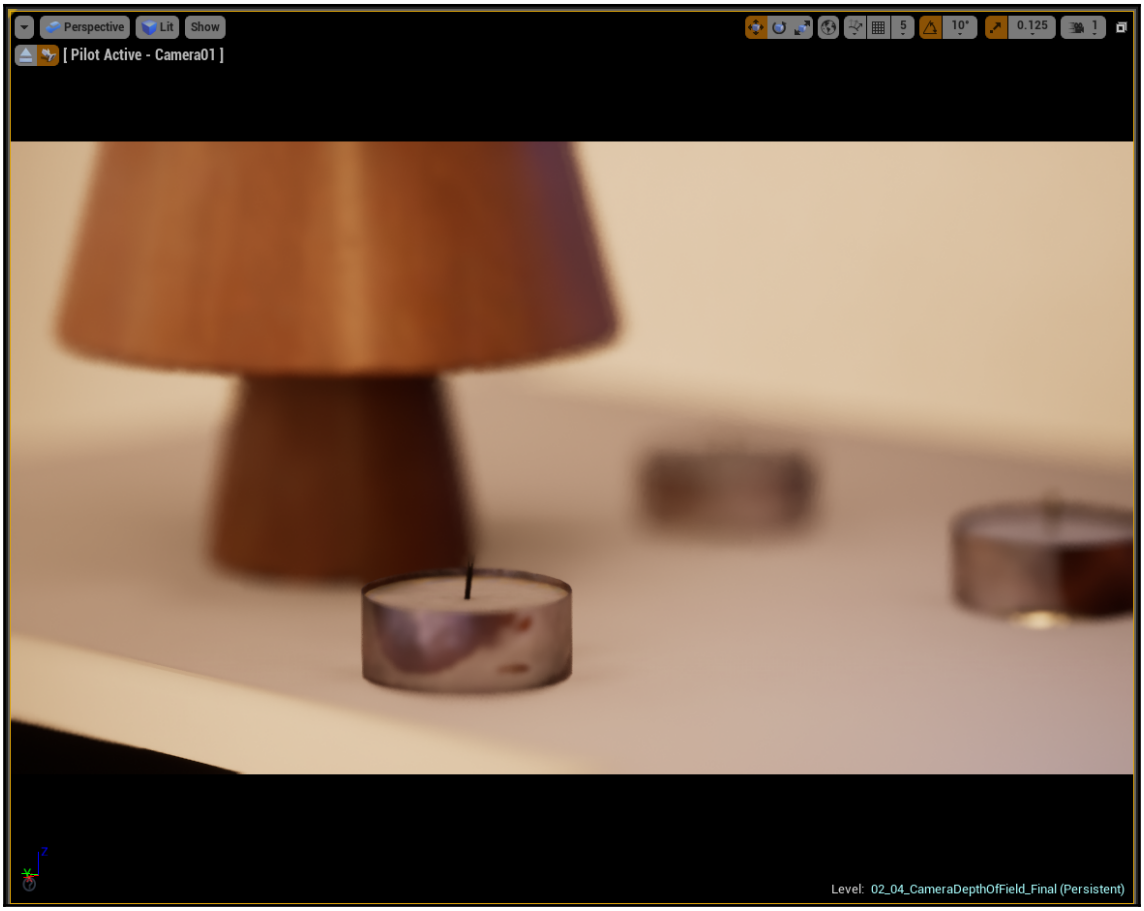

UE4ShadersAndEffects
Content Browser
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
[Pilot Active - Camera01]
Color Picker
OK
Cancel
World Outliner
Details
World Settings
Color Grading
Level: 02_02_ColorGrading_Horror (Persistent)


Highlights
Saturation
RGB
HSV
R 1000.0
G 1000.0
B 1000.0
Y 1.0
1000.0

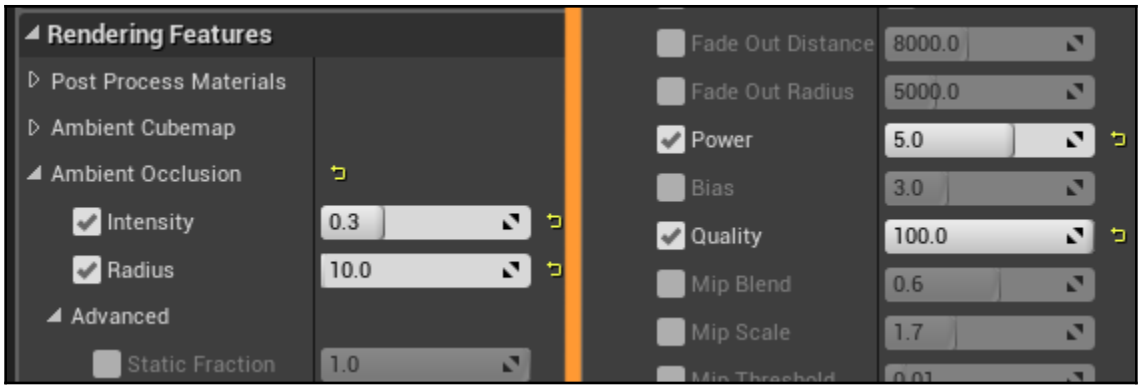

[Pilot Active - Camera01]
Level: 02_04_CameraDepthOfField (Persistent)

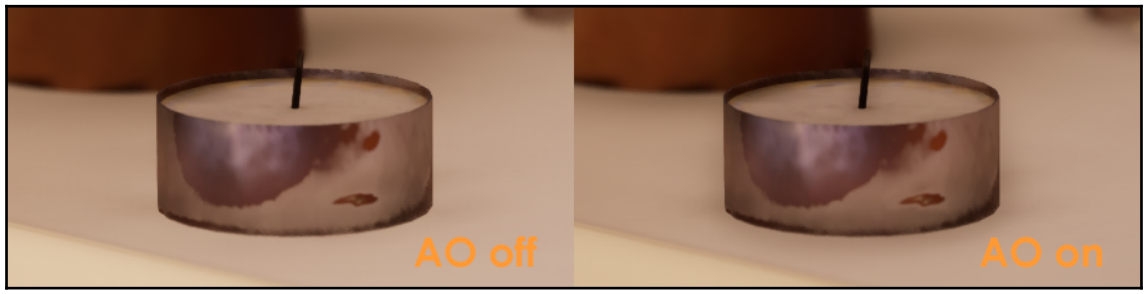

World Outliner
Search...
Label
Type
02_04_CameraDepthOfField (Editor)
World
Geometry
Folder
SM_ChristmasTree
StaticMeshActor
SM_Plane
StaticMeshActor
SM_ShoeRack
StaticMeshActor
SM_ThreeCandles
StaticMeshActor
SM_Walls_Main
StaticMeshActor
Cameras
Folder
Camera01
CineCameraActor
FX
Folder
PostProcessVolume
PostProcessVolume
Lighting
Folder
11 actors (1 selected)
View Options
Details
World Settings
Camera01
+ Add Component
Blueprint/Add Script
Search
Camera01(Instance)
SceneComponent (Inherited)
Search
Transform
Current Camera Settings
Camera Options
Color Grading
Film
Mobile Tonemapper
Lens

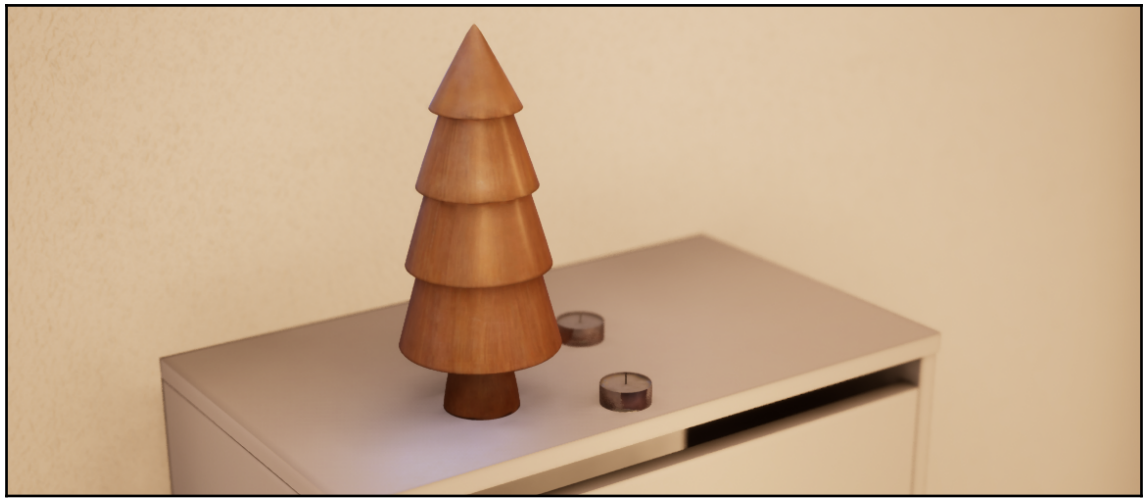

Manual Focus Distance
110.0 cm
Draw Debug Focus Plane


Perspective
Lit
Show
[Pilot Active - Camera01]
Level: 02_04_CameraDepthOfField_Final (Persistent)

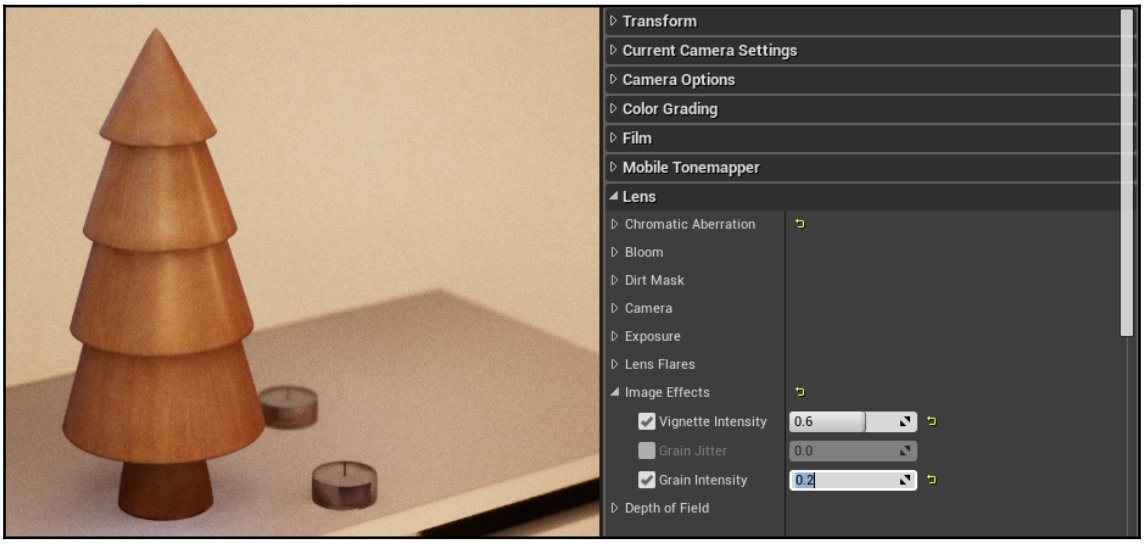
f20
f10
f05

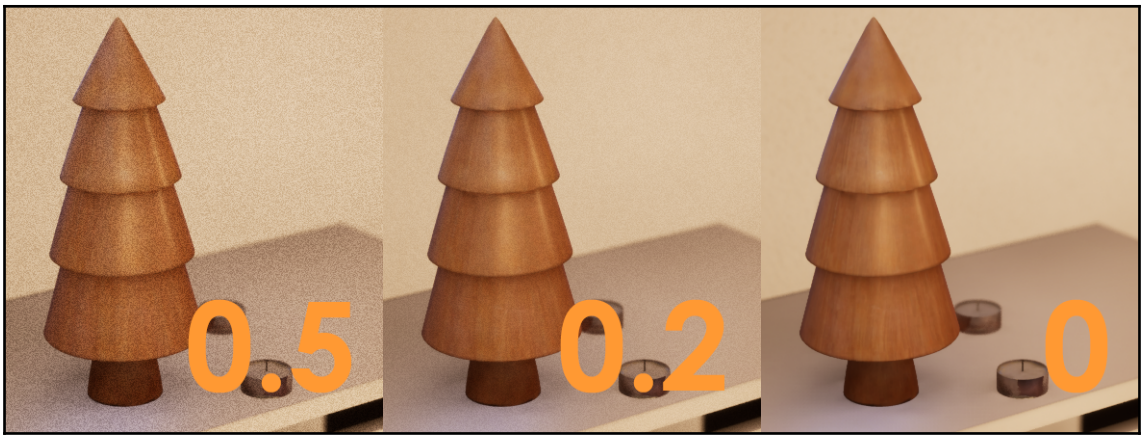

Rendering Features
Post Process Materials
Ambient Cubemap
Ambient Occlusion
Intensity
0.3
Radius
10.0
Advanced
Static Fraction
1.0
Fade Out Distance
8000.0
Fade Out Radius
5000.0
Power
5.0
Bias
3.0
Quality
100.0
Mip Blend
0.6
Mip Scale
1.7

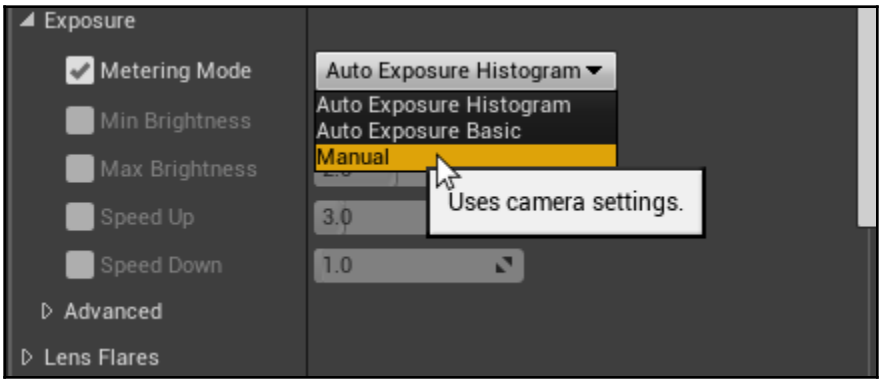

AO off
AO on

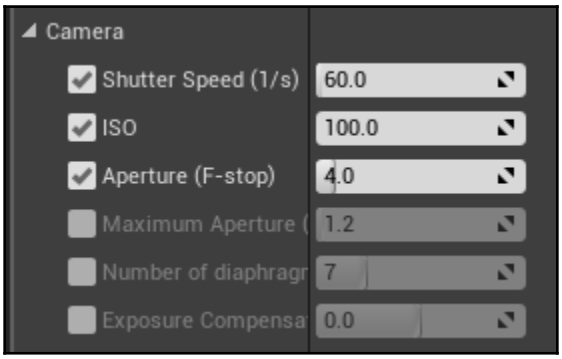


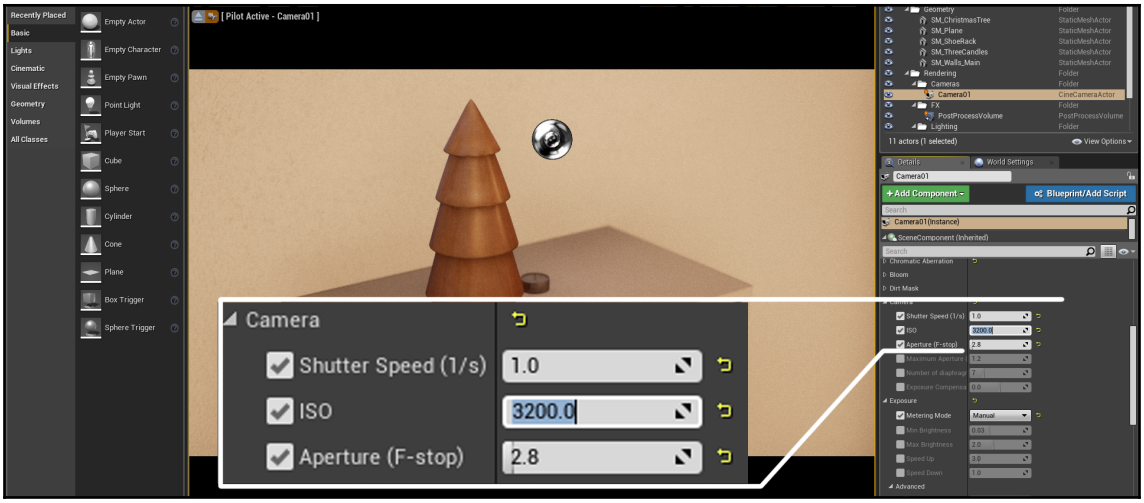
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
[Pilot Active - Camera01]
Image Effects
Vignette Intensity
0.6
Transform
Current Camera Settings
Camera Options
Color Grading
Film
Mobile Tonemapper
Lens
Image Effects
Depth of Field

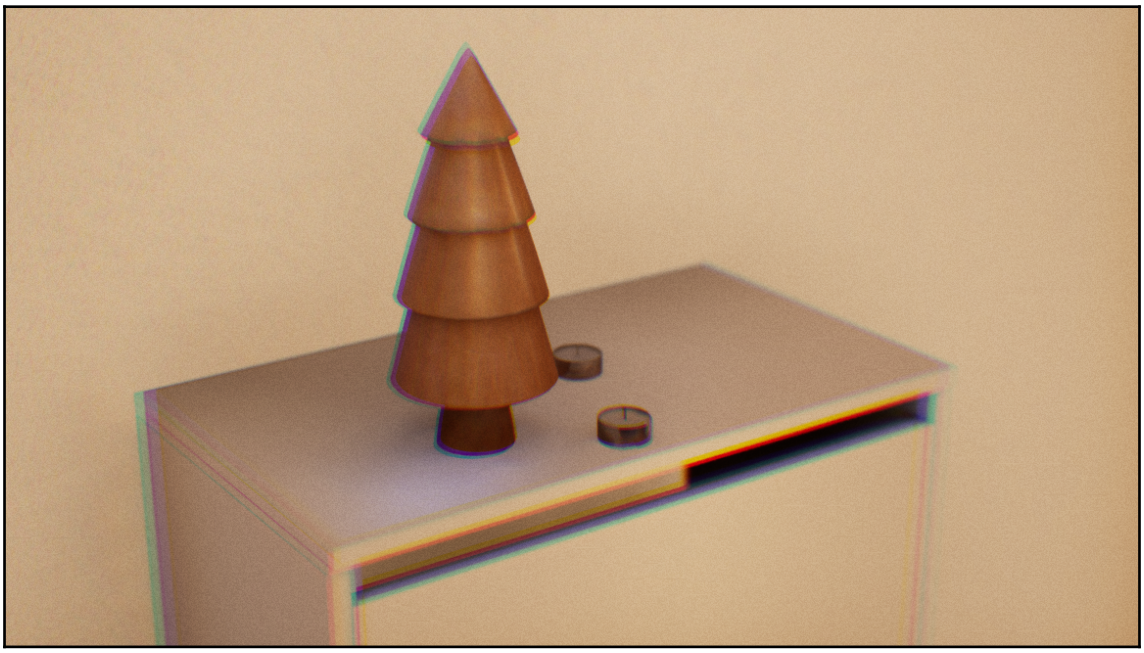

Transform
Current Camera Settings
Camera Options
Color Grading
Film
Mobile Tonemapper
Lens
Chromatic Aberration
Bloom
Dirt Mask
Camera
Exposure
Lens Flares
Image Effects
Vignette Intensity
0.6
Grain Jitter
0.0
Grain Intensity
0.2
Depth of Field

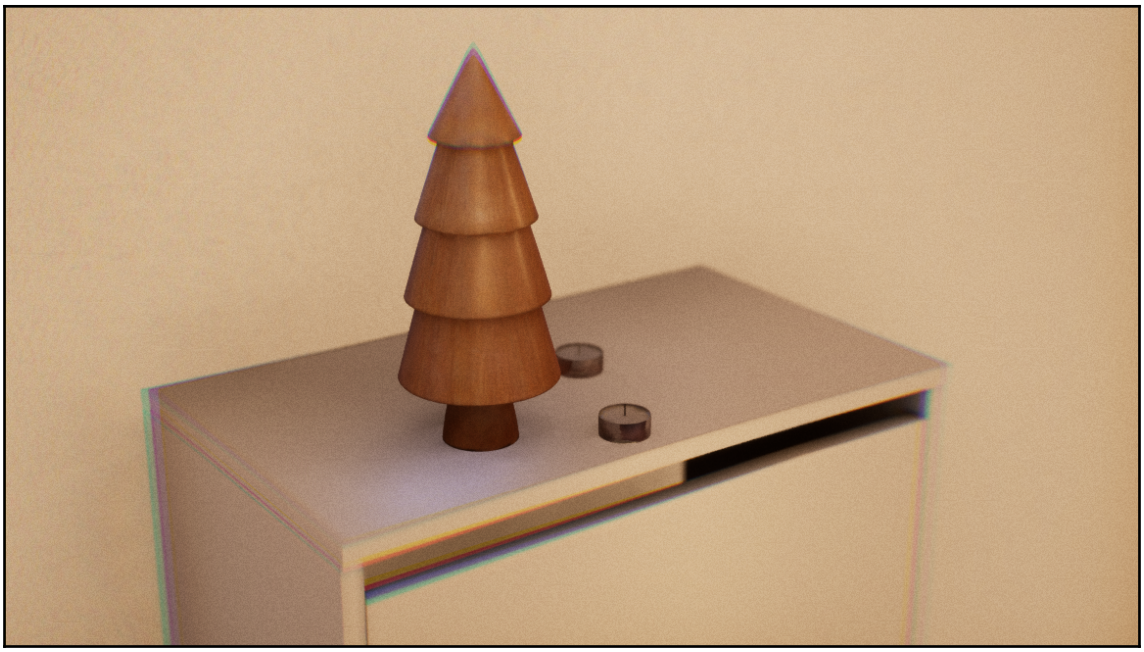

0.5
0.2
0

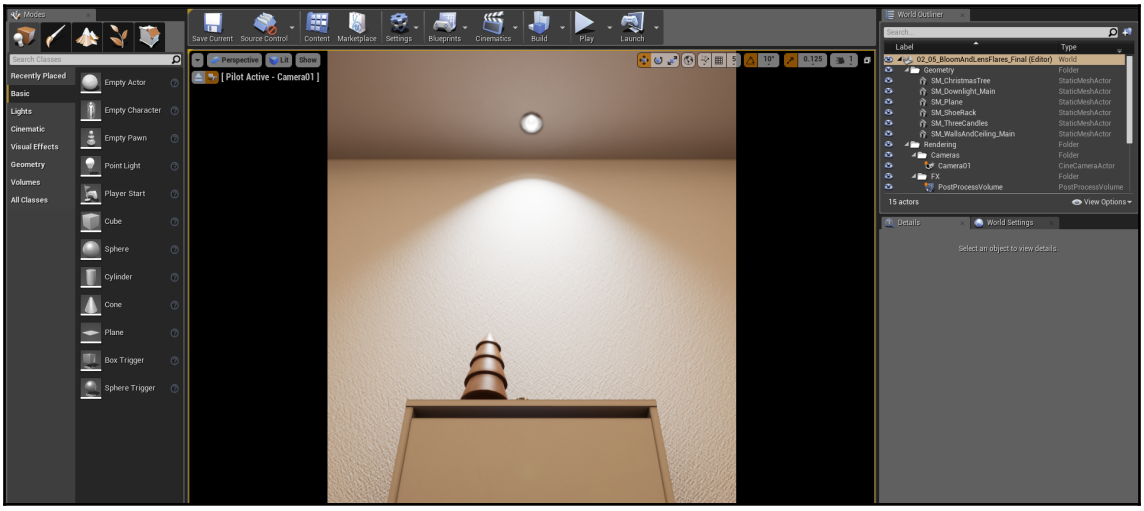

Exposure
Metering Mode
Min Brightness
Max Brightness
Speed Up
Speed Down
Advanced
Lens Flares
Auto Exposure Histogram
Auto Exposure Histogram
Auto Exposure Basic
Manual
Uses camera settings.
3.0
1.0

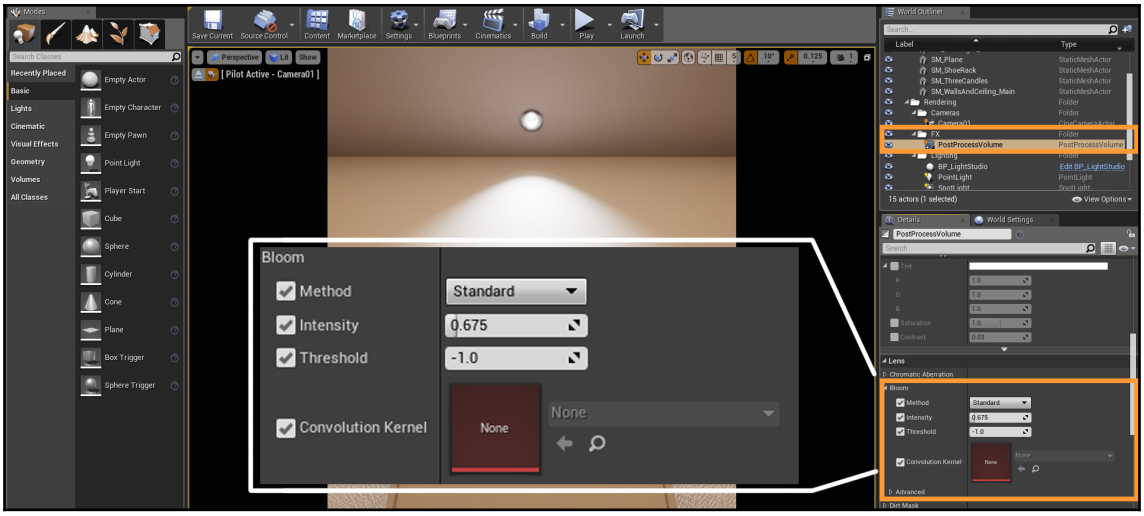

Camera
Shutter Speed (1/s)
60.0
ISO
100.0
Aperture (F-stop)
4.0
Maximum Aperture (
1.2
Number of diaphragr
7
Exposure Compensa
0.0

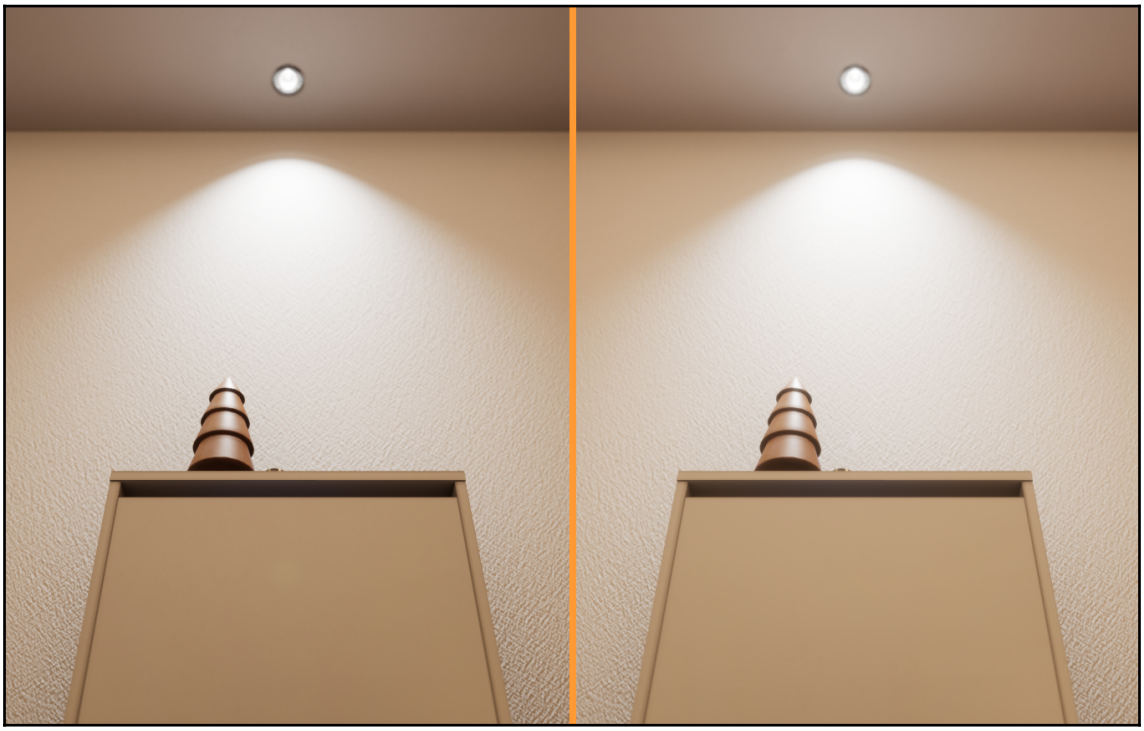

Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
[Pilot Active - Camera01]
Camera
Shutter Speed (1/s)
1.0
ISO
3200.0
Aperture (F-stop)
2.8
Geometry
SM_ChristmasTree
SM_Plane
SM_ShoeRack
SM_ThreeCandles
SM_Walls_Main
Rendering
Cameras
Camera01
FX
PostProcessVolume
Lighting
11 actors (1 selected)
Details
World Settings
Camera01
+ Add Component
Blueprint/Add Script
Camera01 (Instance)
SceneComponent (Inherited)
Chromatic Aberration
Bloom
Dirt Mask
Exposure
Metering Mode
Manual
Advanced

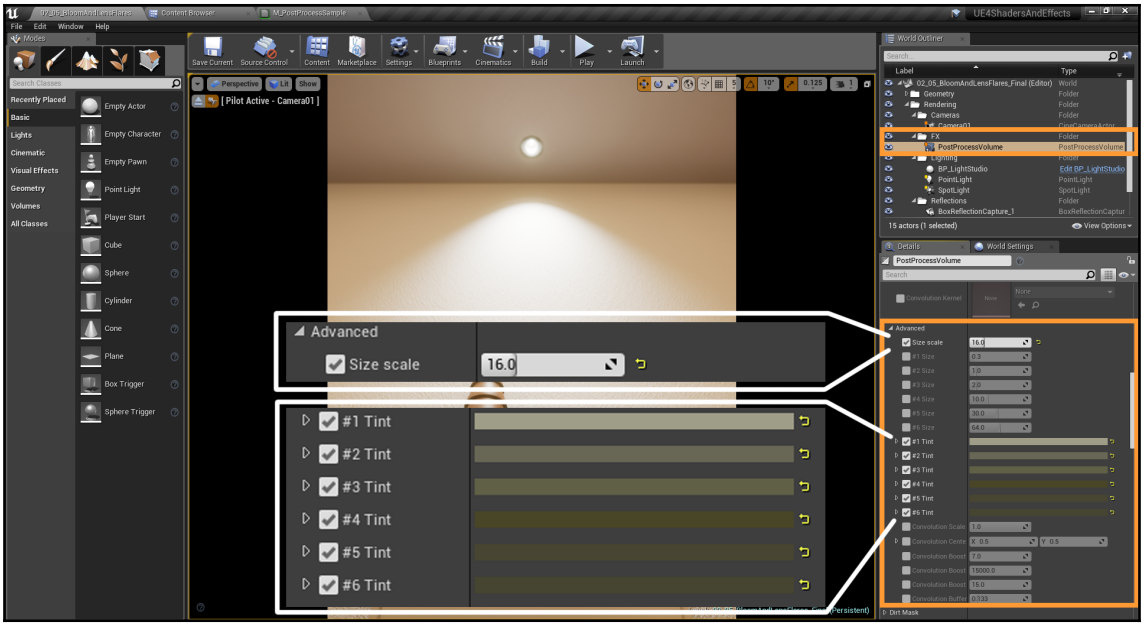


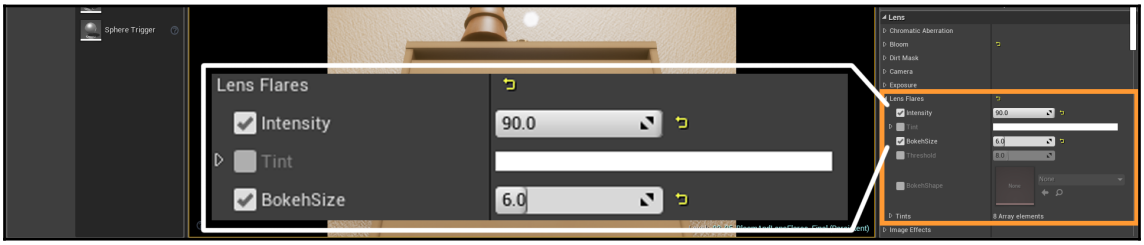


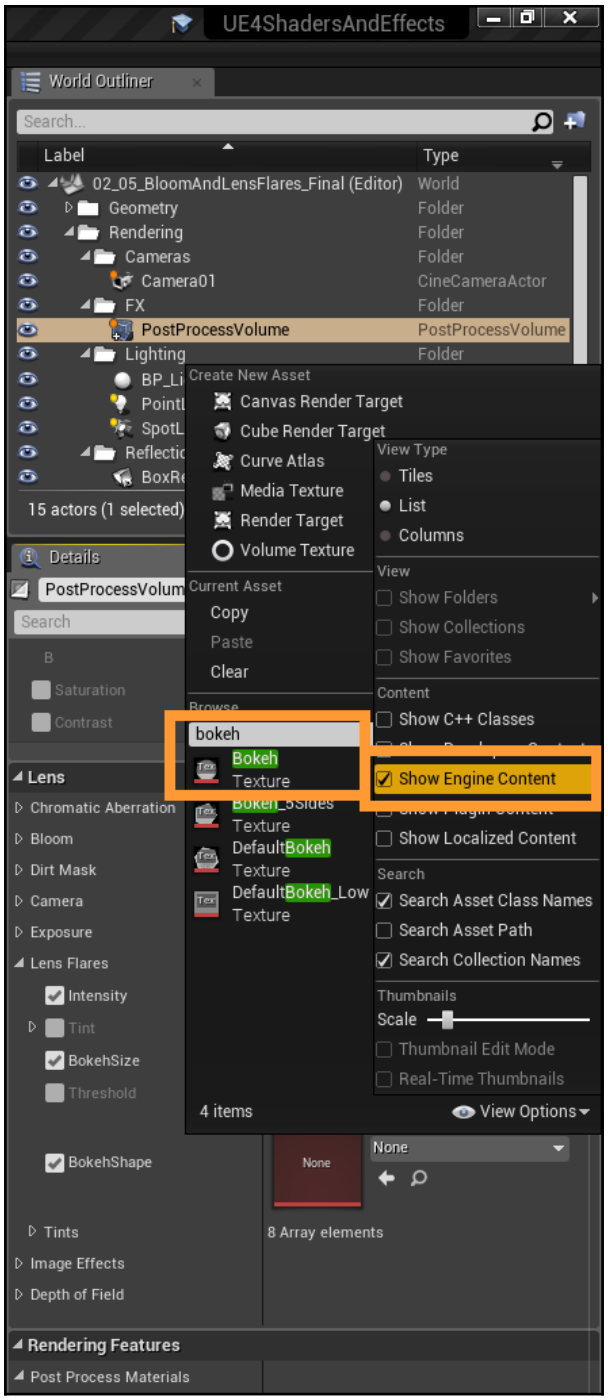

Modes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Sphere
Cylinder
Cone
Plane
Box Trigger
Sphere Trigger
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show
[Pilot Active - Camera01]
World Outliner
Label
Type
02_05_BloomAndLensFlares_Final (Editor)
Geometry
SM_ChristmasTree
SM_Downlight_Main
SM_Plane
SM_ShoeRack
SM_ThreeCandles
SM_WallsAndCeiling_Main
Rendering
Cameras
Camera01
FX
PostProcessVolume
15 actors
View Options
Details
World Settings
Select an object to view details

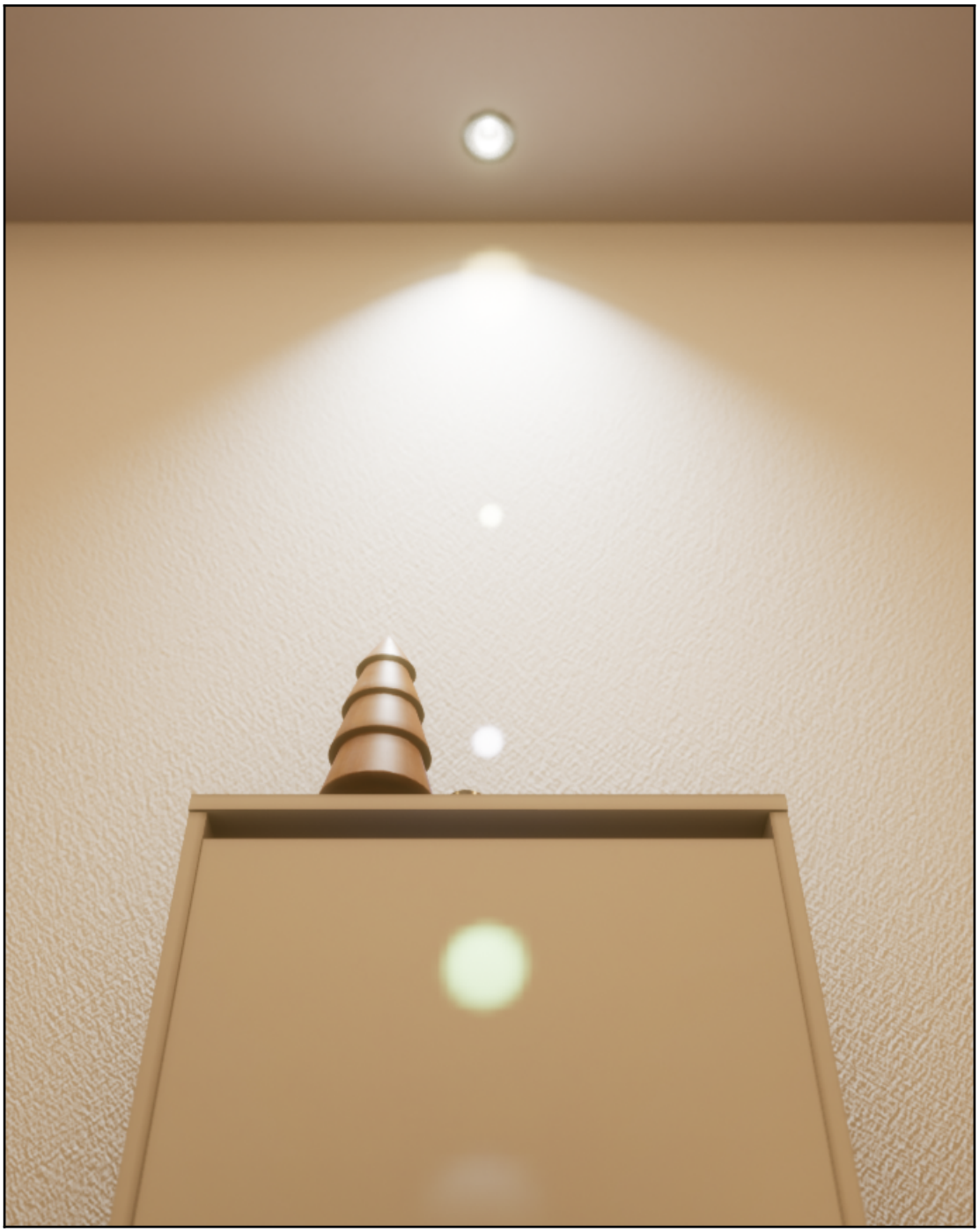

Bloom
Method
Standard
Intensity
0.675
Threshold
-1.0
Convolution Kernel
None
None

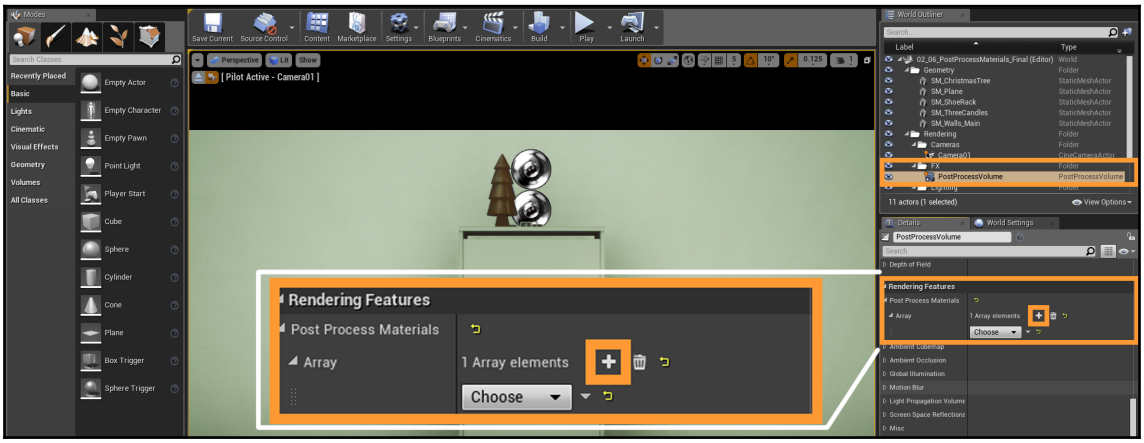


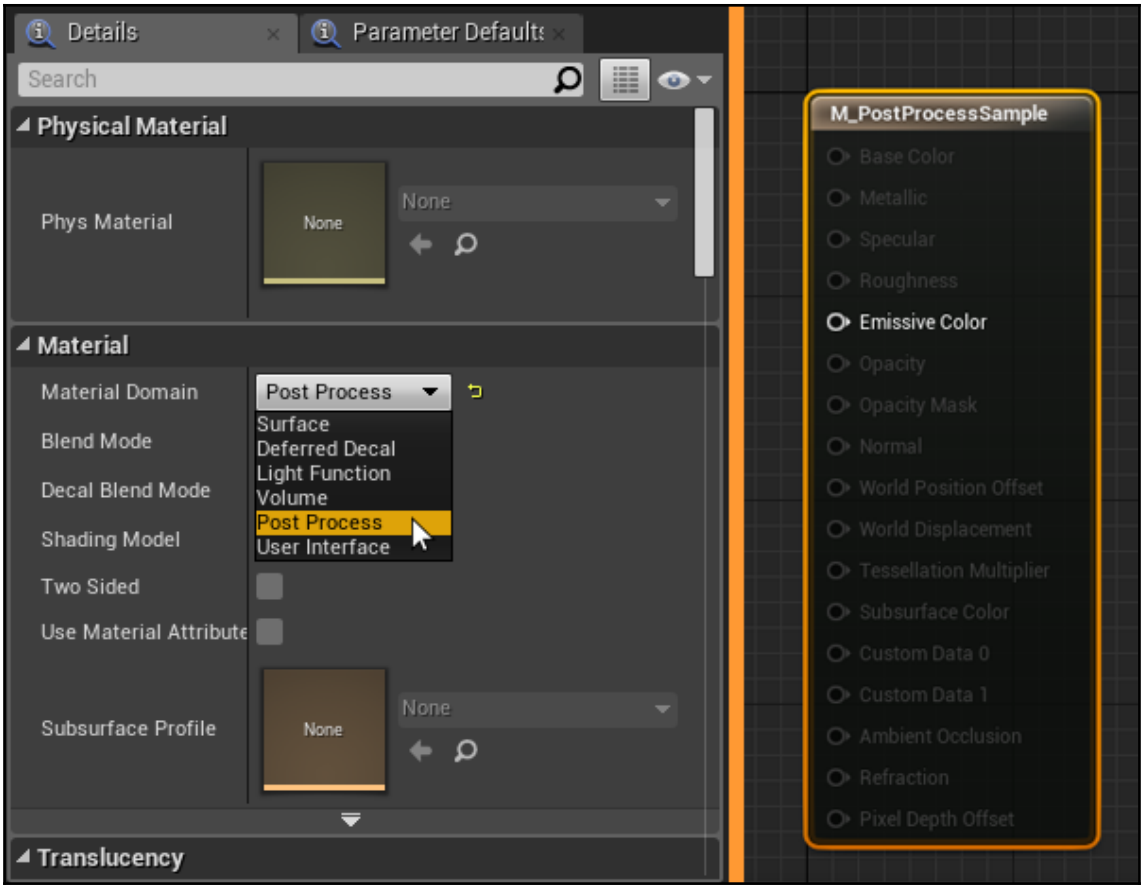

Advanced
Size scale
16.0
#1 Tint
#2 Tint
#3 Tint
#4 Tint
#5 Tint
#6 Tint

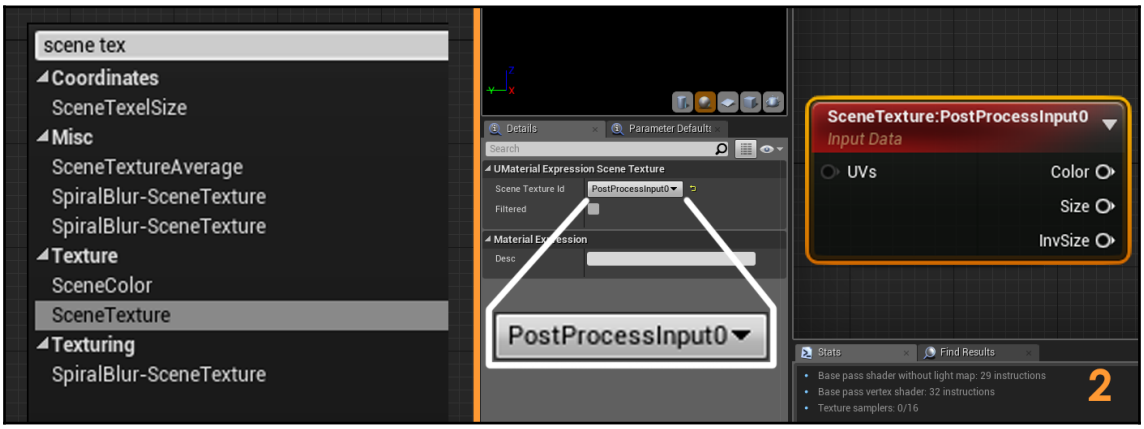

Lens Flares
Intensity
90.0
Tint
BokehSize
6.0

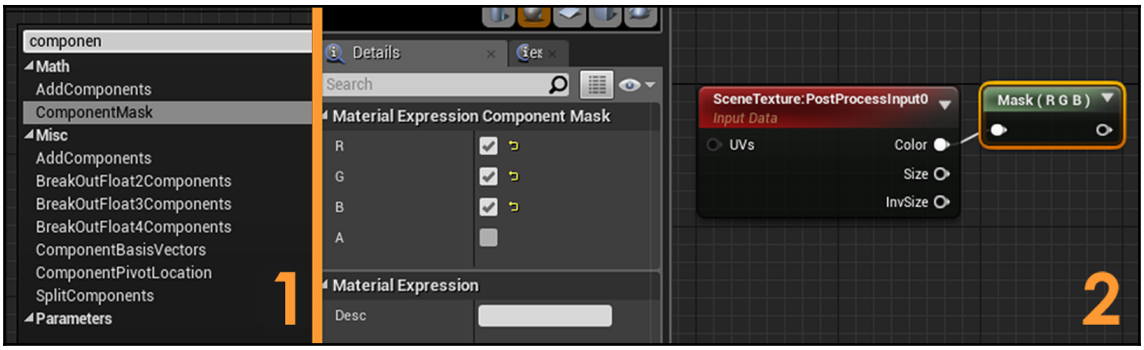

UE4ShadersAndEffects
World Outliner
Search...
Label
Type
02_05_BloomAndLensFlares_Final (Editor)
World
Geometry
Folder
Rendering
Folder
Cameras
Folder
Camera01
CineCameraActor
FX
Folder
PostProcessVolume
PostProcessVolume
Lighting
Folder
15 actors (1 selected)
Details
PostProcessVolum
Search
Saturation
Contrast
Lens
Chromatic Aberration
Bloom
Dirt Mask
Camera
Exposure
Lens Flares
Intensity
Tint
BokehSize
Threshold
BokehShape
Tints
Image Effects
Depth of Field
Rendering Features
Post Process Materials
Create New Asset
Canvas Render Target
Cube Render Target
Curve Atlas
Media Texture
Render Target
Volume Texture
Current Asset
Copy
Paste
Clear
Browse
bokeh
Bokeh
Texture
Texture
DefaultBokeh
Texture
DefaultBokeh_Low
Texture
4 items
View Type
Tiles
List
Columns
View
Show Folders
Show Collections
Show Favorites
Content
Show C++ Classes
Show Engine Content
Show Localized Content
Search
Search Asset Class Names
Search Asset Path
Search Collection Names
Thumbnails
Scale
Thumbnail Edit Mode
Real-Time Thumbnails
View Options
None
None
8 Array elements

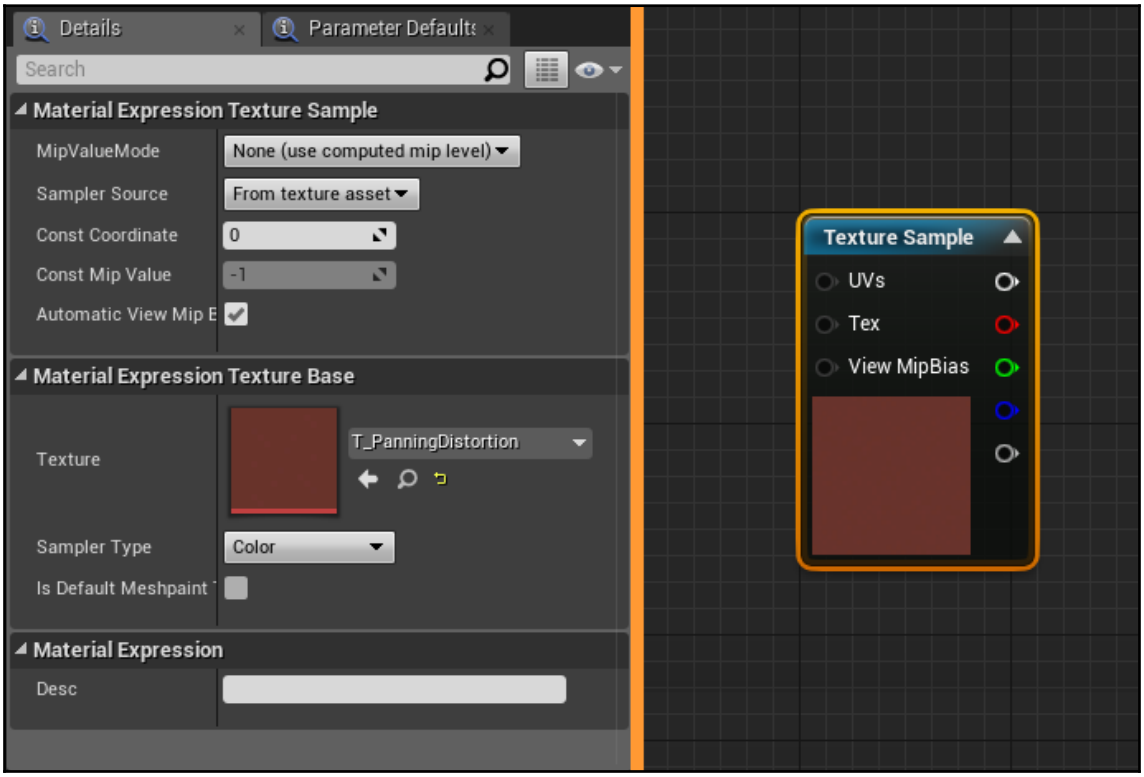


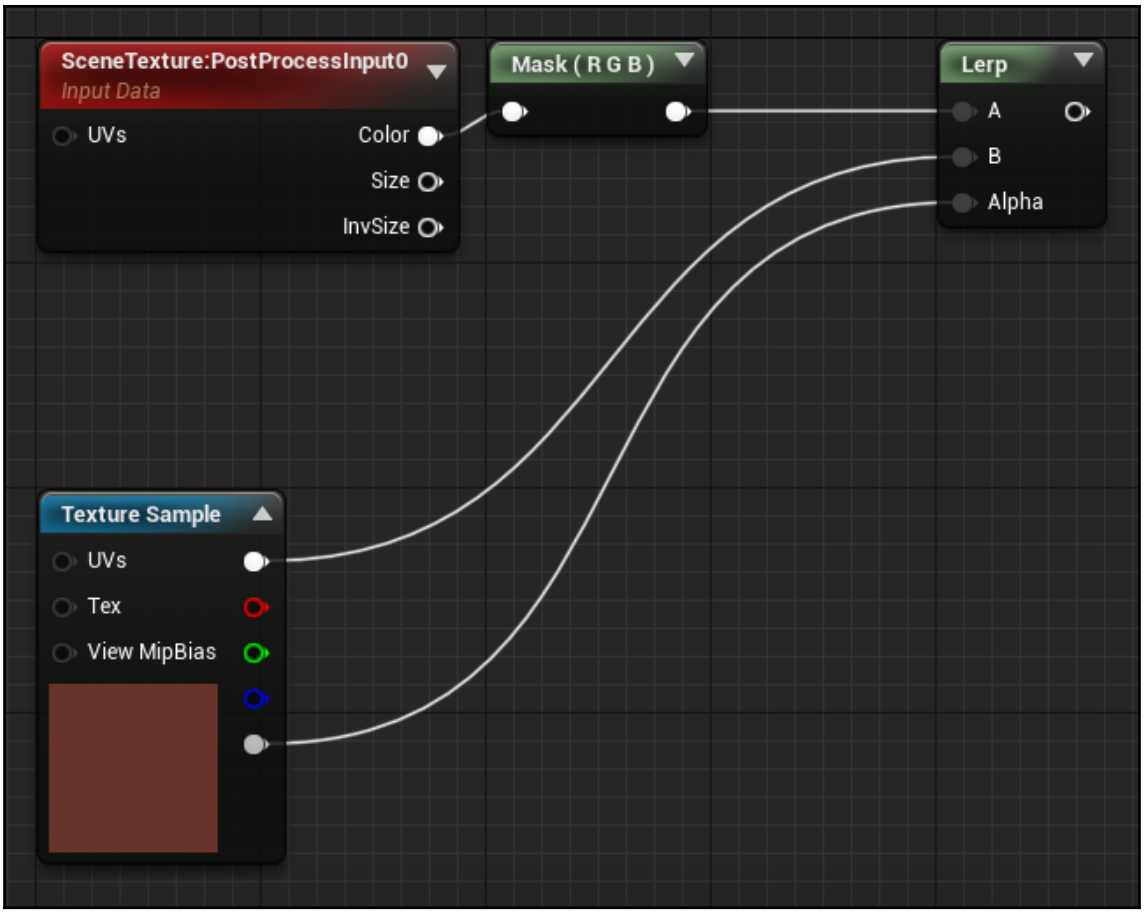

Rendering Features
Post Process Materials
Array
1 Array elements
Choose

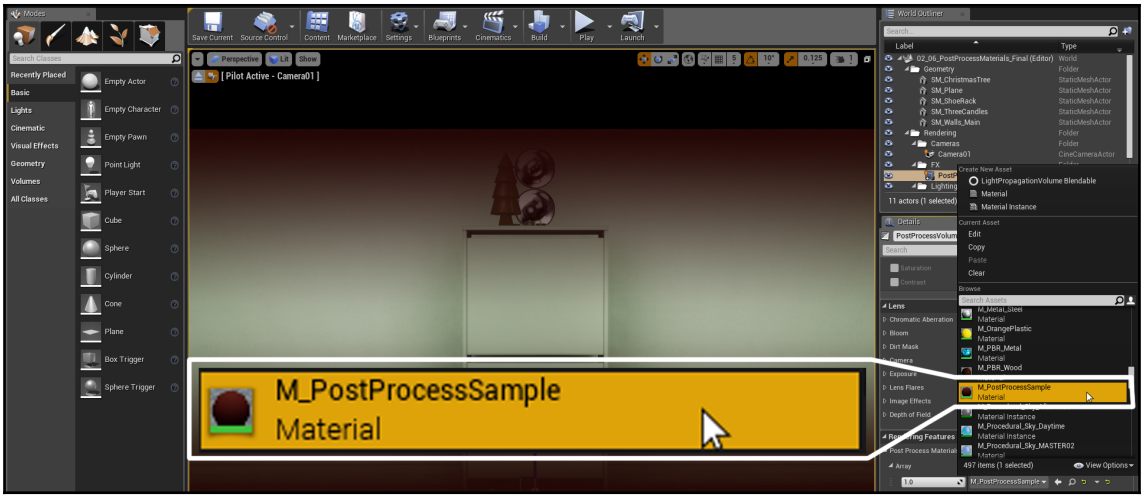

Details
Parameter Defaults
Search
Physical Material
Phys Material
None
None
Material
Material Domain
Post Process
Blend Mode
Surface
Deferred Decal
Light Function
Volume
Post Process
User Interface
Decal Blend Mode
Shading Model
Two Sided
Use Material Attribute
Subsurface Profile
None
None
Translucency
M_PostProcessSample
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset

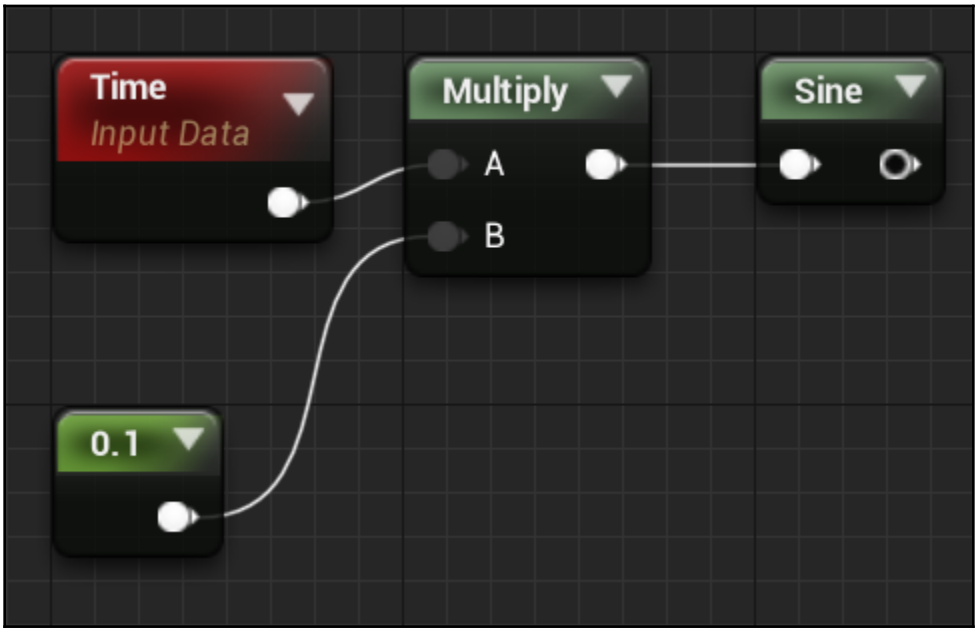

scene tex
Coordinates
SceneTexelSize
Misc
SceneTextureAverage
SpiralBlur-SceneTexture
SpiralBlur-SceneTexture
Texture
SceneColor
SceneTexture
Texturing
SpiralBlur-SceneTexture
Details
Parameter Defaults
Search
UMaterial Expression Scene Texture
Scene Texture Id
PostProcessInput0
Filtered
Material Expression
Desc
PostProcessInput0
SceneTexture:PostProcessInput0
Input Data
UVs
Color
Size
InvSize
Stats
Find Results
Base pass shader without light map: 29 instructions
Base pass vertex shader: 32 instructions
Texture samplers: 0/16
2

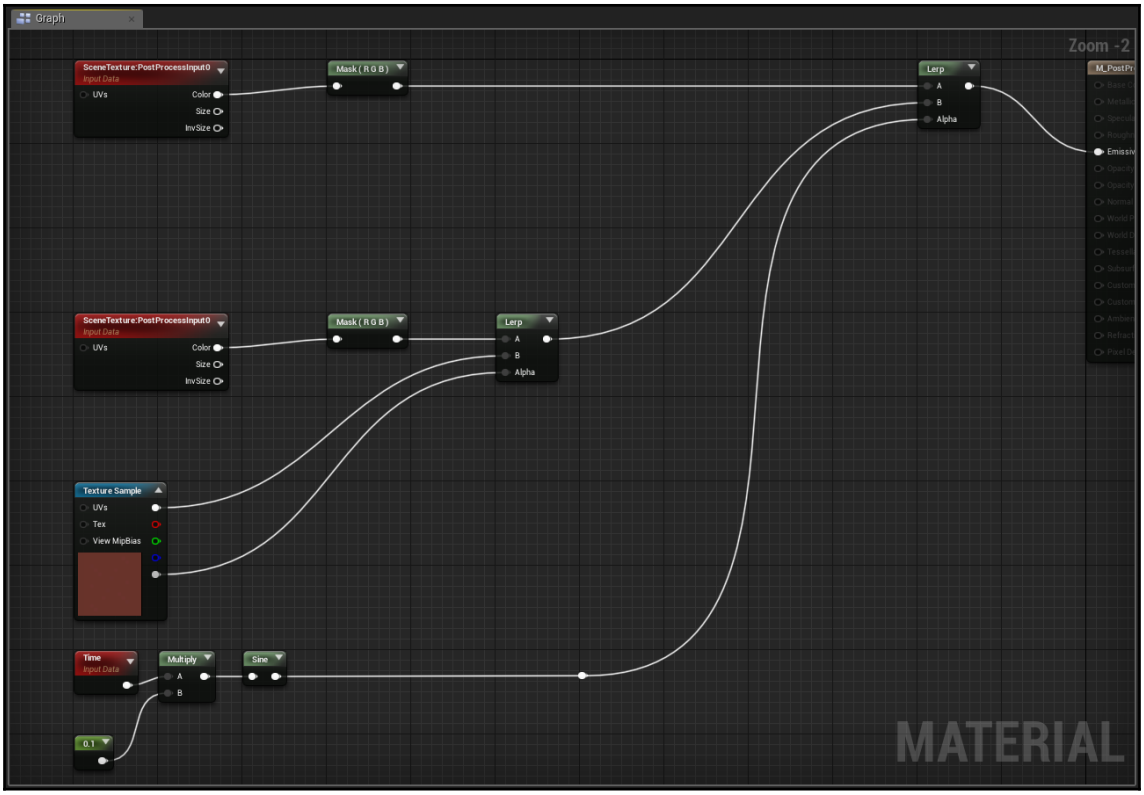

componen
Math
AddComponents
ComponentMask
Misc
AddComponents
BreakOutFloat2Components
BreakOutFloat3Components
BreakOutFloat4Components
ComponentBasisVectors
ComponentPivotLocation
SplitComponents
Parameters
1
Details
Search
Material Expression Component Mask
R
G
B
A
Material Expression
Desc
SceneTexture:PostProcessInput0
Input Data
UVs
Color
Size
InvSize
Mask (R G B)
2

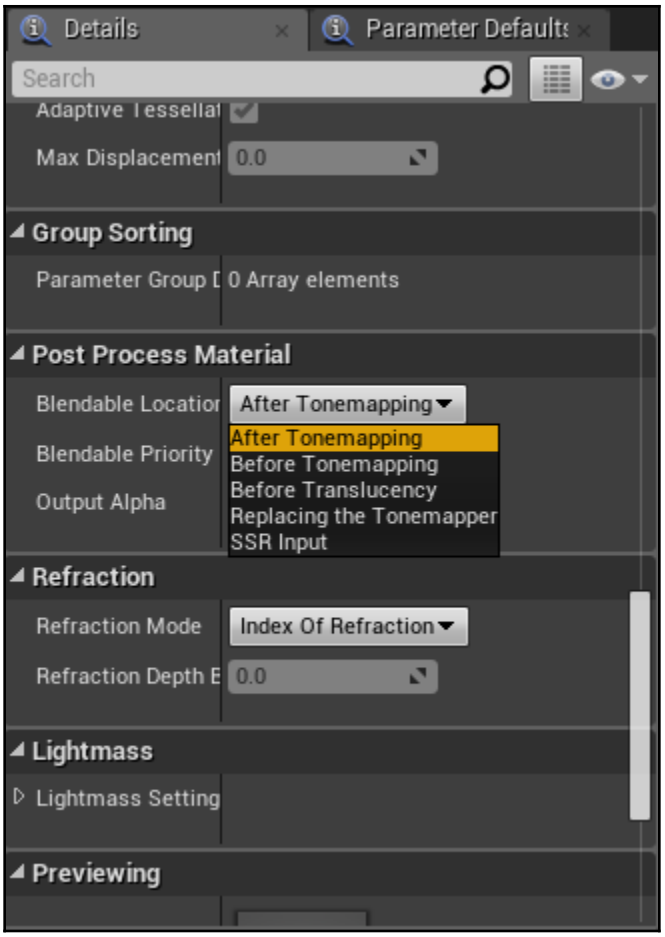

Details
Parameter Defaults
Search
Material Expression Texture Sample
MipValueMode
None (use computed mip level)
Sampler Source
From texture asset
Const Coordinate
0
Const Mip Value
-1
Automatic View Mip E
Material Expression Texture Base
Texture
T_PanningDistortion
Sampler Type
Color
Is Default Meshpaint
Material Expression
Desc
Texture Sample
UVs
Tex
View MipBias

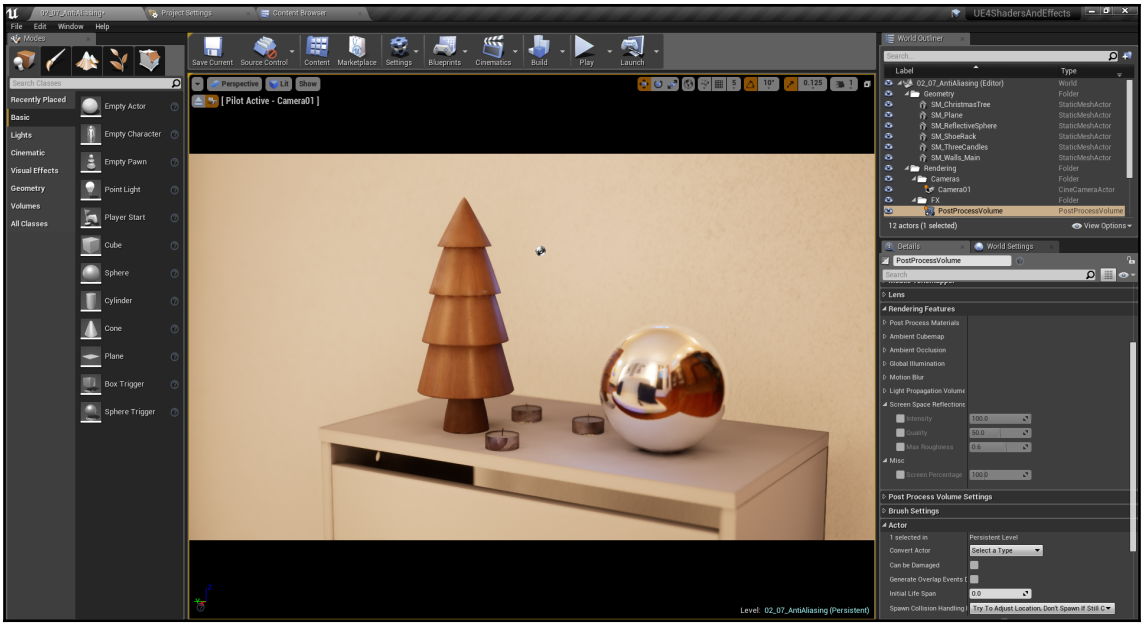

SceneTexture:PostProcessInput0
Input Data
UVs
Color
Size
InvSize
Mask (R G B)
Lerp
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias

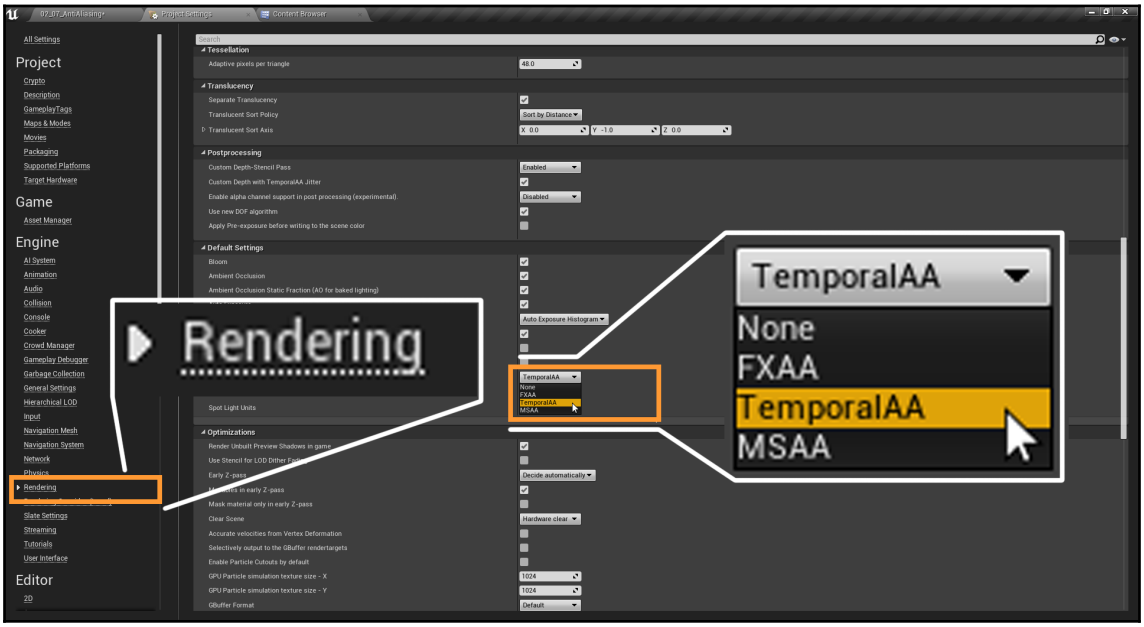

M_PostProcessSample
Material

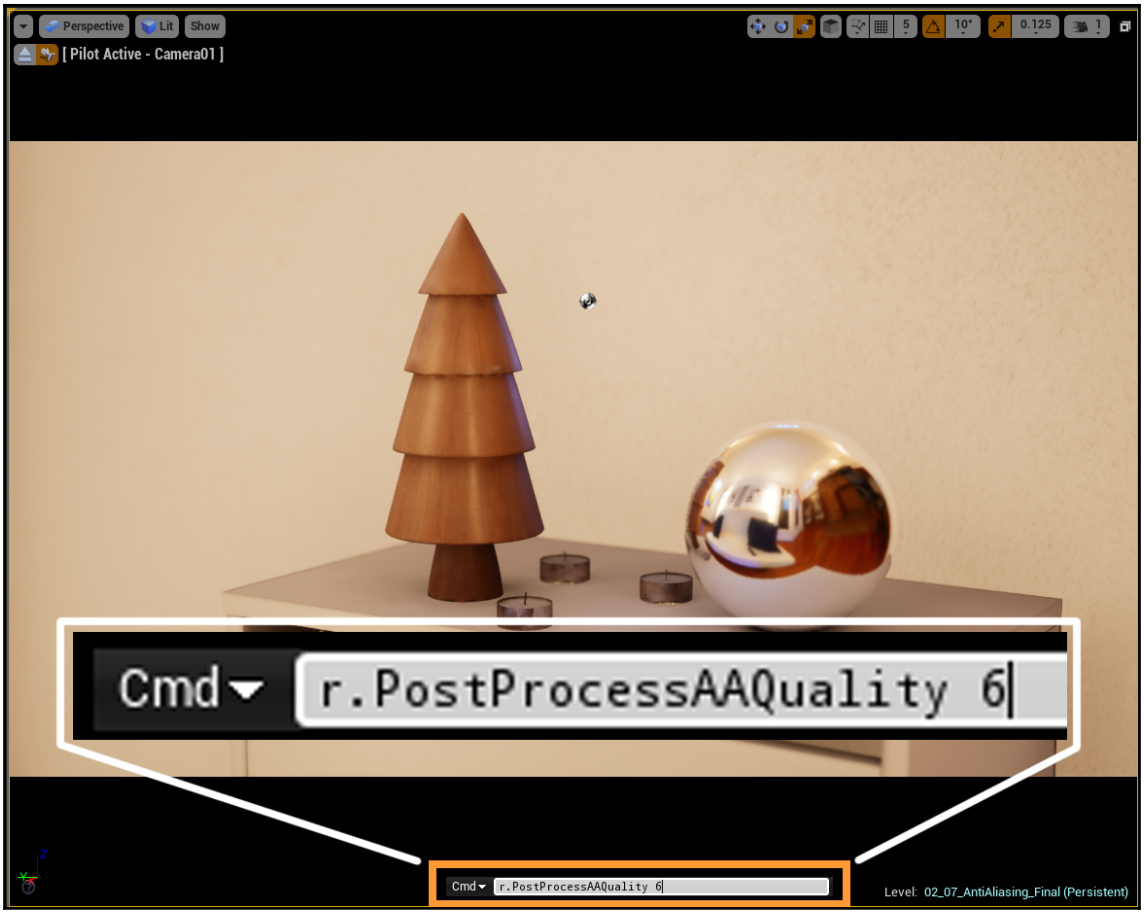

Time
Input Data
Multiply
A
B
Sine
0.1

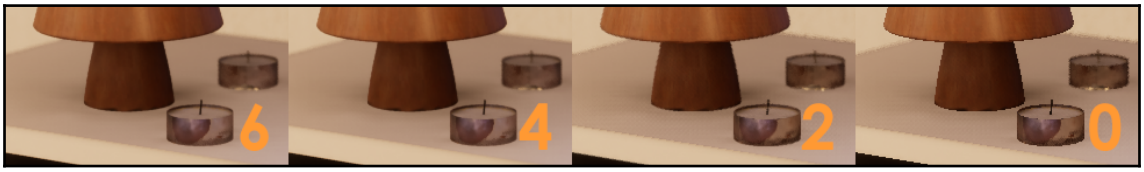

Graph
Zoom -2
SceneTexture:PostProcessInput0
Input Data
UVs
Color
Size
InvSize
Mask (R G B)
Lerp
A
B
Alpha
Texture Sample
Tex
View MipBias
Time
Multiply
Sine
0.1
MATERIAL

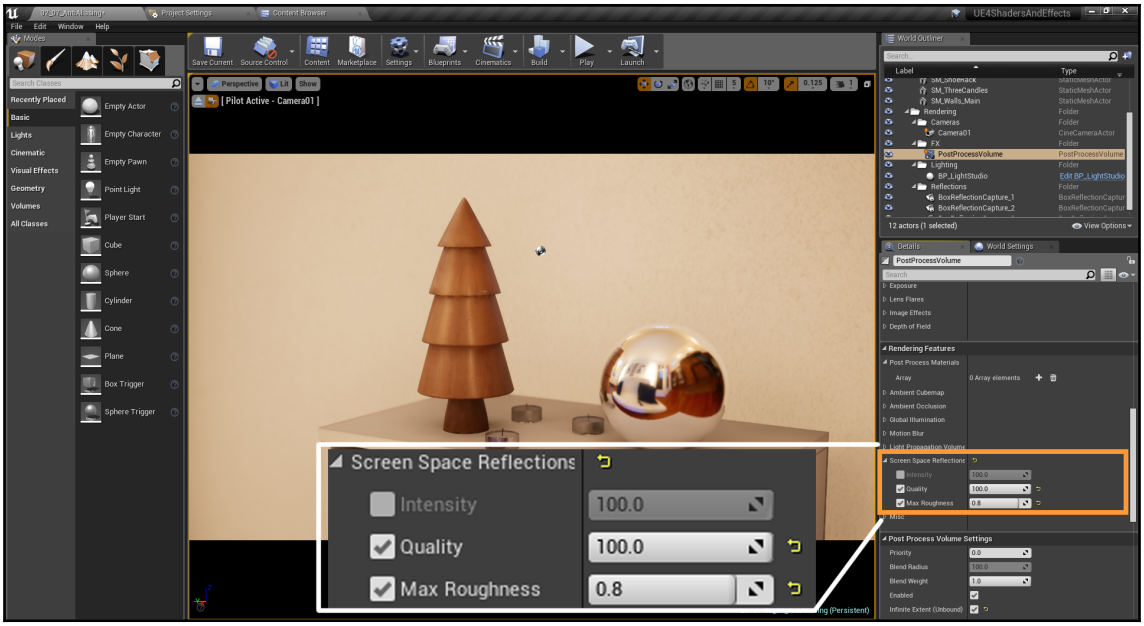

Details
Parameter Defaults
Search
Adaptive Tessellat
Max Displacement
0.0
Group Sorting
Parameter Group D
0 Array elements
Post Process Material
Blendable Locatior
After Tonemapping
Blendable Priority
Output Alpha
After Tonemapping
Before Tonemapping
Before Translucency
Replacing the Tonemapper
SSR Input
Refraction
Refraction Mode
Index Of Refraction
Refraction Depth E
0.0
Lightmass
Lightmass Setting
Previewing

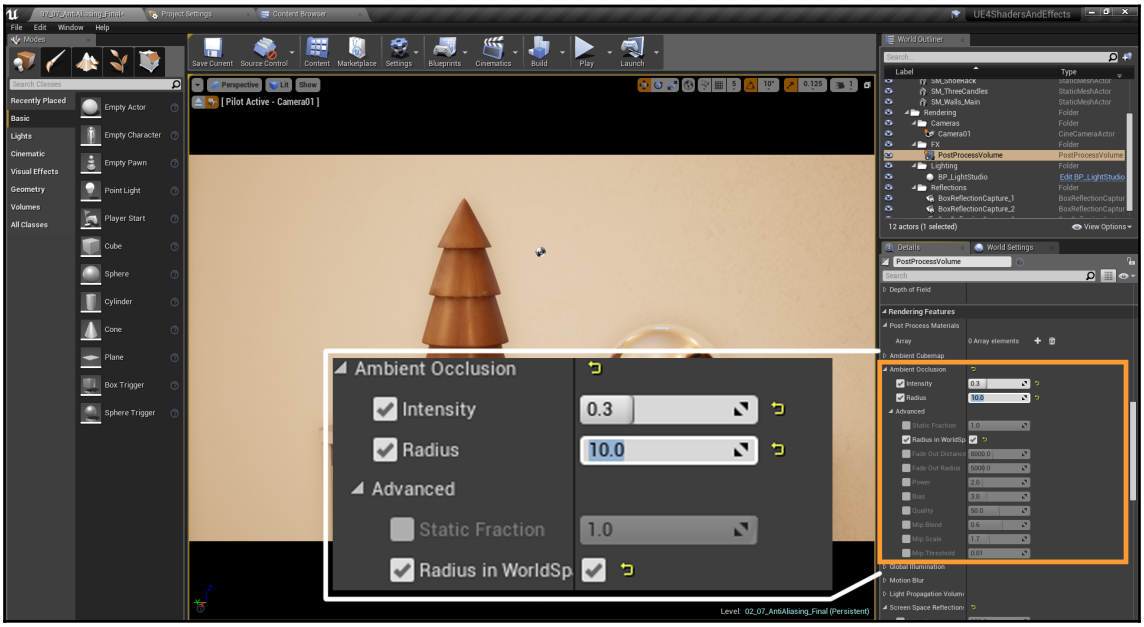

UE4ShadersAndEffects
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
[Pilot Active - Camera01]
Level: 02_07_AntiAliasing (Persistent)

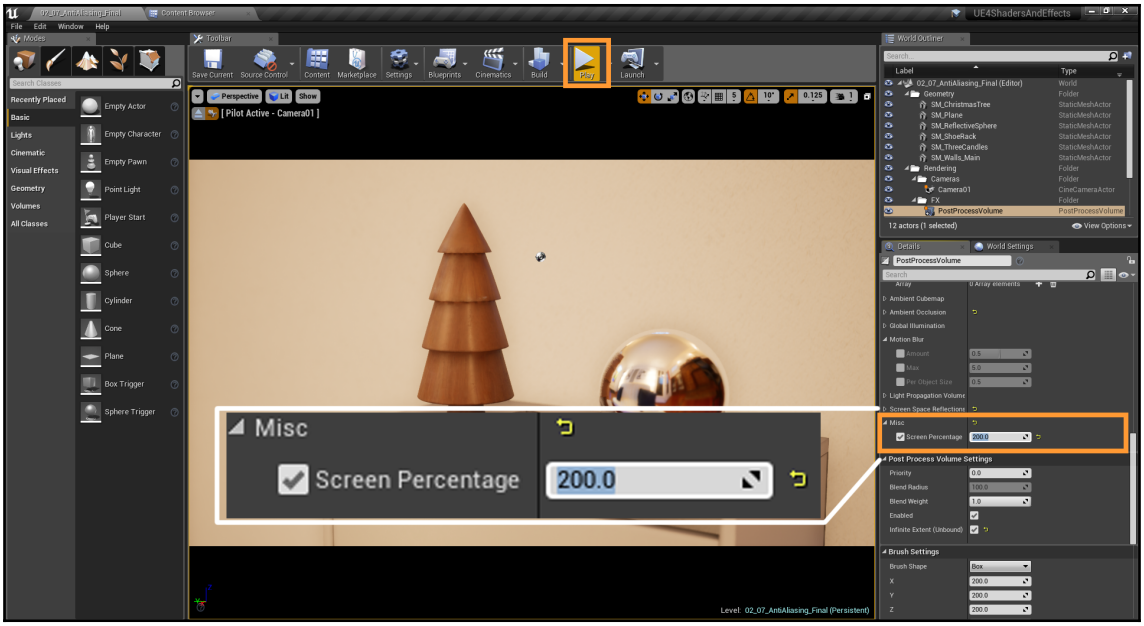

Rendering
TemporalAA
None
FXAA
TemporalAA
MSAA

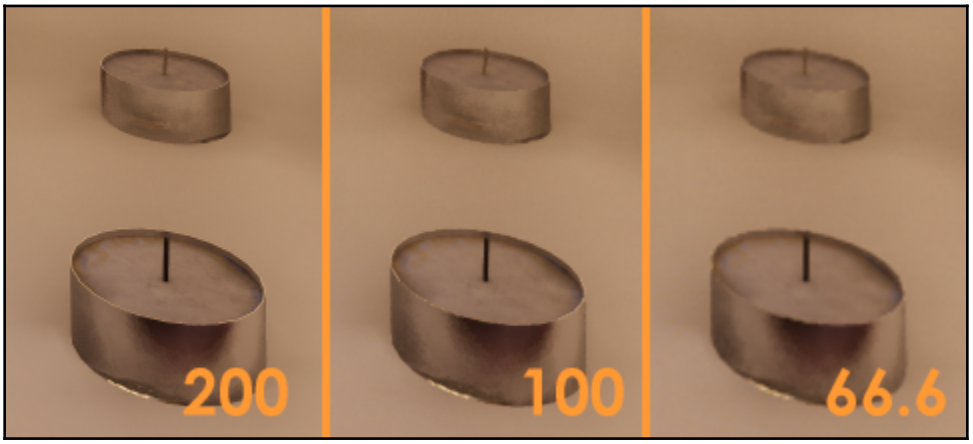

Perspective
Lit
Show
[Pilot Active - Camera01]
Cmd
r.PostProcessAAQuality 6
Level: 02_07_AntiAliasing_Final (Persistent)


6
4
2
0

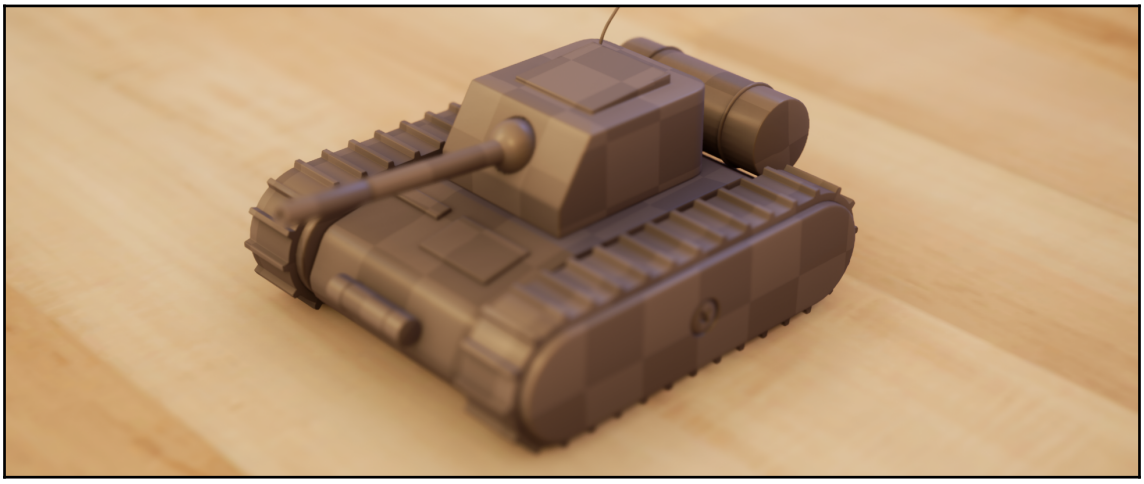

Screen Space Reflections
Intensity
100.0
Quality
100.0
Max Roughness
0.8

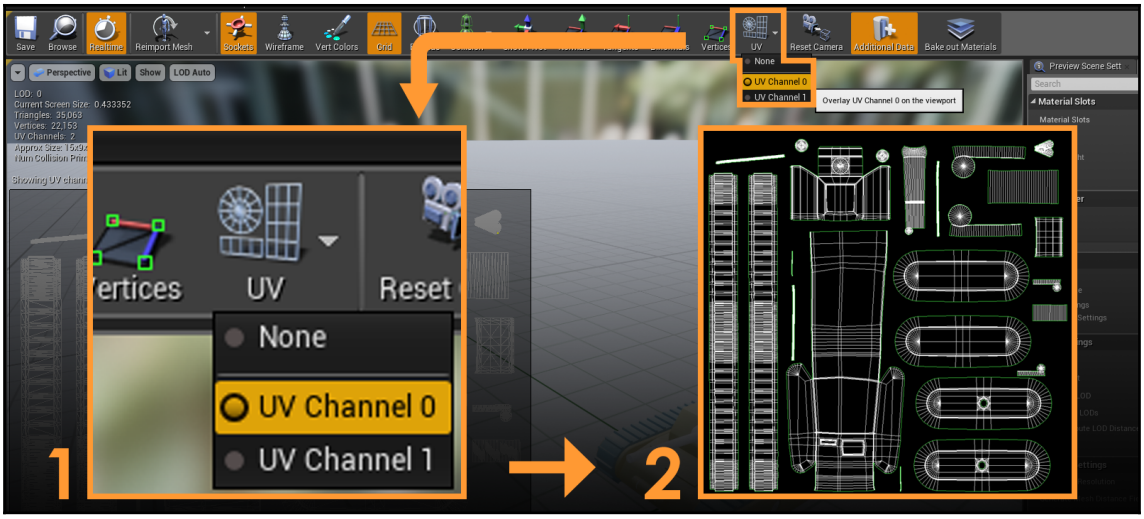

Ambient Occlusion
Intensity
0.3
Radius
10.0
Advanced
Static Fraction
1.0
Radius in WorldSp

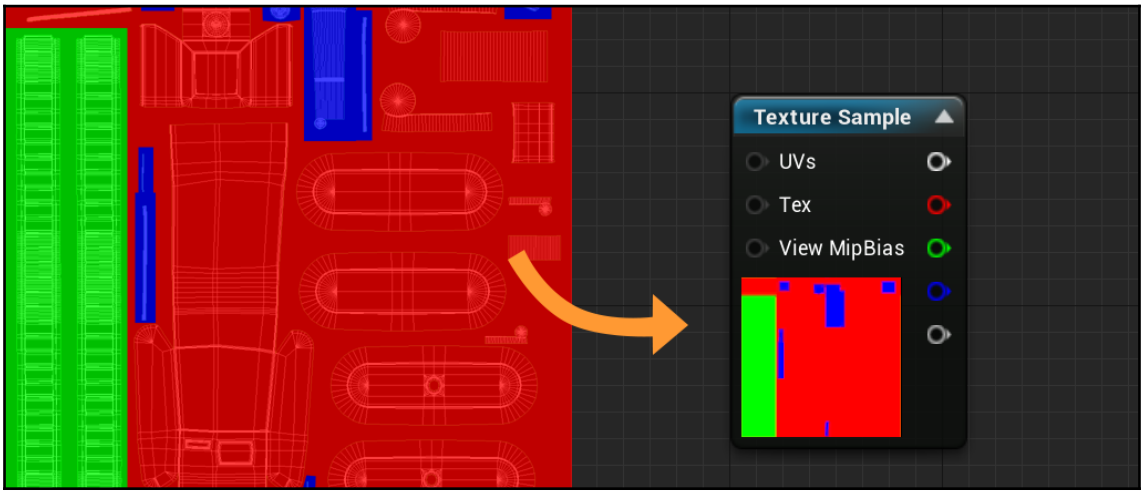

Misc
Screen Percentage
200.0

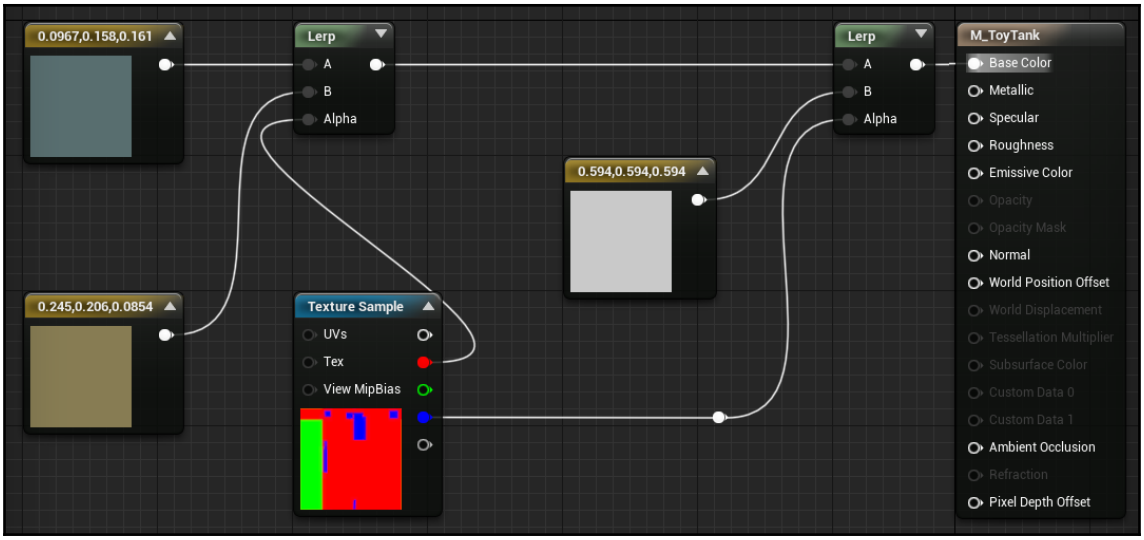

200
100
66.6

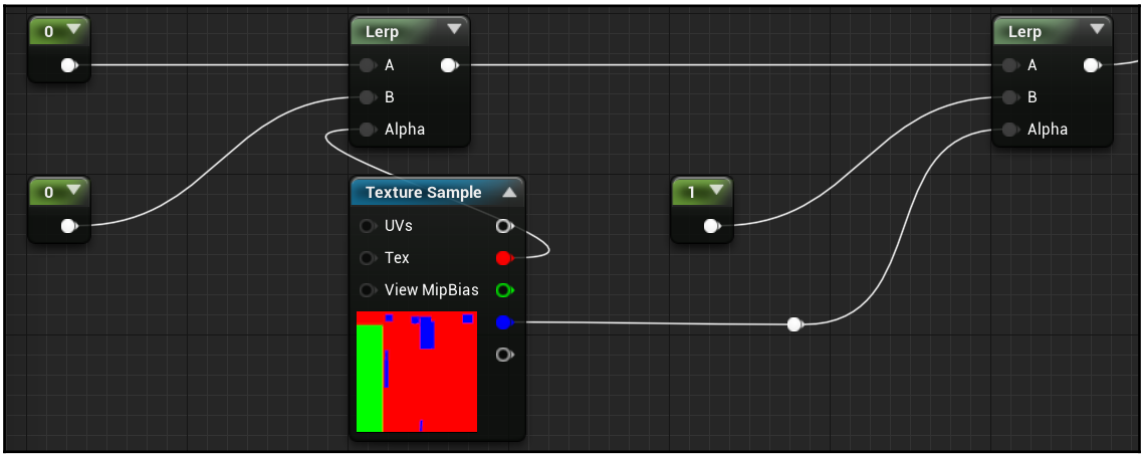
Chapter 3: Opaque Materials and Texture Mapping

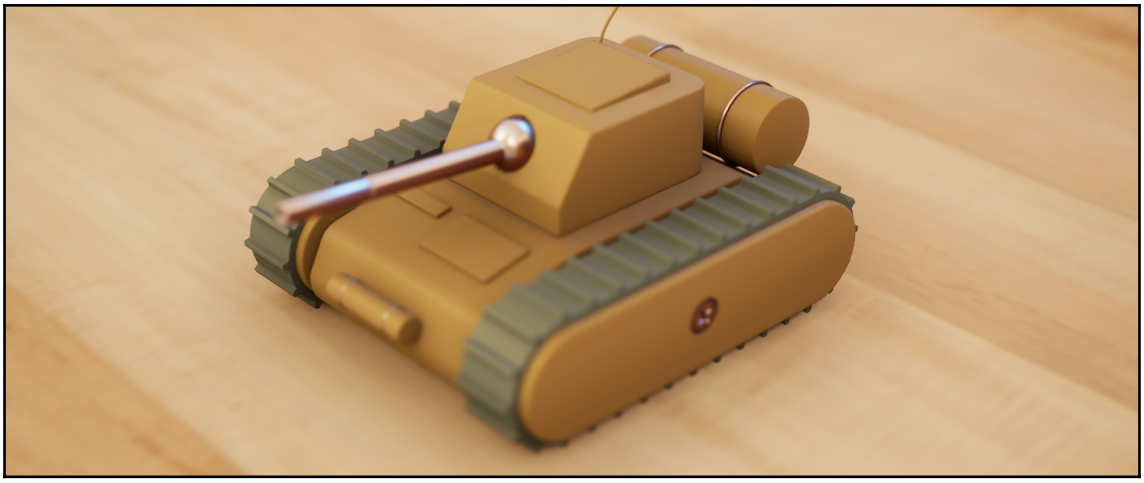


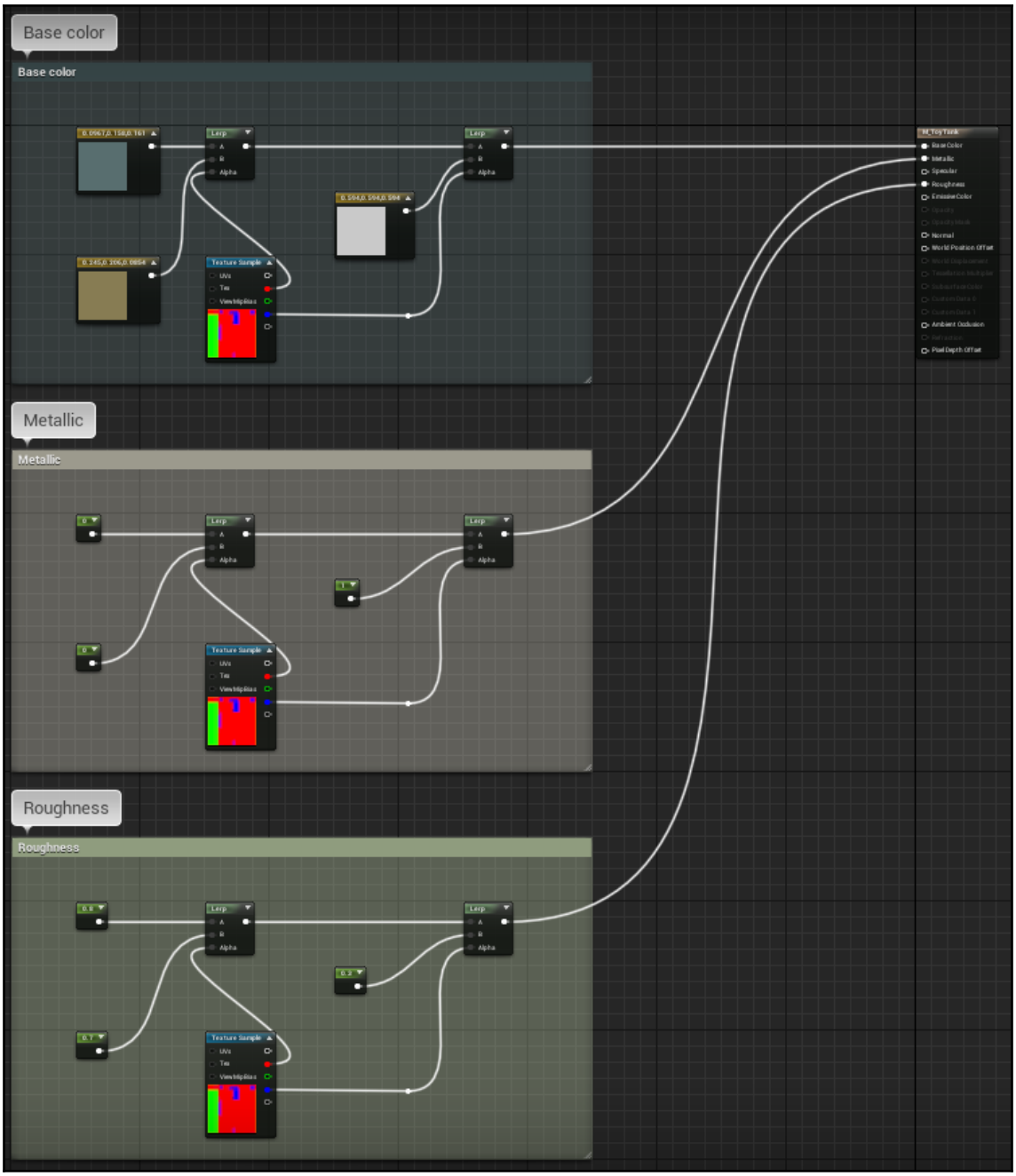

Save
Browse
Realtime
Reimport Mesh
Sockets
Wireframe
Vert Colors
Grid
Vertices
UV
Reset Camera
Additional Data
Bake out Materials
Perspective
Lit
Show
LOD Auto
None
UV Channel 0
UV Channel 1
Overlay UV Channel 0 on the viewport
Preview Scene Sett
Material Slots
ertices
UV
Reset
None
UV Channel 0
UV Channel 1
1
2

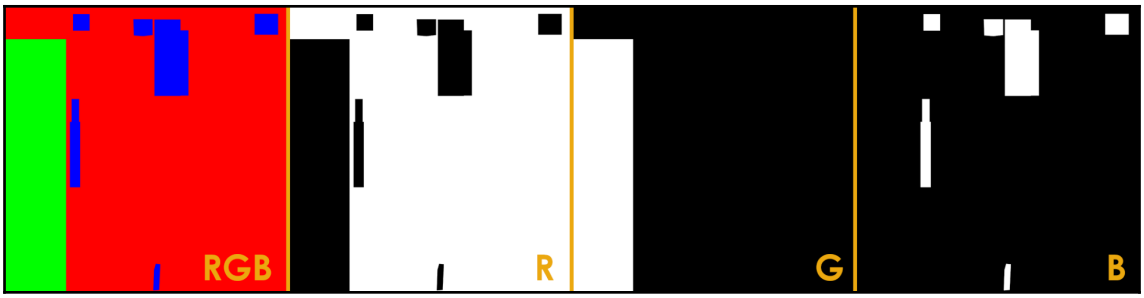

Texture Sample
UVs
Tex
View MipBias

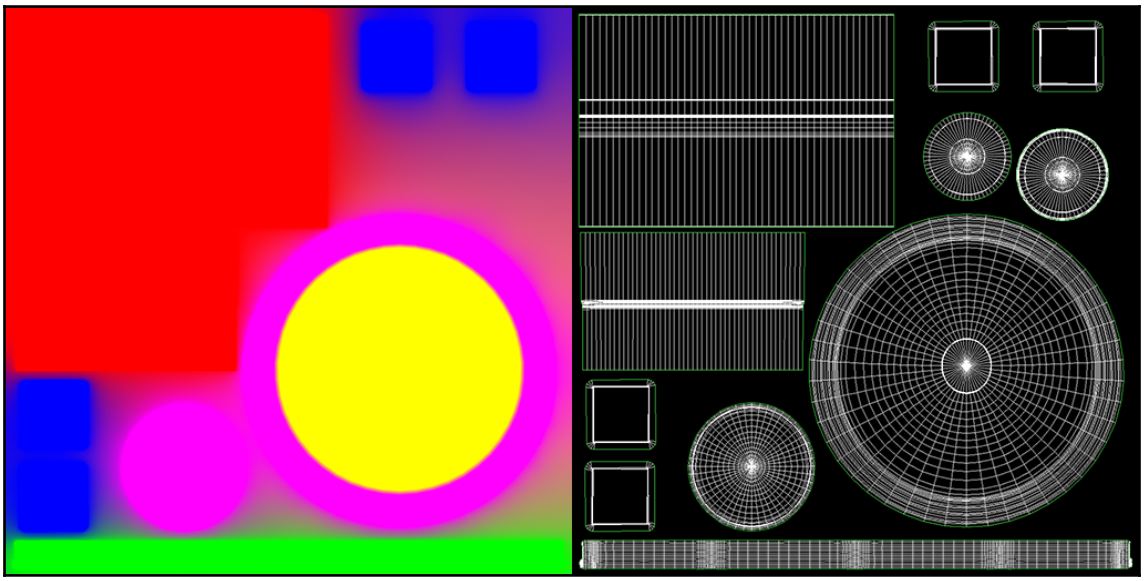

0.0967,0.158,0.161
Lerp
A
B
Alpha
Lerp
A
B
Alpha
M_ToyTank
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
0.594,0.594,0.594
0.245,0.206,0.0854
Texture Sample
UVs
Tex
View MipBias

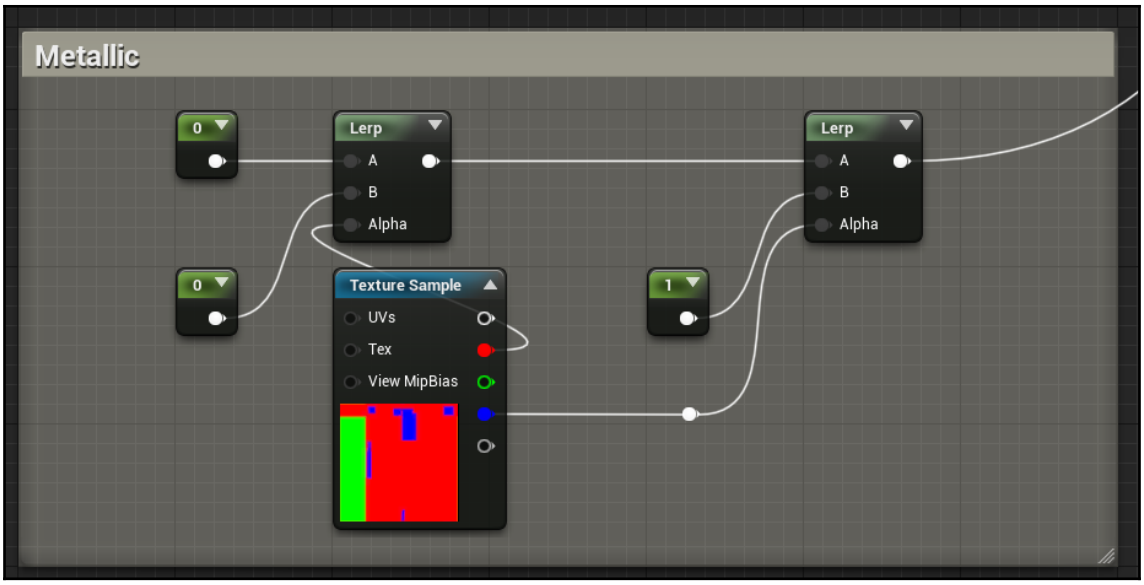

0
Lerp
A
B
Alpha
Lerp
A
B
Alpha
0
Texture Sample
UVs
Tex
View MipBias
1

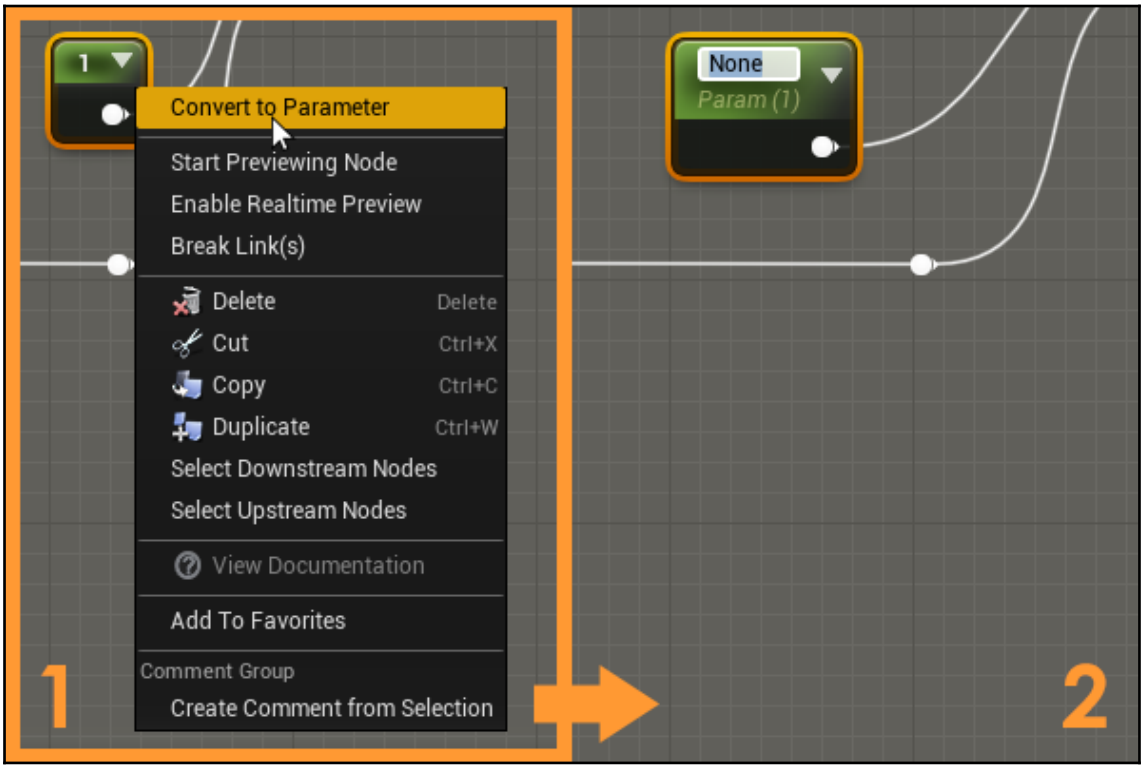


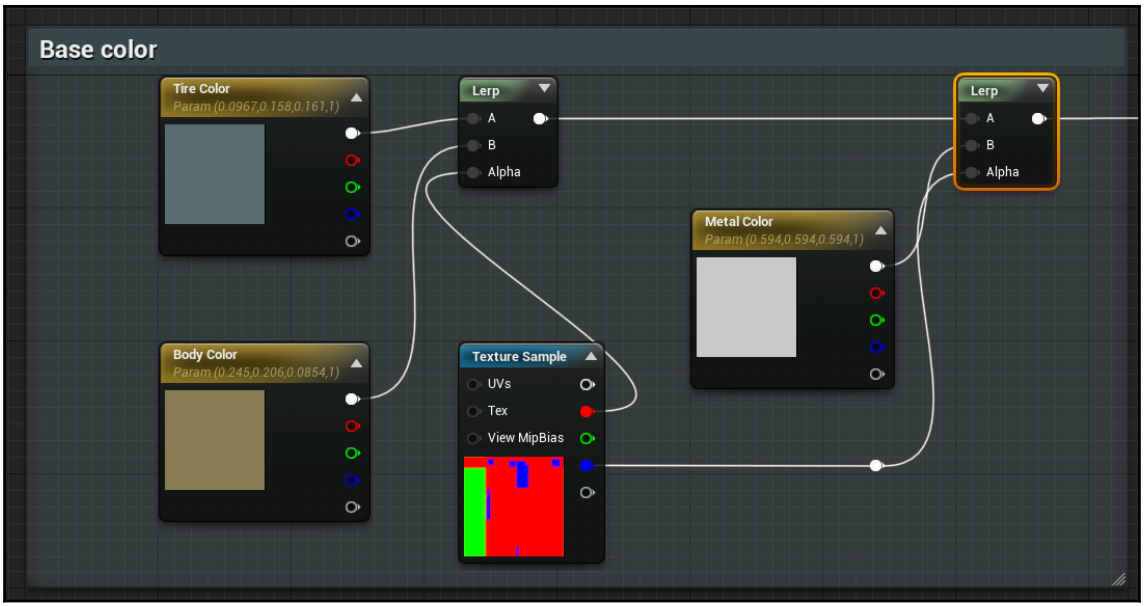

Base color
Base color
Lerp
Lerp
Texture Sample
M_ToyTank
Base Color
Metallic
Specular
Roughness
Emissive Color
Normal
World Position Offset
Ambient Occlusion
Pixel Depth Offset
Metallic
Metallic
Lerp
Lerp
Texture Sample
Roughness
Roughness
Lerp
Lerp
Texture Sample

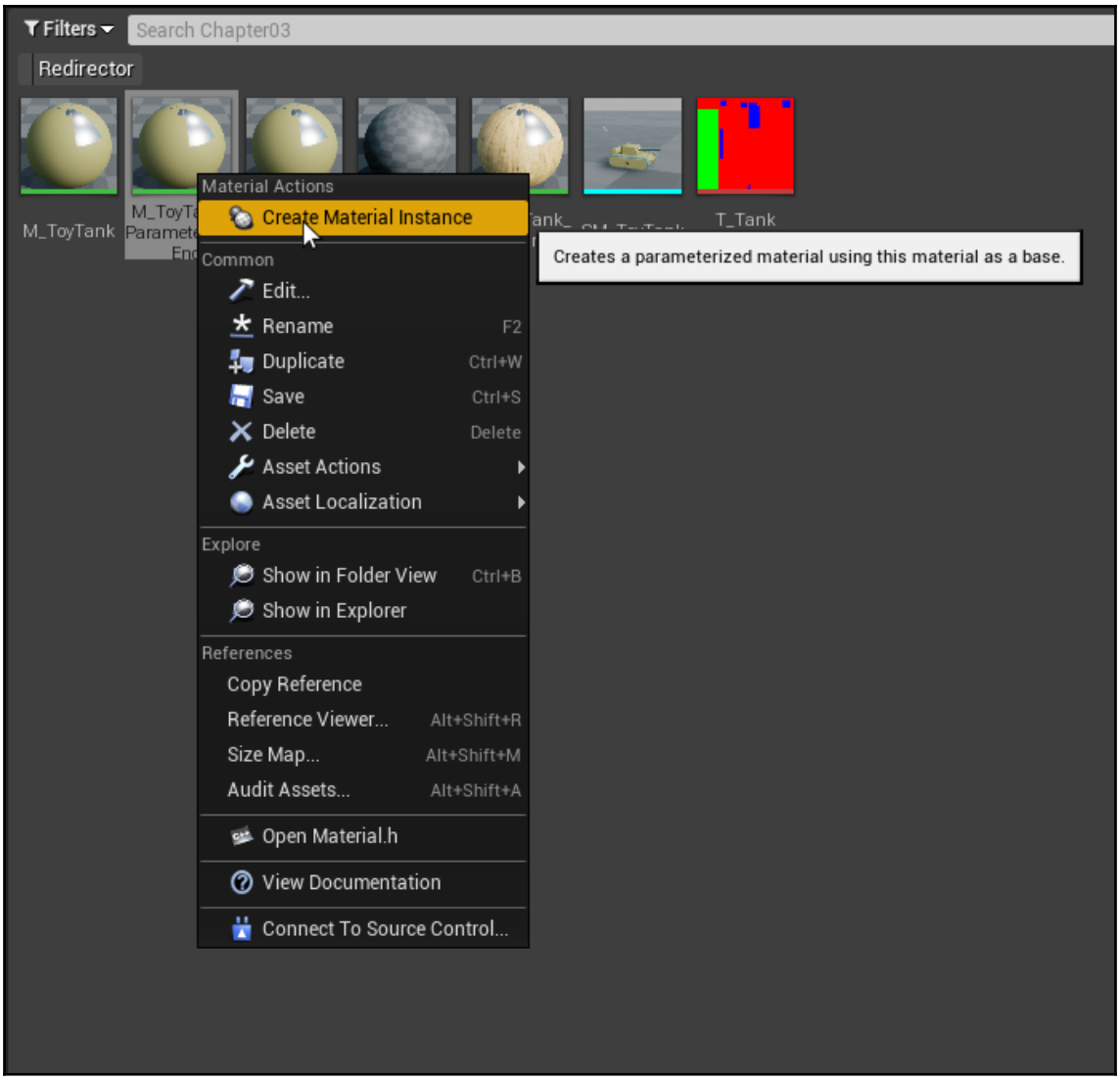

RGB
R
G
B

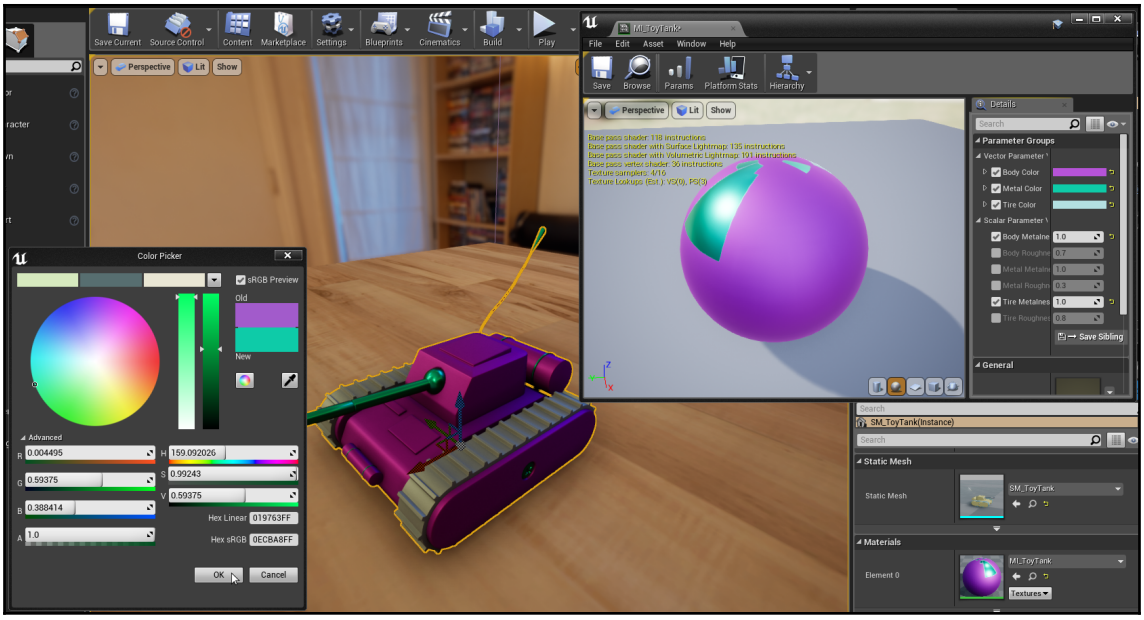


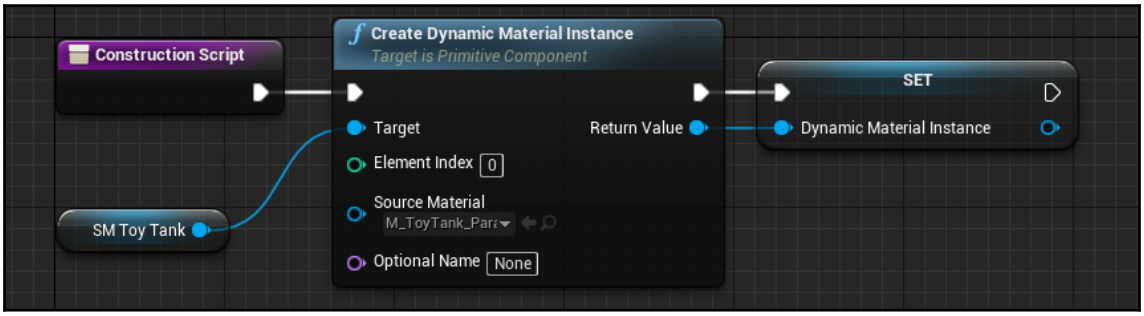

Metallic
0
Lerp
A
B
Alpha
Lerp
A
B
Alpha
0
Texture Sample
UVs
Tex
View MipBias
1

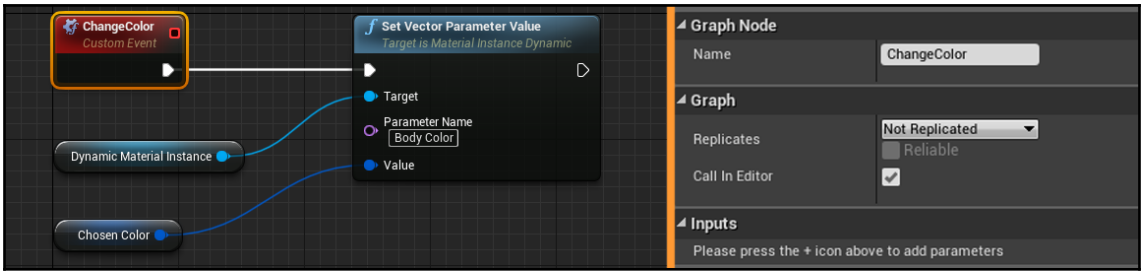

1
Convert to Parameter
Start Previewing Node
Enable Realtime Preview
Break Link(s)
Delete Delete
Cut Ctrl+X
Copy Ctrl+C
Duplicate Ctrl+W
Select Downstream Nodes
Select Upstream Nodes
View Documentation
Add To Favorites
Comment Group
Create Comment from Selection
None
Param (1)
1
2

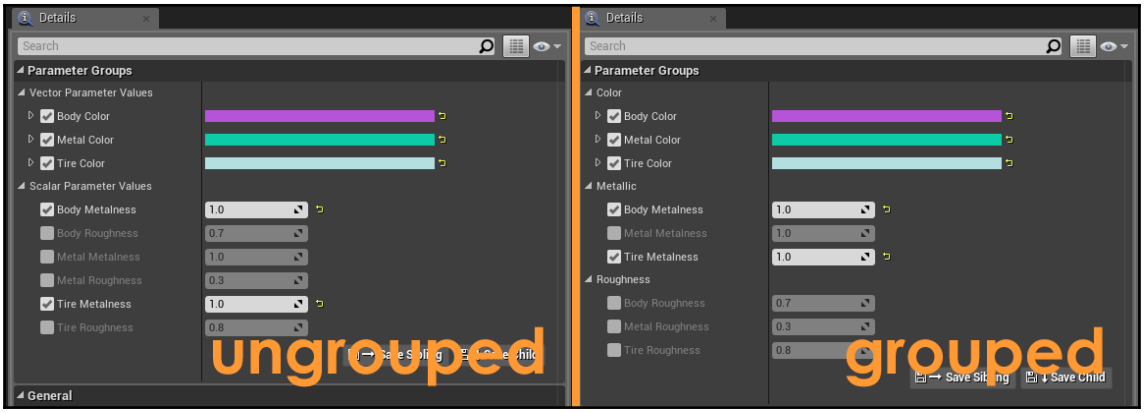

Base color
Tire Color
Param (0.0967,0.158,0.161,1)
Lerp
A
B
Alpha
Lerp
A
B
Alpha
Metal Color
Param (0.594,0.594,0.594,1)
Body Color
Param (0.245,0.206,0.0854,1)
Texture Sample
UVs
Tex
View MipBias

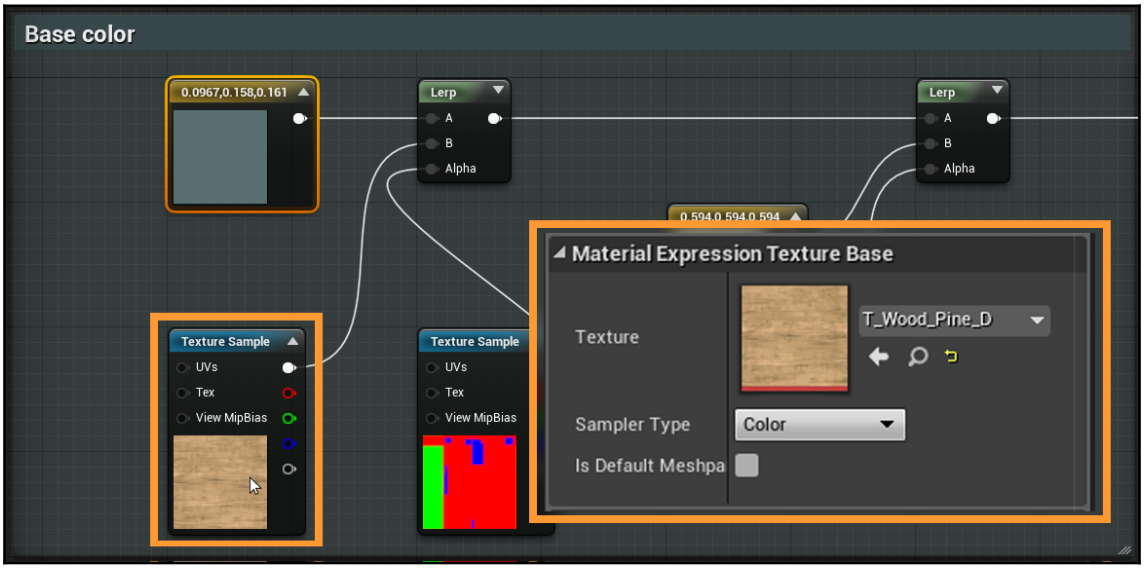

Filters
Search Chapter03
Redirector
M_ToyTank
T_Tank
Material Actions
Create Material Instance
Common
Edit...
Rename F2
Duplicate Ctrl+W
Save Ctrl+S
Delete Delete
Asset Actions
Asset Localization
Explore
Show in Folder View Ctrl+B
Show in Explorer
References
Copy Reference
Reference Viewer... Alt+Shift+R
Size Map... Alt+Shift+M
Audit Assets... Alt+Shift+A
Open Material.h
View Documentation
Connect To Source Control...
Creates a parameterized material using this material as a base.

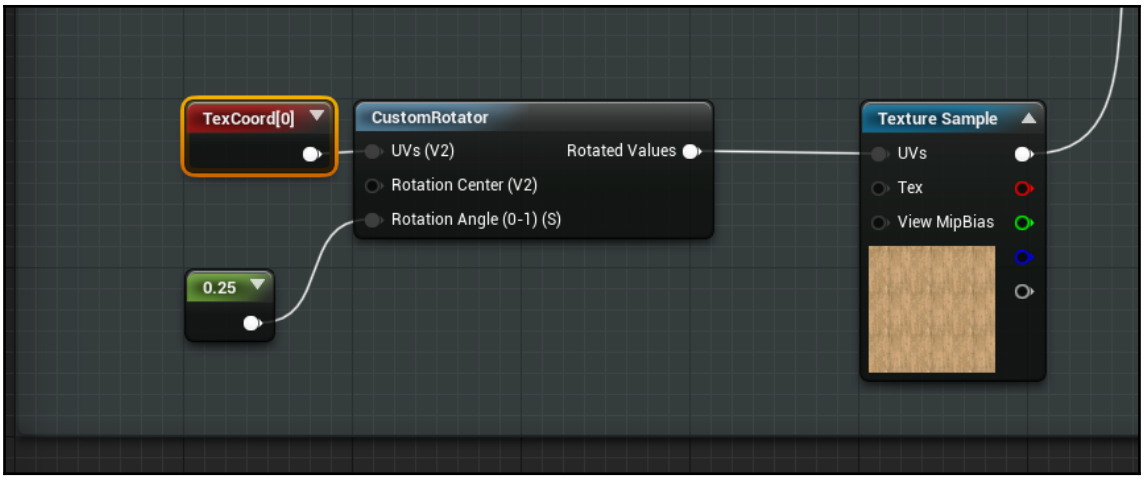

Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Perspective
Lit
Show
Color Picker
sRGB Preview
Old
New
Advanced
Hex Linear
Hex sRGB
OK
Cancel
M_ToyTank*
File
Edit
Asset
Window
Help
Save
Browse
Params
Platform Stats
Hierarchy
Details
Parameter Groups
Vector Parameter
Body Color
Metal Color
Tire Color
Scalar Parameter
Body Metalne
Tire Metalnes
Save Sibling
General
SM_ToyTank(Instance)
Static Mesh
SM_ToyTank
Materials
Element 0
M_ToyTank
Textures

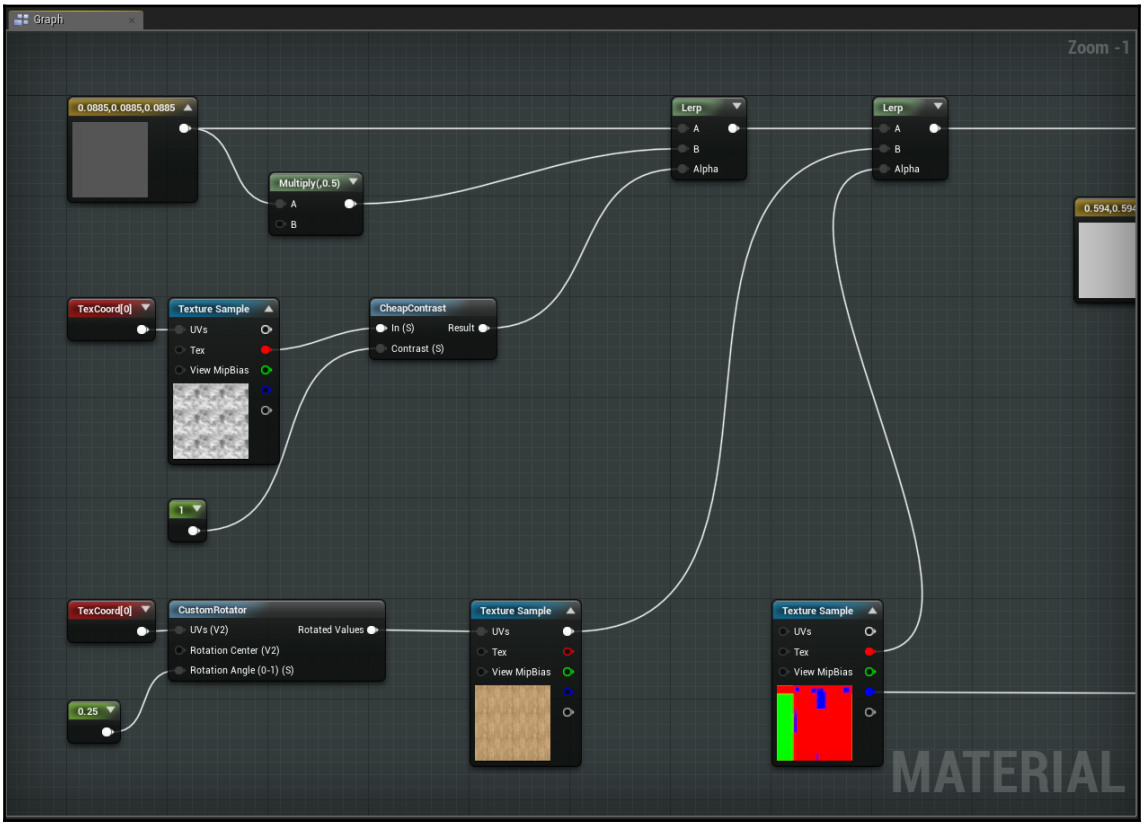

Construction Script
Create Dynamic Material Instance
Target is Primitive Component
Target
Element Index
0
Source Material
M_ToyTank_Para
Optional Name
None
Return Value
SET
Dynamic Material Instance
SM Toy Tank

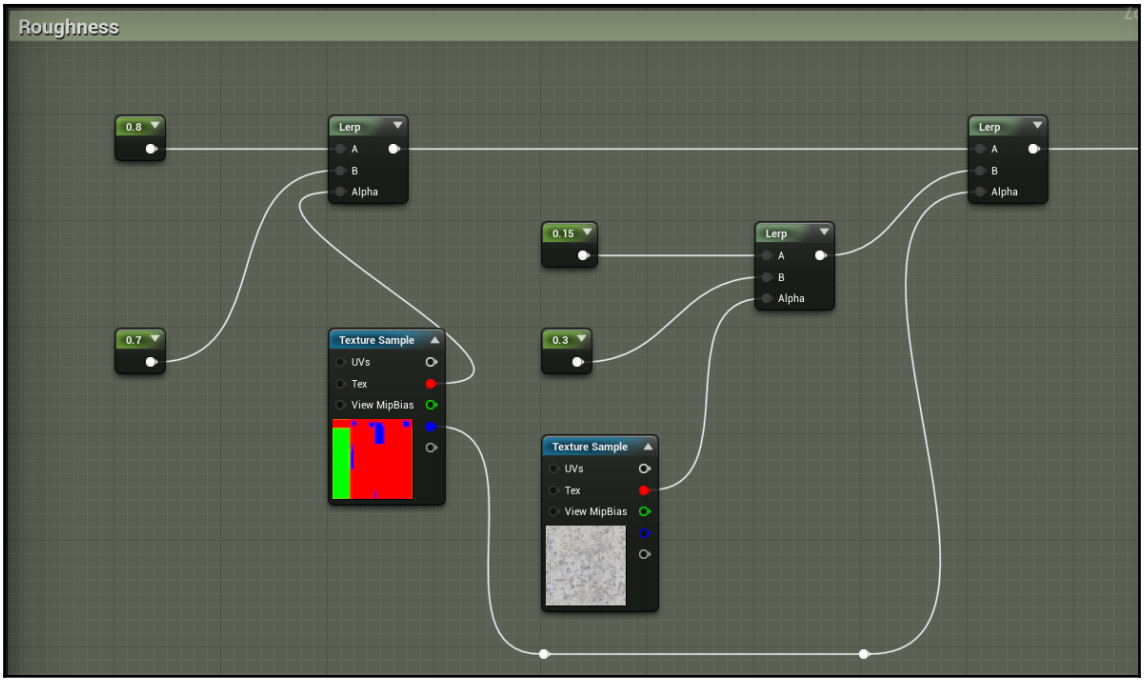

ChangeColor
Custom Event
Set Vector Parameter Value
Target is Material Instance Dynamic
Target
Parameter Name
Body Color
Value
Dynamic Material Instance
Chosen Color
Graph Node
Name
ChangeColor
Graph
Replicates
Not Replicated
Reliable
Call In Editor
Inputs
Please press the + icon above to add parameters

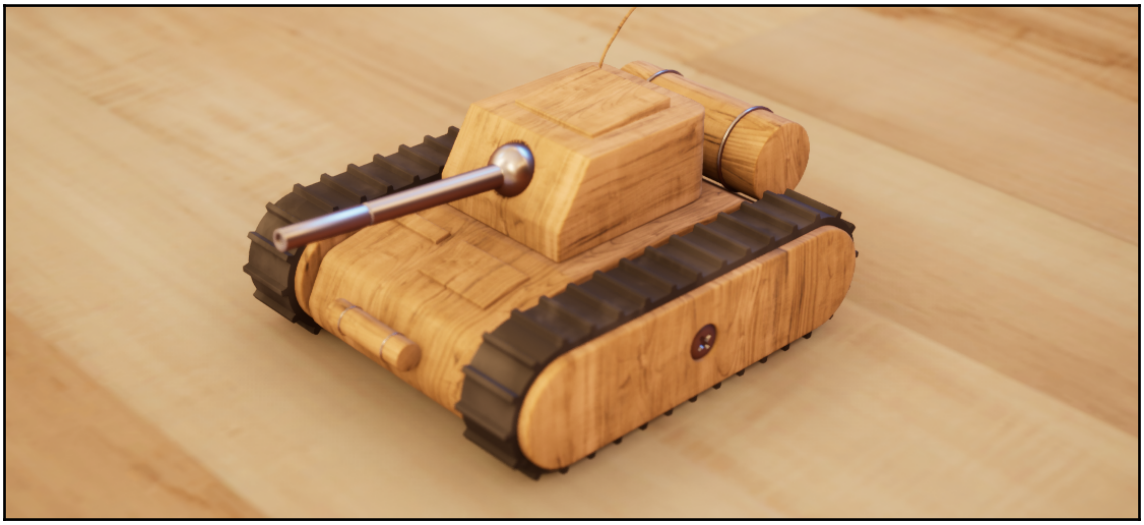

Details
Search
Parameter Groups
Vector Parameter Values
Body Color
Metal Color
Tire Color
Scalar Parameter Values
Body Metalness
Body Roughness
Metal Metalness
Metal Roughness
Tire Metalness
Tire Roughness
General
ungrouped
Details
Search
Parameter Groups
Color
Body Color
Metal Color
Tire Color
Metallic
Body Metalness
Metal Metalness
Tire Metalness
Roughness
Body Roughness
Metal Roughness
Tire Roughness
grouped

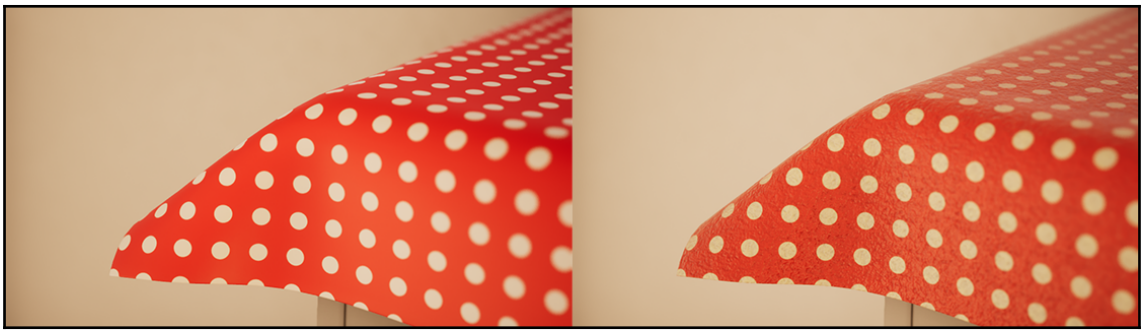

Base color
0.0967,0.158,0.161
Lerp
A
B
Alpha
Lerp
A
B
Alpha
0.594,0.594,0.594
Material Expression Texture Base
Texture
T_Wood_Pine_D
Sampler Type
Color
Is Default Meshpa
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias

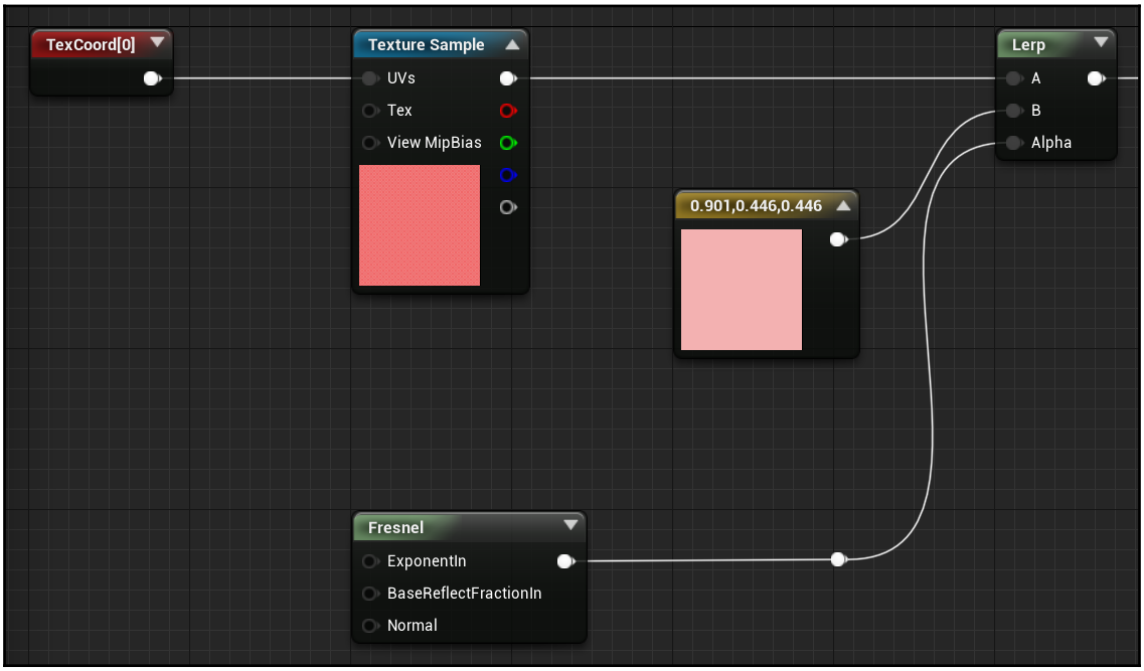

TexCoord[0]
CustomRotator
UVs (V2)
Rotated Values
Rotation Center (V2)
Rotation Angle (0-1) (S)
0.25
Texture Sample
UVs
Tex
View MipBias

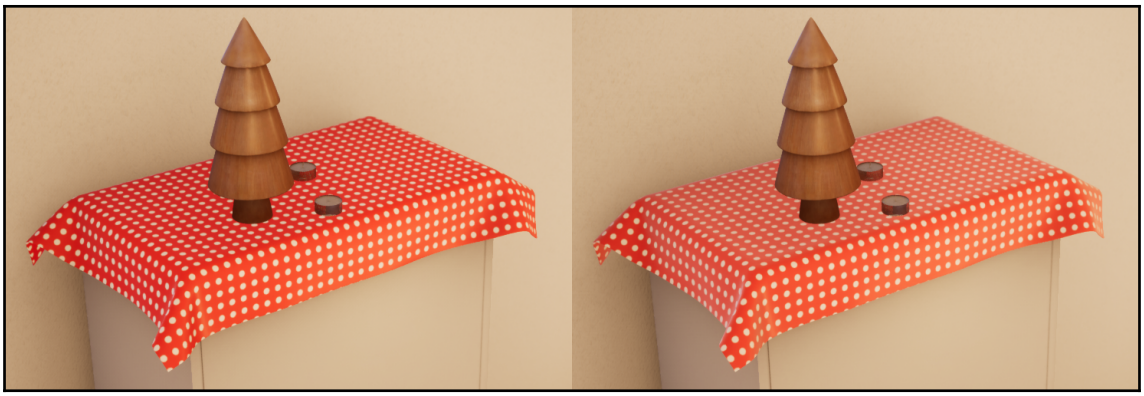

Graph
Zoom -1
0.0885,0.0885,0.0885
Multiply(,0.5)
A
B
Lerp
Alpha
TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
1
CustomRotator
Rotation Center (V2)
Rotation Angle (0-1) (S)
0.25
MATERIAL

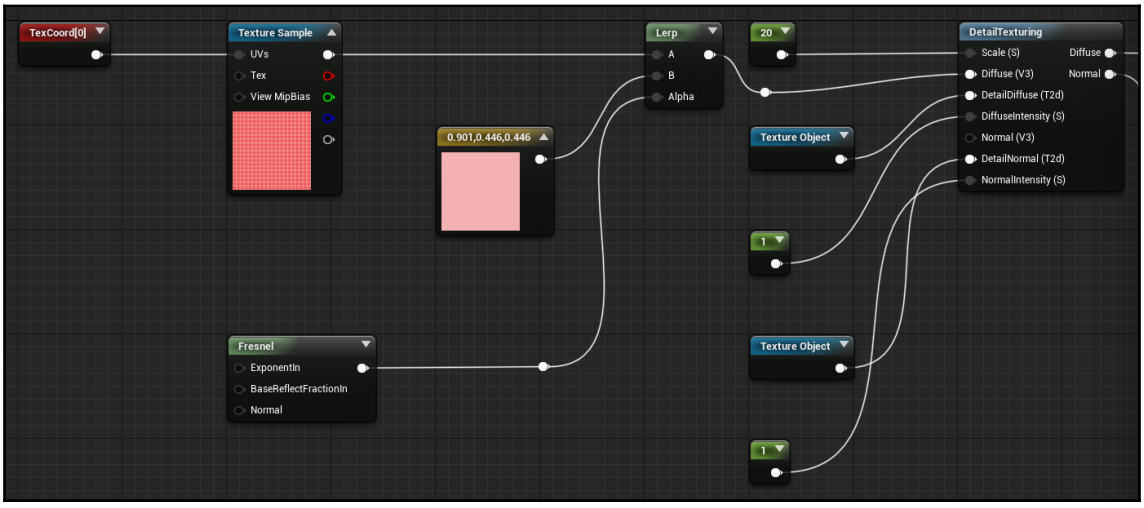

Roughness
0.8
Lerp
A
B
Alpha
Lerp
A
B
Alpha
0.15
Lerp
A
B
Alpha
0.7
Texture Sample
UVs
Tex
View MipBias
0.3
Texture Sample
UVs
Tex
View MipBias

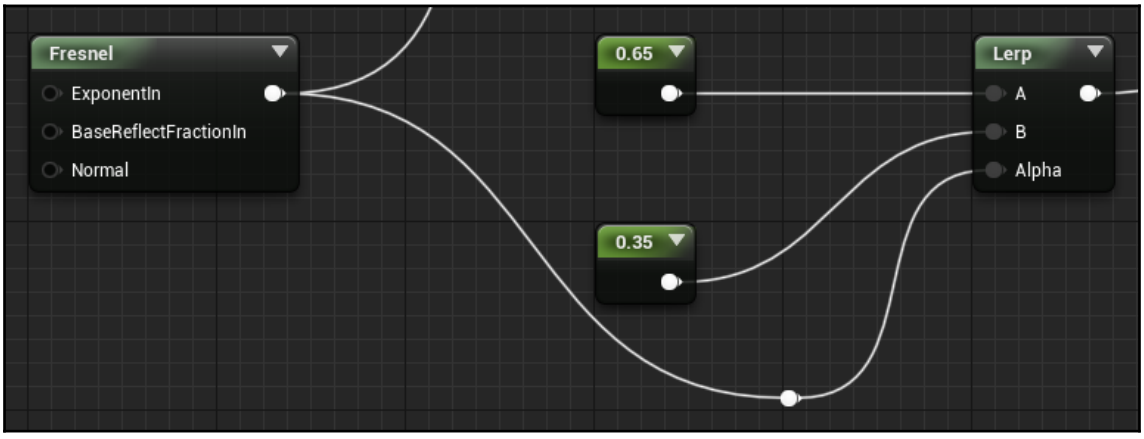


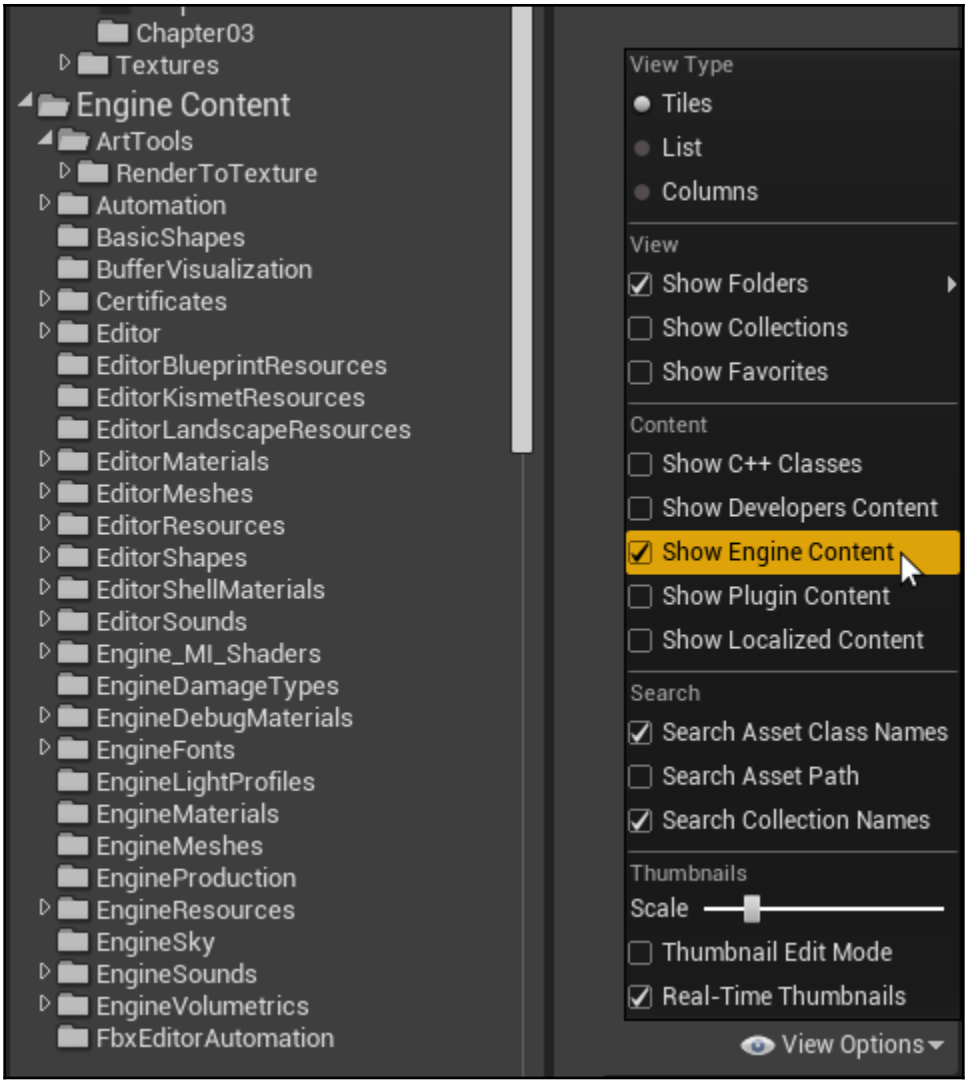



TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha
0.901,0.446,0.446
Fresnel
ExponentIn
BaseReflectFractionIn
Normal

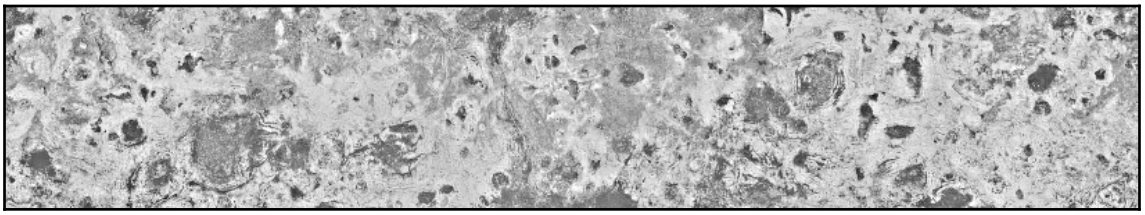


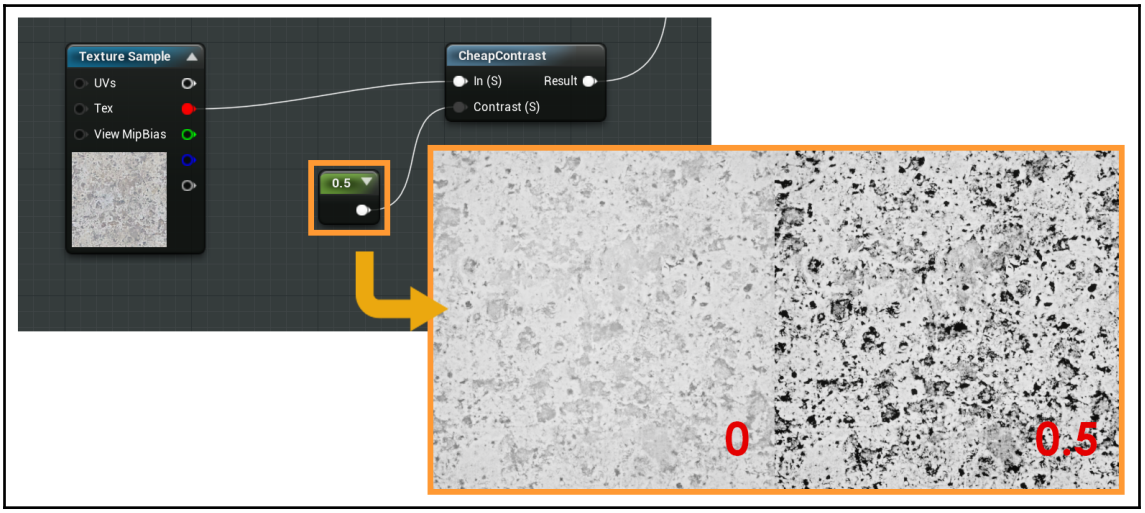

TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
0.901,0.446,0.446
Lerp
A
B
Alpha
20
Texture Object
1
Fresnel
ExponentIn
BaseReflectFractionIn
Normal
Texture Object
1
DetailTexturing
Scale (S)
Diffuse (V3)
DetailDiffuse (T2d)
DiffuseIntensity (S)
Normal (V3)
DetailNormal (T2d)
NormalIntensity (S)
Diffuse
Normal

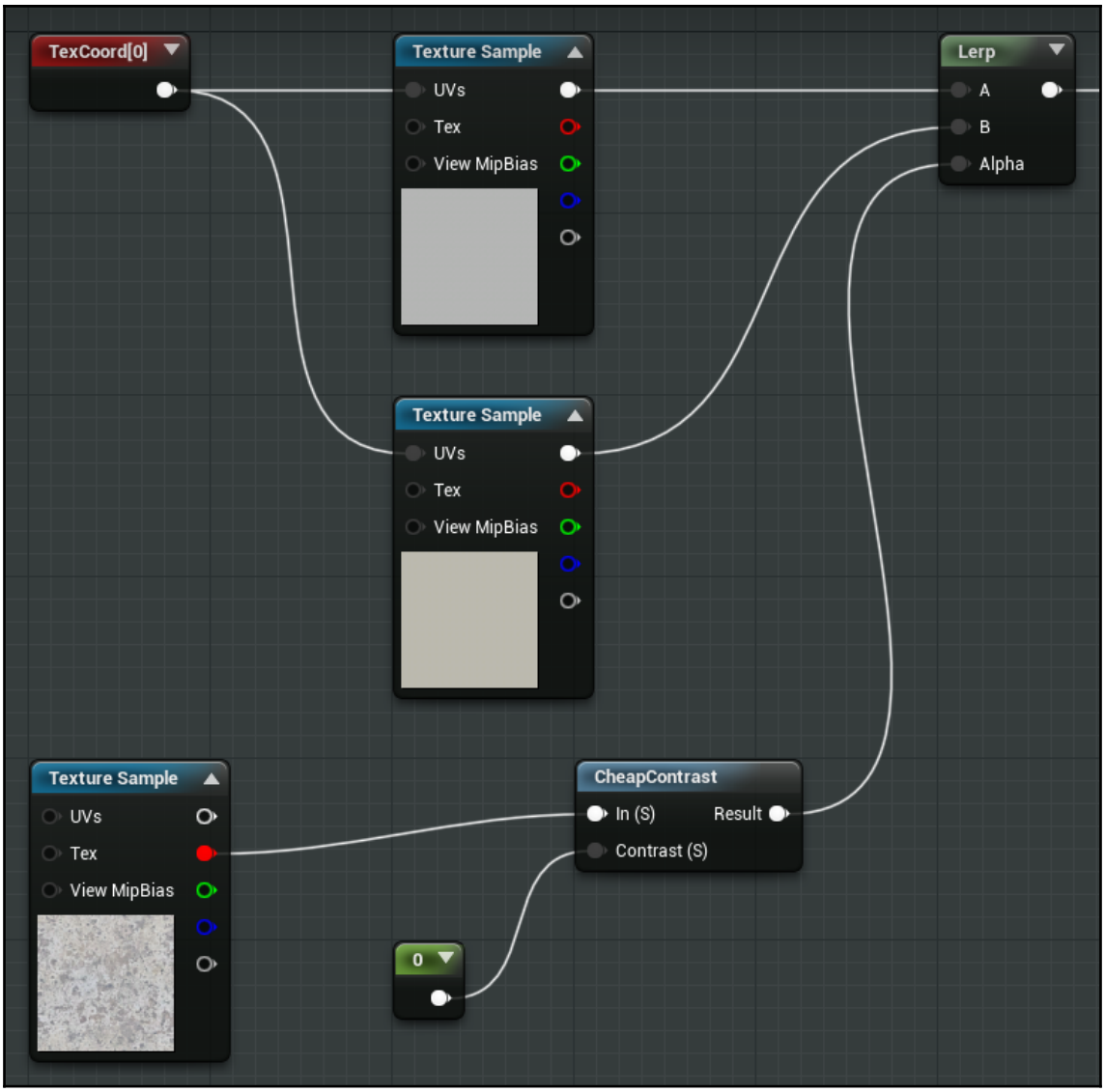

Fresnel
ExponentIn
BaseReflectFractionIn
Normal
0.65
0.35
Lerp
A
B
Alpha

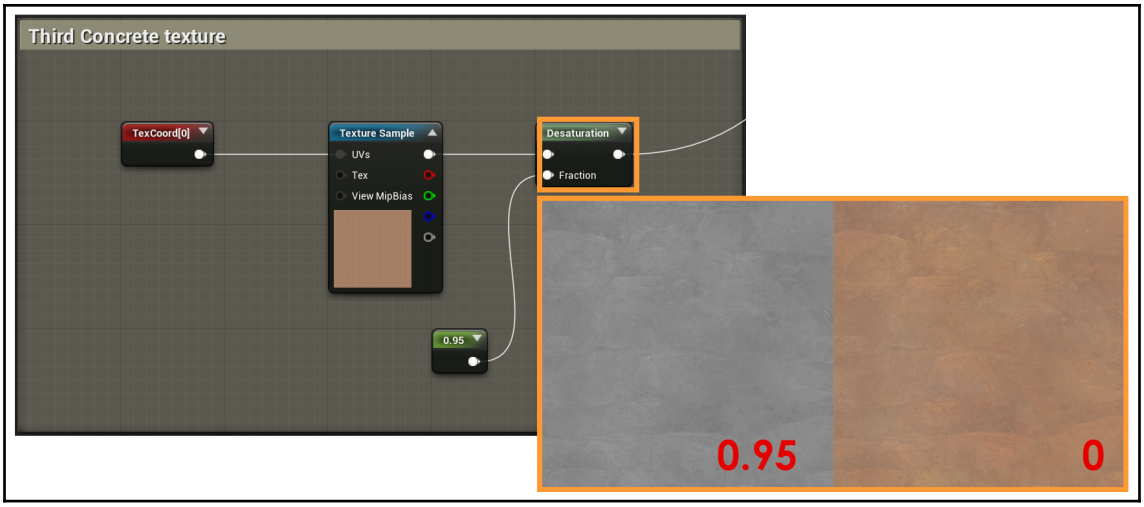

Chapter03
Textures
Engine Content
ArtTools
RenderToTexture
Automation
BasicShapes
BufferVisualization
Certificates
Editor
EditorBlueprintResources
EditorKismetResources
EditorLandscapeResources
EditorMaterials
EditorMeshes
EditorResources
EditorShapes
EditorShellMaterials
EditorSounds
Engine_MI_Shaders
EngineDamageTypes
EngineDebugMaterials
EngineFonts
EngineLightProfiles
EngineMaterials
EngineMeshes
EngineProduction
EngineResources
EngineSky
EngineSounds
EngineVolumetrics
FbxEditorAutomation
View Type
Tiles
List
Columns
View
Show Folders
Show Collections
Show Favorites
Content
Show C++ Classes
Show Developers Content
Show Engine Content
Show Plugin Content
Show Localized Content
Search
Search Asset Class Names
Search Asset Path
Search Collection Names
Thumbnails
Scale
Thumbnail Edit Mode
Real-Time Thumbnails
View Options

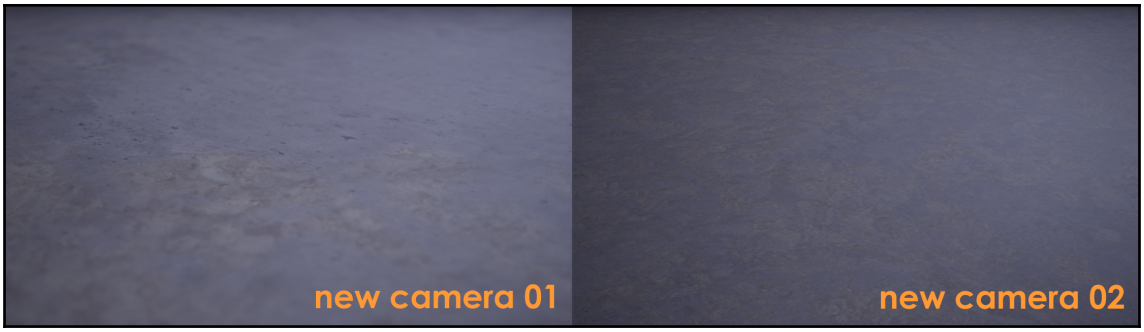
Camera 01
Camera 02

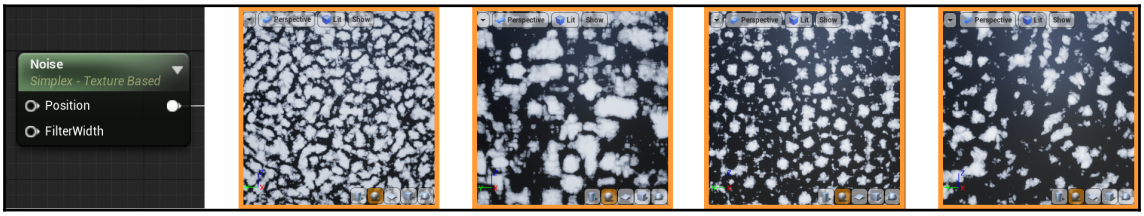


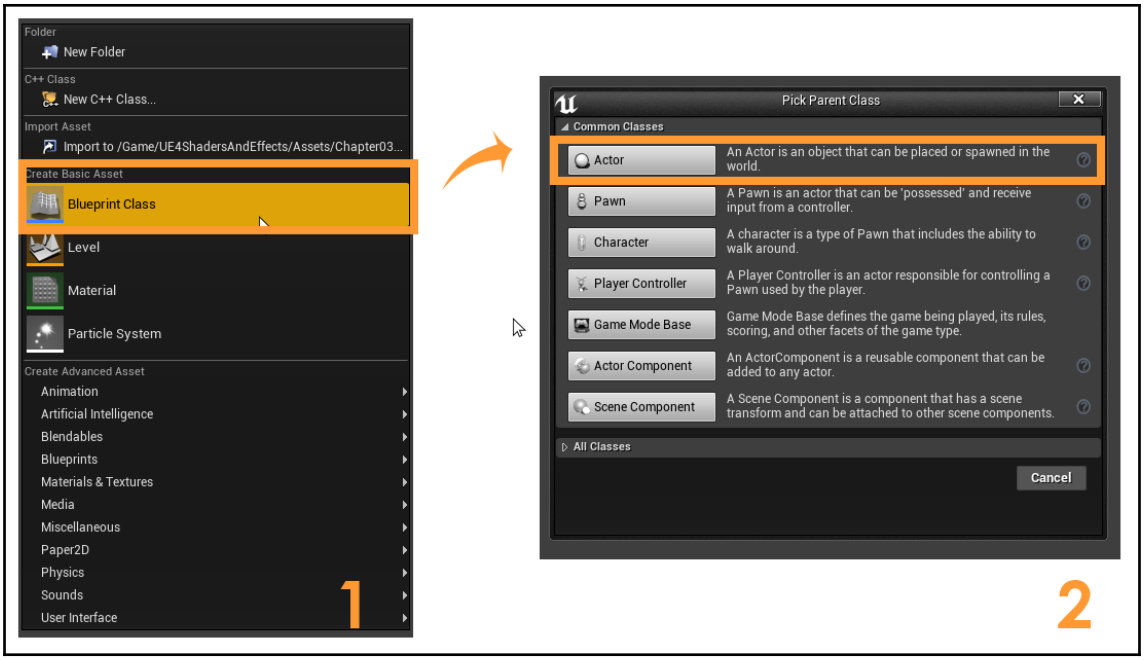

Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
0.5
0
0.5

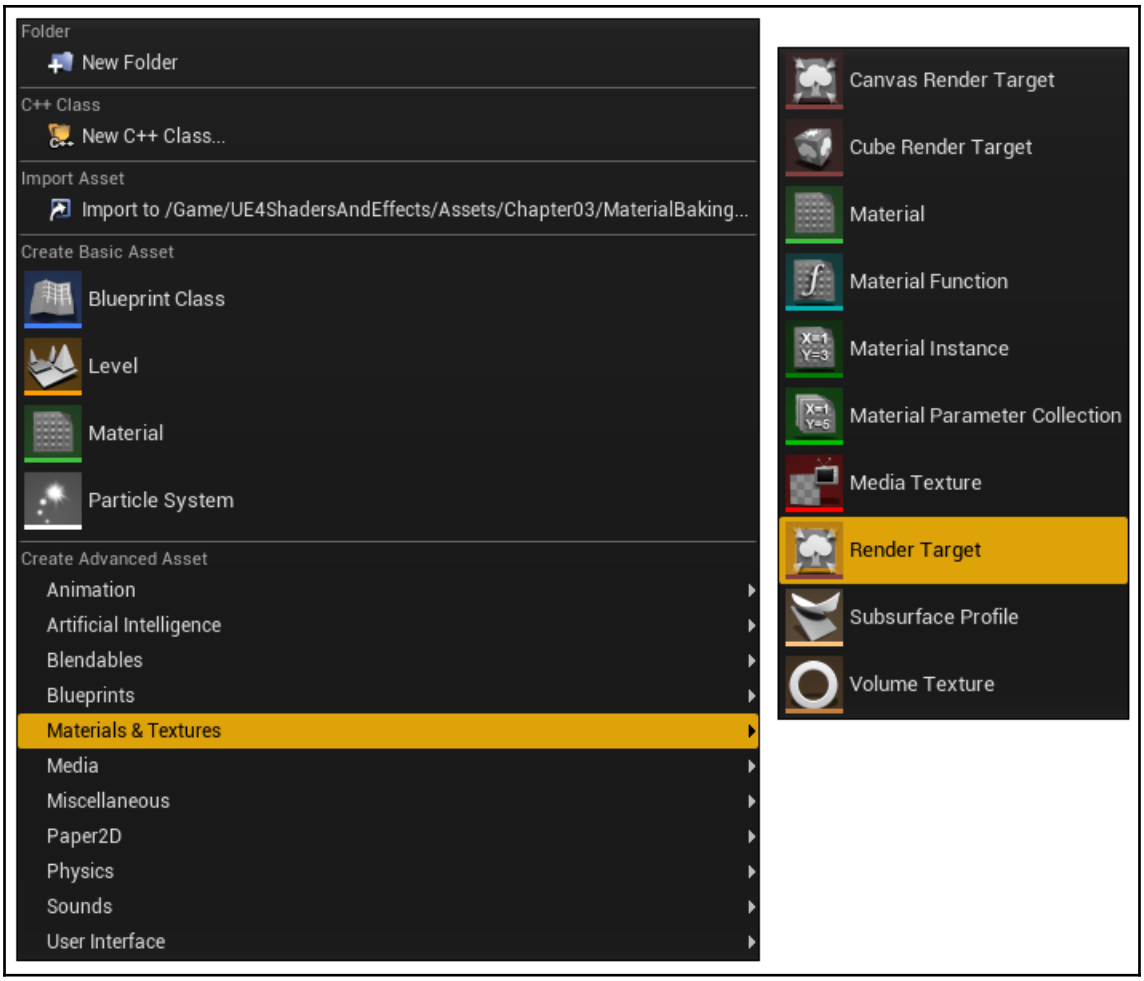

TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
0

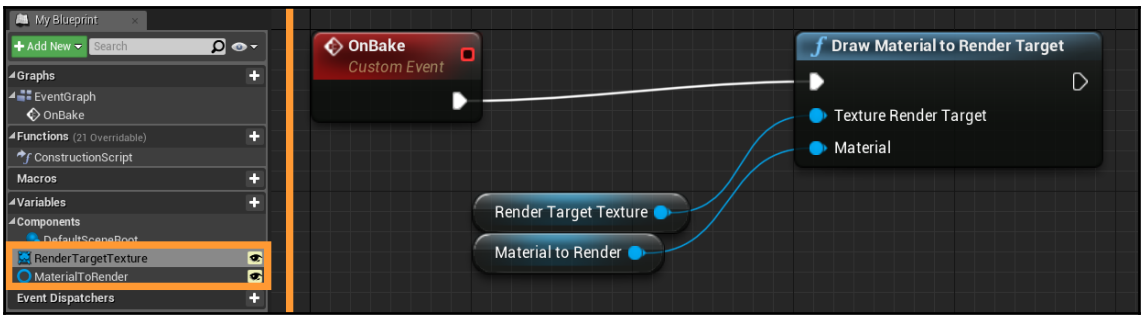

Third Concrete texture
TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
Desaturation
Fraction
0.95
0.95
0


new camera 01
new camera 02

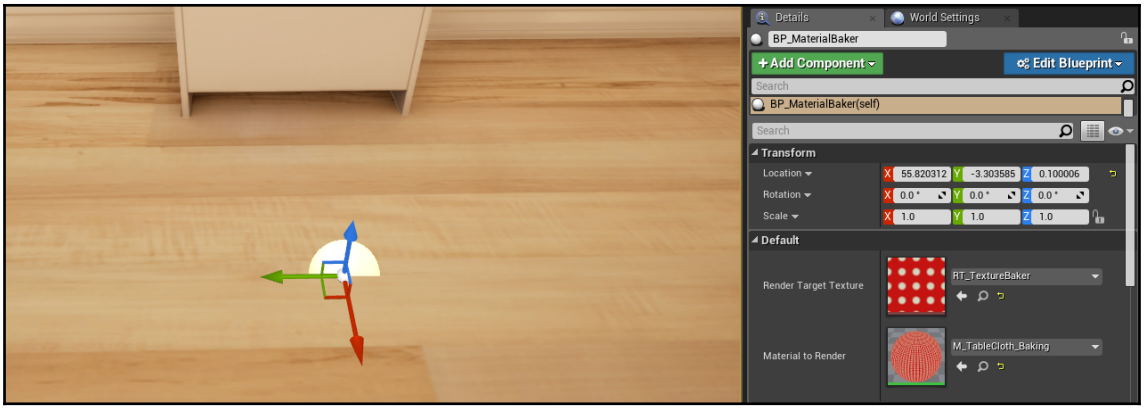

Noise
Simplex - Texture Based
Position
FilterWidth


Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter03...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
1
Pick Parent Class
Common Classes
Actor
An Actor is an object that can be placed or spawned in the world.
Pawn
A Pawn is an actor that can be 'possessed' and receive input from a controller.
Character
A character is a type of Pawn that includes the ability to walk around.
Player Controller
A Player Controller is an actor responsible for controlling a Pawn used by the player.
Game Mode Base
Game Mode Base defines the game being played, its rules, scoring, and other facets of the game type.
Actor Component
An ActorComponent is a reusable component that can be added to any actor.
Scene Component
A Scene Component is a component that has a scene transform and can be attached to other scene components.
All Classes
Cancel
2

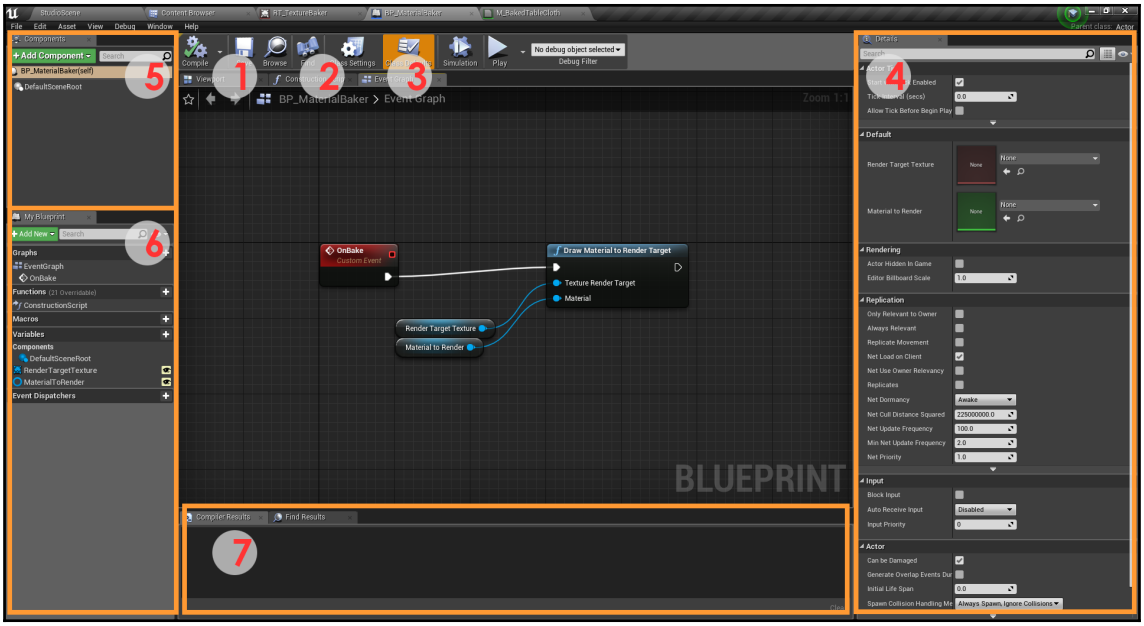

Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter03/MaterialBaking...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Canvas Render Target
Cube Render Target
Material
Material Function
Material Instance
Material Parameter Collection
Media Texture
Render Target
Subsurface Profile
Volume Texture

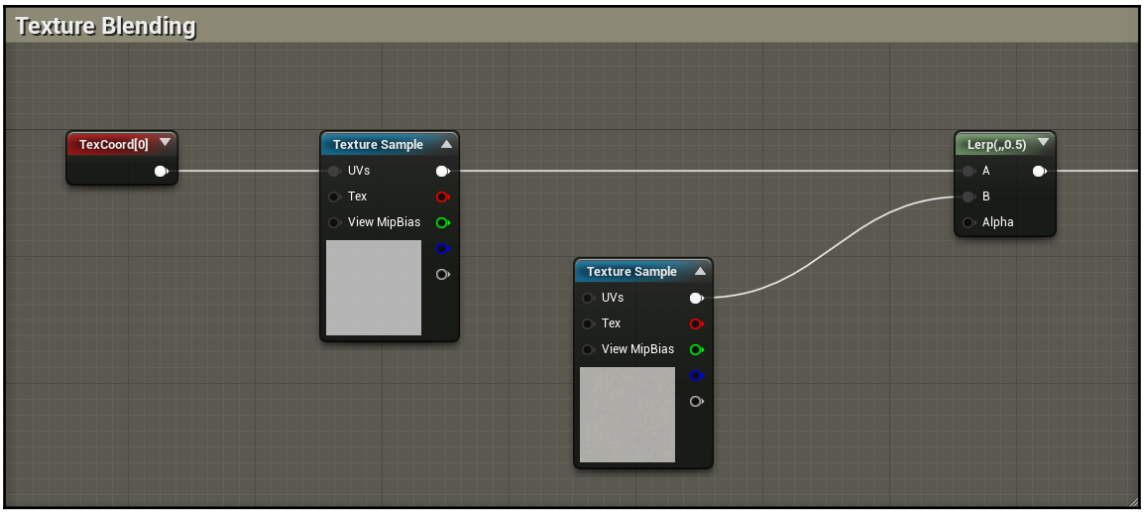

My Blueprint
Add New
Search
Graphs
EventGraph
OnBake
Functions (21 Overridable)
ConstructionScript
Macros
Variables
Components
RenderTargetTexture
MaterialToRender
Event Dispatchers
OnBake
Custom Event
Draw Material to Render Target
Texture Render Target
Material
Render Target Texture
Material to Render

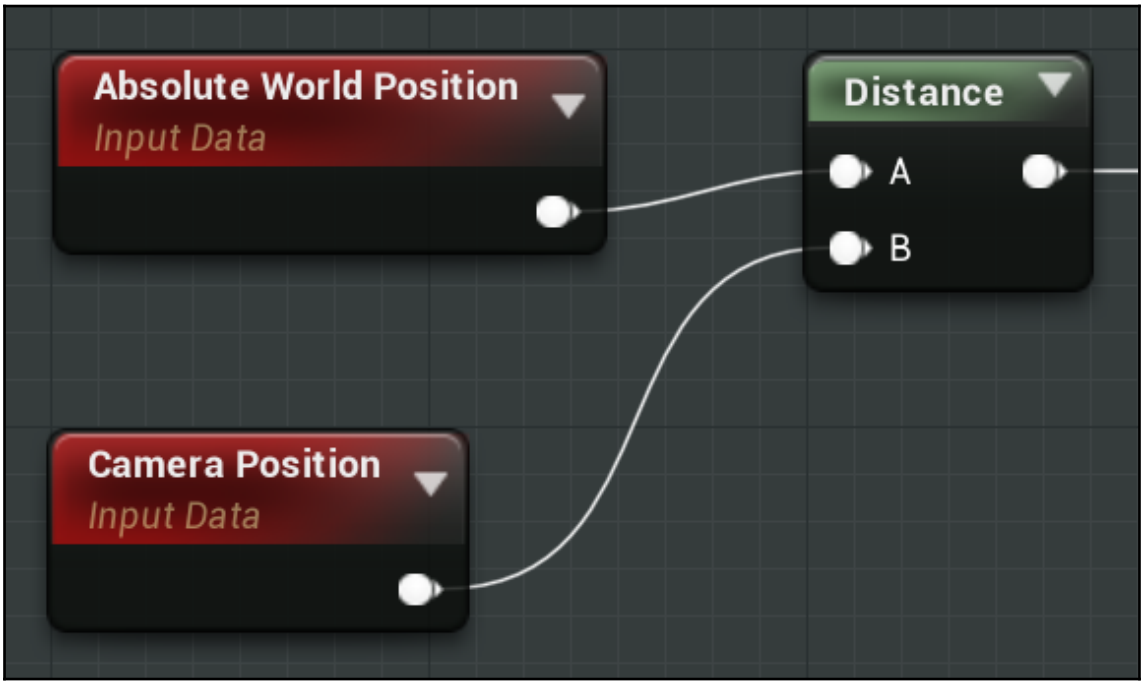
Construction Script
On Bake
Target is BP Material Baker
Target
self

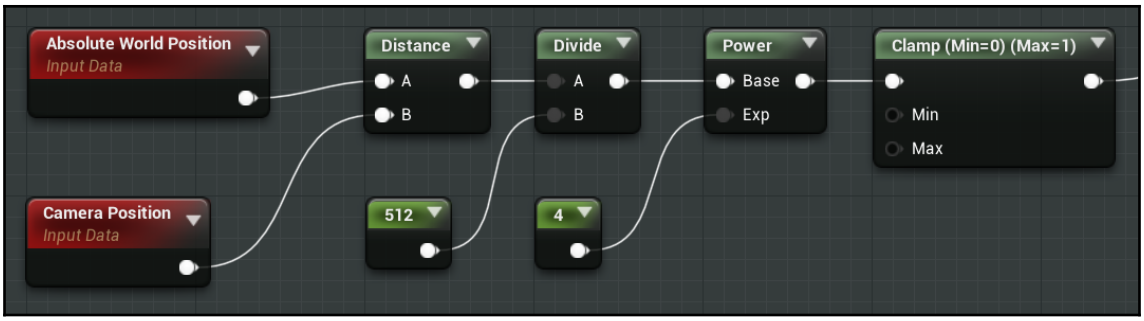

Details
World Settings
BP_MaterialBaker
+ Add Component
Edit Blueprint
Search
BP_MaterialBaker(self)
Search
Transform
Location
55.820312
-3.303585
0.100006
Rotation
0.0 °
0.0 °
0.0 °
Scale
1.0
1.0
1.0
Default
Render Target Texture
RT_TextureBaker
Material to Render
M_TableCloth_Baking

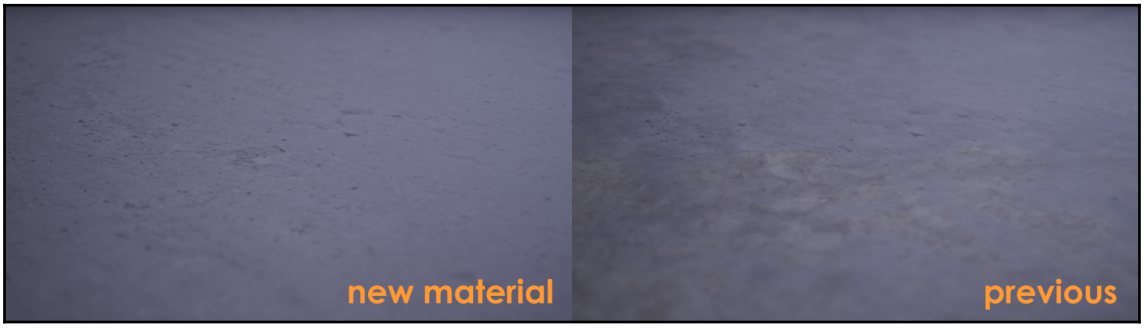
baked
original

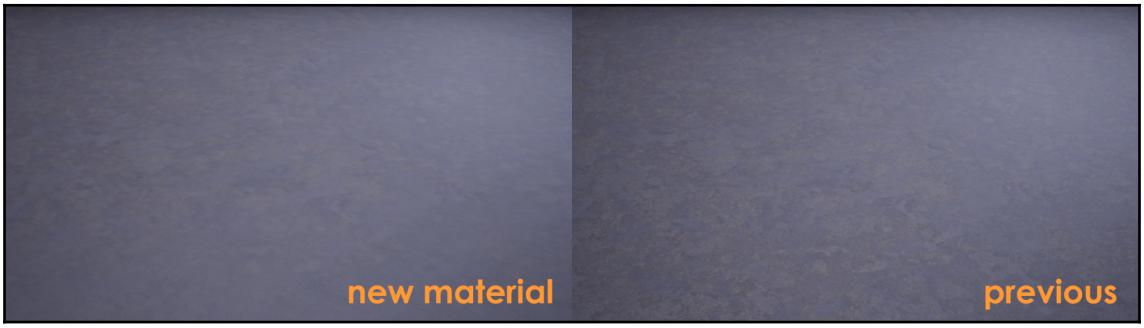

1
2
3
4
5
6
7
BP_MaterialBaker > Event Graph
OnBake
Custom Event
Draw Material to Render Target
Texture Render Target
Material
Render Target Texture
Material to Render
BLUEPRINT

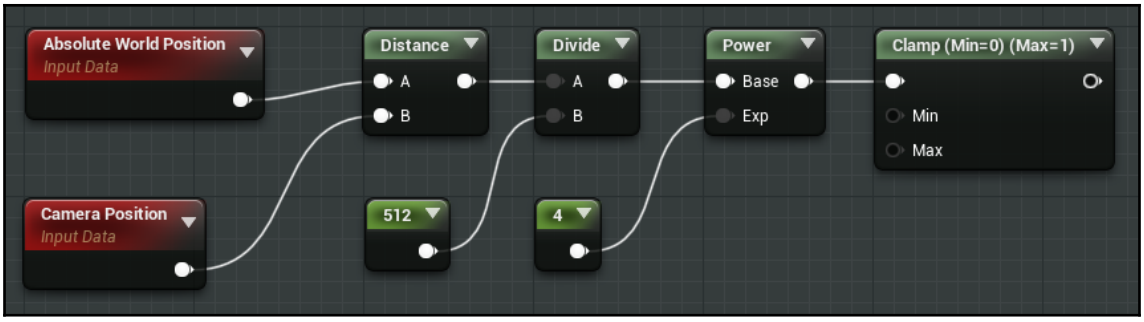

Texture Blending
TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Lerp(„0.5)
A
B
Alpha

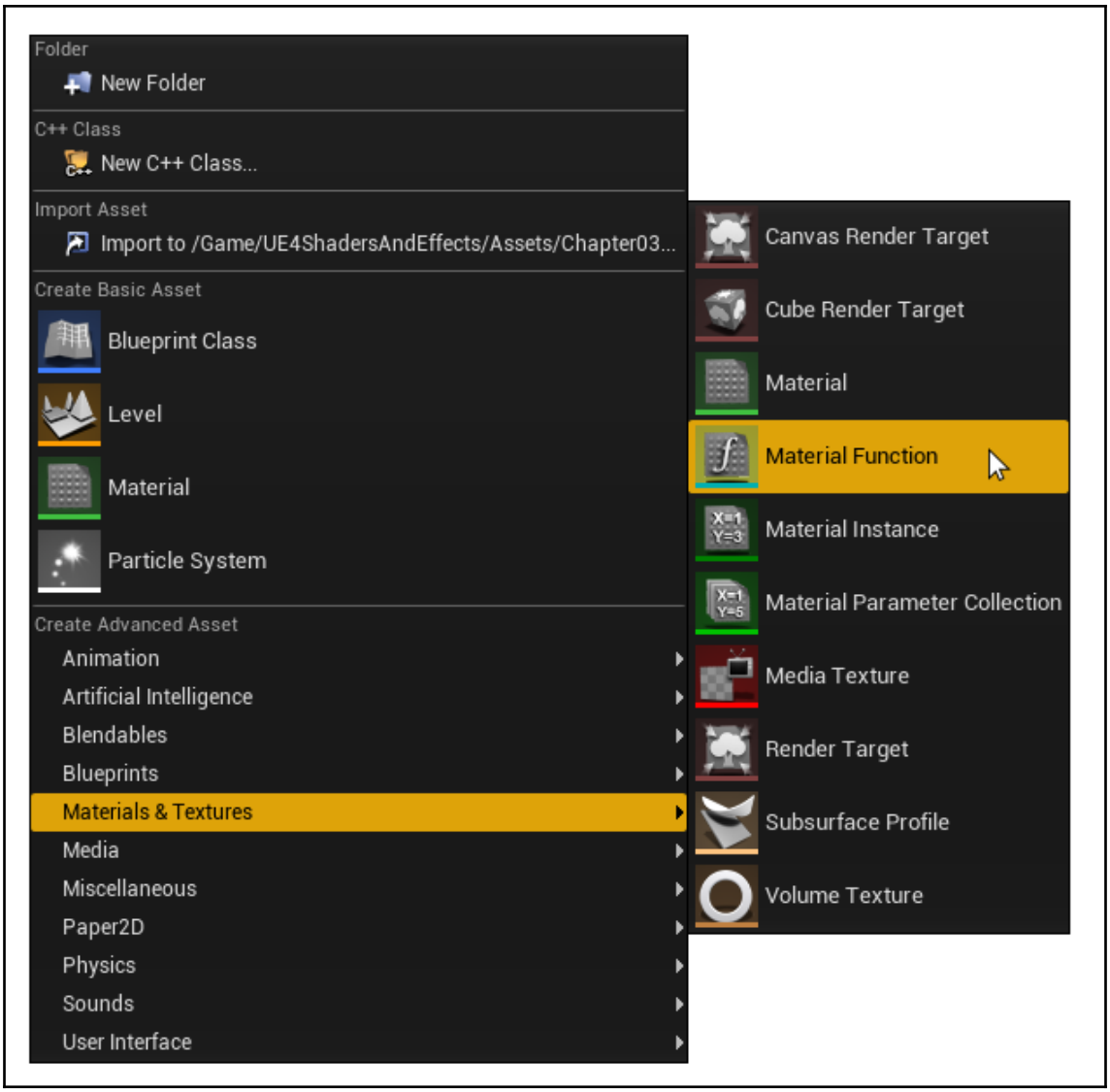

Absolute World Position
Input Data
Distance
A
B
Camera Position
Input Data

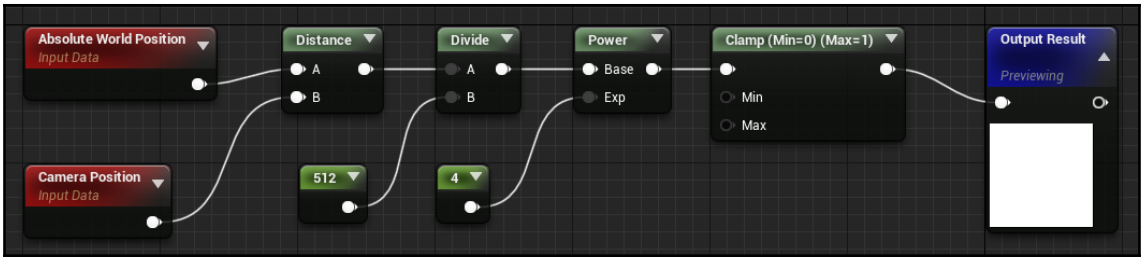

Absolute World Position
Input Data
Distance
A
B
Divide
A
B
Power
Base
Exp
Clamp (Min=0) (Max=1)
Min
Max
Camera Position
Input Data
512
4


new material
previous

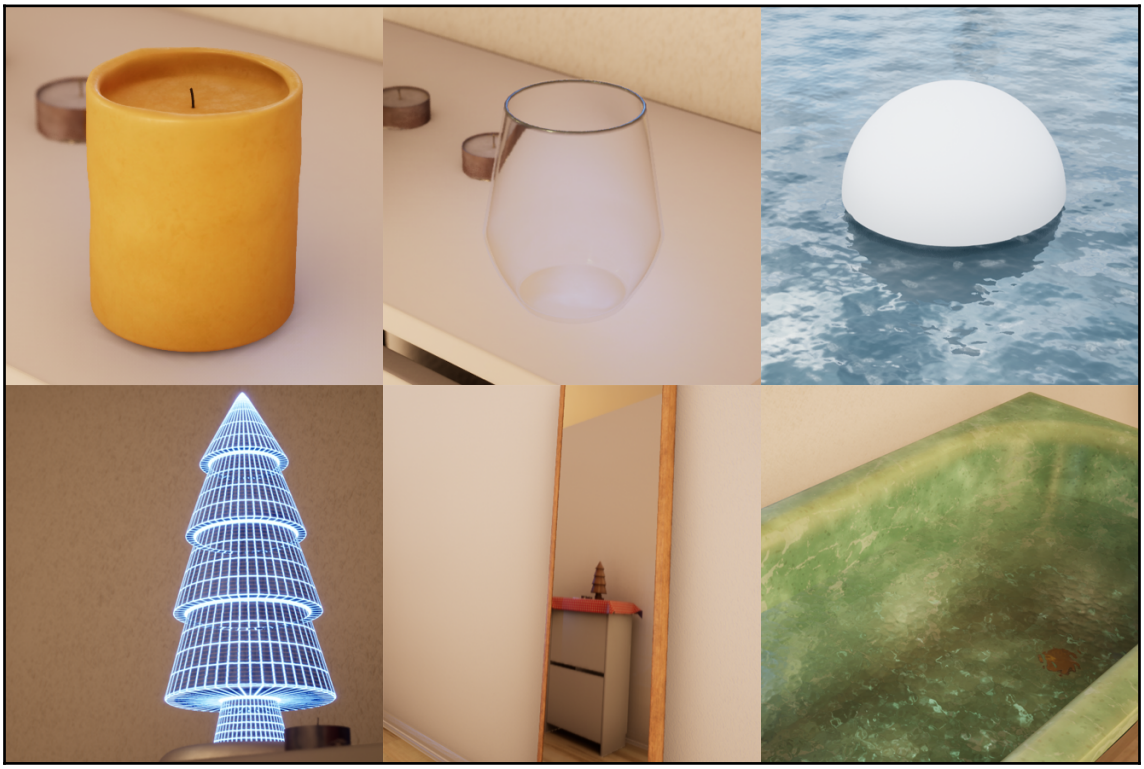

new material
previous

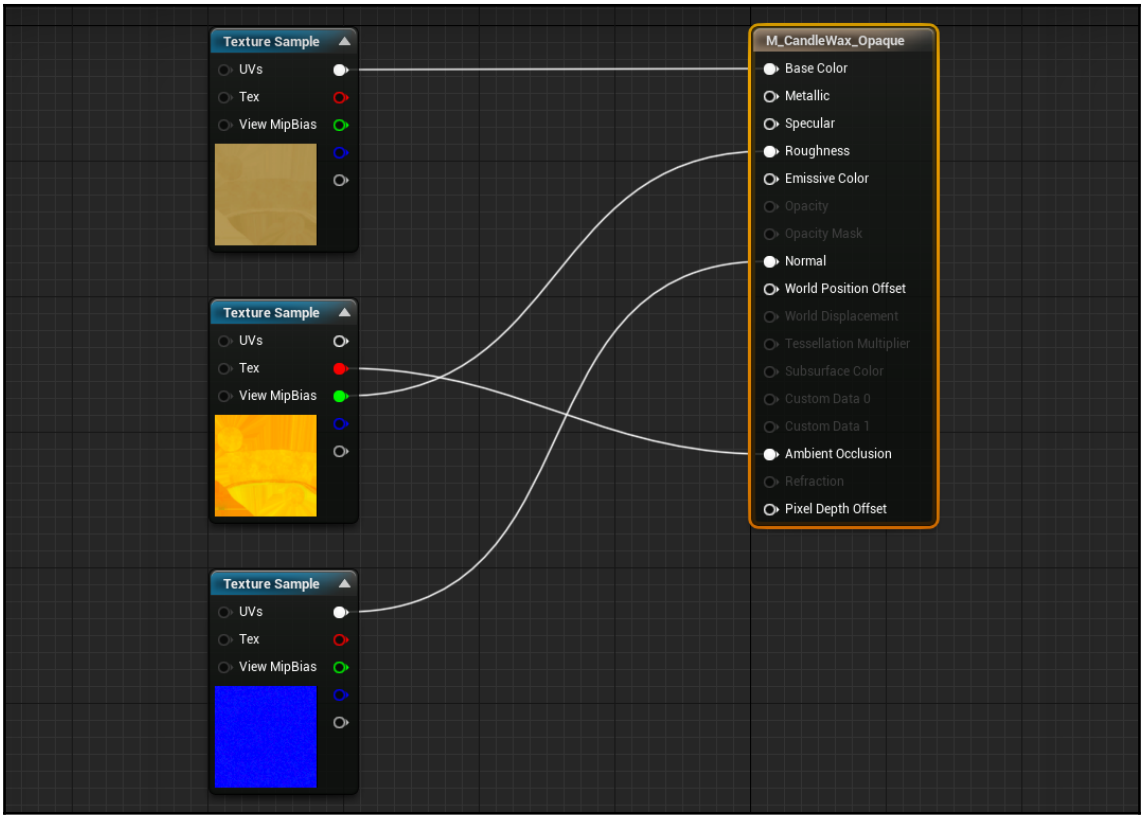

Absolute World Position
Input Data
Distance
A
B
Divide
A
B
Power
Base
Exp
Clamp (Min=0) (Max=1)
Min
Max
Camera Position
Input Data
512
4

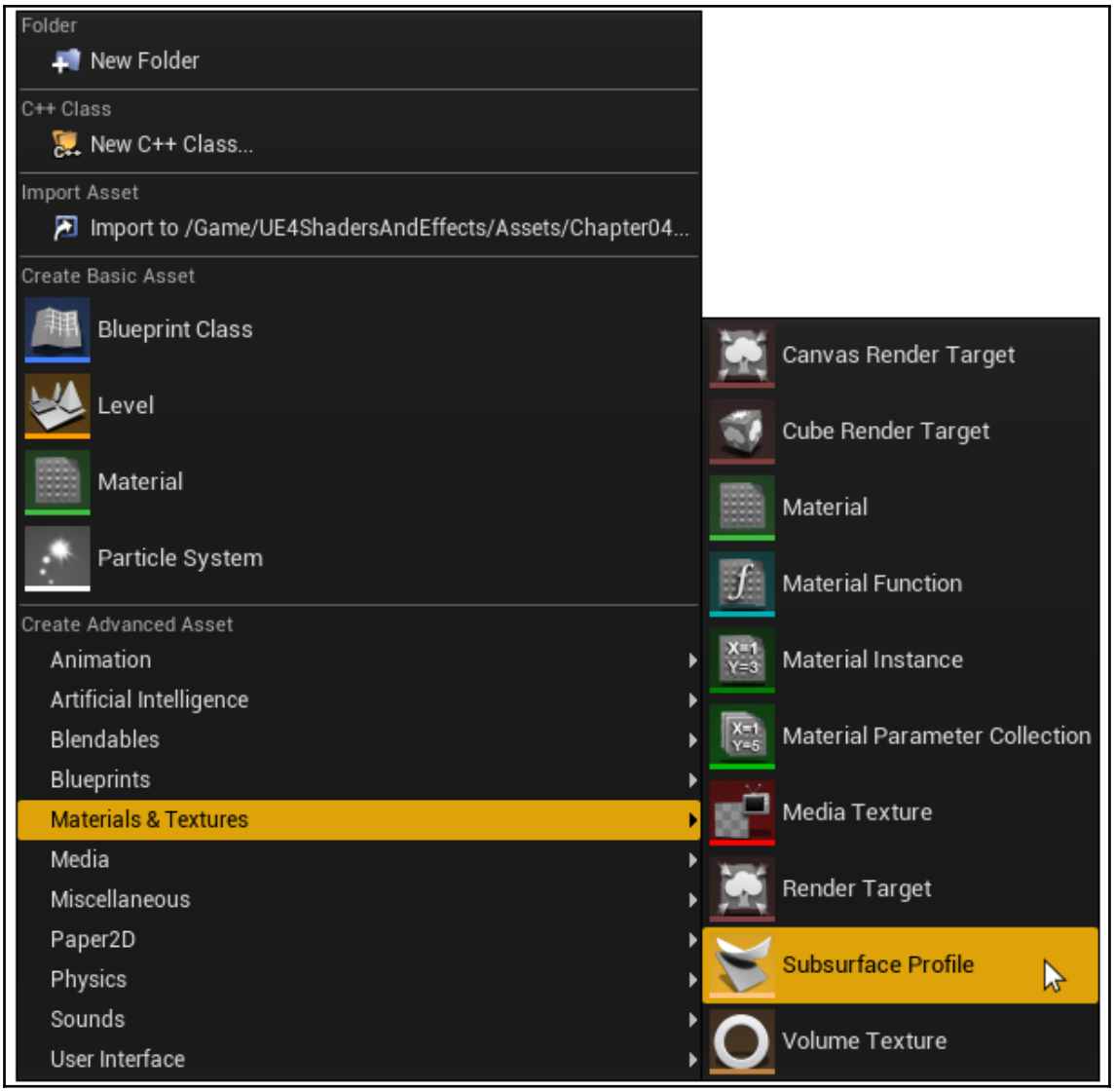

Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter03...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Canvas Render Target
Cube Render Target
Material
Material Function
Material Instance
Material Parameter Collection
Media Texture
Render Target
Subsurface Profile
Volume Texture

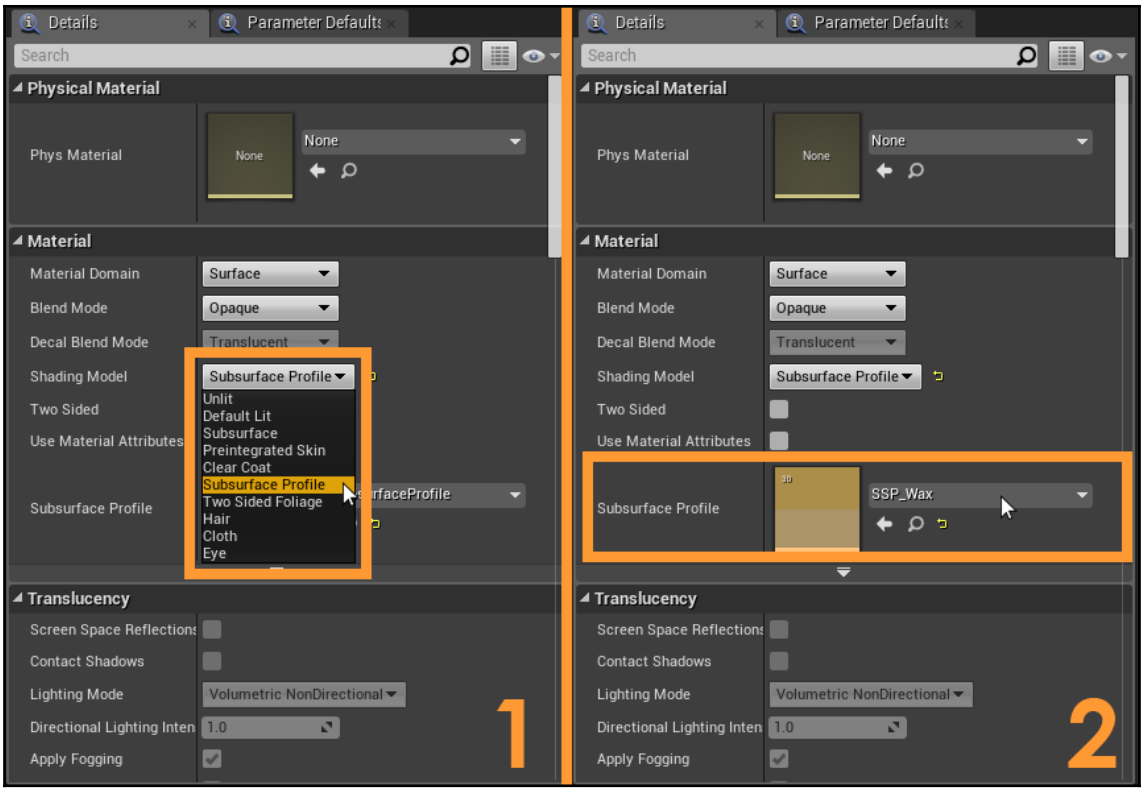

Absolute World Position
Input Data
Distance
A
B
Divide
A
B
Power
Base
Exp
Clamp (Min=0) (Max=1)
Min
Max
Output Result
Previewing
Camera Position
Input Data
512
4

Chapter 4: Translucent Materials and More

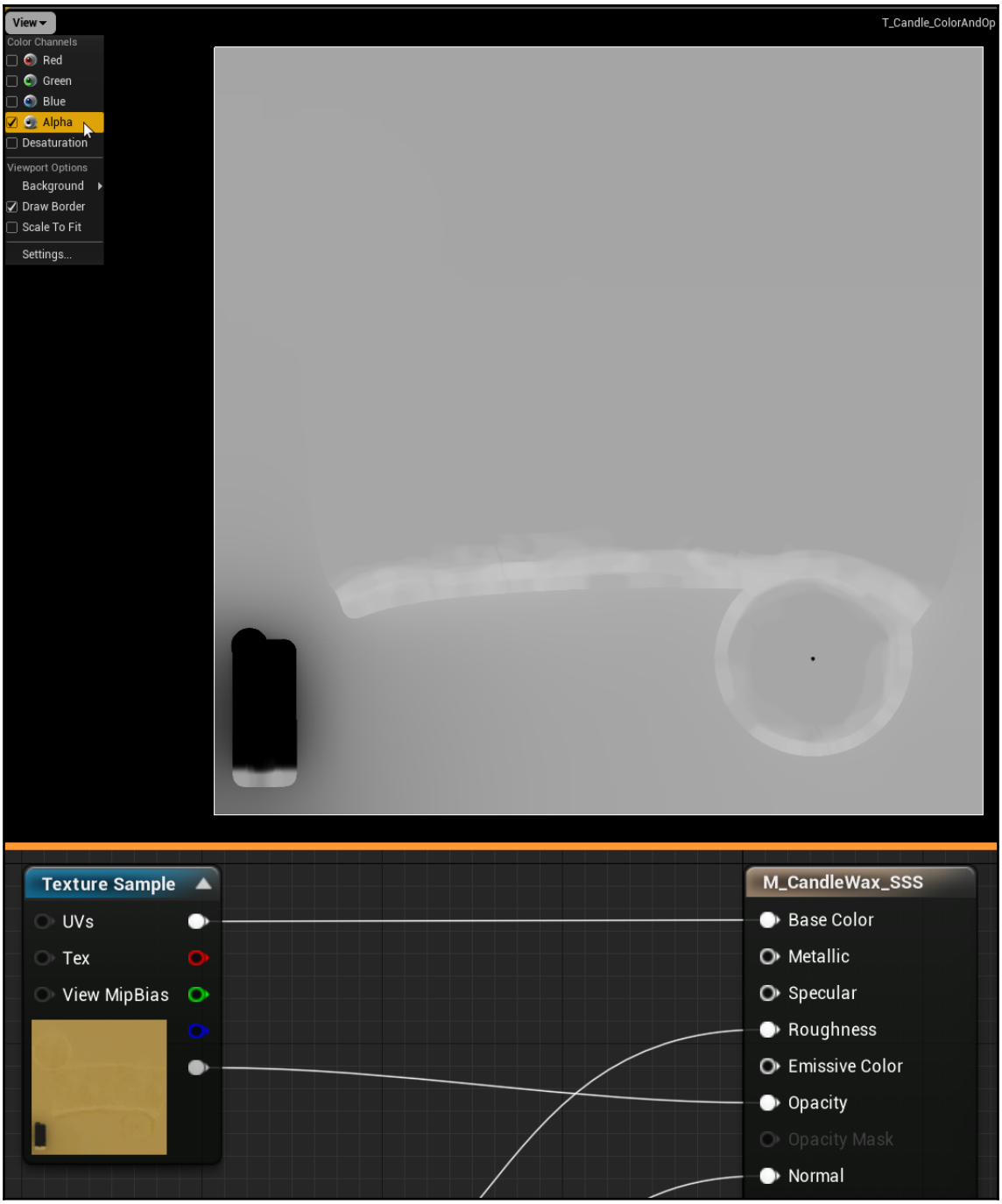


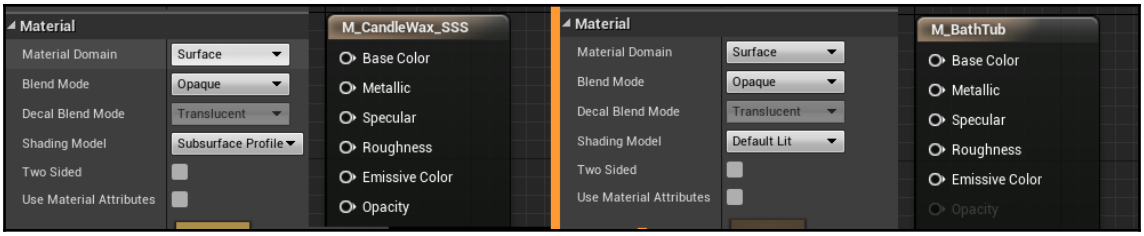

Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
M_CandleWax_Opaque
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset

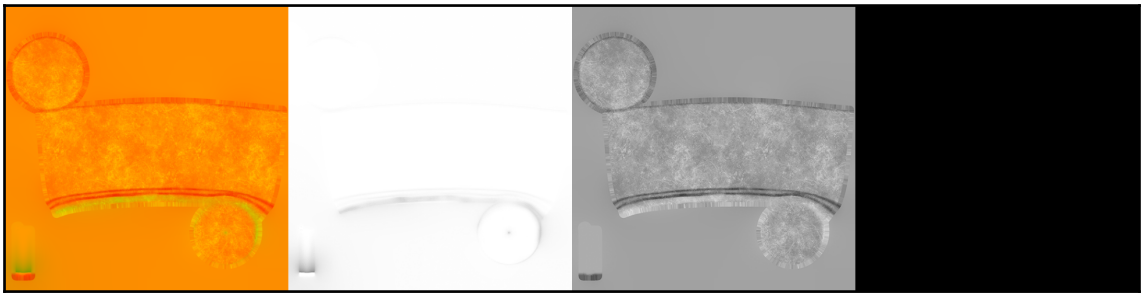

Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter04...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Canvas Render Target
Cube Render Target
Material
Material Function
Material Instance
Material Parameter Collection
Media Texture
Render Target
Subsurface Profile
Volume Texture

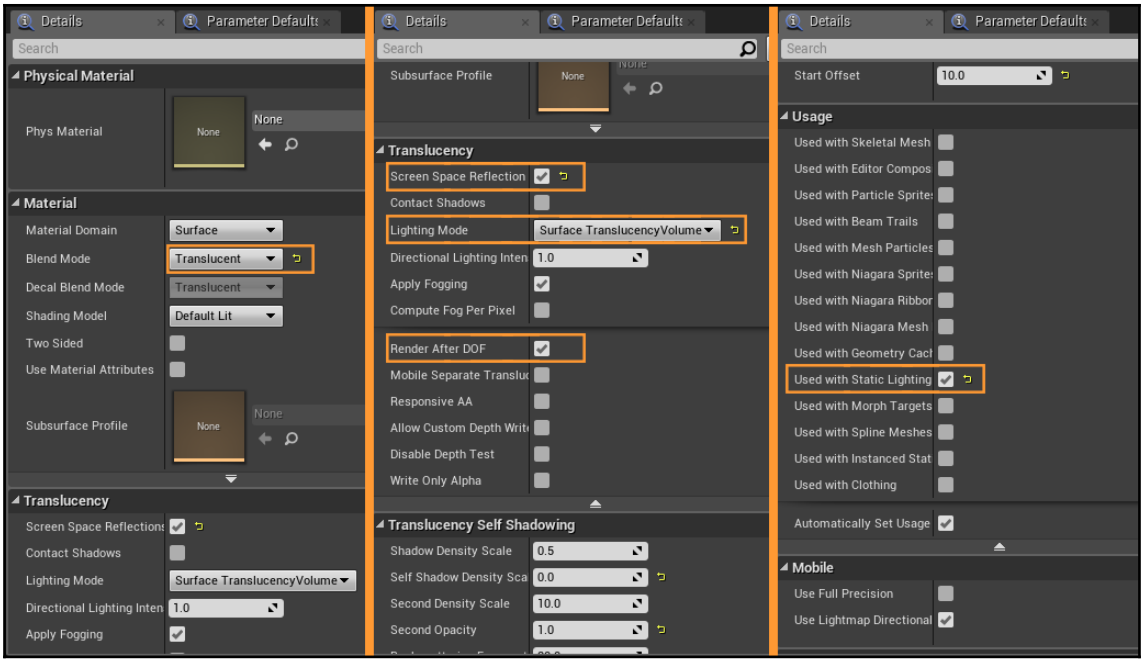

Details
Parameter Defaults
Search
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Subsurface Profile
Two Sided
Use Material Attributes
Subsurface Profile
Unlit
Default Lit
Subsurface
Preintegrated Skin
Clear Coat
Subsurface Profile
Two Sided Foliage
Hair
Cloth
Eye
SSP_Wax
Translucency
Screen Space Reflections
Contact Shadows
Lighting Mode
Volumetric NonDirectional
Directional Lighting Inten
1.0
Apply Fogging
1
2

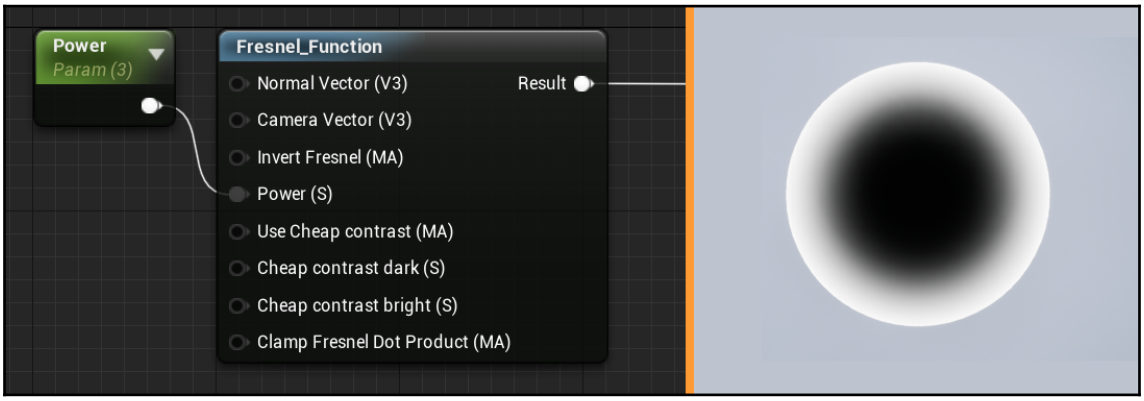
M_CandleWax_SSS_Workii
SSP_Wax* - Generic Asset
File
Edit
Asset
Window
Help
Save
Browse
Details
Search
USubsurface Profile
Scatter Radius
30.0
Subsurface Color
R
0.417885
G
0.274677
B
0.06301
Falloff Color
R
0.432292
G
0.085326
B
0.081026
Boundary Color Bleed

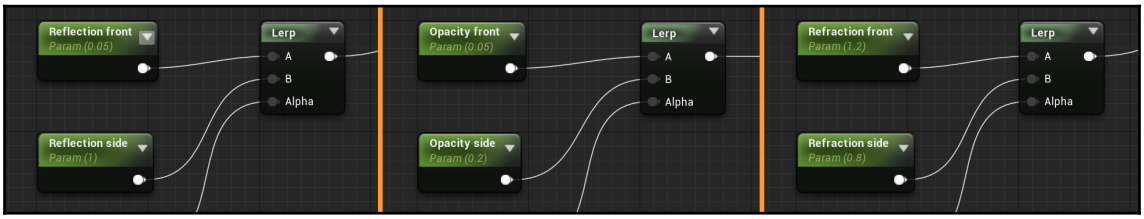

View
Color Channels
Red
Green
Blue
Alpha
Desaturation
Viewport Options
Background
Draw Border
Scale To Fit
Settings...
T_Candle_ColorAndOp
Texture Sample
UVs
Tex
View MipBias
M_CandleWax_SSS
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal

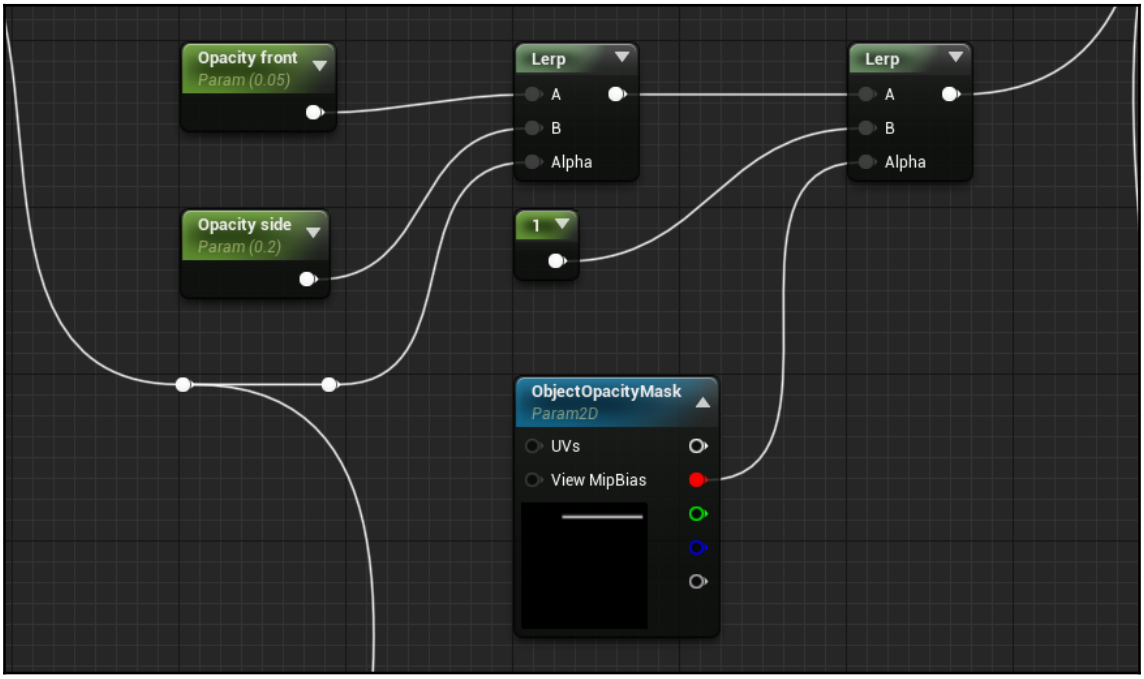

Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Subsurface Profile
Two Sided
Use Material Attributes
M_CandleWax_SSS
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attributes
M_BathTub
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity

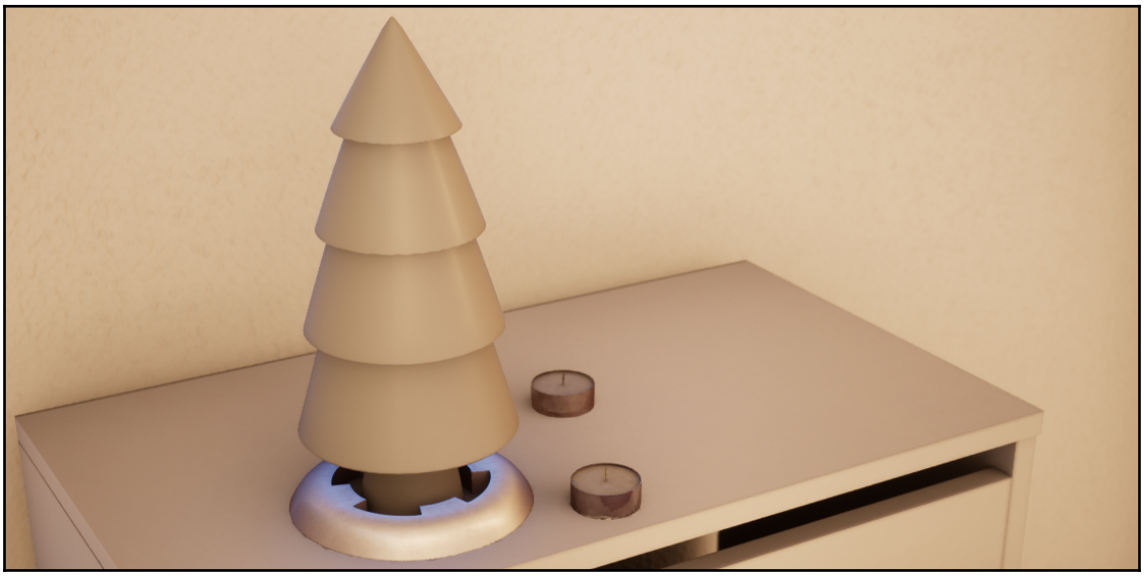


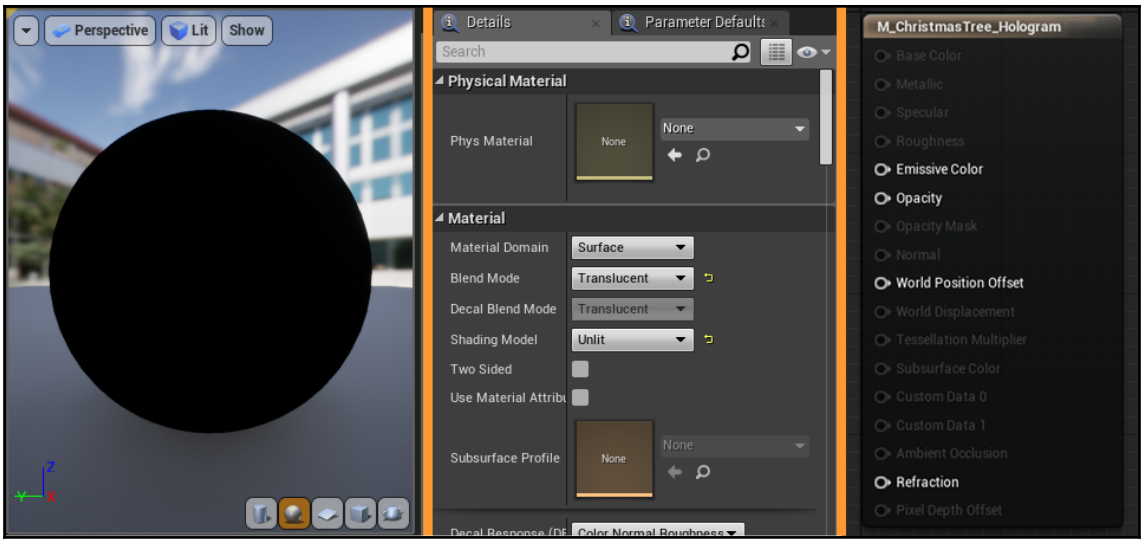

Details
Parameter Defaults
Search
Physical Material
Phys Material
None
Material
Material Domain
Surface
Blend Mode
Translucent
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attributes
Subsurface Profile
Translucency
Screen Space Reflections
Contact Shadows
Lighting Mode
Surface TranslucencyVolume
Directional Lighting Inten
1.0
Apply Fogging
Translucency
Screen Space Reflection
Contact Shadows
Lighting Mode
Surface TranslucencyVolume
Directional Lighting Inten
1.0
Apply Fogging
Compute Fog Per Pixel
Render After DOF
Mobile Separate Translu
Responsive AA
Allow Custom Depth Writ
Disable Depth Test
Write Only Alpha
Translucency Self Shadowing
Shadow Density Scale
0.5
Self Shadow Density Sca
0.0
Second Density Scale
10.0
Second Opacity
1.0
Start Offset
10.0
Usage
Used with Skeletal Mesh
Used with Editor Compos
Used with Particle Sprite
Used with Beam Trails
Used with Mesh Particles
Used with Niagara Sprite
Used with Niagara Ribbon
Used with Niagara Mesh
Used with Geometry Cach
Used with Static Lighting
Used with Morph Targets
Used with Spline Meshes
Used with Instanced Stat
Used with Clothing
Automatically Set Usage
Mobile
Use Full Precision
Use Lightmap Directional

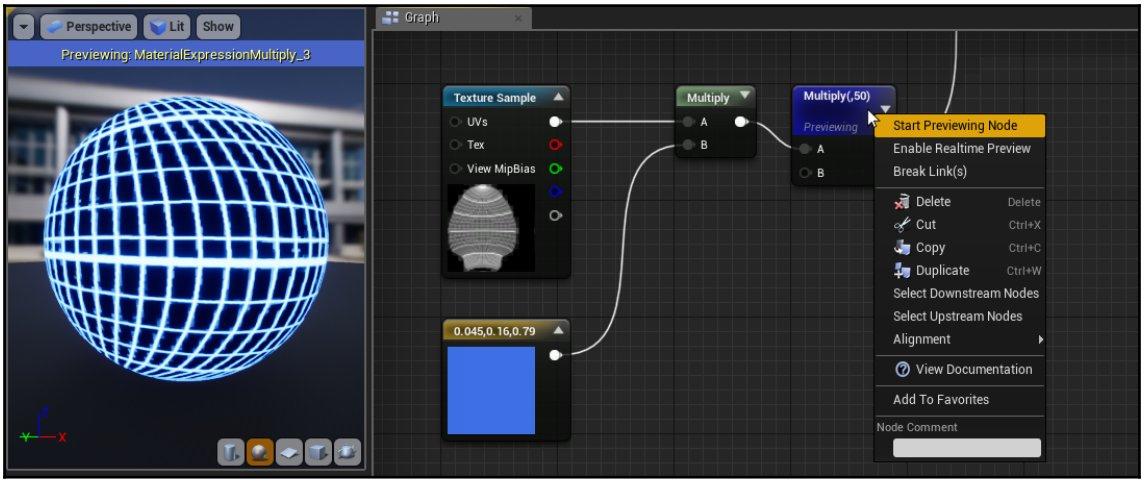

Power
Param (3)
Fresnel_Function
Normal Vector (V3)
Camera Vector (V3)
Invert Fresnel (MA)
Power (S)
Use Cheap contrast (MA)
Cheap contrast dark (S)
Cheap contrast bright (S)
Clamp Fresnel Dot Product (MA)
Result

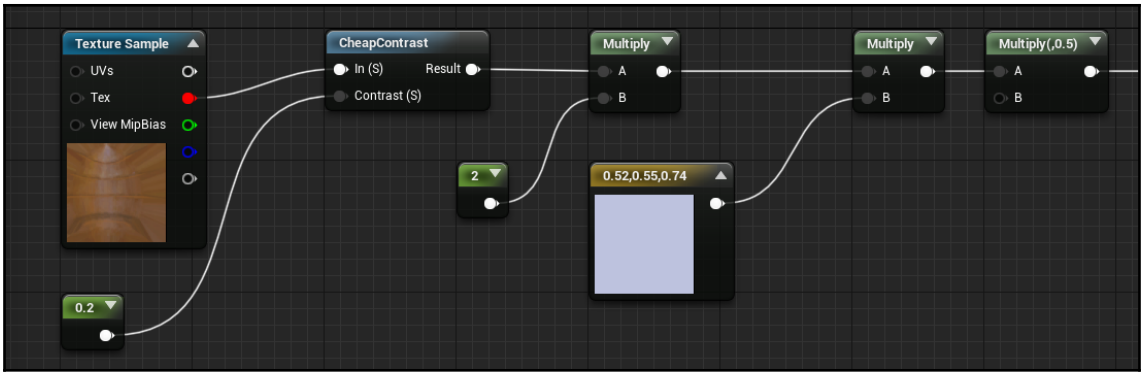

Reflection front
Param (0.05)
Reflection side
Param (1)
Lerp
A
B
Alpha
Opacity front
Param (0.05)
Opacity side
Param (0.2)
Lerp
A
B
Alpha
Refraction front
Param (1.2)
Refraction side
Param (0.8)
Lerp
A
B
Alpha

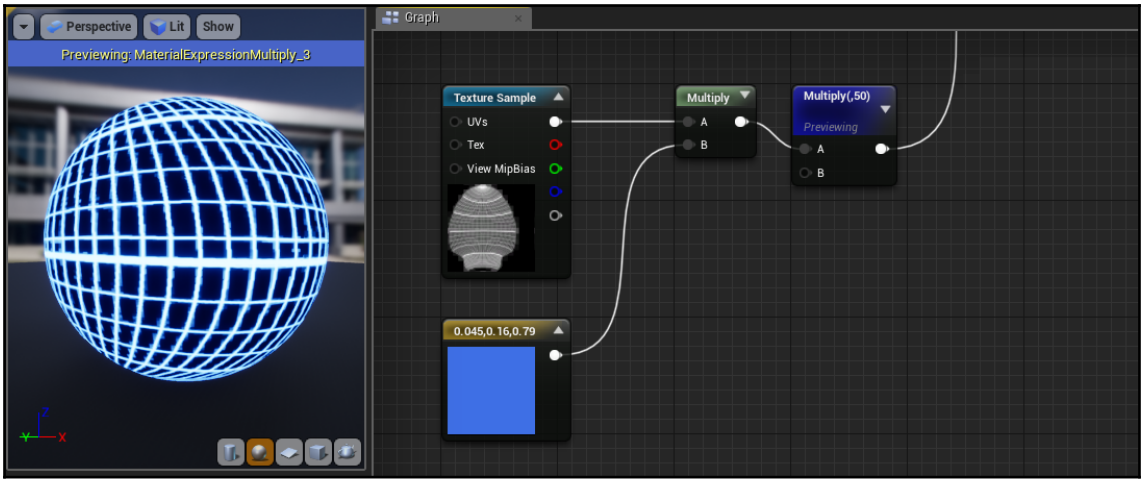

Opacity front
Param (0.05)
Lerp
A
B
Alpha
Lerp
A
B
Alpha
Opacity side
Param (0.2)
1
ObjectOpacityMask
Param2D
UVs
View MipBias

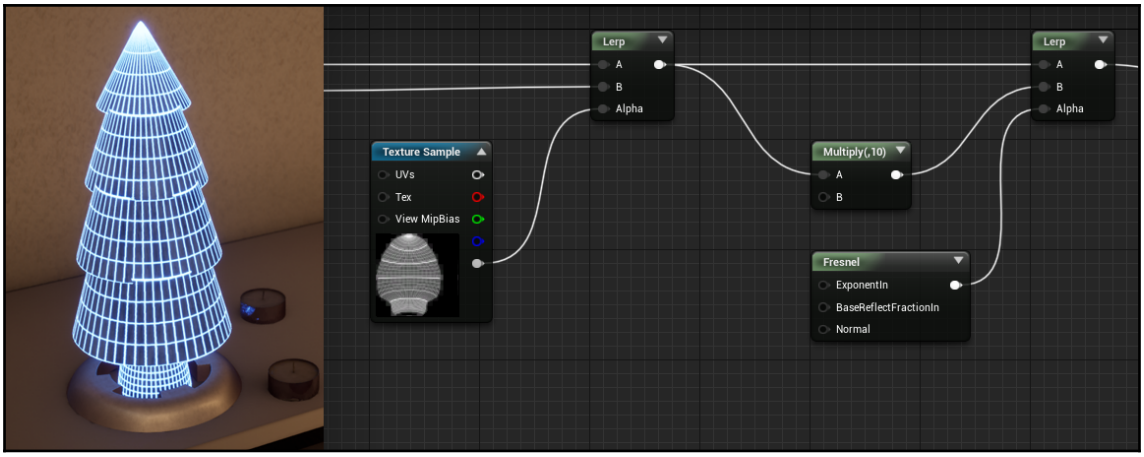


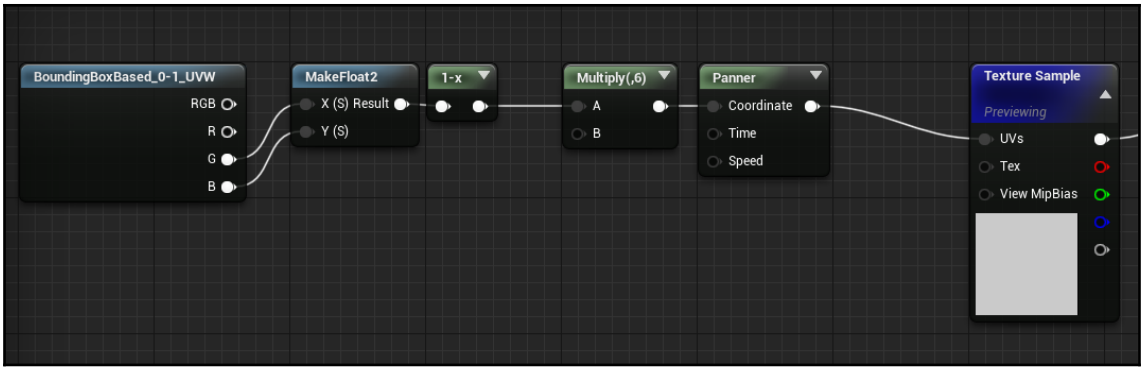

Perspective
Lit
Show
Details
Parameter Defaults
Search
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Translucent
Decal Blend Mode
Translucent
Shading Model
Unlit
Two Sided
Use Material Attribu
Subsurface Profile
None
None
M_ChristmasTree_Hologram
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset

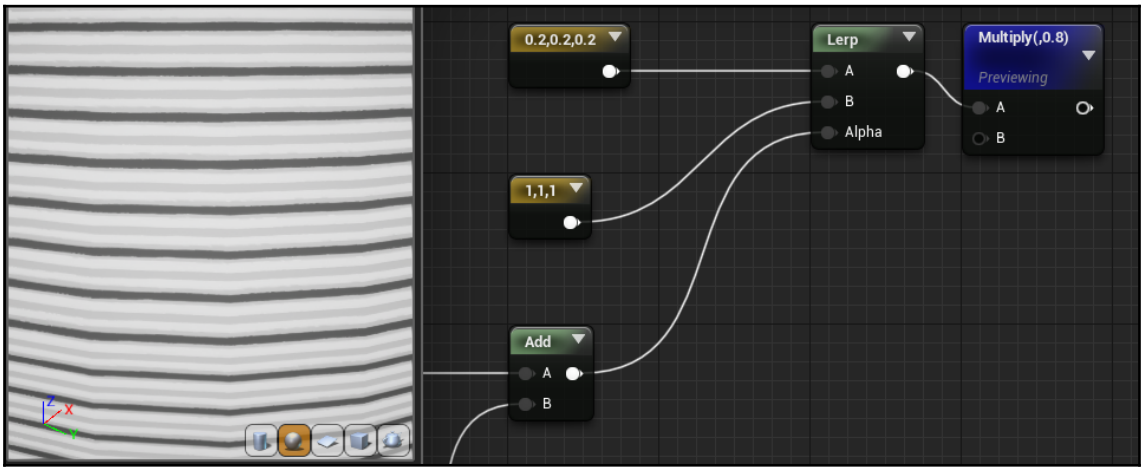

Perspective
Lit
Show
Previewing: MaterialExpressionMultiply_3
Graph
Texture Sample
UVs
Tex
View MipBias
Multiply
A
B
Multiply(,50)
Previewing
A
B
0.045,0.16,0.79
Start Previewing Node
Enable Realtime Preview
Break Link(s)
Delete
Delete
Cut
Ctrl+X
Copy
Ctrl+C
Duplicate
Ctrl+W
Select Downstream Nodes
Select Upstream Nodes
Alignment
View Documentation
Add To Favorites
Node Comment

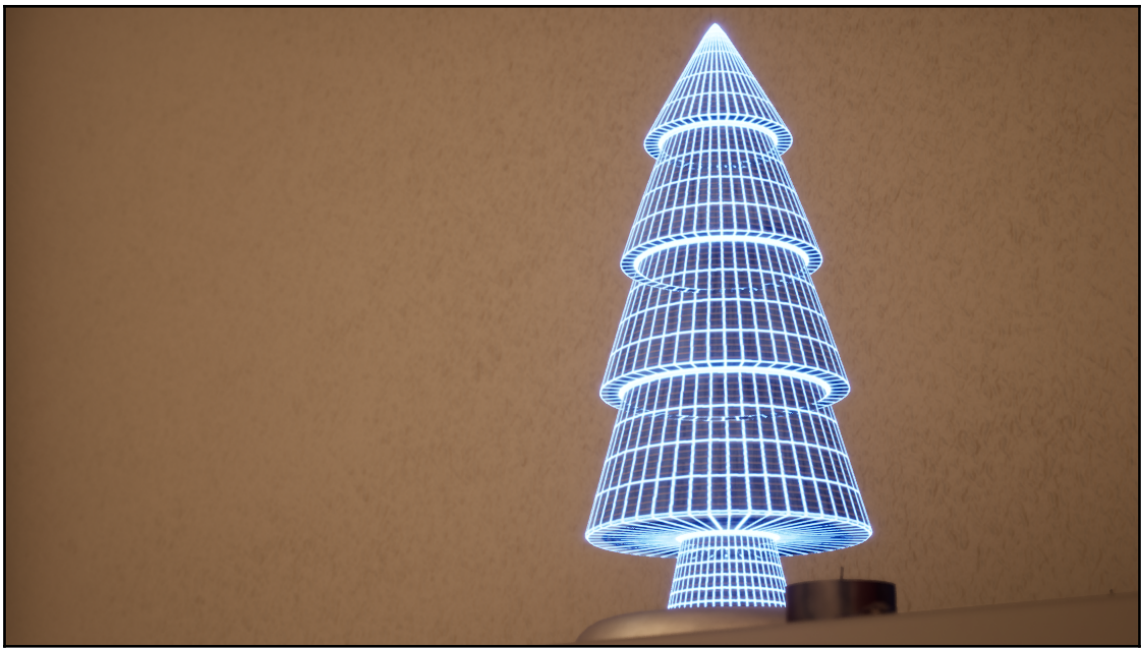

Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
Multiply
A
B
Multiply
A
B
Multiply(,0.5)
A
B
2
0.52,0.55,0.74
0.2

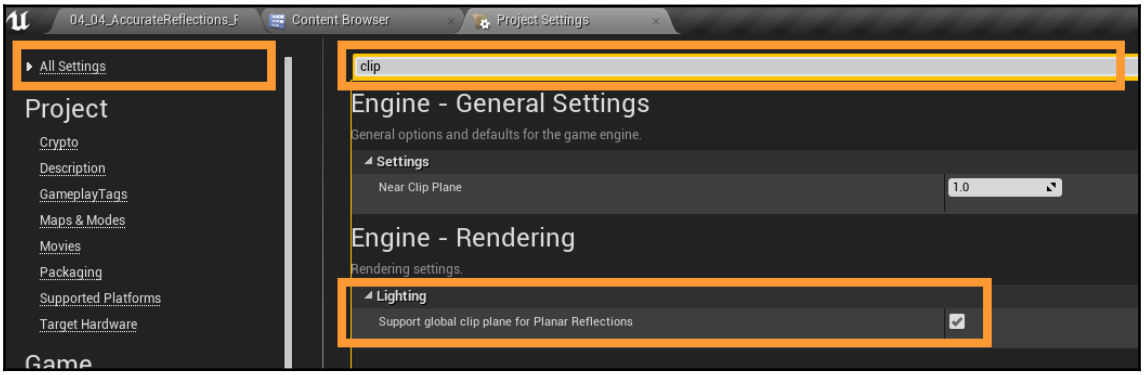

Perspective
Lit
Show
Previewing: MaterialExpressionMultiply_3
Graph
Texture Sample
UVs
Tex
View MipBias
Multiply
A
B
Multiply(,50)
Previewing
A
B
0.045,0.16,0.79

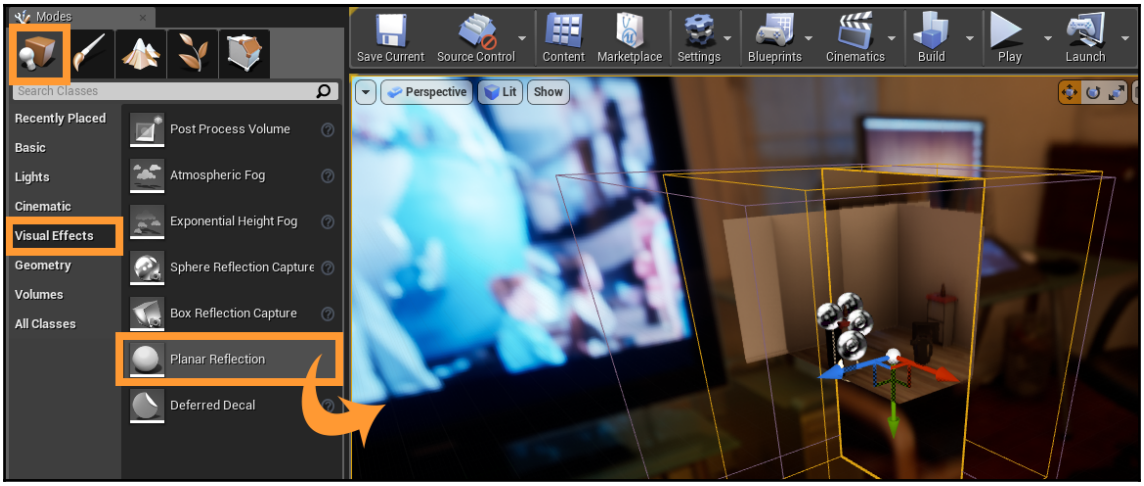

Lerp
A
B
Alpha
Lerp
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias
Multiply(,10)
A
B
Fresnel
ExponentIn
BaseReflectFractionIn
Normal

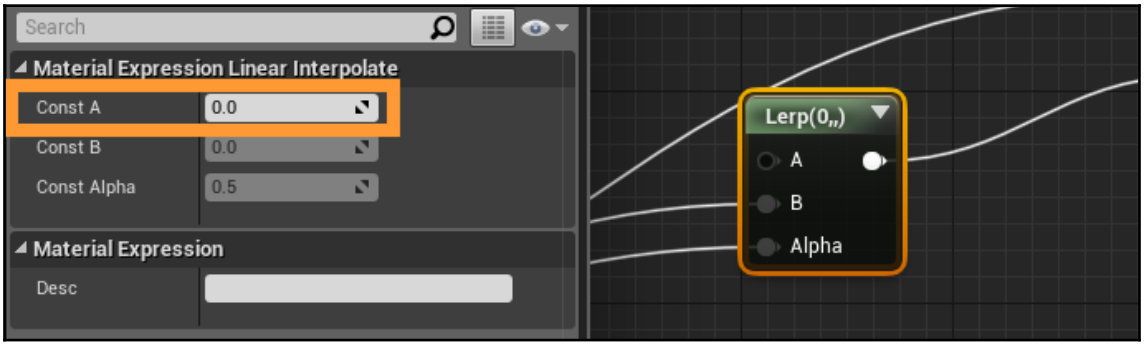

BoundingBoxBased_0-1_UVW
RGB
R
G
B
MakeFloat2
X (S) Result
Y (S)
1-x
Multiply(,6)
A
B
Panner
Coordinate
Time
Speed
Texture Sample
Previewing
UVs
Tex
View MipBias

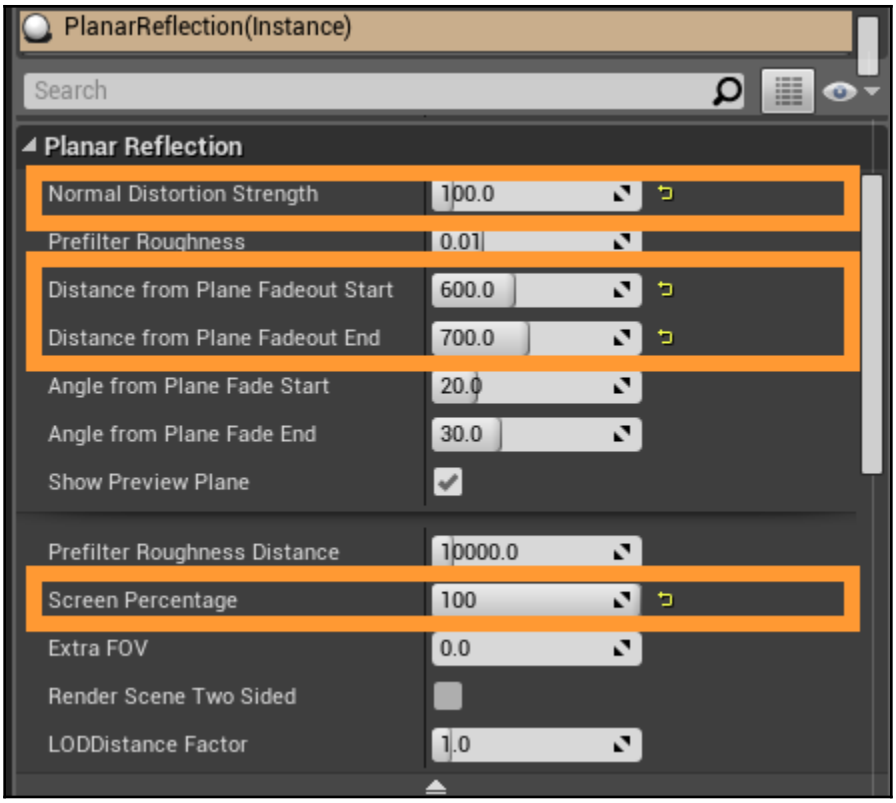

0.2,0.2,0.2
1,1,1
Add
A
B
Lerp
A
B
Alpha
Multiply(,0.8)
Previewing
A
B



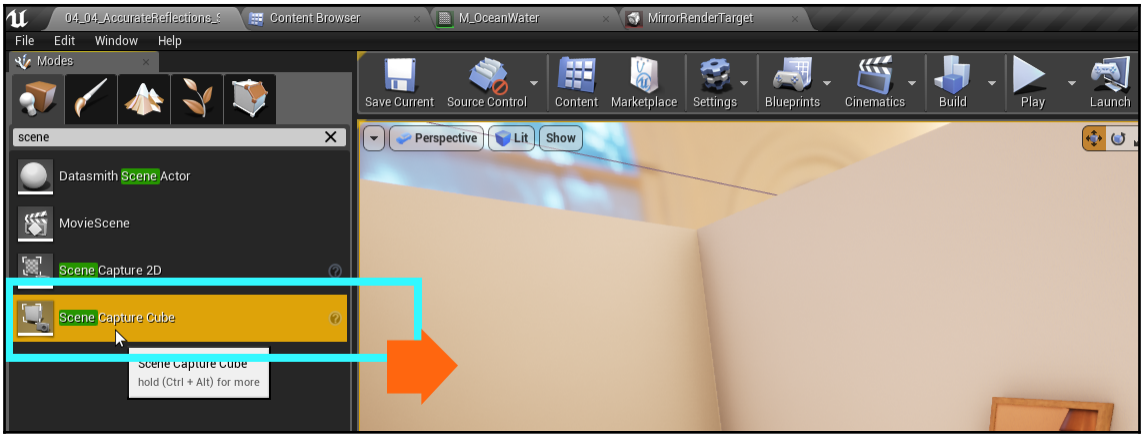

04_04_AccurateReflections_F
Content Browser
Project Settings
All Settings
Project
Crypto
Description
GameplayTags
Maps & Modes
Movies
Packaging
Supported Platforms
Target Hardware
Game
clip
Engine - General Settings
General options and defaults for the game engine.
Settings
Near Clip Plane
1.0
Engine - Rendering
Rendering settings.
Lighting
Support global clip plane for Planar Reflections

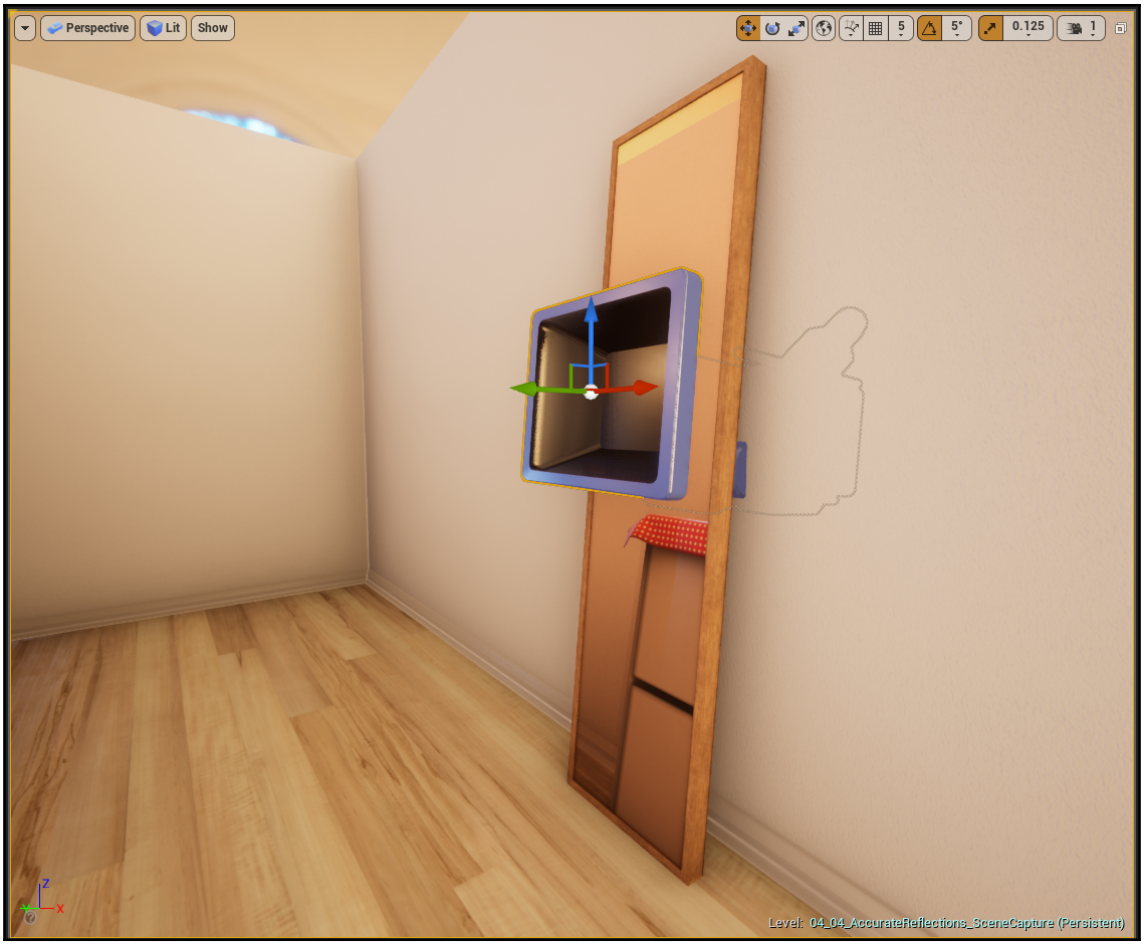

Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Post Process Volume
Atmospheric Fog
Exponential Height Fog
Sphere Reflection Capture
Box Reflection Capture
Planar Reflection
Deferred Decal
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show

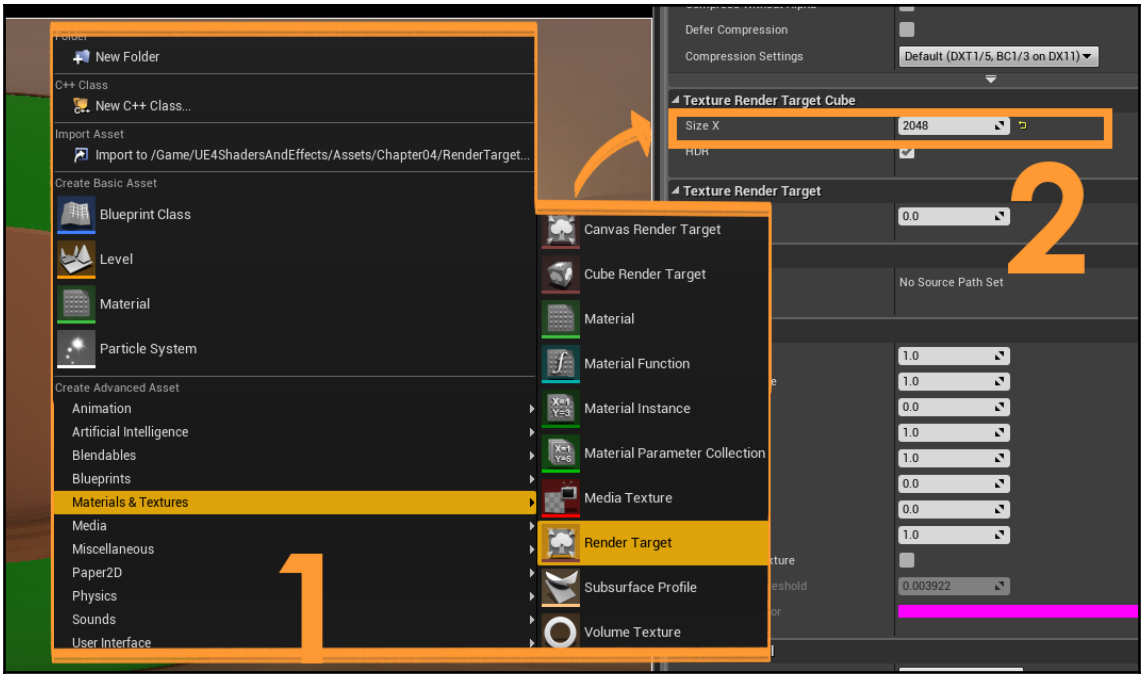

Search
Material Expression Linear Interpolate
Const A
0.0
Const B
0.0
Const Alpha
0.5
Material Expression
Desc
Lerp(0,,)
A
B
Alpha

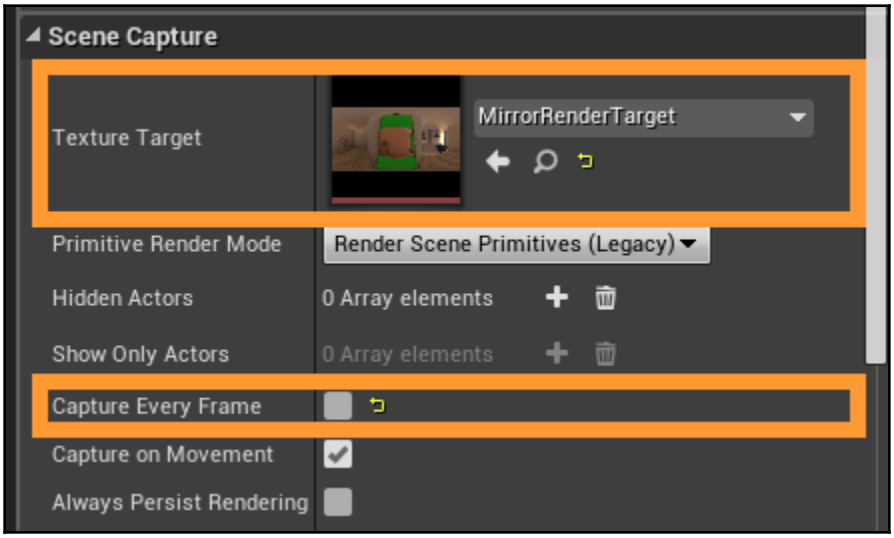

PlanarReflection(Instance)
Search
Planar Reflection
Normal Distortion Strength
100.0
Prefilter Roughness
0.01
Distance from Plane Fadeout Start
600.0
Distance from Plane Fadeout End
700.0
Angle from Plane Fade Start
20.0
Angle from Plane Fade End
30.0
Show Preview Plane
Prefilter Roughness Distance
10000.0
Screen Percentage
100
Extra FOV
0.0
Render Scene Two Sided
LODDistance Factor
1.0

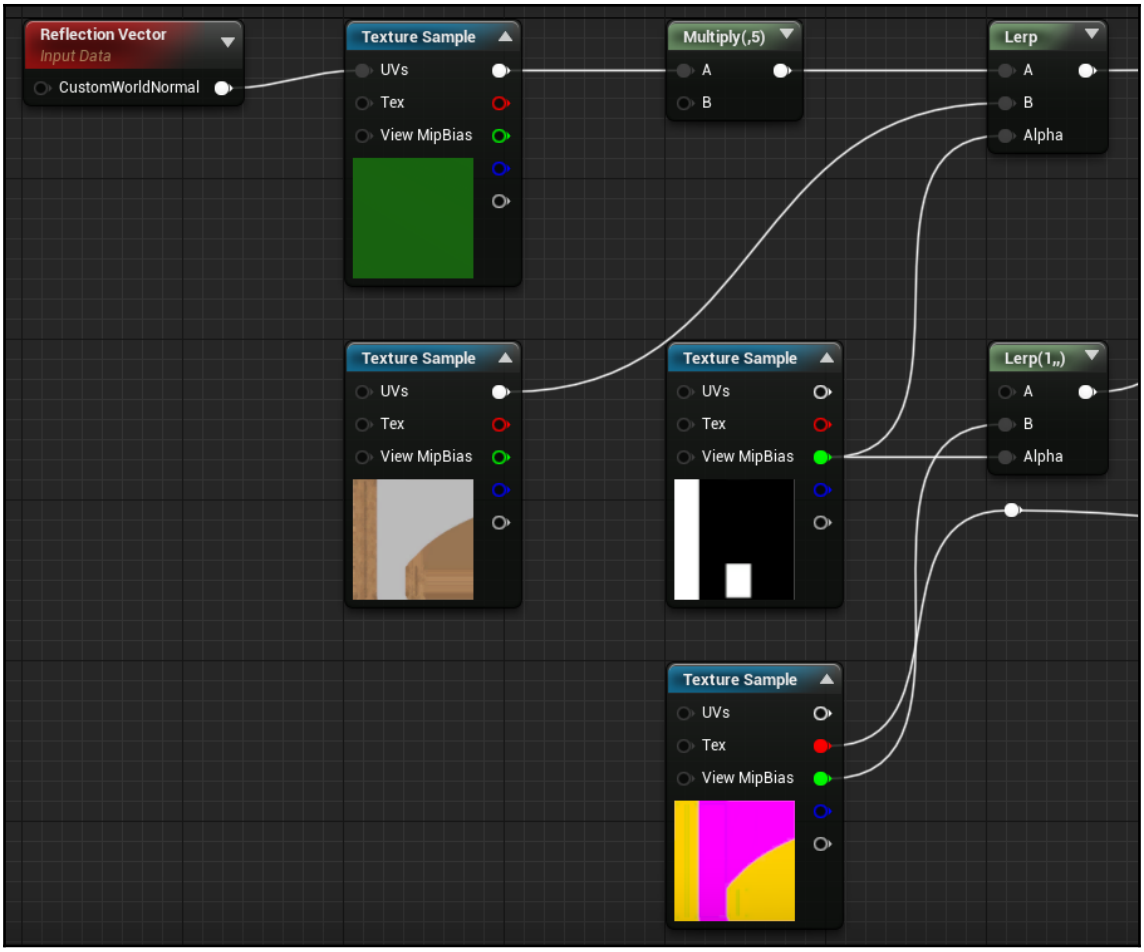
SCREEN SPACE REFLECTIONS
PLANAR REFLECTIONS

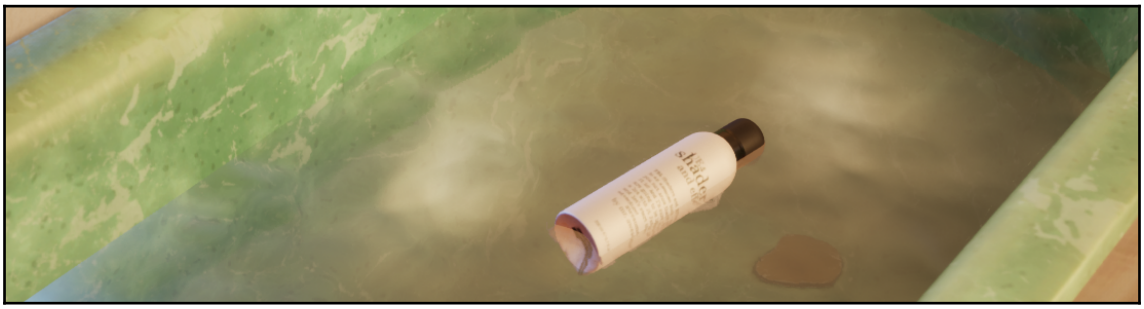

04_04_AccurateReflections_S
Content Browser
M_OceanWater
MirrorRenderTarget
File
Edit
Window
Help
Modes
scene
Datasmith Scene Actor
MovieScene
Scene Capture 2D
Scene Capture Cube
Scene Capture Cube
hold (Ctrl + Alt) for more
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Perspective
Lit
Show

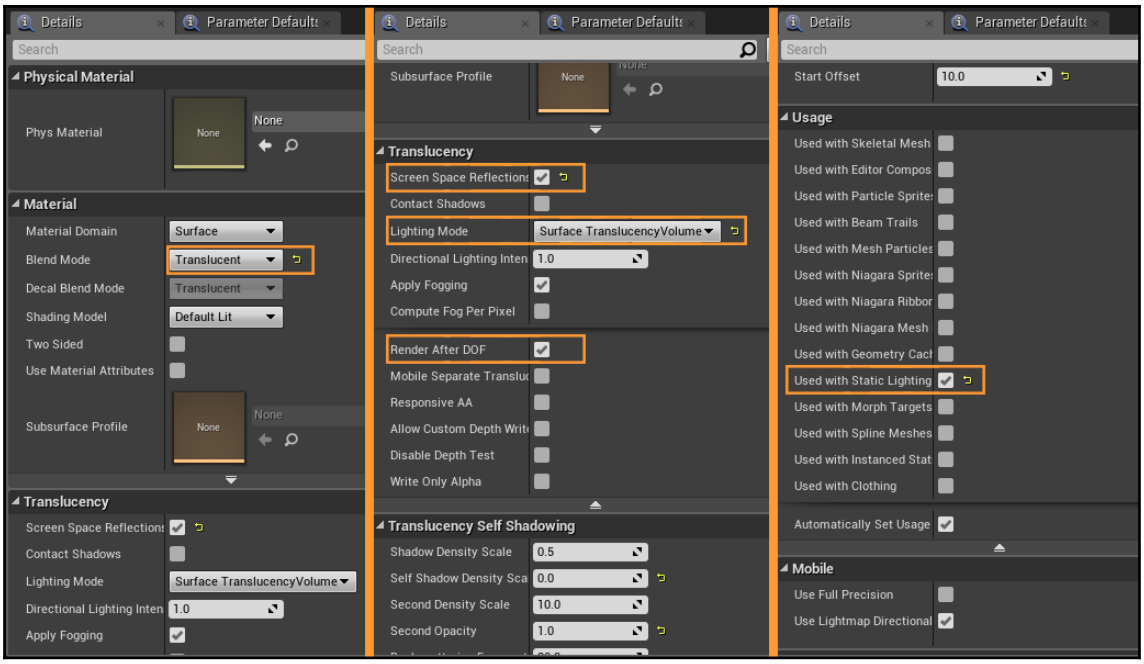

Perspective
Lit
Show
5
5°
0.125
1
Level: 04_04_AccurateReflections_SceneCapture (Persistent)

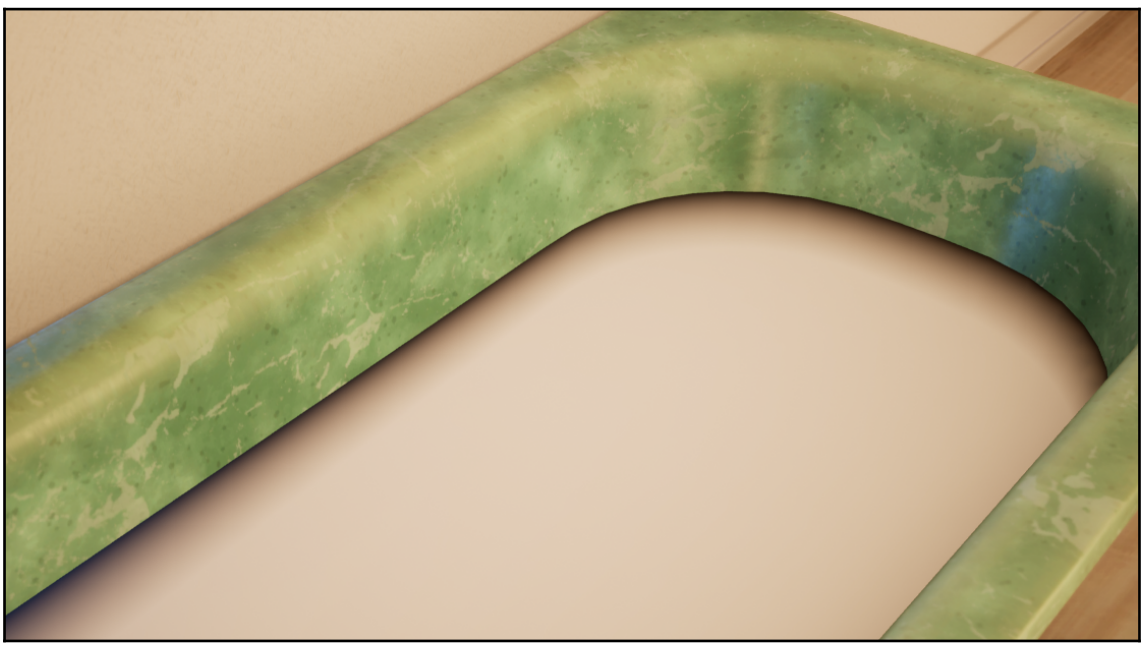

New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter04/RenderTarget...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
1
Canvas Render Target
Cube Render Target
Material
Material Function
Material Instance
Material Parameter Collection
Media Texture
Render Target
Subsurface Profile
Volume Texture
Defer Compression
Compression Settings
Default (DXT1/5, BC1/3 on DX11)
Texture Render Target Cube
Size X
2048
HDR
Texture Render Target
0.0
No Source Path Set
1.0
1.0
0.0
1.0
1.0
0.0
0.0
1.0
0.003922
2

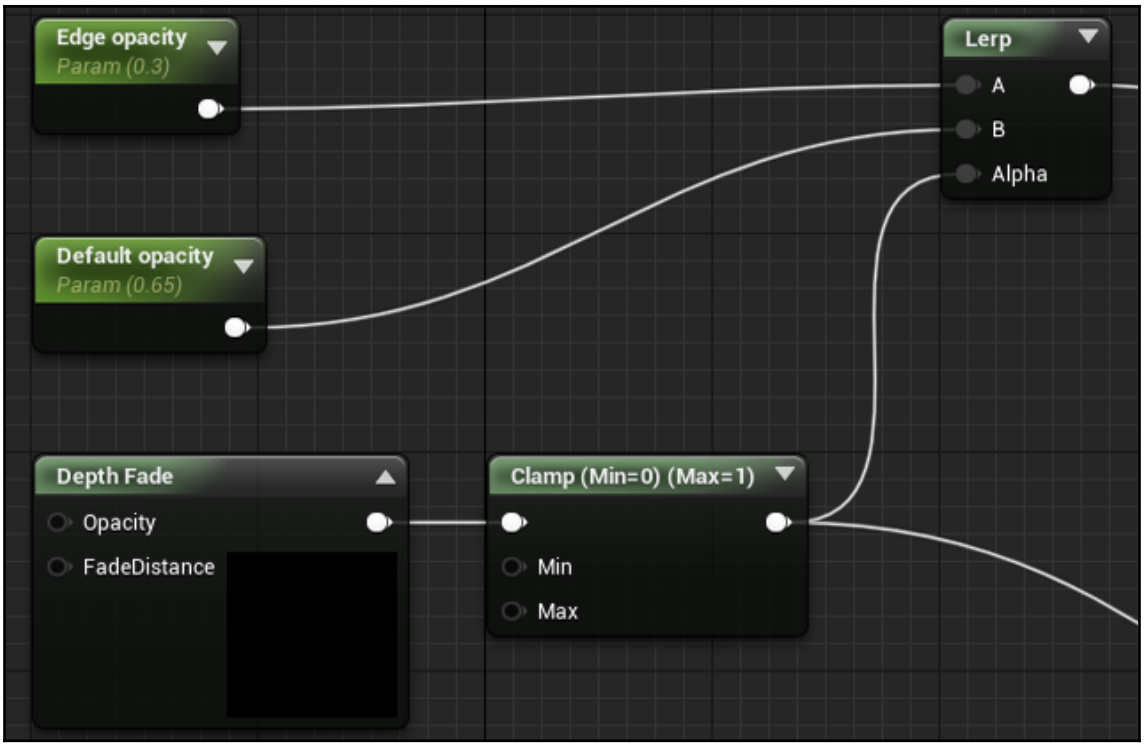

Scene Capture
Texture Target
MirrorRenderTarget
Primitive Render Mode
Render Scene Primitives (Legacy)
Hidden Actors
0 Array elements
Show Only Actors
0 Array elements
Capture Every Frame
Capture on Movement
Always Persist Rendering

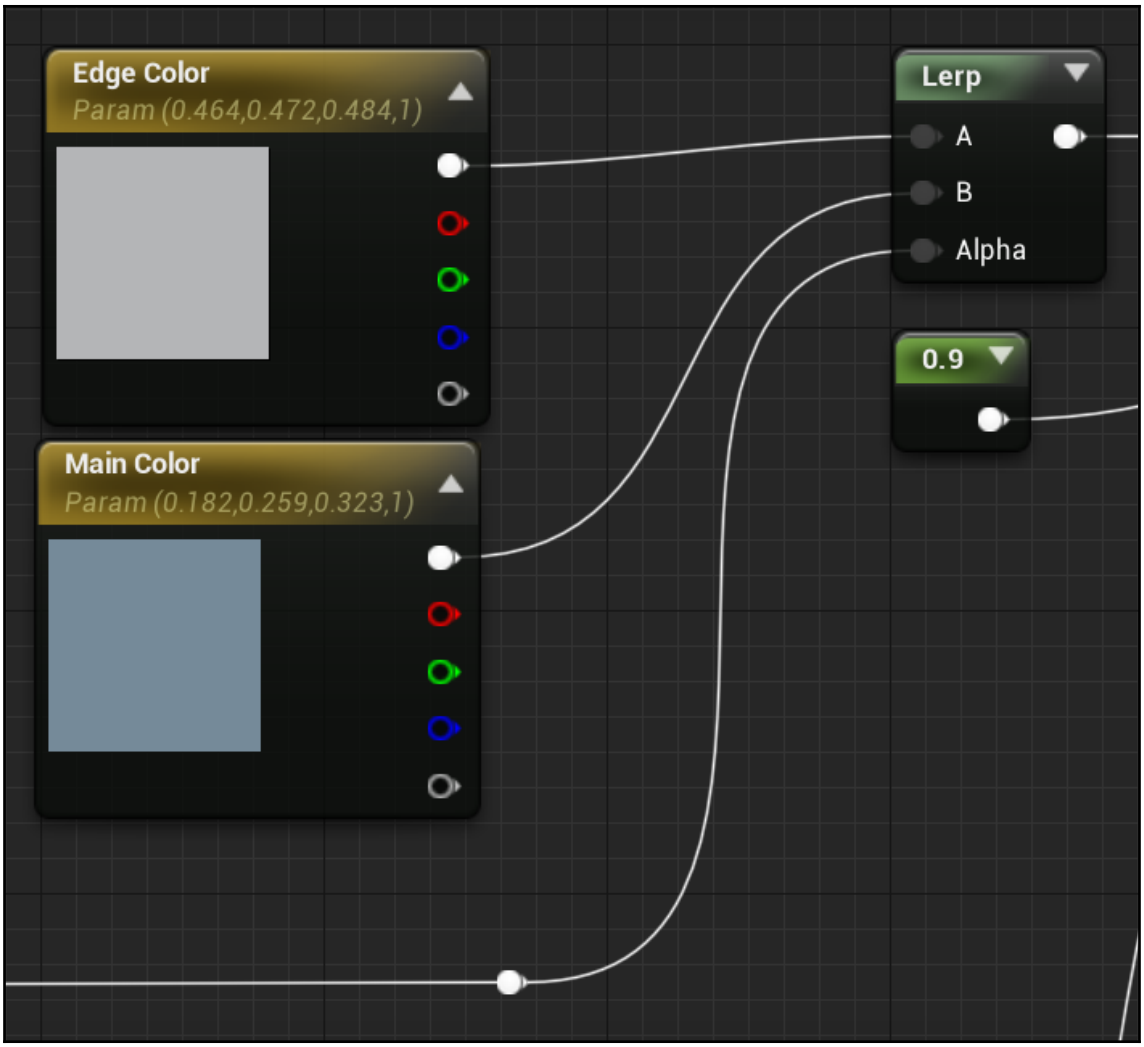

Reflection Vector
Input Data
CustomWorldNormal
Texture Sample
UVs
Tex
View MipBias
Multiply(,5)
A
B
Lerp
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Lerp(1,,)
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias

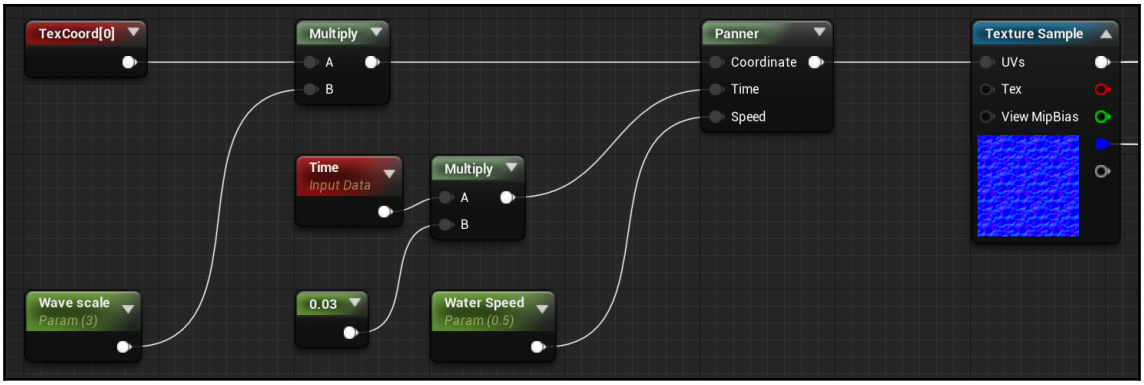


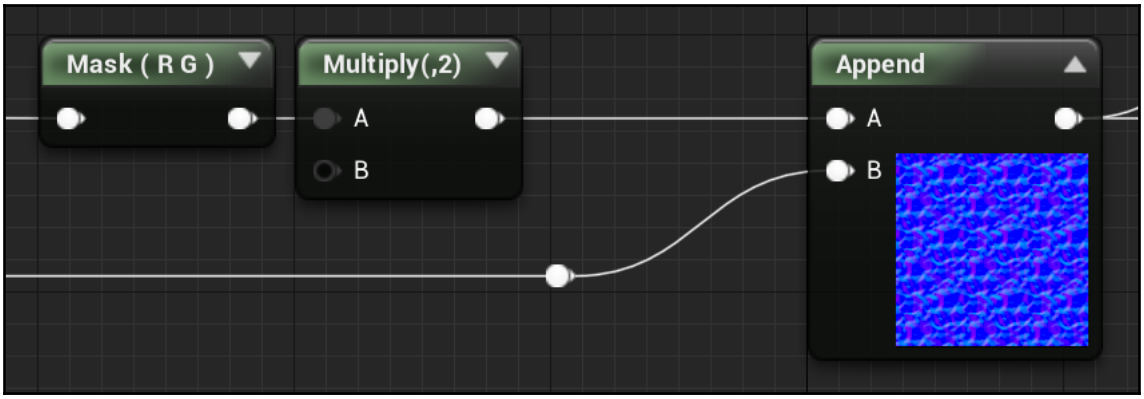

Details
Parameter Defaults
Search
Physical Material
Phys Material
None
Material
Material Domain
Surface
Blend Mode
Translucent
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attributes
Subsurface Profile
None
Translucency
Screen Space Reflections
Contact Shadows
Lighting Mode
Surface TranslucencyVolume
Directional Lighting Inten
1.0
Apply Fogging
Subsurface Profile
None
Translucency
Screen Space Reflections
Contact Shadows
Lighting Mode
Surface TranslucencyVolume
Directional Lighting Inten
1.0
Apply Fogging
Compute Fog Per Pixel
Render After DOF
Mobile Separate Translu
Responsive AA
Allow Custom Depth Writ
Disable Depth Test
Write Only Alpha
Translucency Self Shadowing
Shadow Density Scale
0.5
Self Shadow Density Sca
0.0
Second Density Scale
10.0
Second Opacity
1.0
Start Offset
10.0
Usage
Used with Skeletal Mesh
Used with Editor Compos
Used with Particle Sprite
Used with Beam Trails
Used with Mesh Particles
Used with Niagara Sprite
Used with Niagara Ribbon
Used with Niagara Mesh
Used with Geometry Cach
Used with Static Lighting
Used with Morph Targets
Used with Spline Meshes
Used with Instanced Stat
Used with Clothing
Automatically Set Usage
Mobile
Use Full Precision
Use Lightmap Directional

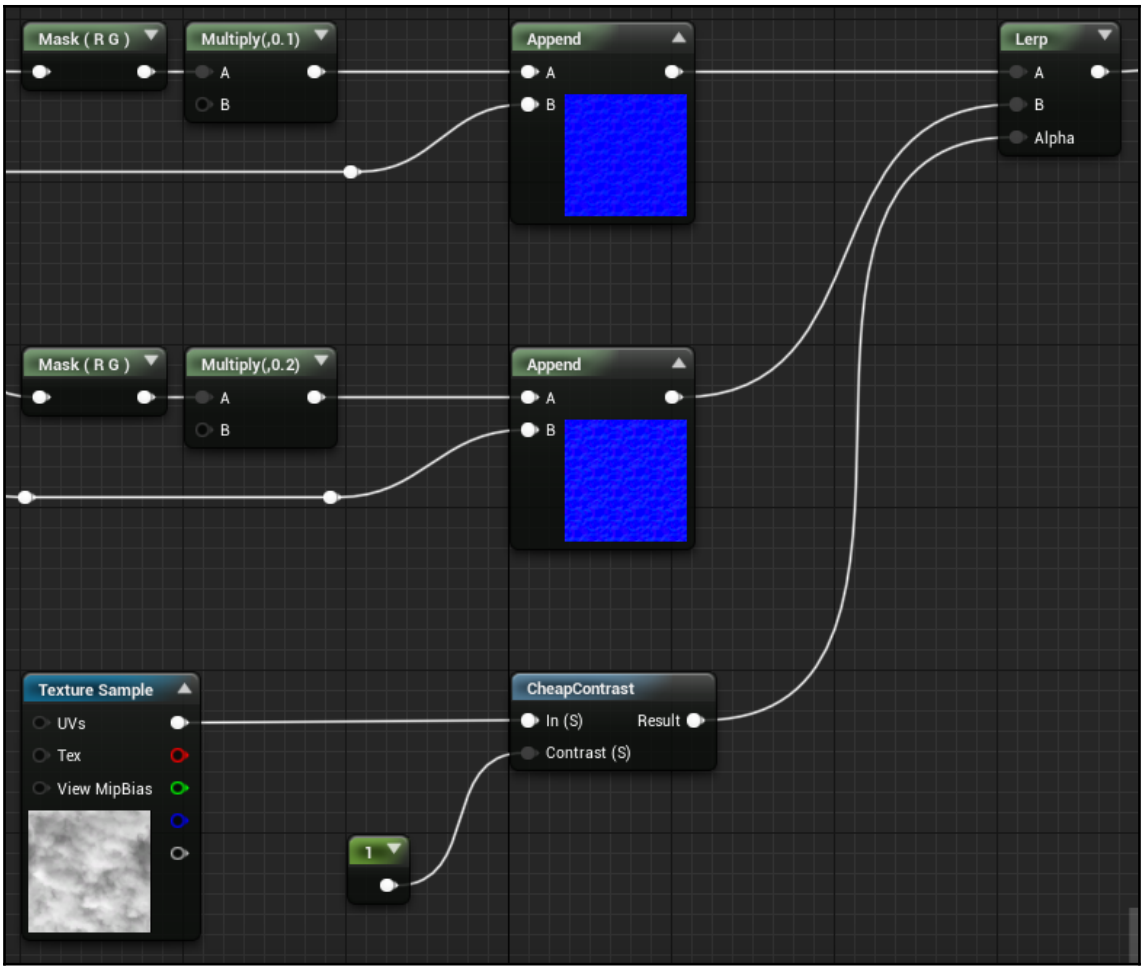


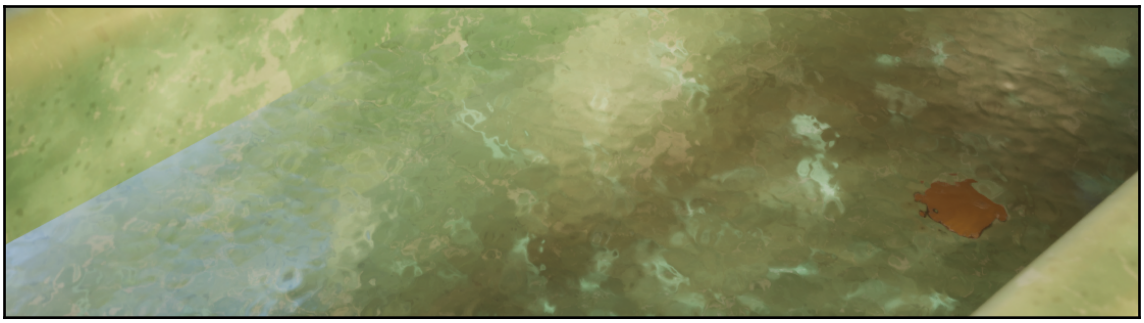

Edge opacity
Param (0.3)
Lerp
A
B
Alpha
Default opacity
Param (0.65)
Depth Fade
Opacity
FadeDistance
Clamp (Min=0) (Max=1)
Min
Max

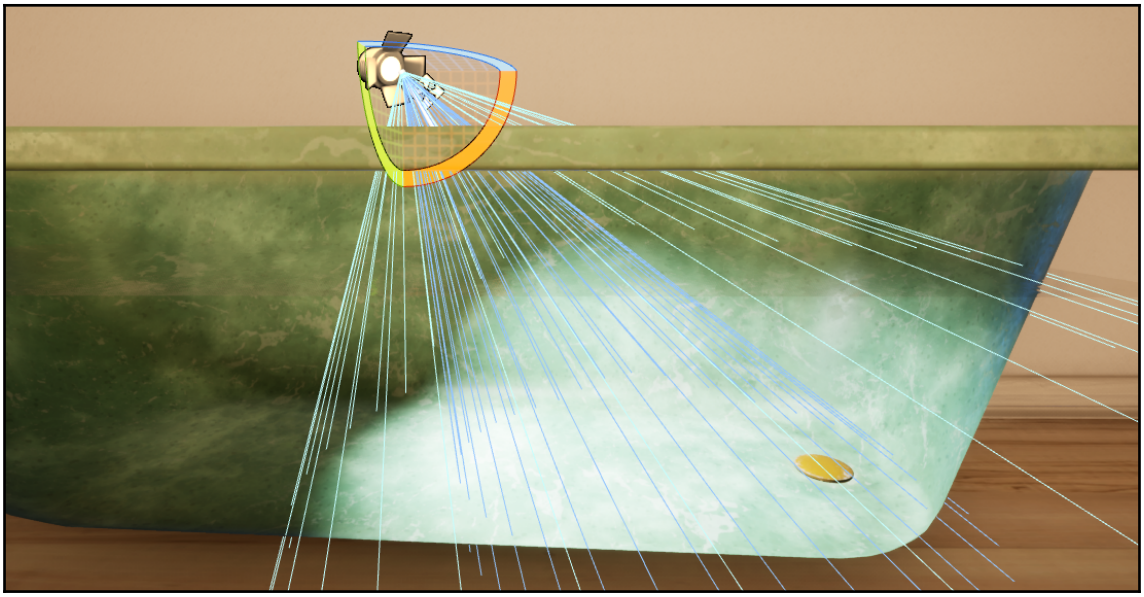

Edge Color
Param (0.464,0.472,0.484,1)
Main Color
Param (0.182,0.259,0.323,1)
Lerp
A
B
Alpha
0.9

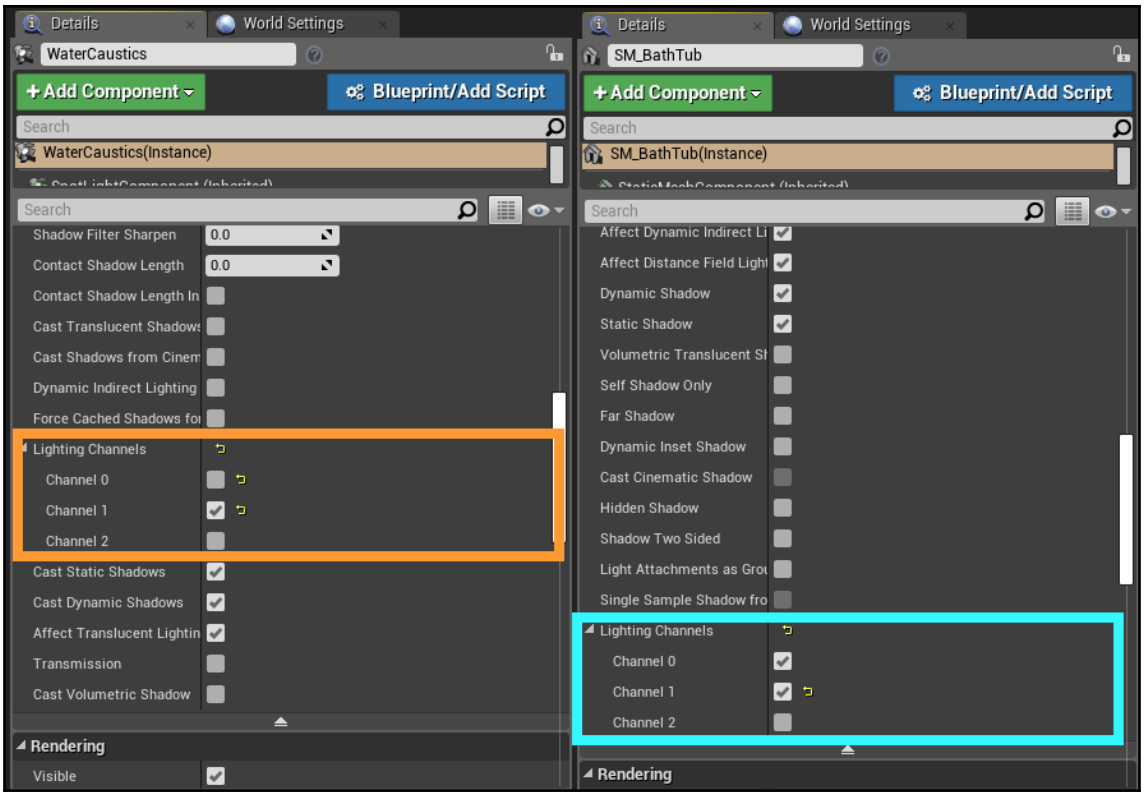

TexCoord[0]
Multiply
A
B
Panner
Coordinate
Time
Speed
Texture Sample
UVs
Tex
View MipBias
Time
Input Data
Multiply
A
B
Wave scale
Param (3)
0.03
Water Speed
Param (0.5)

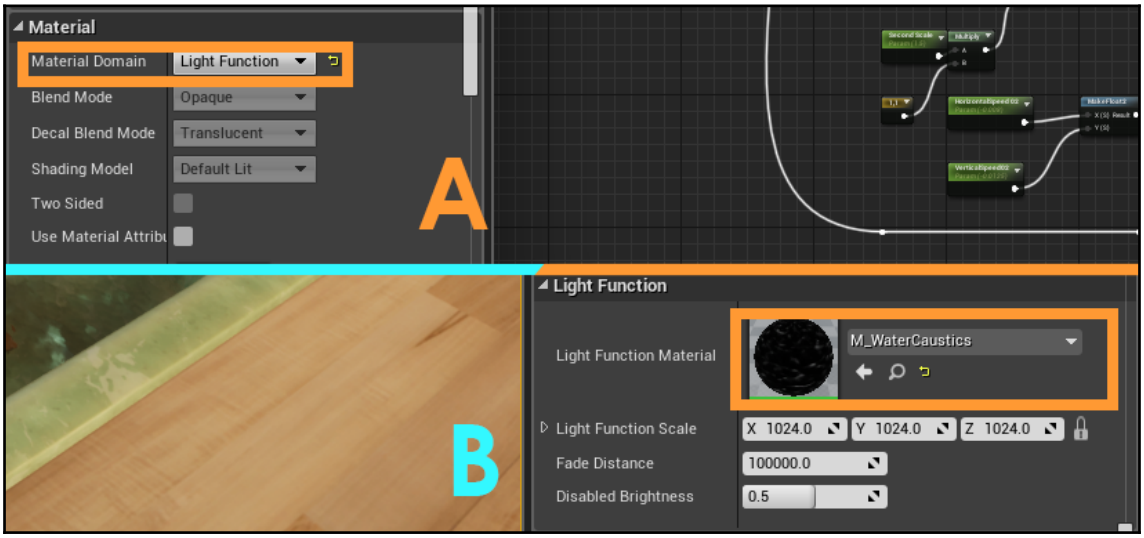

Mask (R G)
Multiply(,2)
A
B
Append
A
B

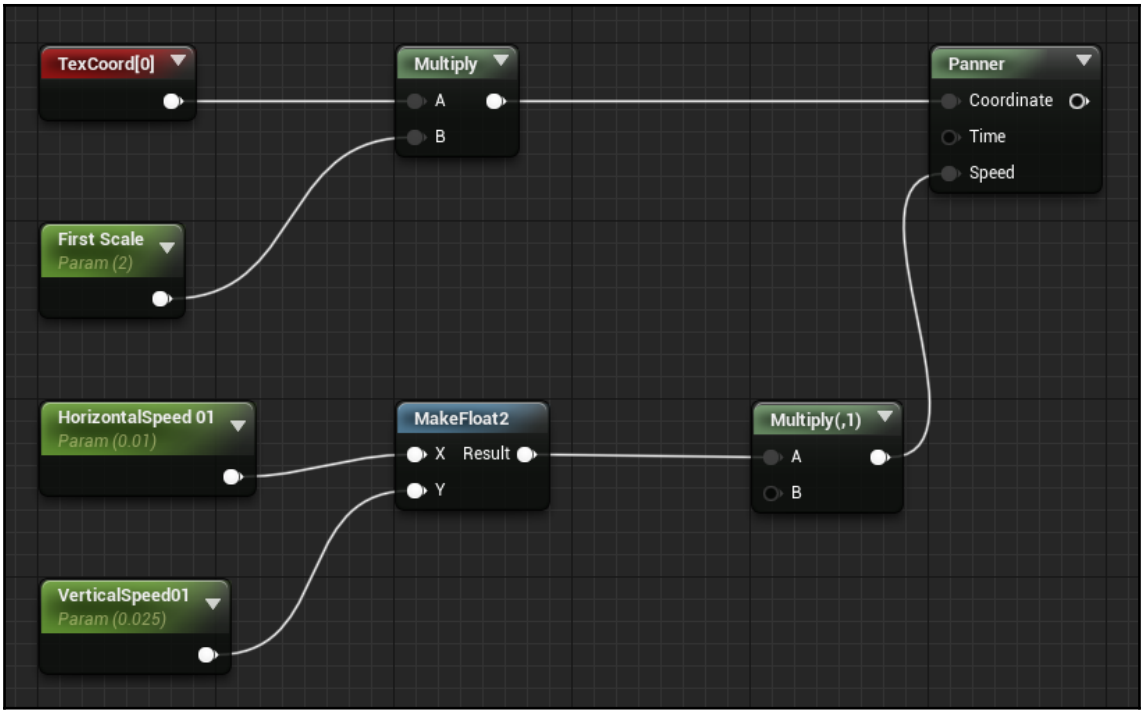

Mask (R G)
Multiply(,0.1)
A
B
Append
A
B
Lerp
A
B
Alpha
Mask (R G)
Multiply(,0.2)
A
B
Append
A
B
Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
1

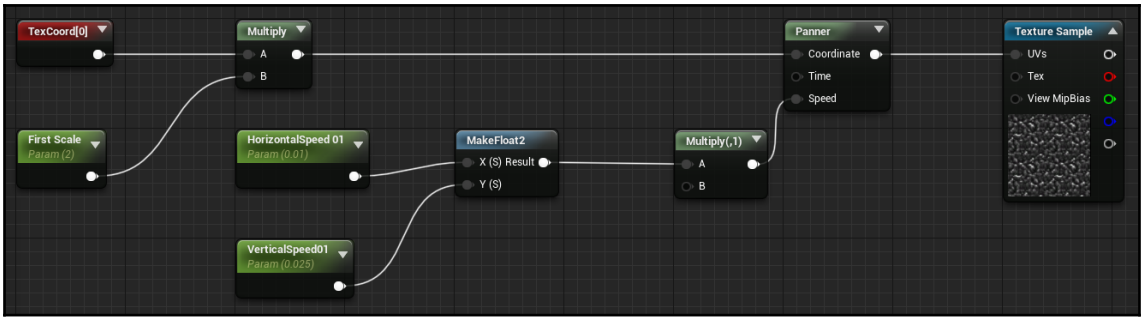


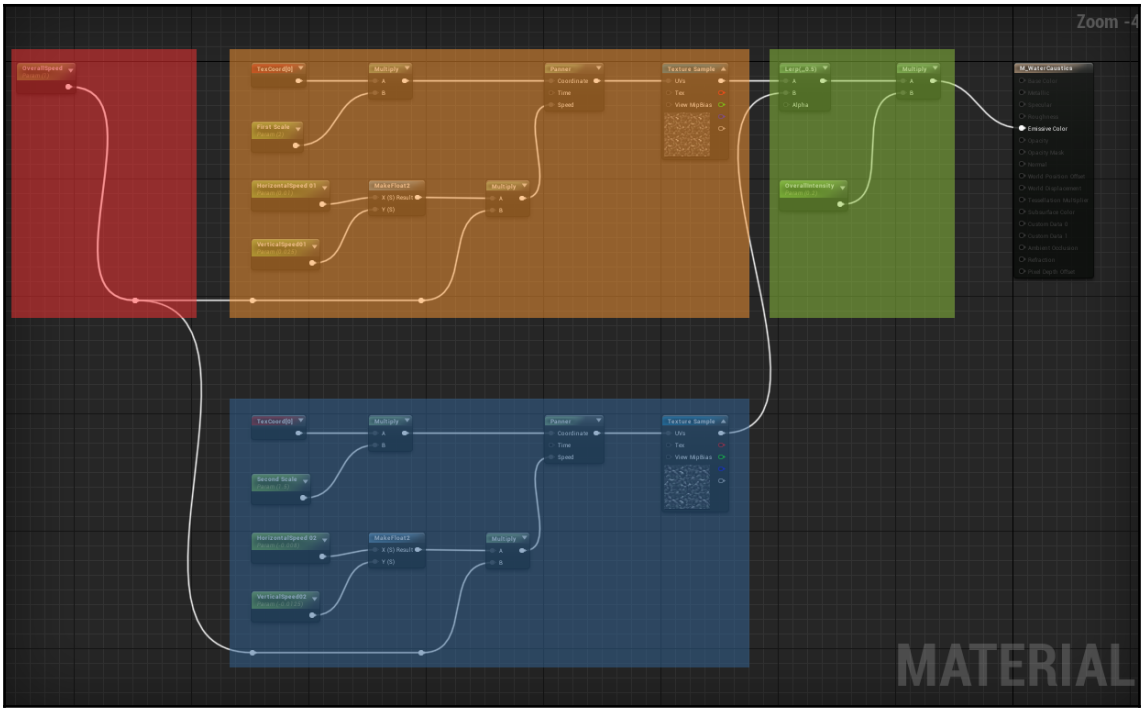


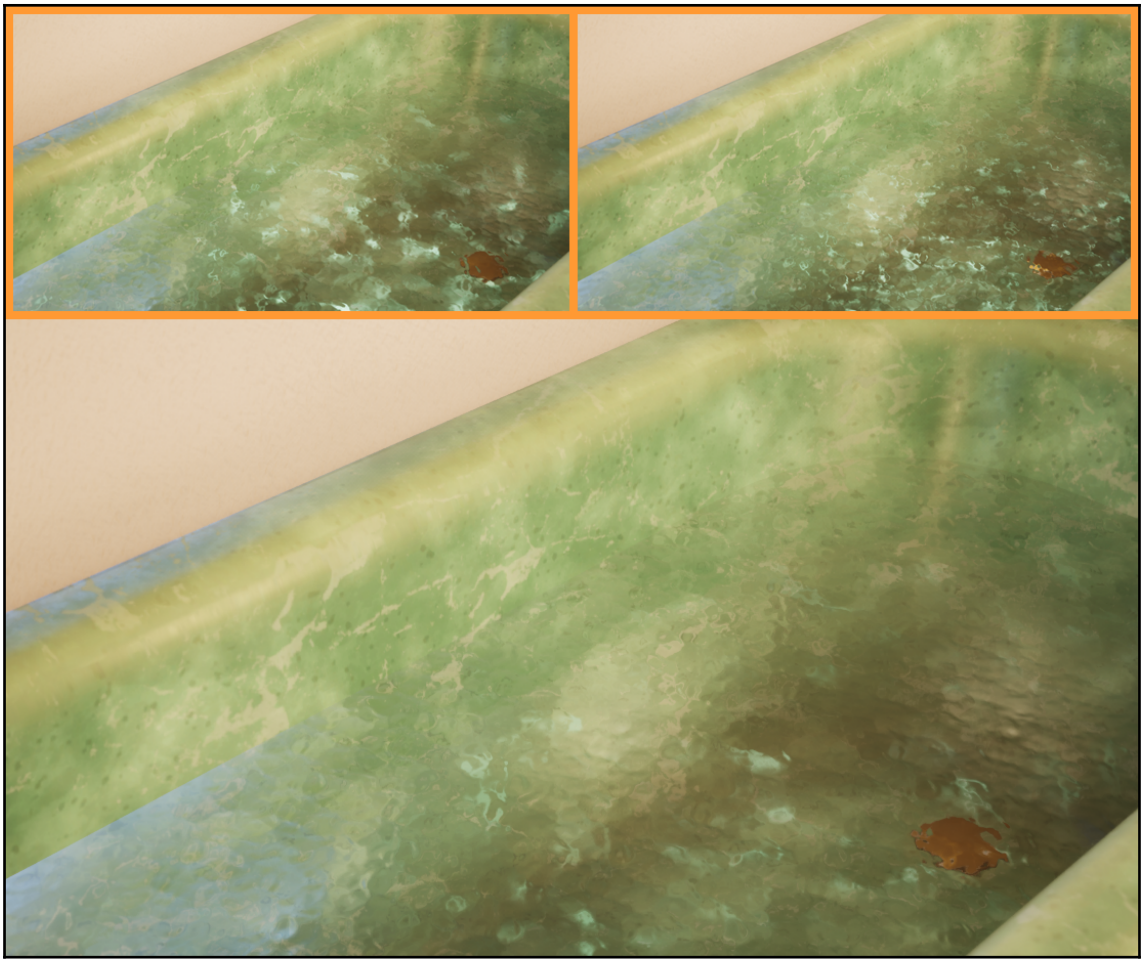

Details
World Settings
WaterCaustics
+ Add Component
Blueprint/Add Script
Search
WaterCaustics(Instance)
Shadow Filter Sharpen
0.0
Contact Shadow Length
0.0
Contact Shadow Length In
Cast Translucent Shadows
Cast Shadows from Cinem
Dynamic Indirect Lighting
Force Cached Shadows fo
Lighting Channels
Channel 0
Channel 1
Channel 2
Cast Static Shadows
Cast Dynamic Shadows
Affect Translucent Lightin
Transmission
Cast Volumetric Shadow
Rendering
Visible
Details
World Settings
SM_BathTub
+ Add Component
Blueprint/Add Script
Search
SM_BathTub(Instance)
Affect Dynamic Indirect Li
Affect Distance Field Light
Dynamic Shadow
Static Shadow
Volumetric Translucent Sh
Self Shadow Only
Far Shadow
Dynamic Inset Shadow
Cast Cinematic Shadow
Hidden Shadow
Shadow Two Sided
Light Attachments as Grou
Single Sample Shadow fro
Lighting Channels
Channel 0
Channel 1
Channel 2
Rendering

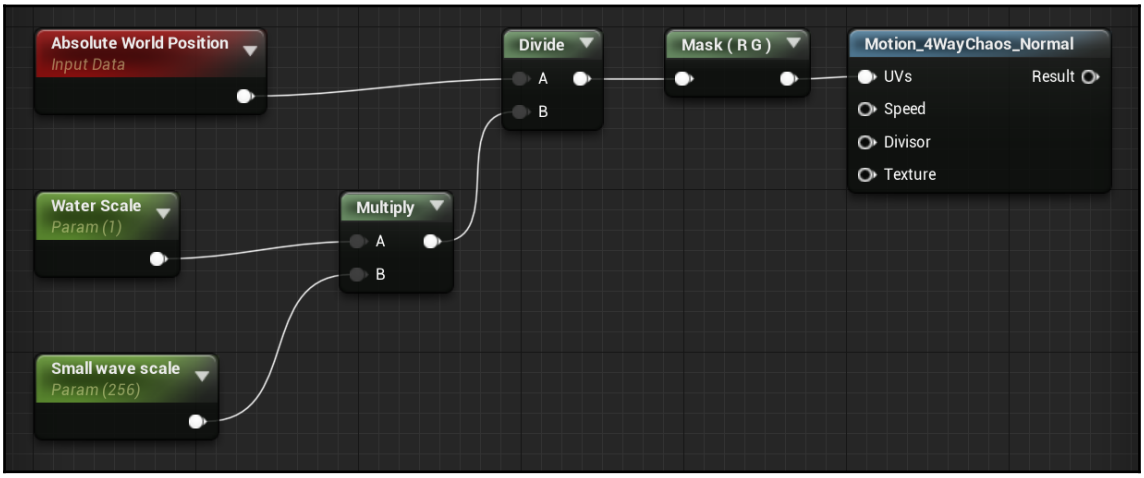

Material
Material Domain
Light Function
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attribu
A
B
Light Function
Light Function Material
M_WaterCaustics
Light Function Scale
X 1024.0
Y 1024.0
Z 1024.0
Fade Distance
100000.0
Disabled Brightness
0.5

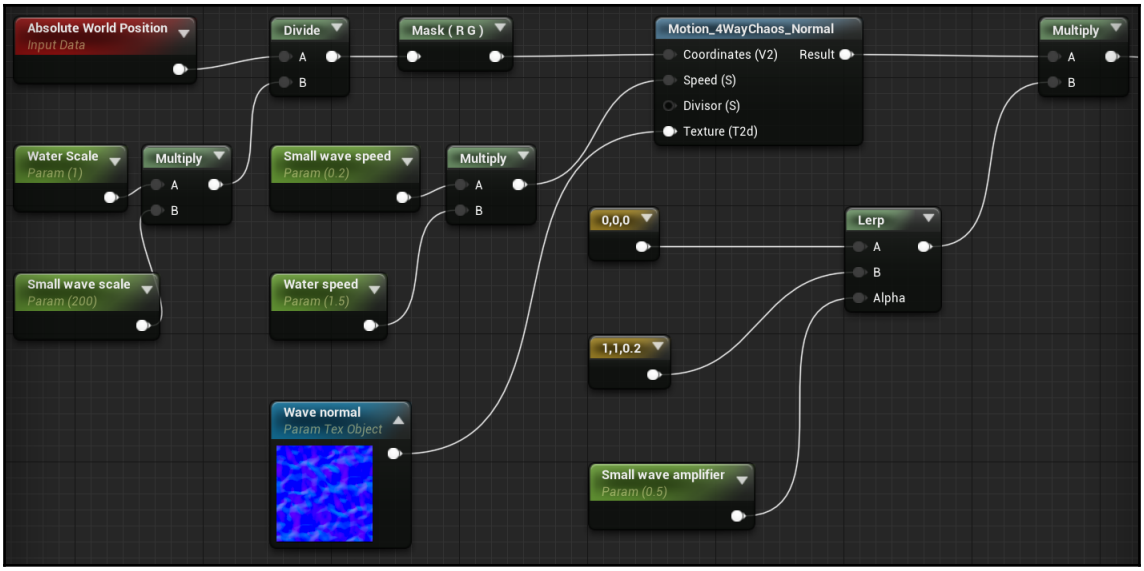

TexCoord[0]
Multiply
A
B
Panner
Coordinate
Time
Speed
First Scale
Param (2)
HorizontalSpeed 01
Param (0.01)
MakeFloat2
X
Result
Y
Multiply(,1)
A
B
VerticalSpeed01
Param (0.025)

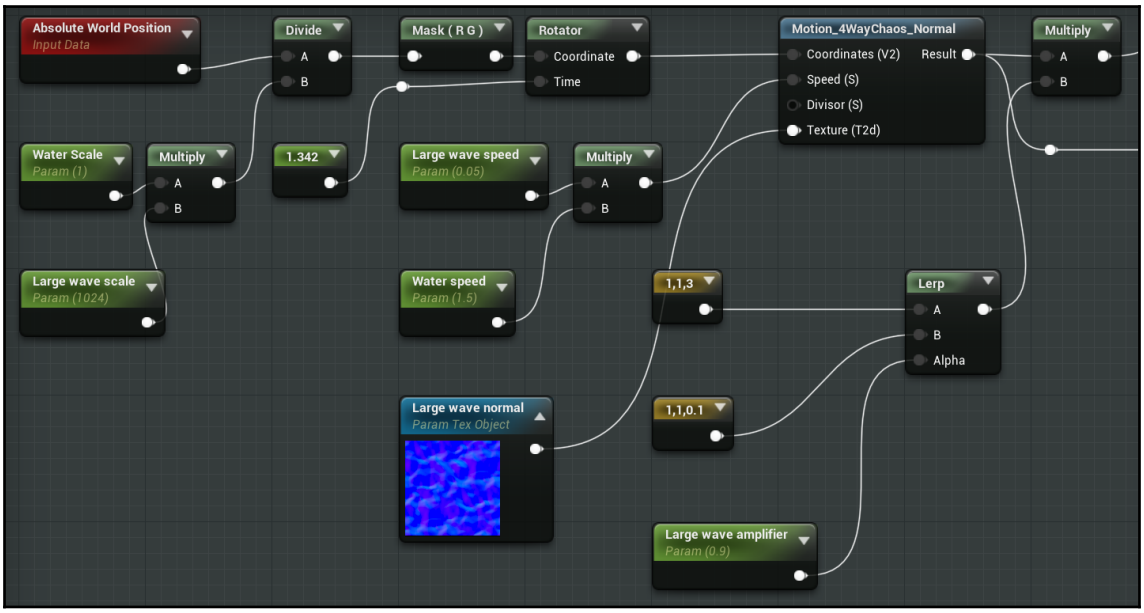

TexCoord[0]
Multiply
A
B
Panner
Coordinate
Time
Speed
Texture Sample
UVs
Tex
View MipBias
First Scale
Param (2)
HorizontalSpeed 01
Param (0.01)
MakeFloat2
X (S) Result
Y (S)
Multiply(,1)
A
B
VerticalSpeed01
Param (0.025)

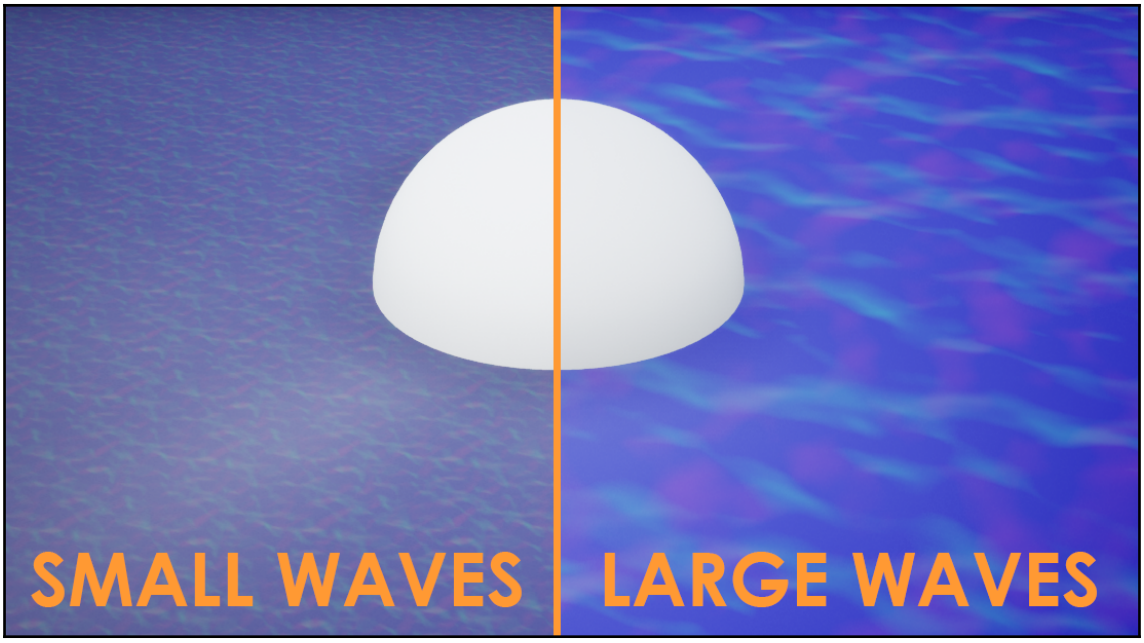

Zoom -4
OverallSpeed
TexCoord[0]
Multiply
Panner
Texture Sample
Lerp(_0.5)
Multiply
M_WaterCaustics
Emissive Color
First Scale
HorizontalSpeed 01
MakeFloat2
VerticalSpeed01
OverallIntensity
Second Scale
HorizontalSpeed 02
VerticalSpeed02
MATERIAL

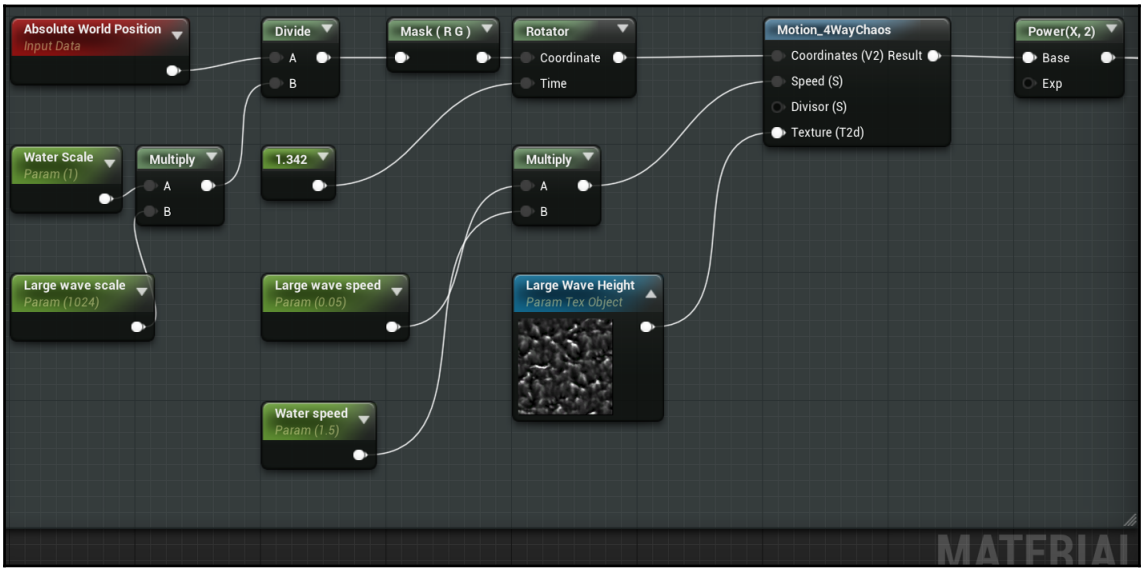


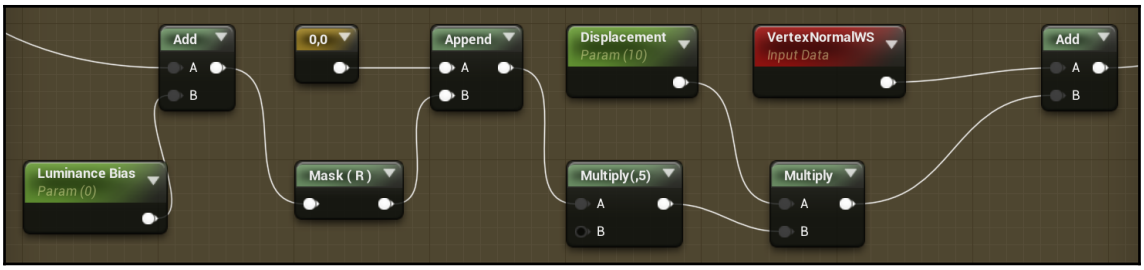

Absolute World Position
Input Data
Divide
A
B
Mask (R G)
Motion_4WayChaos_Normal
UVs
Result
Speed
Divisor
Texture
Water Scale
Param (1)
Multiply
A
B
Small wave scale
Param (256)

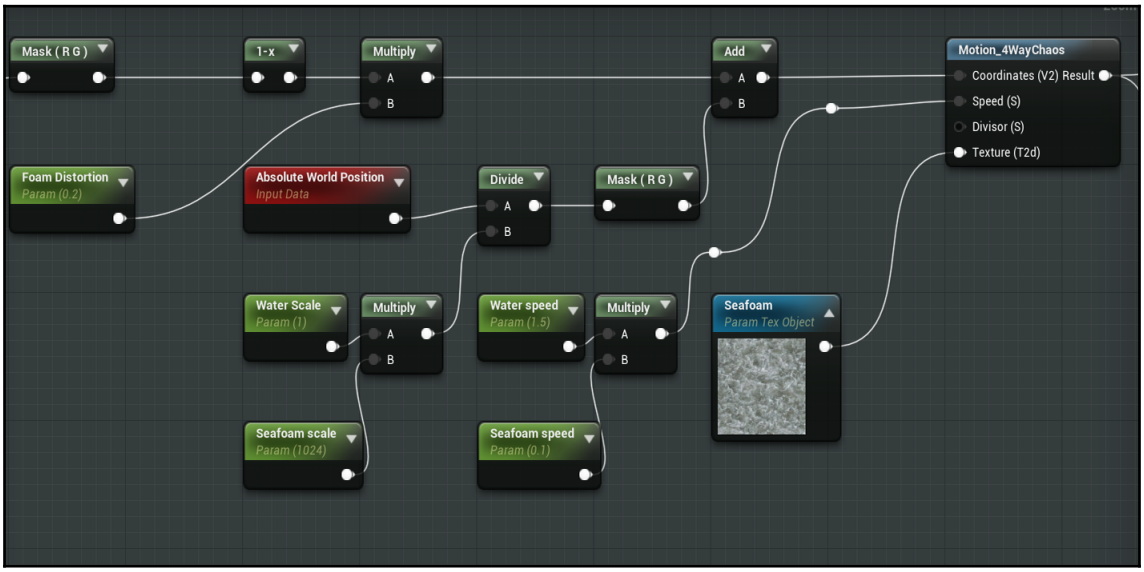

Absolute World Position
Input Data
Divide
A
B
Mask (R G)
Motion_4WayChaos_Normal
Coordinates (V2)
Result
Speed (S)
Divisor (S)
Texture (T2d)
Multiply
A
B
Water Scale
Param (1)
Multiply
A
B
Small wave speed
Param (0.2)
Multiply
A
B
0,0,0
Lerp
A
B
Alpha
Small wave scale
Param (200)
Water speed
Param (1.5)
1,1,0.2
Wave normal
Param Tex Object
Small wave amplifier
Param (0.5)

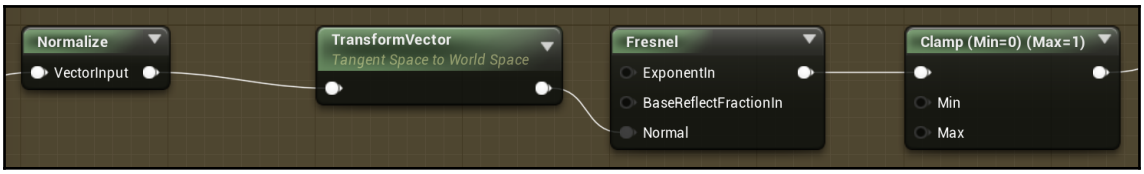

Absolute World Position
Input Data
Divide
A
B
Mask (R G)
Rotator
Coordinate
Time
Motion_4WayChaos_Normal
Coordinates (V2)
Result
Speed (S)
Divisor (S)
Texture (T2d)
Multiply
A
B
Water Scale
Param (1)
Multiply
A
B
1.342
Large wave speed
Param (0.05)
Multiply
A
B
Large wave scale
Param (1024)
Water speed
Param (1.5)
1,1,3
Lerp
A
B
Alpha
Large wave normal
Param Tex Object
1,1,0.1
Large wave amplifier
Param (0.9)

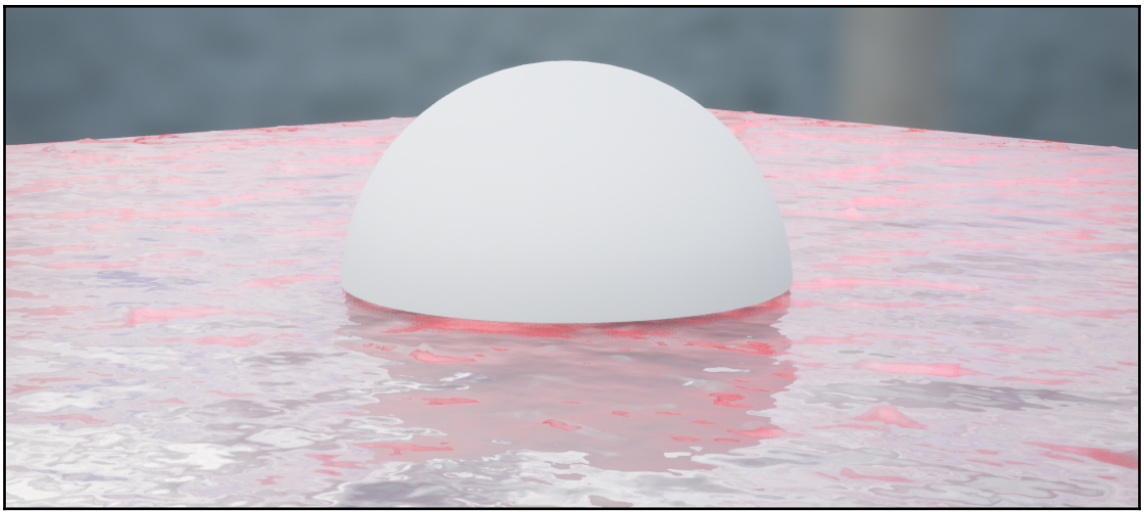

SMALL WAVES
LARGE WAVES

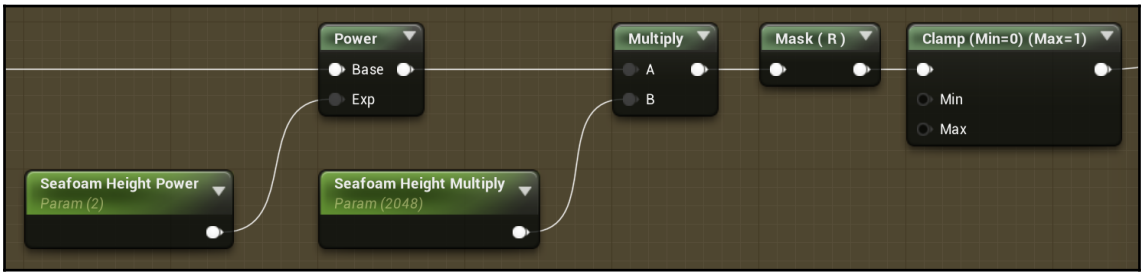

Absolute World Position
Input Data
Divide
A
B
Mask (R G)
Rotator
Coordinate
Time
Motion_4WayChaos
Coordinates (V2) Result
Speed (S)
Divisor (S)
Texture (T2d)
Power(X, 2)
Base
Exp
Water Scale
Param (1)
Multiply
A
B
1.342
Multiply
A
B
Large wave scale
Param (1024)
Large wave speed
Param (0.05)
Large Wave Height
Param Tex Object
Water speed
Param (1.5)
MATERIAL


Add
A
B
0,0
Append
A
B
Displacement
Param (10)
VertexNormalWS
Input Data
Add
A
B
Luminance Bias
Param (0)
Mask (R)
Multiply(,5)
A
B
Multiply
A
B

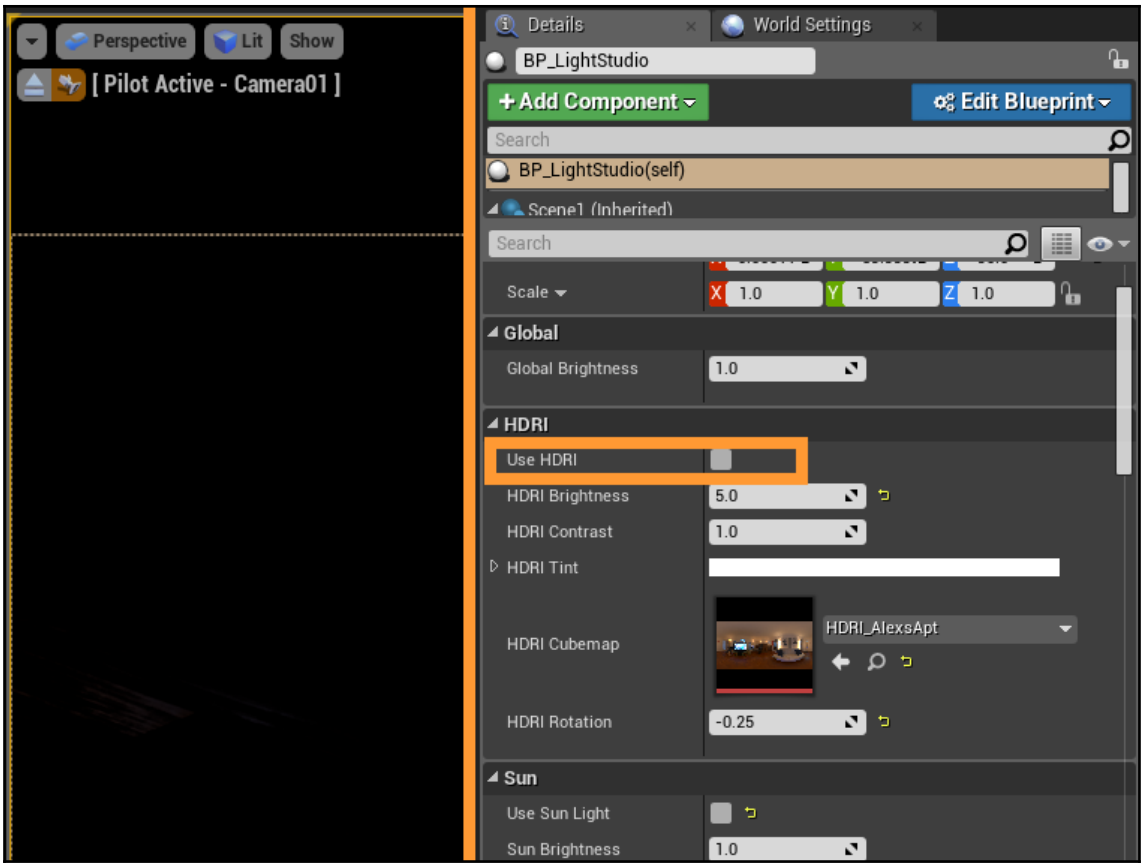

Mask (R G)
1-x
Multiply
A
B
Add
A
B
Motion_4WayChaos
Coordinates (V2) Result
Speed (S)
Divisor (S)
Texture (T2d)
Foam Distortion
Param (0.2)
Absolute World Position
Input Data
Divide
A
B
Mask (R G)
Water Scale
Param (1)
Multiply
A
B
Water speed
Param (1.5)
Multiply
A
B
Seafoam
Param Tex Object
Seafoam scale
Param (1024)
Seafoam speed
Param (0.1)

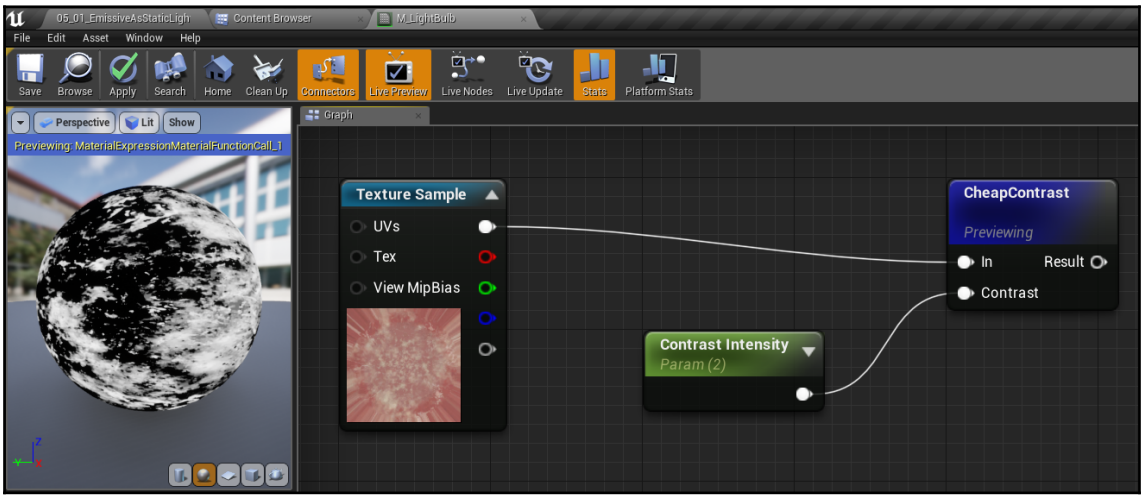

Normalize
VectorInput
TransformVector
Tangent Space to World Space
Fresnel
ExponentIn
BaseReflectFractionIn
Normal
Clamp (Min=0) (Max=1)
Min
Max

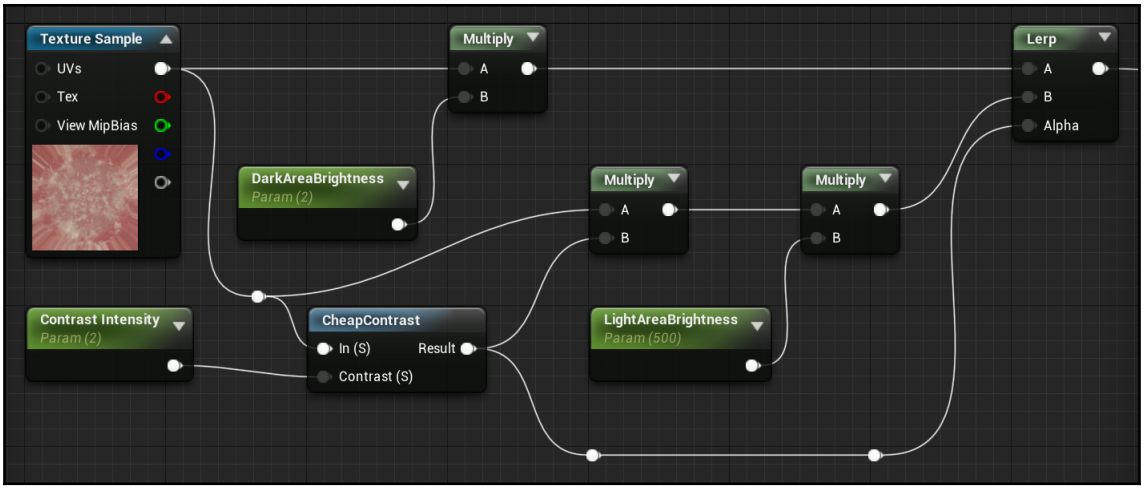


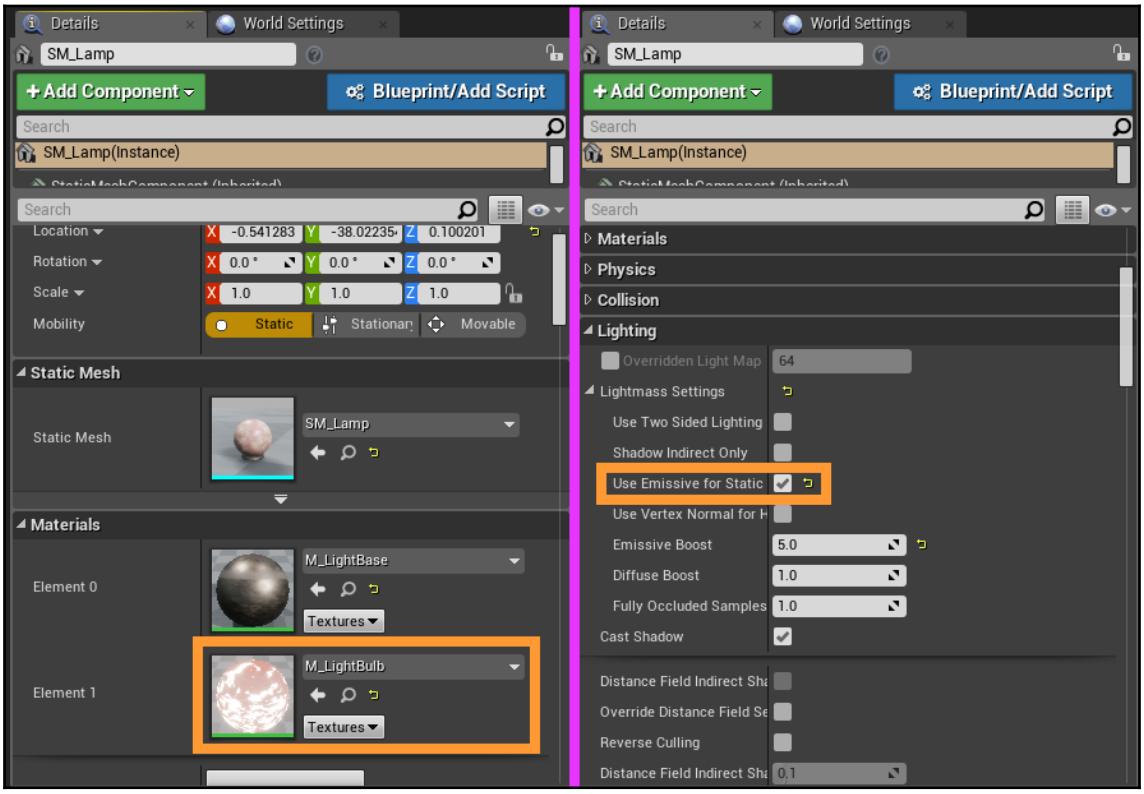

Power
Base
Exp
Multiply
A
B
Mask (R)
Clamp (Min=0) (Max=1)
Min
Max
Seafoam Height Power
Param (2)
Seafoam Height Multiply
Param (2048)

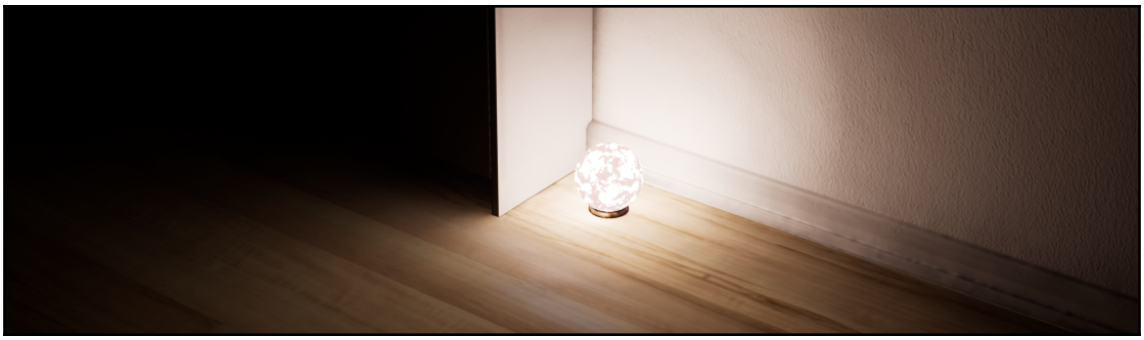
Chapter 5: Beyond Traditional Material Uses

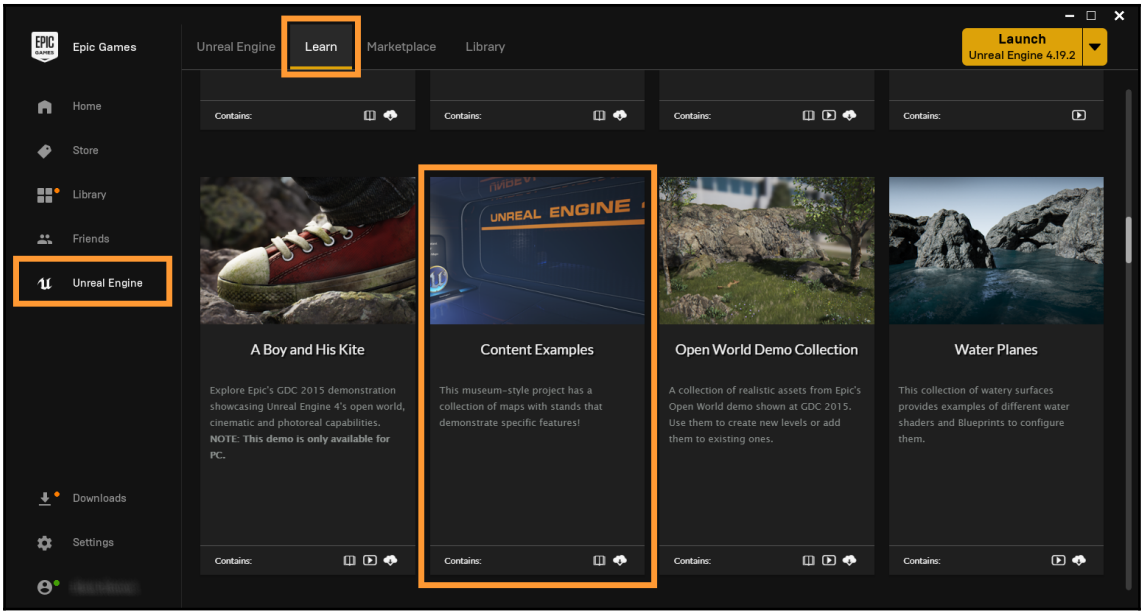

Perspective
Lit
Show
[Pilot Active - Camera01]
Details
World Settings
BP_LightStudio
+ Add Component
Edit Blueprint
Search
BP_LightStudio(self)
Scene1 (Inherited)
Search
Scale
X 1.0
Y 1.0
Z 1.0
Global
Global Brightness
1.0
HDRI
Use HDRI
HDRI Brightness
5.0
HDRI Contrast
1.0
HDRI Tint
HDRI Cubemap
HDRI_AlexsApt
HDRI Rotation
-0.25
Sun
Use Sun Light
Sun Brightness
1.0


File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Stats
Platform Stats
Perspective
Lit
Show
Previewing MaterialExpressionMaterialFunctionCall_1
Graph
Texture Sample
UVs
Tex
View MipBias
CheapContrast
Previewing
In
Result
Contrast
Contrast Intensity
Param (2)

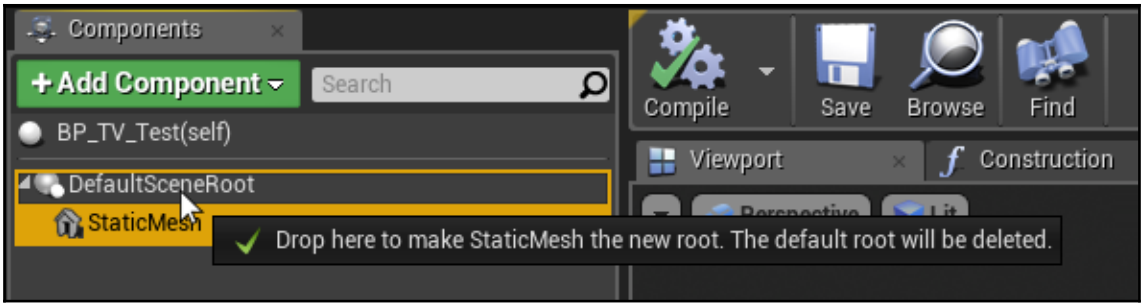

Texture Sample
UVs
Tex
View MipBias
Multiply
A
B
Lerp
A
B
Alpha
DarkAreaBrightness
Param (2)
Multiply
A
B
Multiply
A
B
Contrast Intensity
Param (2)
CheapContrast
In (S)
Result
Contrast (S)
LightAreaBrightness
Param (500)

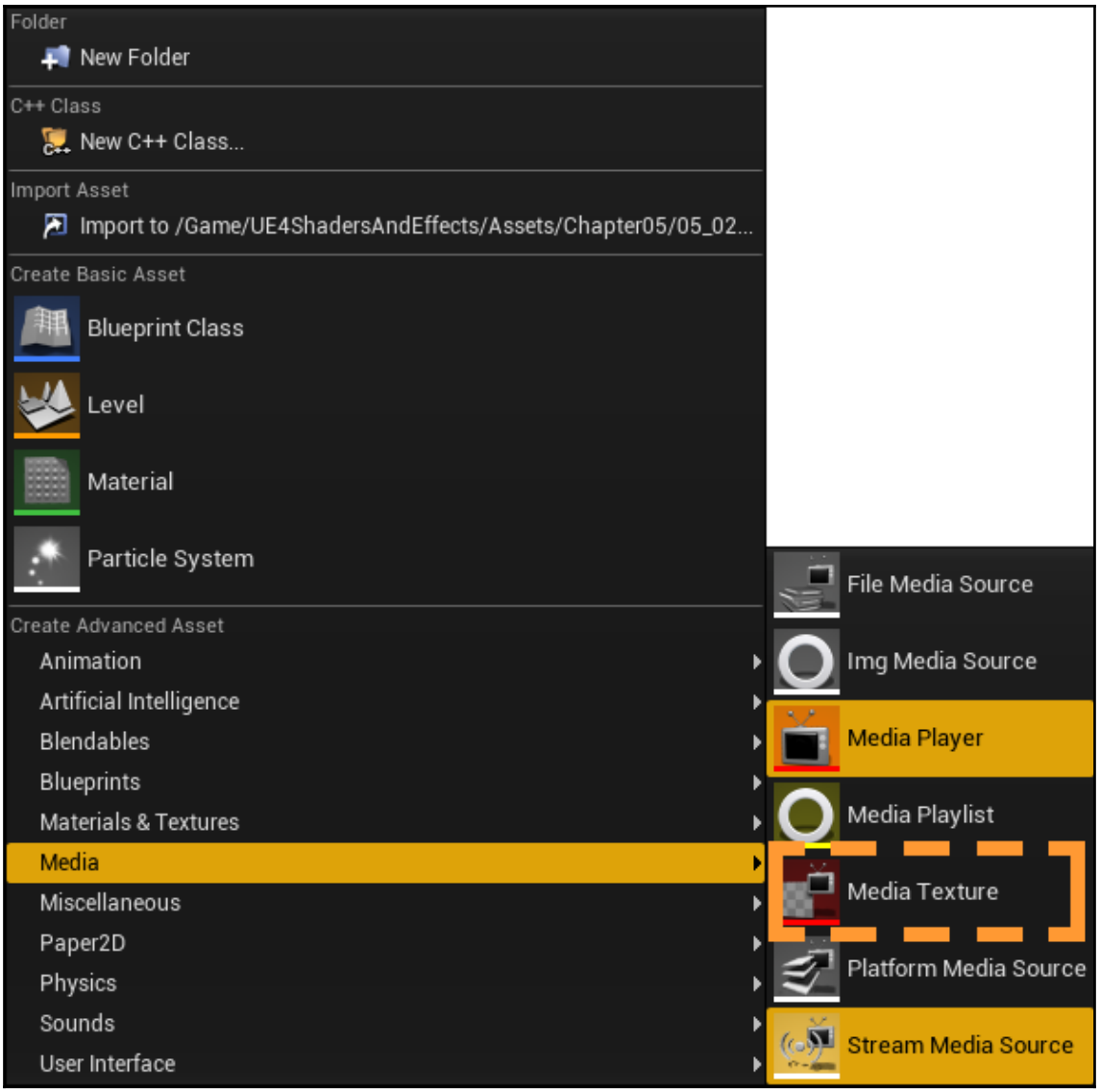

Details
World Settings
SM_Lamp
+ Add Component
Blueprint/Add Script
Search
SM_Lamp(Instance)
Location
Rotation
Scale
Mobility
Static
Movable
Static Mesh
Static Mesh
SM_Lamp
Materials
Element 0
M_LightBase
Textures
Element 1
M_LightBulb
Textures
Materials
Physics
Collision
Lighting
Overridden Light Map
64
Lightmass Settings
Use Two Sided Lighting
Shadow Indirect Only
Use Emissive for Static
Use Vertex Normal for H
Emissive Boost
5.0
Diffuse Boost
1.0
Fully Occluded Samples
1.0
Cast Shadow
Distance Field Indirect Sha
Override Distance Field Se
Reverse Culling
Distance Field Indirect Sha
0.1

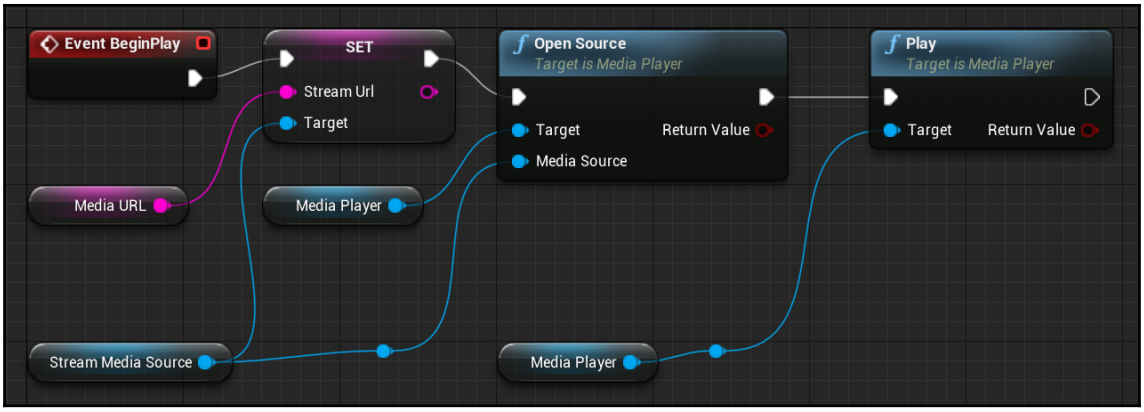


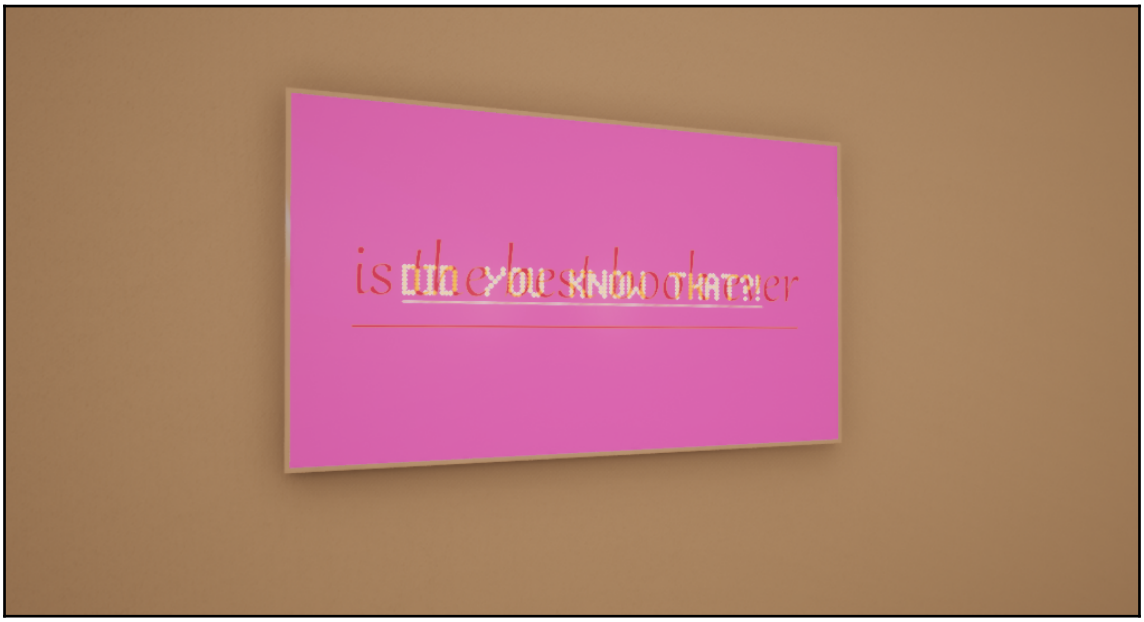

Epic Games
Unreal Engine
Learn
Marketplace
Library
Launch
Unreal Engine 4.19.2
Home
Store
Library
Friends
Unreal Engine
Downloads
Settings
Contains:
A Boy and His Kite
Explore Epic's GDC 2015 demonstration showcasing Unreal Engine 4's open world, cinematic and photoreal capabilities.
NOTE: This demo is only available for PC.
UNREAL ENGINE
Content Examples
This museum-style project has a collection of maps with stands that demonstrate specific features!
Open World Demo Collection
A collection of realistic assets from Epic's Open World demo shown at GDC 2015. Use them to create new levels or add them to existing ones.
Water Planes
This collection of watery surfaces provides examples of different water shaders and Blueprints to configure them.

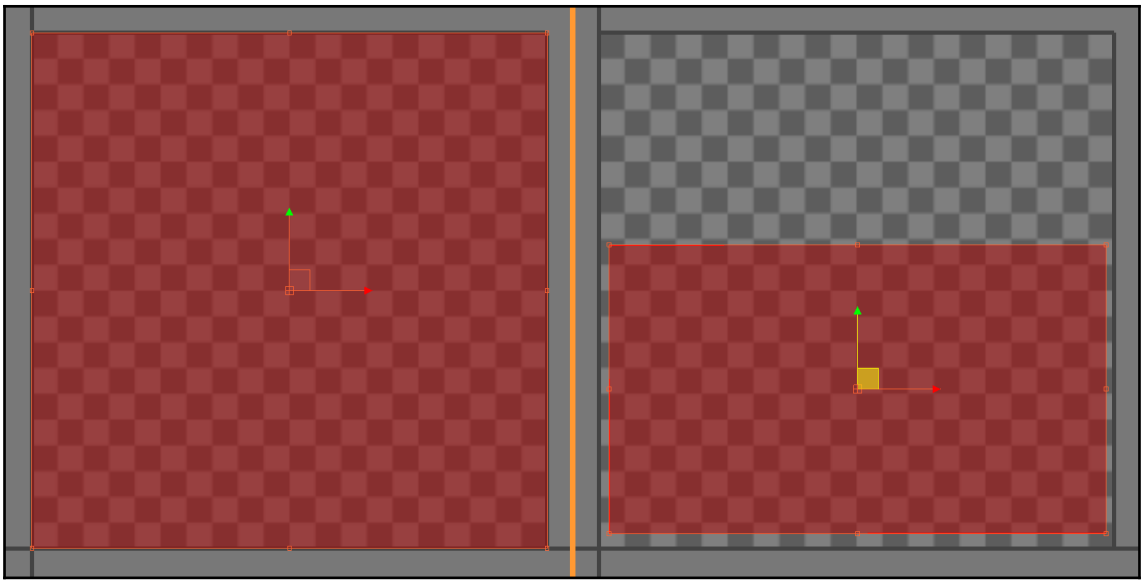
UE4
Shaders and effects!


Components
+ Add Component
Search
BP_TV_Test(self)
DefaultSceneRoot
StaticMesh
Drop here to make StaticMesh the new root. The default root will be deleted.
Compile
Save
Browse
Find
Viewport
Construction

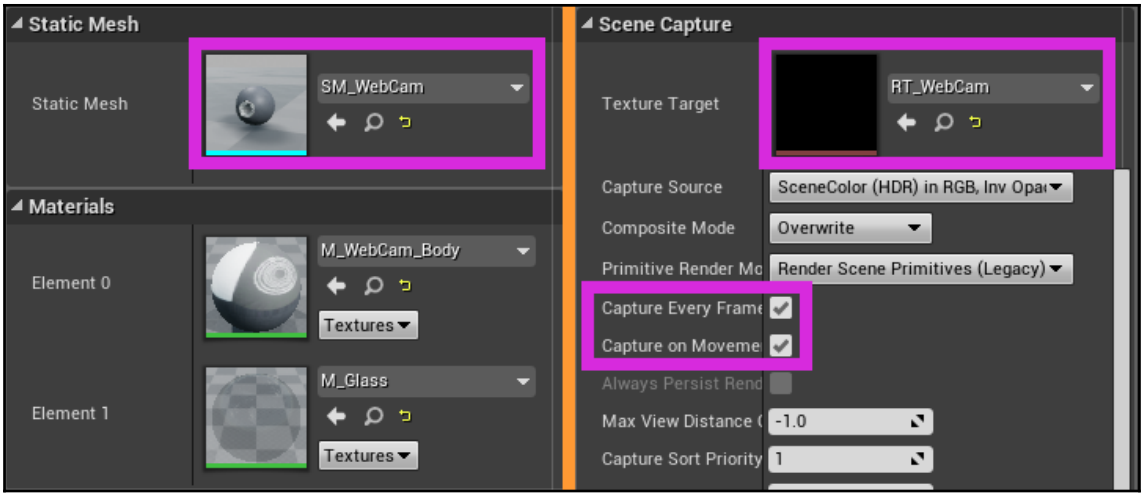

Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter05/05_02...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
File Media Source
Img Media Source
Media Player
Media Playlist
Media Texture
Platform Media Source
Stream Media Source

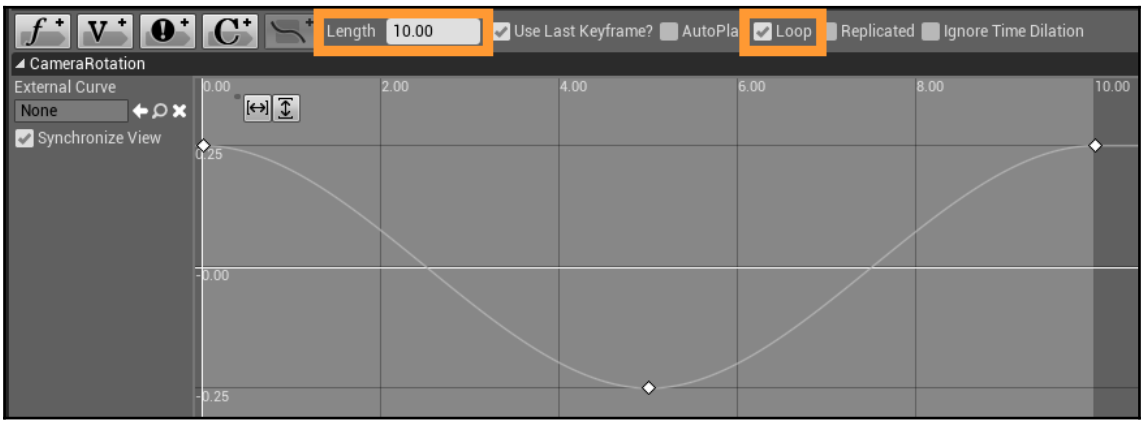

Event BeginPlay
SET
Stream Url
Target
Open Source
Target is Media Player
Target
Return Value
Media Source
Play
Target is Media Player
Target
Return Value
Media URL
Media Player
Stream Media Source
Media Player

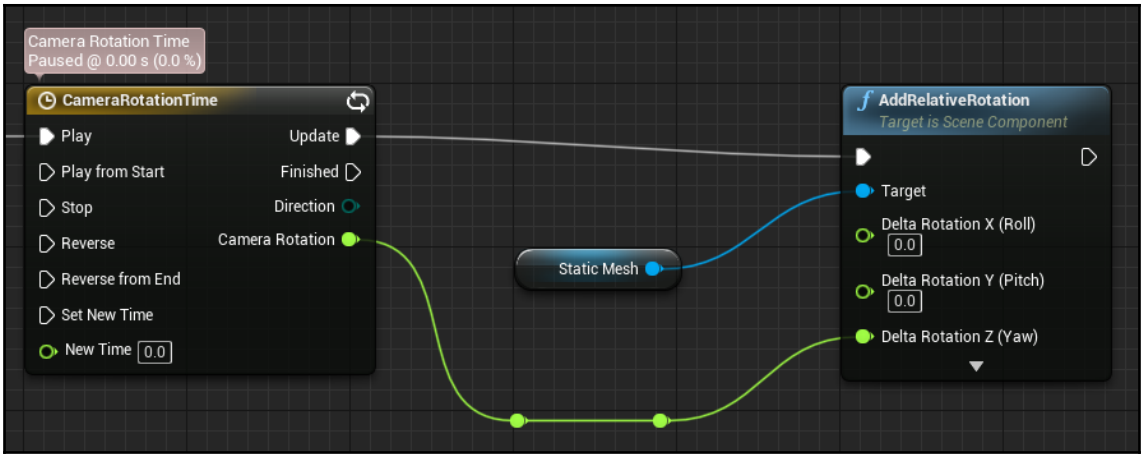

DID YOU KNOW THAT?!

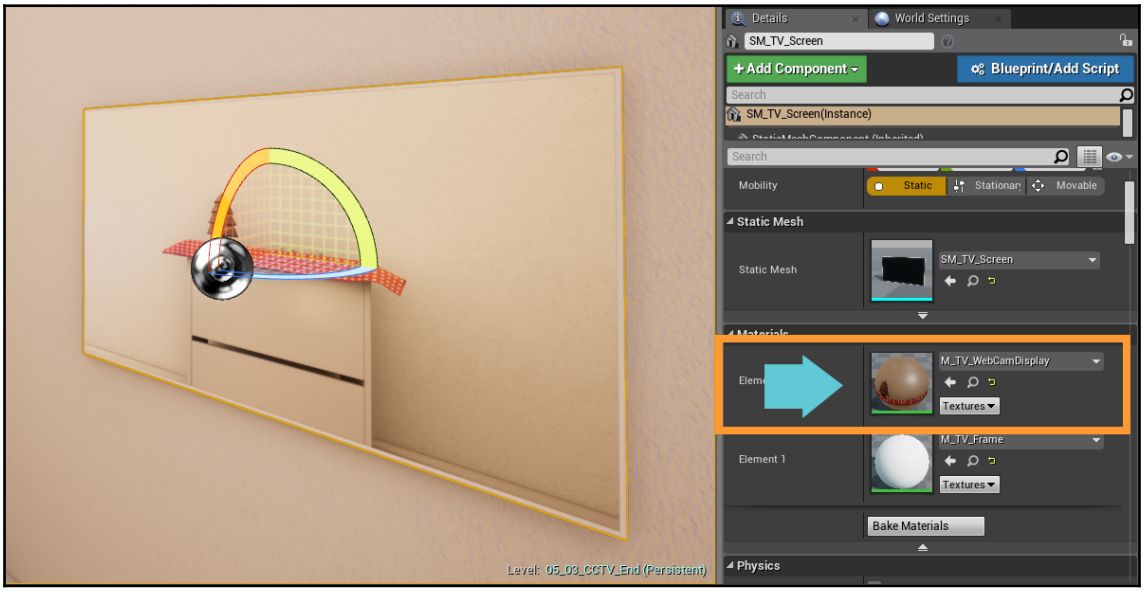


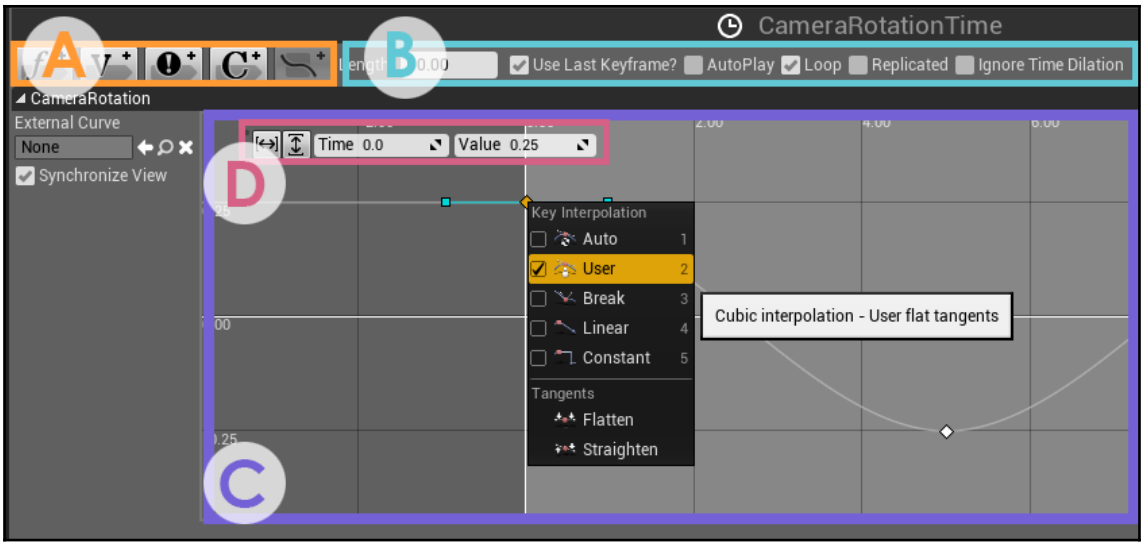
File Edit Asset View Debug Win
Components
+ Add Component
Search
Search Components
Scripting
New Blueprint Script Component...
New C++ Component...
Common
Audio
Geometry Cache
Particle System
Point Light
Rect Light
Scene
Skeletal Mesh
Static Mesh
Plane
Cube
Sphere
AI
AIPerception
AIPerception Stimuli Source
Blackboard
Pawn Noise Emitter
Pawn Sensing
Audio
1...
File Edit Asset View Debug Wir
Components
+ Add Component
Search
Search Components
Decal
Exponential Height Fog
Geometry Cache
Hierarchical Instanced Static Mesh
Instanced Static Mesh
Material Billboard
MRMesh
Particle System
Planar Reflection
Poseable Mesh
Post Process
Procedural Mesh
Scene Capture Component 2D
Scene Capture Component Cube
Skeletal Mesh
Spline Mesh
Static Mesh
Text Render
Vector Field
Sequence
Actor Sequence
SteamVR
&2

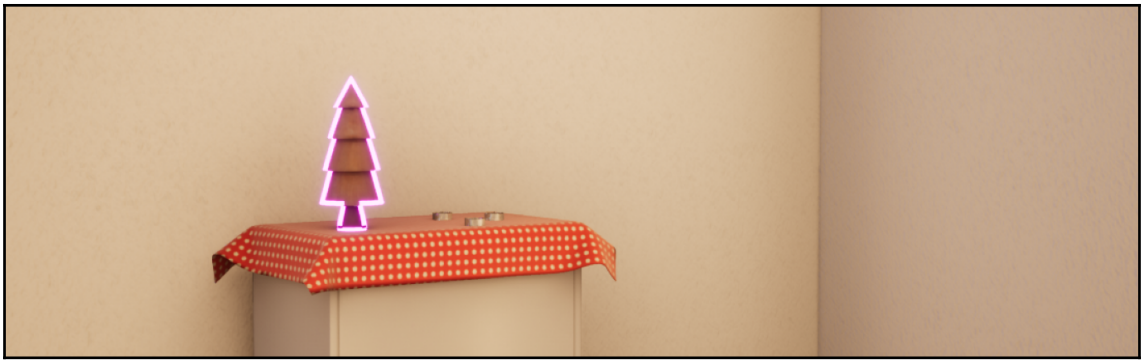

Static Mesh
Static Mesh
SM_WebCam
Materials
Element 0
M_WebCam_Body
Textures
Element 1
M_Glass
Textures
Scene Capture
Texture Target
RT_WebCam
Capture Source
SceneColor (HDR) in RGB, Inv Opa
Composite Mode
Overwrite
Primitive Render Mo
Render Scene Primitives (Legacy)
Capture Every Frame
Capture on Moveme
Always Persist Rend
Max View Distance
-1.0
Capture Sort Priority
1

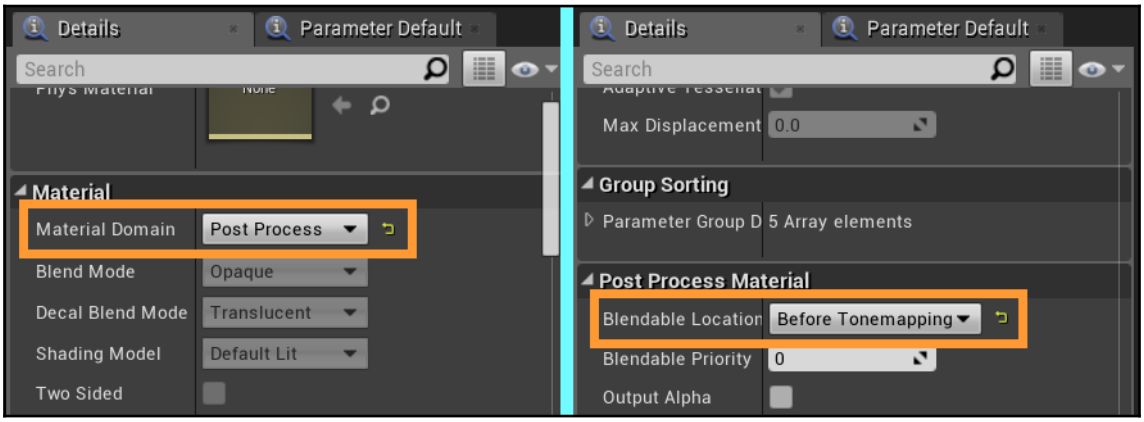

Length
10.00
Use Last Keyframe?
AutoPla
Loop
Replicated
Ignore Time Dilation
CameraRotation
External Curve
None
Synchronize View
0.00
2.00
4.00
6.00
8.00
10.00
0.25
-0.00
-0.25

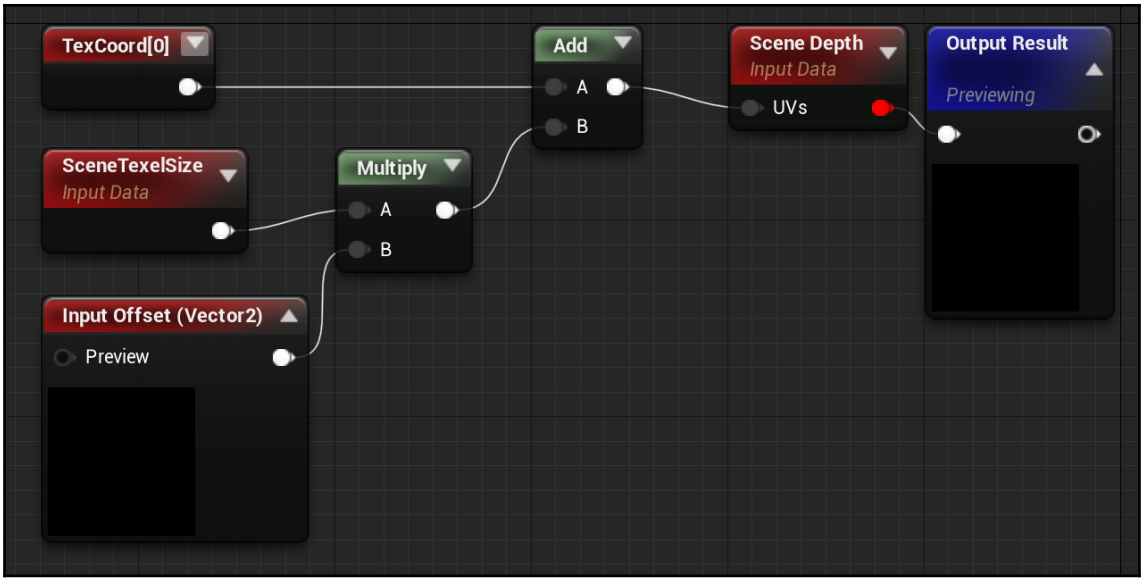

Camera Rotation Time
Paused @ 0.00 s (0.0 %)
CameraRotationTime
Play
Play from Start
Stop
Reverse
Reverse from End
Set New Time
New Time
0.0
Update
Finished
Direction
Camera Rotation
Static Mesh
AddRelativeRotation
Target is Scene Component
Target
Delta Rotation X (Roll)
0.0
Delta Rotation Y (Pitch)
0.0
Delta Rotation Z (Yaw)

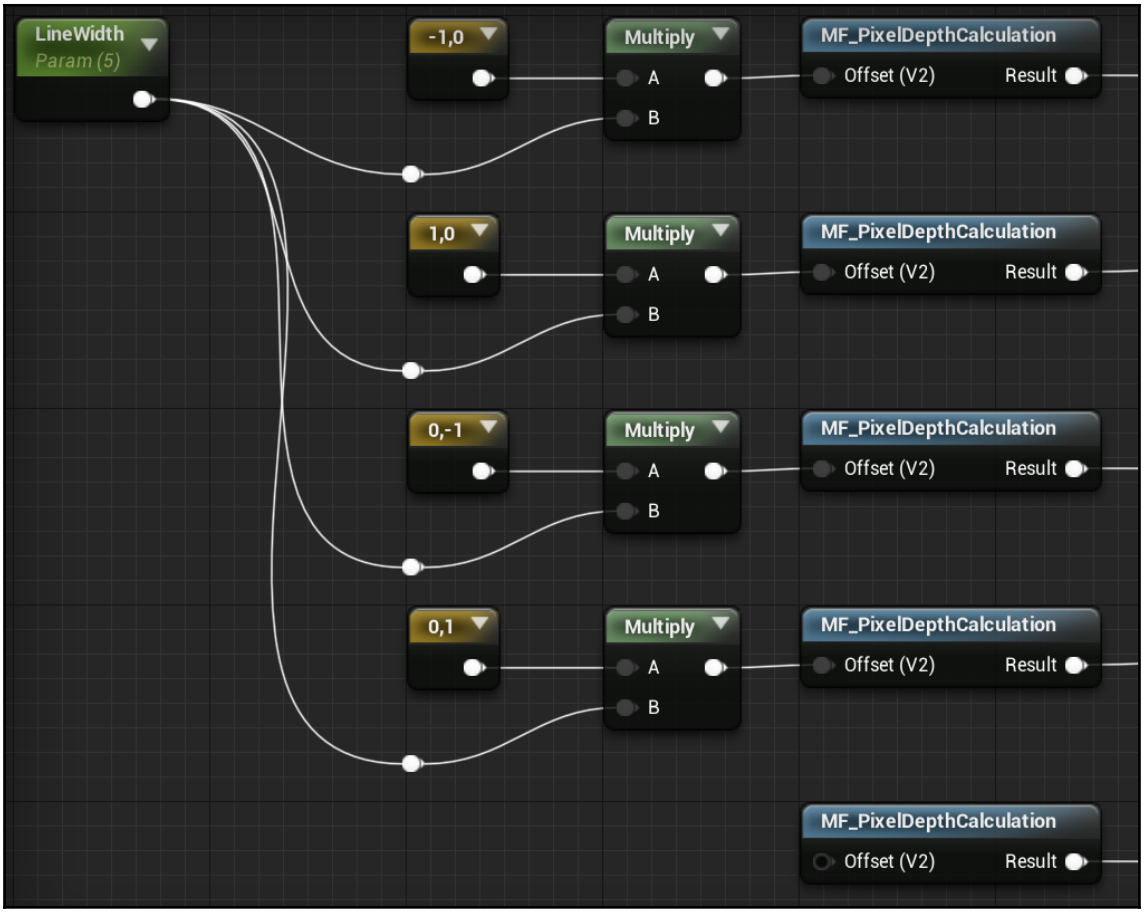

Details
World Settings
SM_TV_Screen
+ Add Component
Blueprint/Add Script
Search
SM_TV_Screen(Instance)
Mobility
Static
Movable
Static Mesh
SM_TV_Screen
M_TV_WebCamDisplay
Textures
Element 1
M_TV_Frame
Bake Materials
Physics
Level: 05_03_CCTV_End (Persistent)

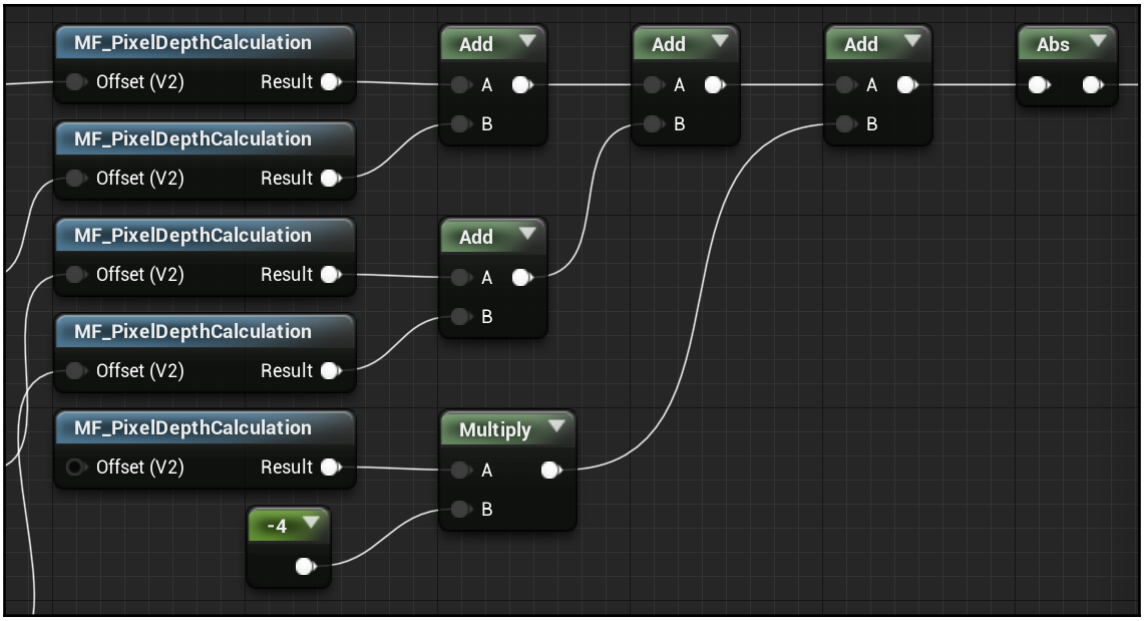

A
B
C
D
CameraRotationTime
Use Last Keyframe?
AutoPlay
Loop
Replicated
Ignore Time Dilation
CameraRotation
External Curve
None
Synchronize View
Time 0.0
Value 0.25
Key Interpolation
Auto 1
User 2
Break 3
Linear 4
Constant 5
Tangents
Flatten
Straighten
Cubic interpolation - User flat tangents

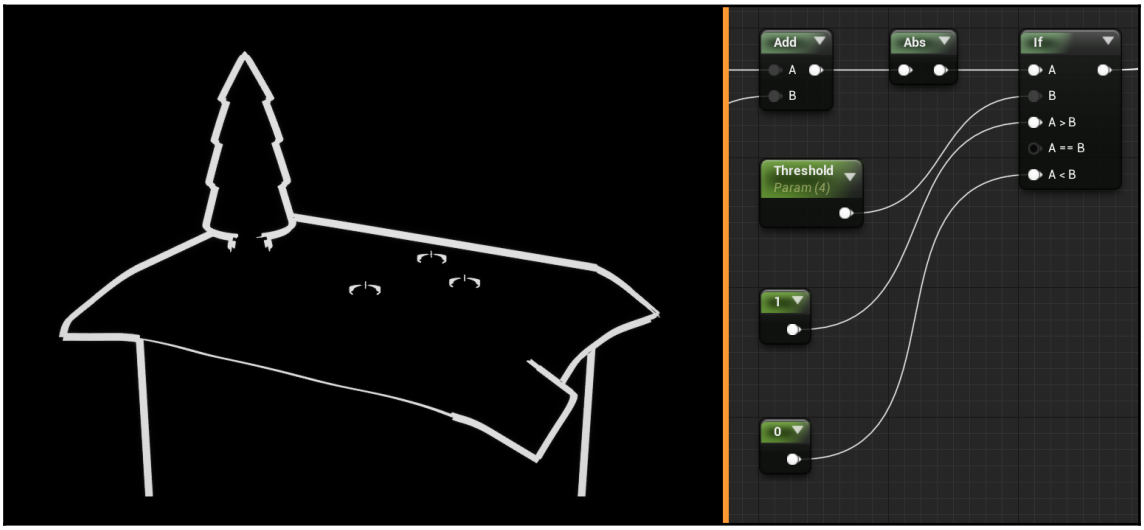


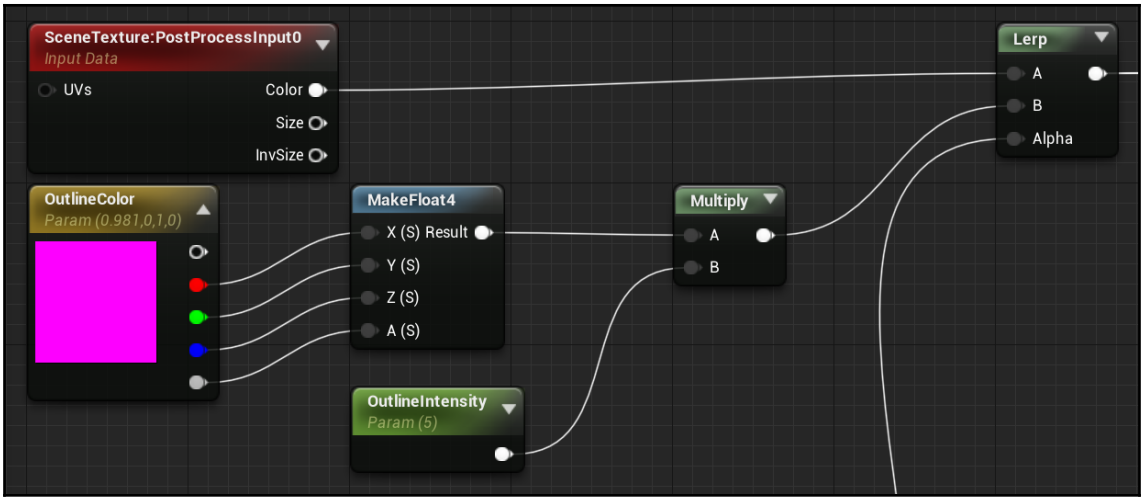

Details
Parameter Default
Search
Material
Material Domain
Post Process
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Max Displacement
0.0
Group Sorting
Parameter Group D
5 Array elements
Post Process Material
Blendable Location
Before Tonemapping
Blendable Priority
0
Output Alpha

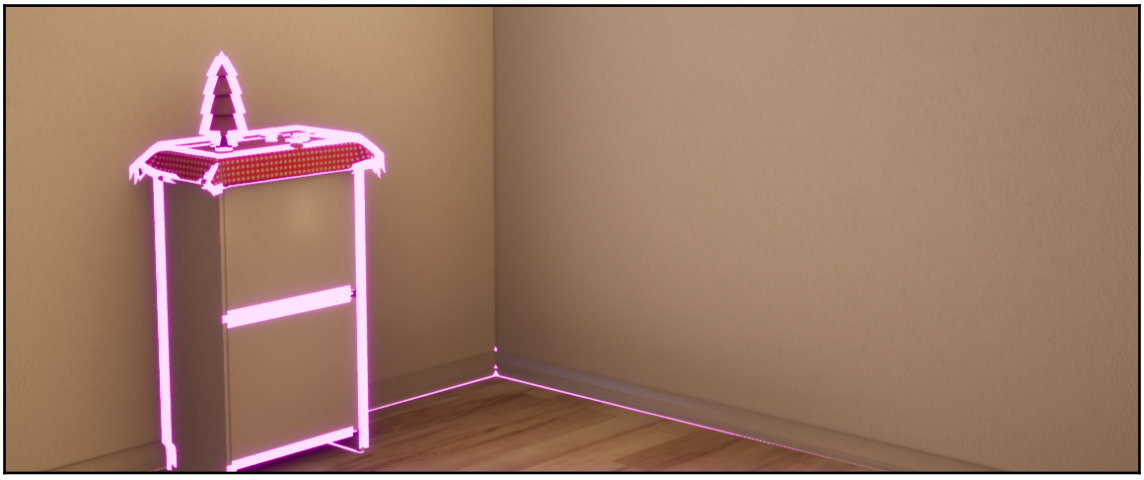

TexCoord[0]
Add
A
B
Scene Depth
Input Data
UVs
Output Result
Previewing
SceneTexelSize
Input Data
Multiply
A
B
Input Offset (Vector2)
Preview

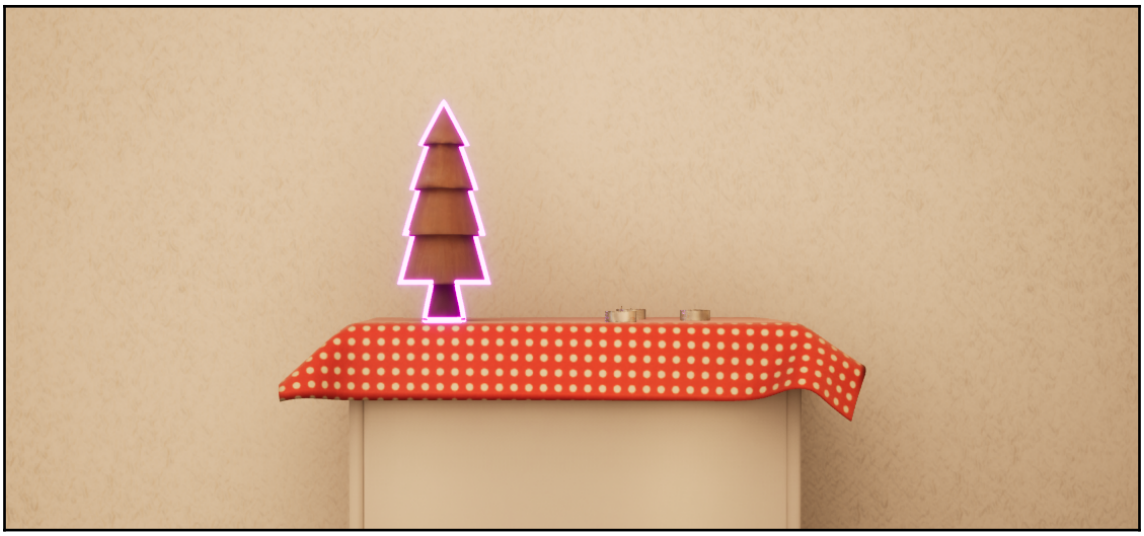

LineWidth
Param (5)
-1,0
Multiply
A
B
MF_PixelDepthCalculation
Offset (V2)
Result
1,0
Multiply
A
B
MF_PixelDepthCalculation
Offset (V2)
Result
0,-1
Multiply
A
B
MF_PixelDepthCalculation
Offset (V2)
Result
0,1
Multiply
A
B
MF_PixelDepthCalculation
Offset (V2)
Result
MF_PixelDepthCalculation
Offset (V2)
Result

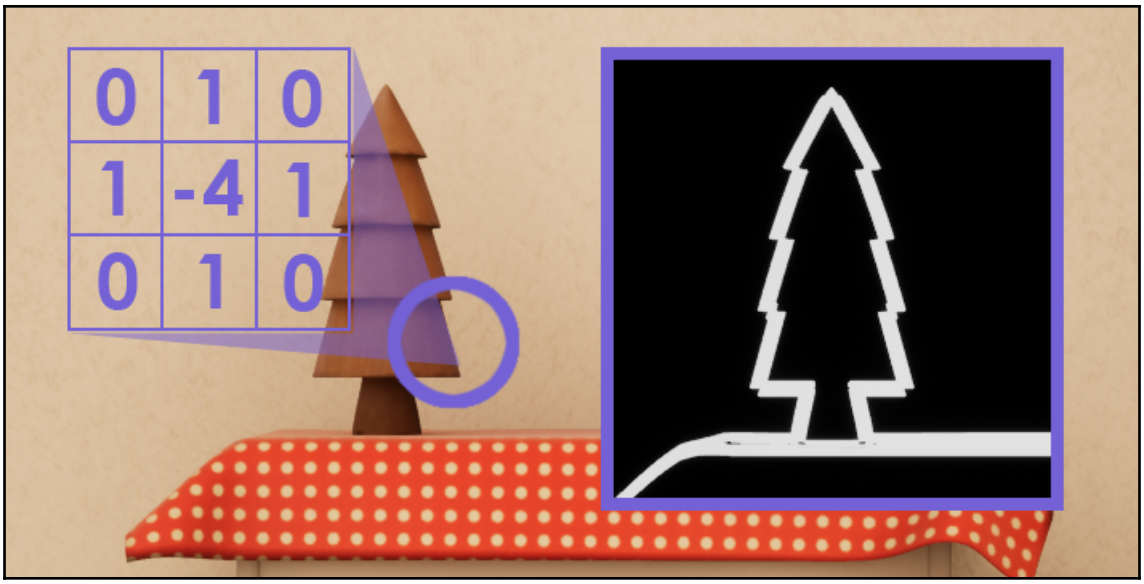

MF_PixelDepthCalculation
Offset (V2)
Result
MF_PixelDepthCalculation
Offset (V2)
Result
MF_PixelDepthCalculation
Offset (V2)
Result
MF_PixelDepthCalculation
Offset (V2)
Result
MF_PixelDepthCalculation
Offset (V2)
Result
-4
Add
A
B
Add
A
B
Add
A
B
Add
A
B
Multiply
A
B
Abs


Add
A
B
Abs
If
A
B
A > B
A == B
A < B
Threshold
Param (4)
1
0

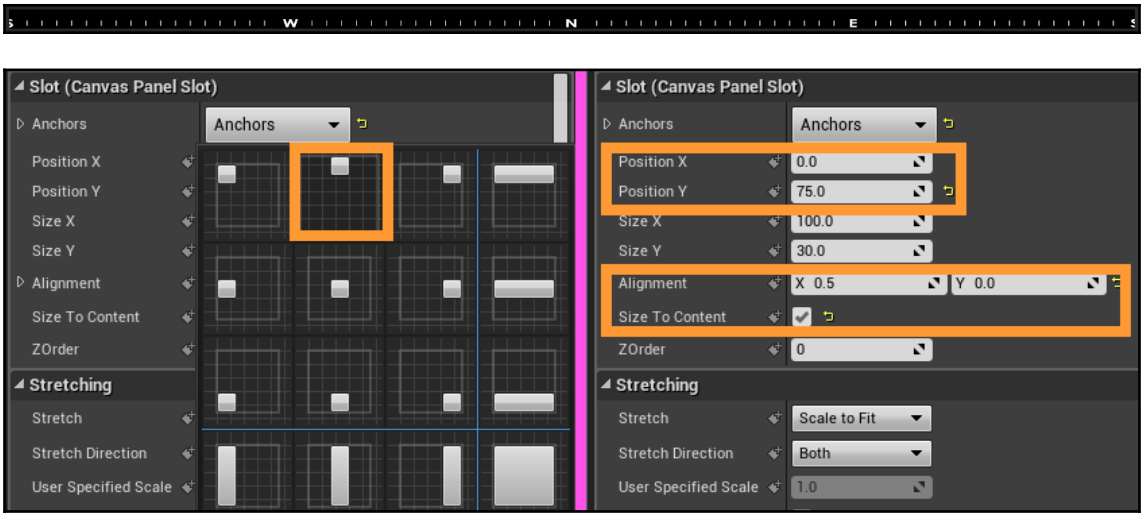

SceneTexture:PostProcessInput0
Input Data
UVs
Color
Size
InvSize
Lerp
A
B
Alpha
OutlineColor
Param (0.981,0,1,0)
MakeFloat4
X (S) Result
Y (S)
Z (S)
A (S)
Multiply
A
B
OutlineIntensity
Param (5)

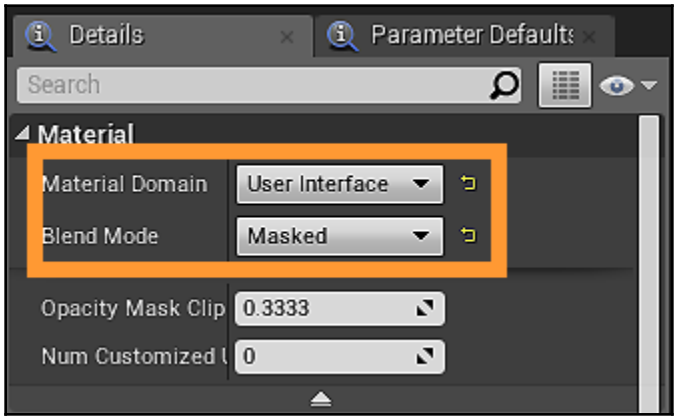


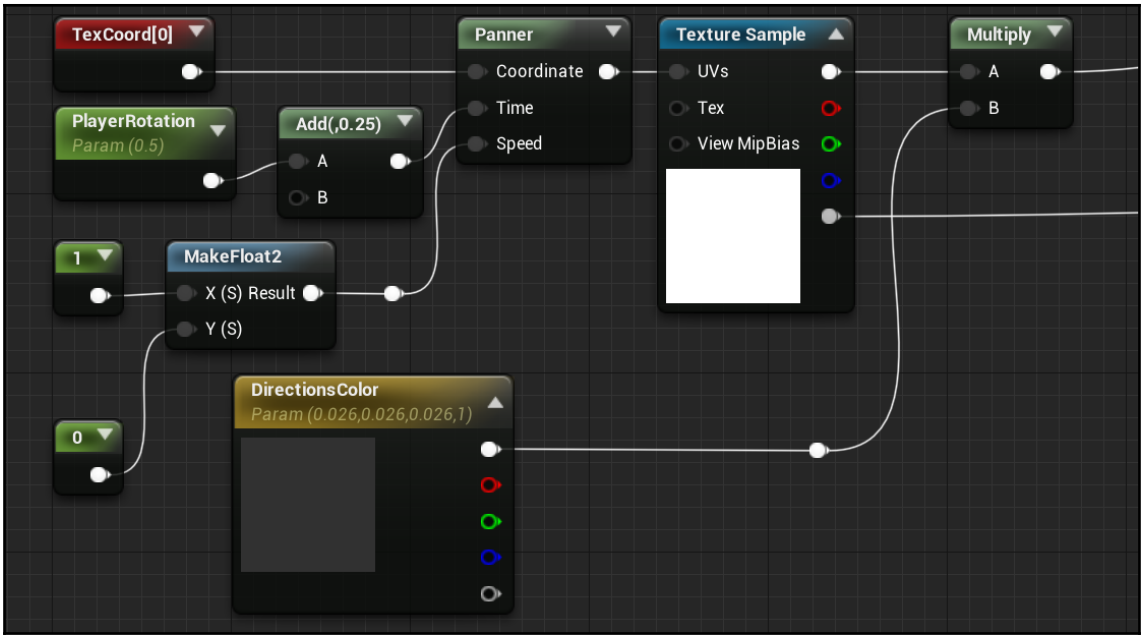


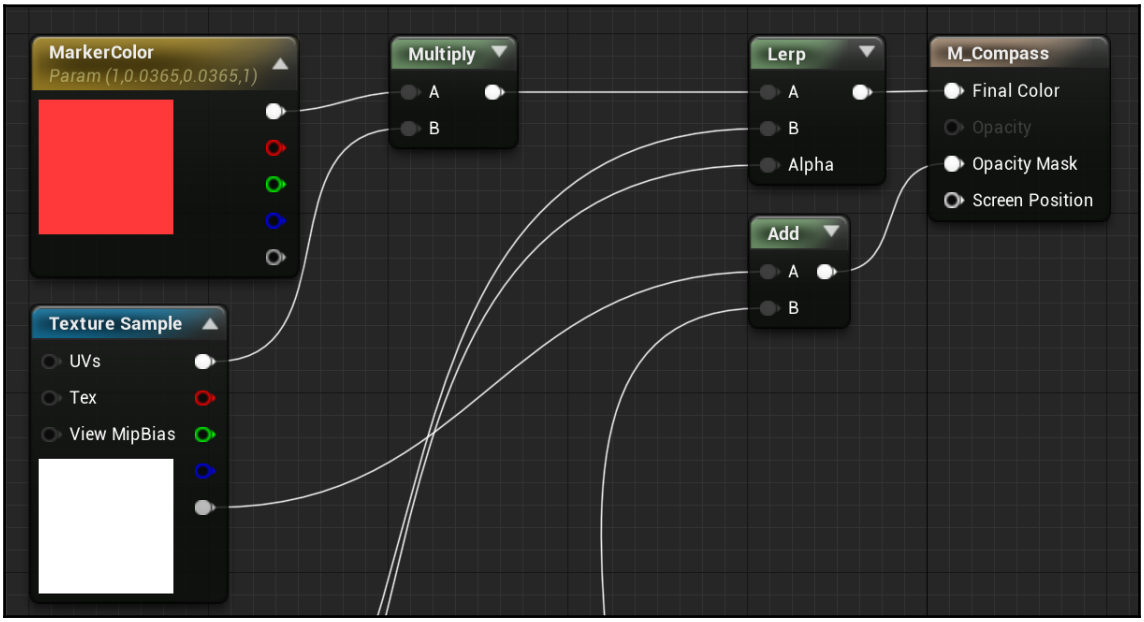

0 1 0
1 -4 1
0 1 0

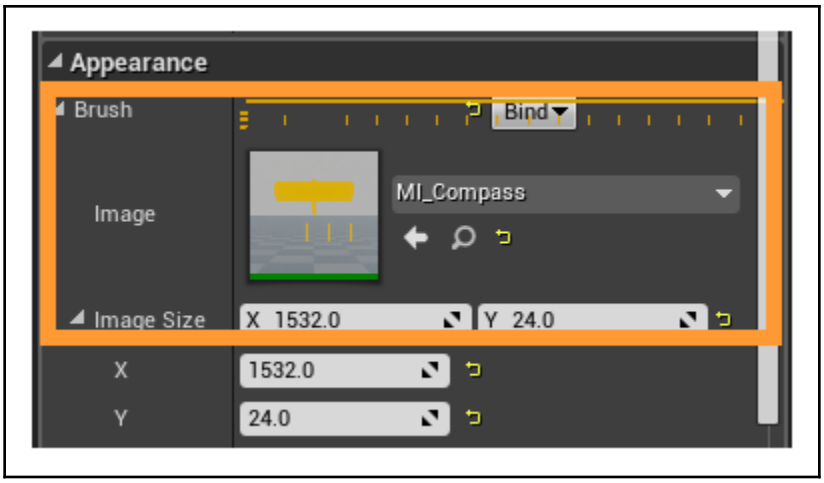
N
E

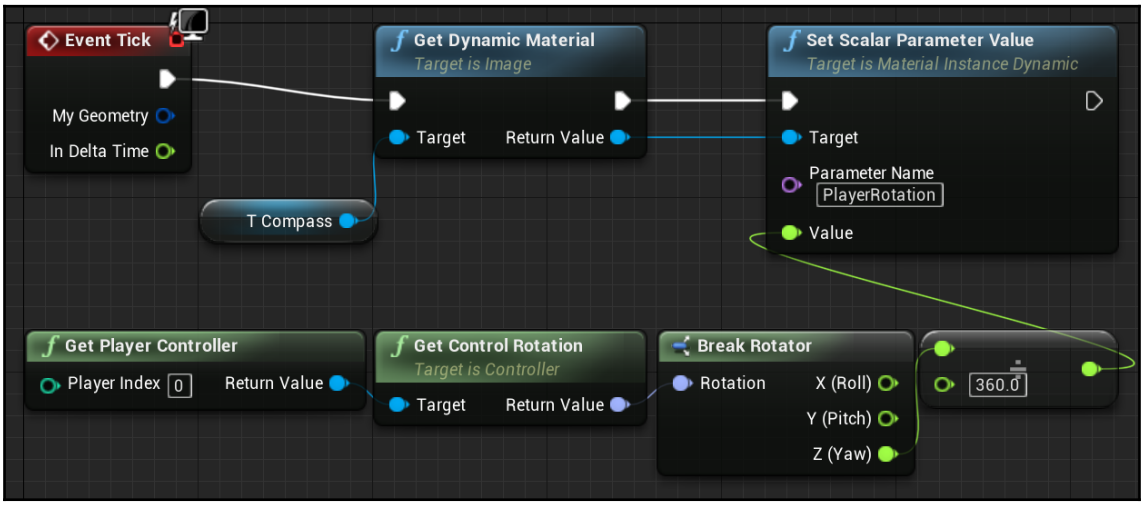

W
N
E
Slot (Canvas Panel Slot)
Anchors
Position X
Position Y
Size X
Size Y
Alignment
Size To Content
ZOrder
Stretching
Stretch
Stretch Direction
User Specified Scale
Anchors
0.0
75.0
100.0
30.0
X 0.5
Y 0.0
0
Scale to Fit
Both
1.0

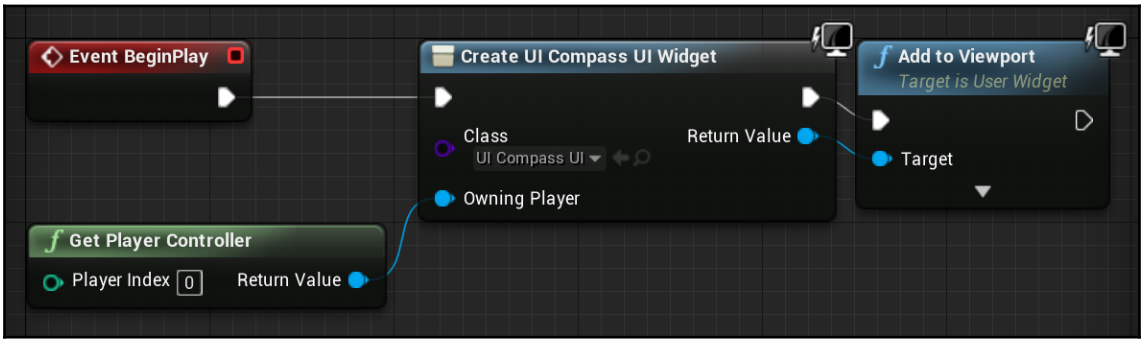

Details
Parameter Defaults
Search
Material
Material Domain
User Interface
Blend Mode
Masked
Opacity Mask Clip
0.3333
Num Customized
0

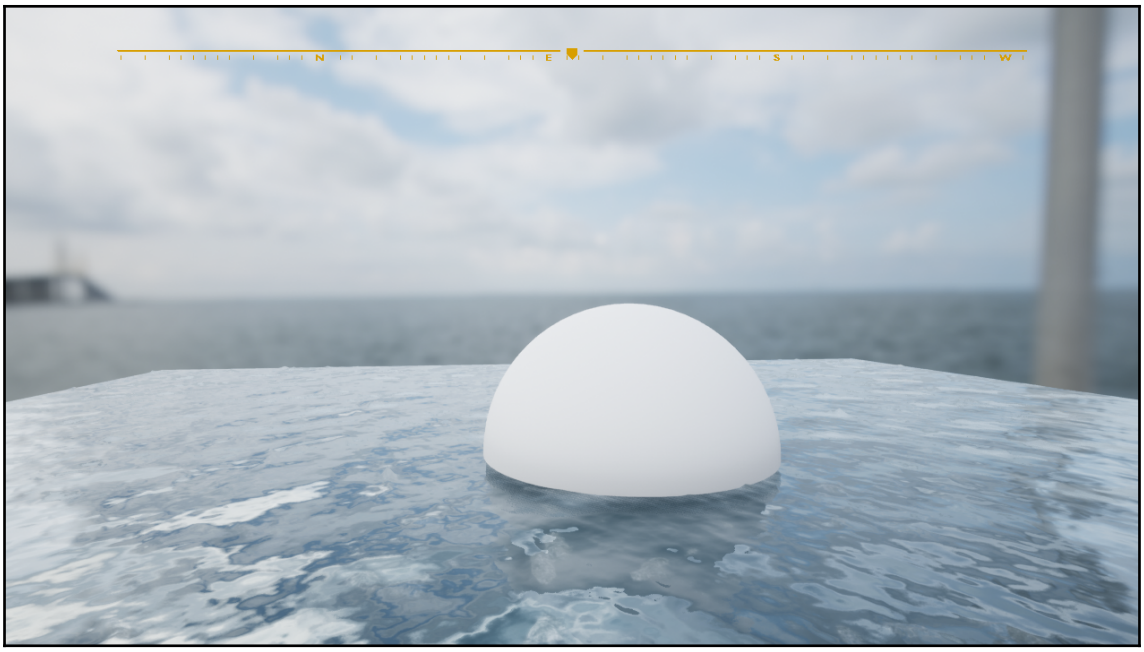

TexCoord[0]
Panner
Coordinate
Time
Speed
Texture Sample
UVs
Tex
View MipBias
Multiply
A
B
PlayerRotation
Param (0.5)
Add(,0.25)
A
B
1
MakeFloat2
X (S) Result
Y (S)
0
DirectionsColor
Param (0.026,0.026,0.026,1)

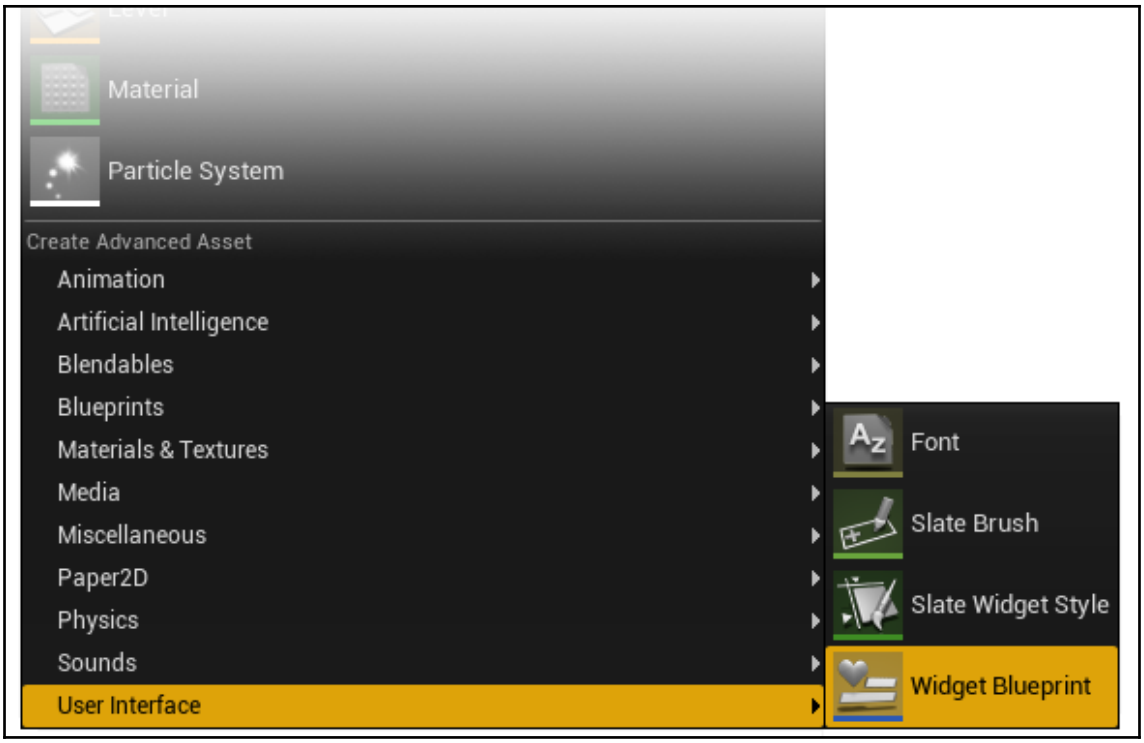

MarkerColor
Param (1,0.0365,0.0365,1)
Multiply
A
B
Lerp
A
B
Alpha
M_Compass
Final Color
Opacity
Opacity Mask
Screen Position
Add
A
B
Texture Sample
UVs
Tex
View MipBias

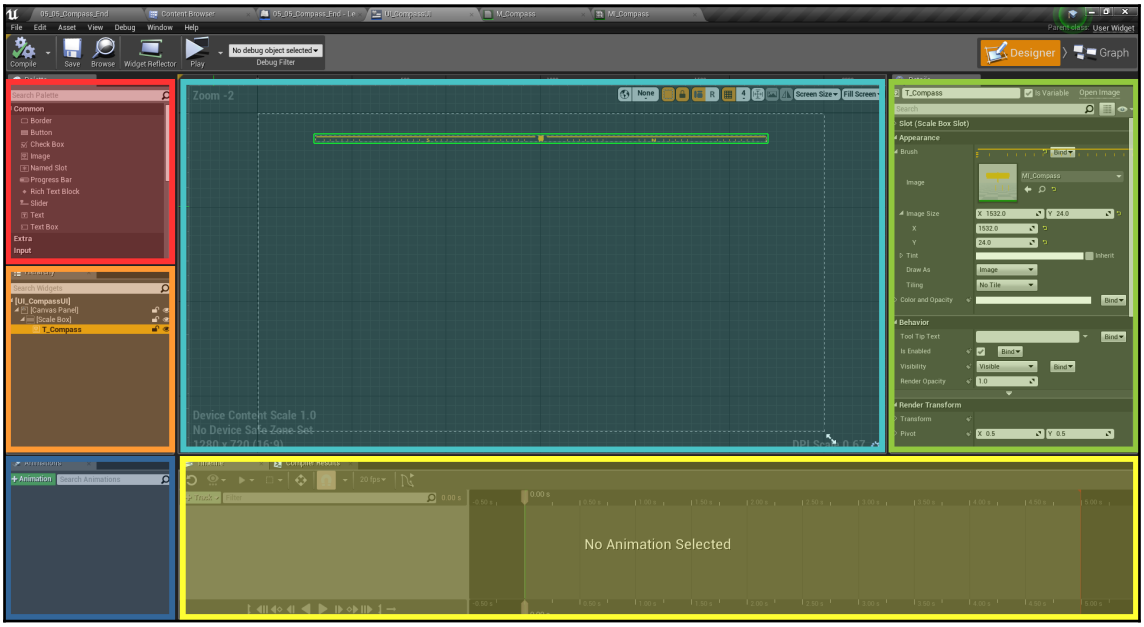

Appearance
Brush
Bind
Image
MI_Compass
Image Size
X 1532.0
Y 24.0
X
1532.0
Y
24.0

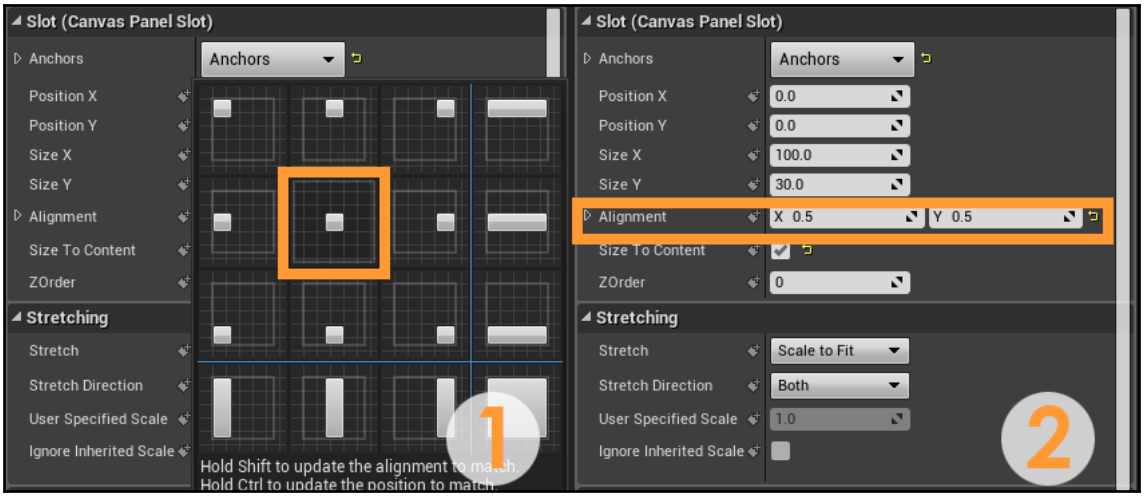

Event Tick
My Geometry
In Delta Time
Get Dynamic Material
Target is Image
Target
Return Value
Set Scalar Parameter Value
Target is Material Instance Dynamic
Target
Parameter Name
PlayerRotation
Value
T Compass
Get Player Controller
Player Index 0
Return Value
Get Control Rotation
Target is Controller
Target
Return Value
Break Rotator
Rotation
X (Roll)
Y (Pitch)
Z (Yaw)
360.0

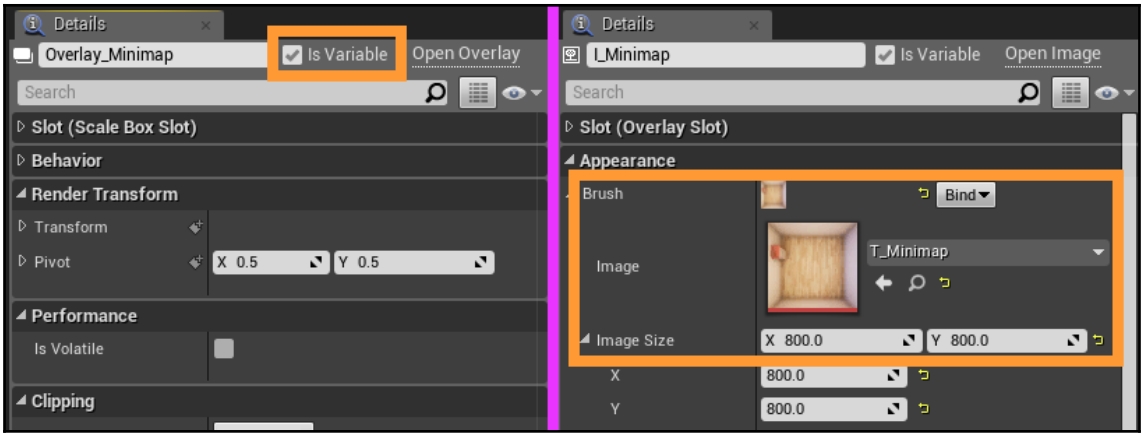

Event BeginPlay
Create UI Compass UI Widget
Class
UI Compass UI
Return Value
Owning Player
Add to Viewport
Target is User Widget
Target
Get Player Controller
Player Index 0
Return Value

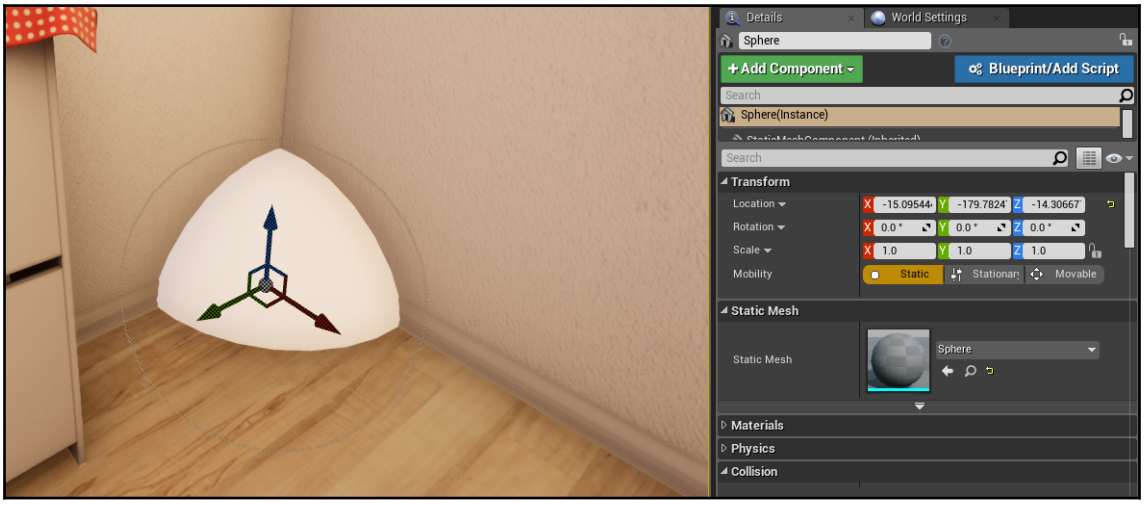

N
E
S
W

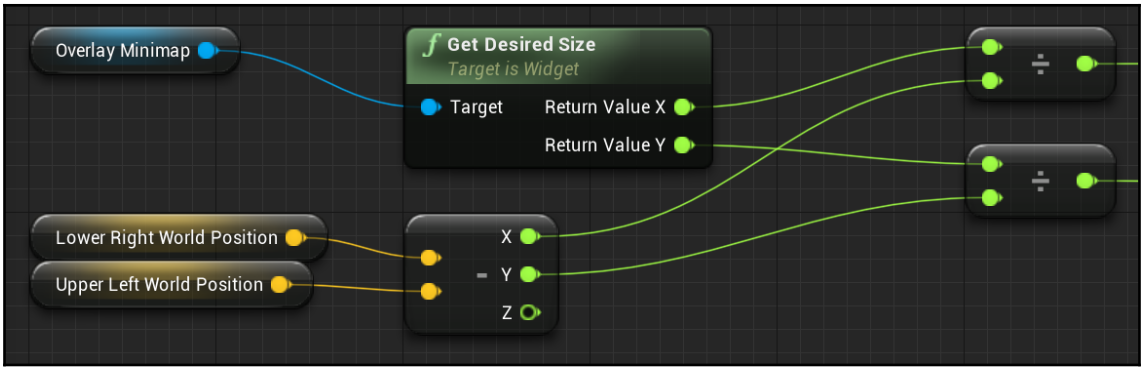

Material
Particle System
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
Sounds
User Interface
Font
Slate Brush
Slate Widget Style
Widget Blueprint

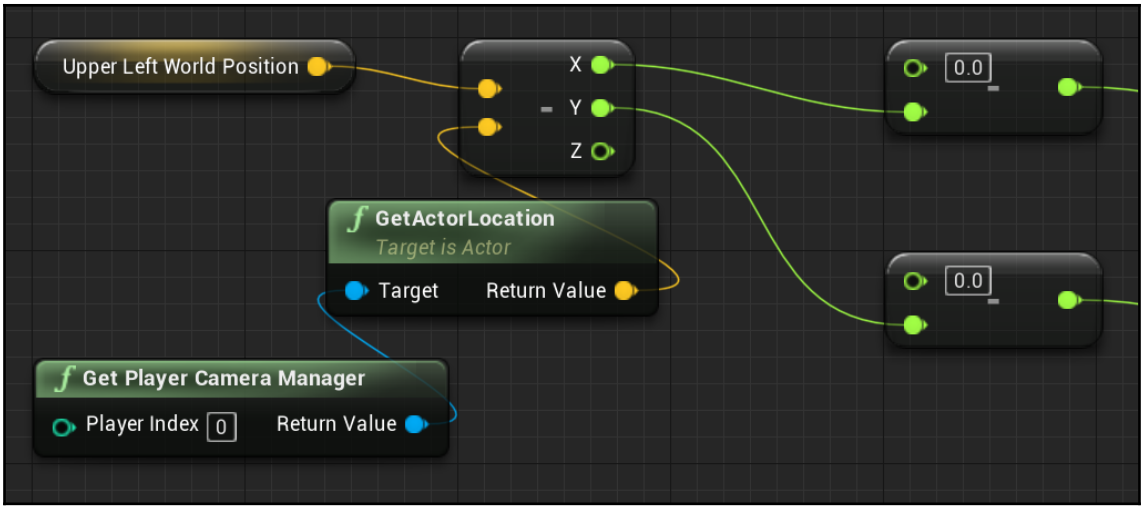

Designer
Graph
Zoom -2
Device Content Scale 1.0
No Device Safe Zone Set
No Animation Selected

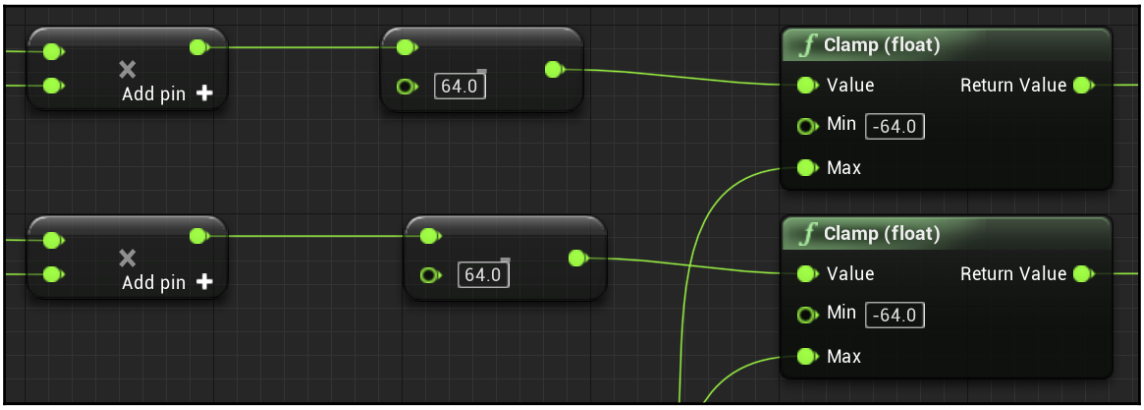

Slot (Canvas Panel Slot)
Anchors
Position X
Position Y
Size X
Size Y
Alignment
Size To Content
ZOrder
Stretching
Stretch
Stretch Direction
User Specified Scale
Ignore Inherited Scale
Anchors
Hold Shift to update the alignment to match.
Hold Ctrl to update the position to match.
1
Slot (Canvas Panel Slot)
Anchors
Position X 0.0
Position Y 0.0
Size X 100.0
Size Y 30.0
Alignment X 0.5 Y 0.5
Size To Content
ZOrder 0
Stretching
Stretch Scale to Fit
Stretch Direction Both
User Specified Scale 1.0
Ignore Inherited Scale
2

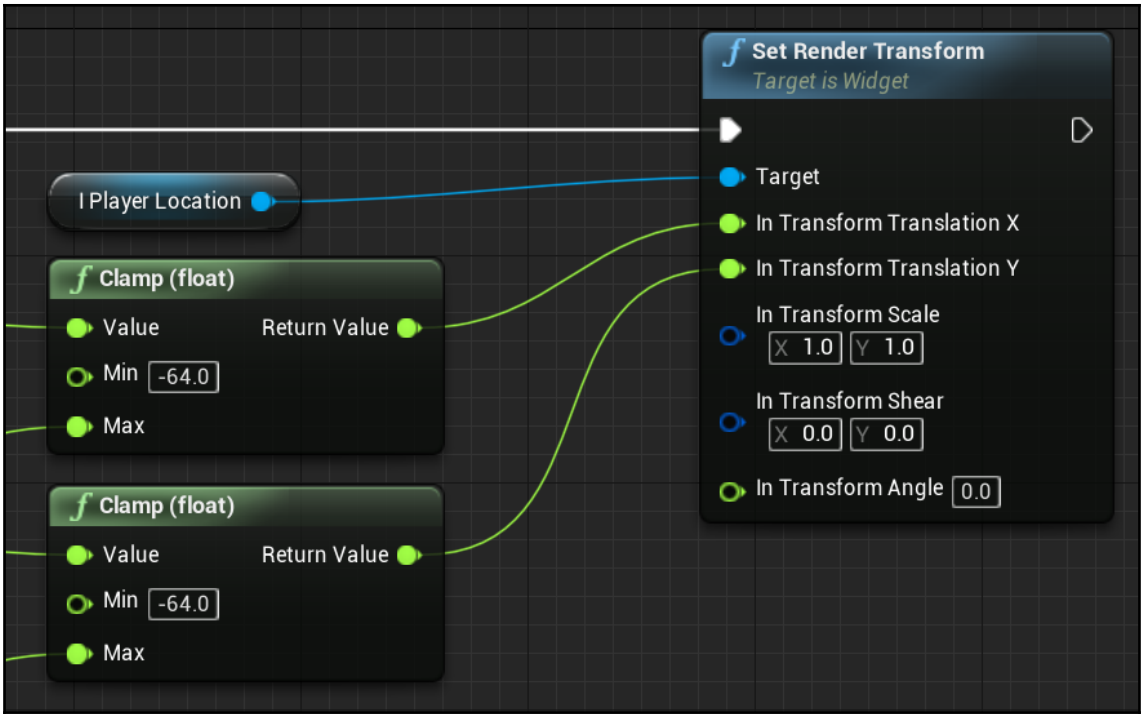

Details
Overlay_Minimap
Is Variable
Open Overlay
Search
Slot (Scale Box Slot)
Behavior
Render Transform
Transform
Pivot
X 0.5
Y 0.5
Performance
Is Volatile
Clipping
Details
I_Minimap
Is Variable
Open Image
Search
Slot (Overlay Slot)
Appearance
Brush
Bind
Image
T_Minimap
Image Size
X 800.0
Y 800.0
X
800.0
Y
800.0

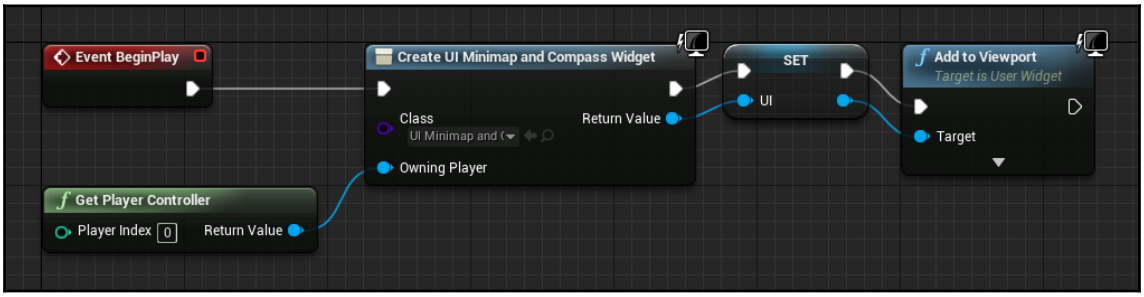

Details
World Settings
Sphere
+ Add Component
Blueprint/Add Script
Search
Sphere(Instance)
Search
Transform
Location
Rotation
Scale
Mobility
Static
Stationary
Movable
Static Mesh
Static Mesh
Sphere
Materials
Physics
Collision


Overlay Minimap
Get Desired Size
Target is Widget
Target
Return Value X
Return Value Y
Lower Right World Position
Upper Left World Position
X
Y
Z

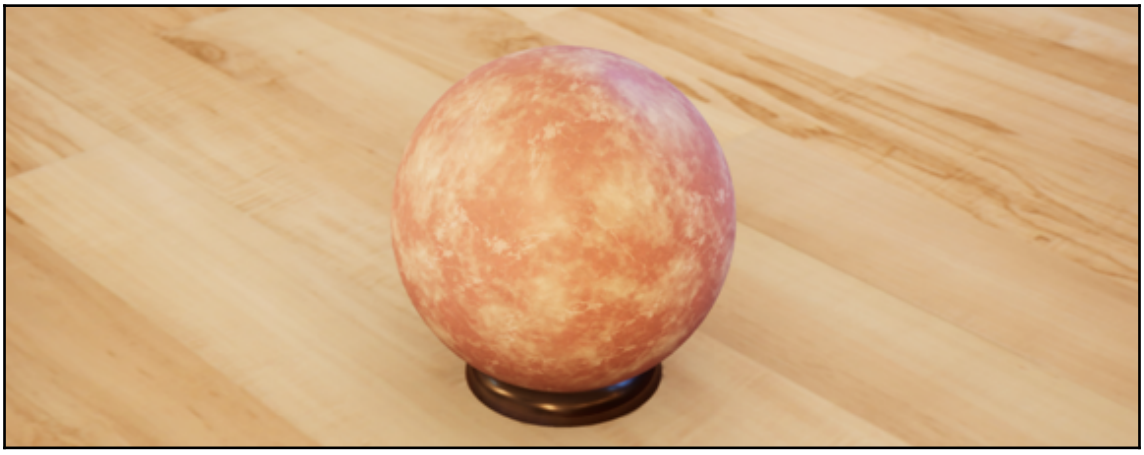

Upper Left World Position
X
Y
Z
0.0
0.0
GetActorLocation
Target is Actor
Target
Return Value
Get Player Camera Manager
Player Index
0
Return Value

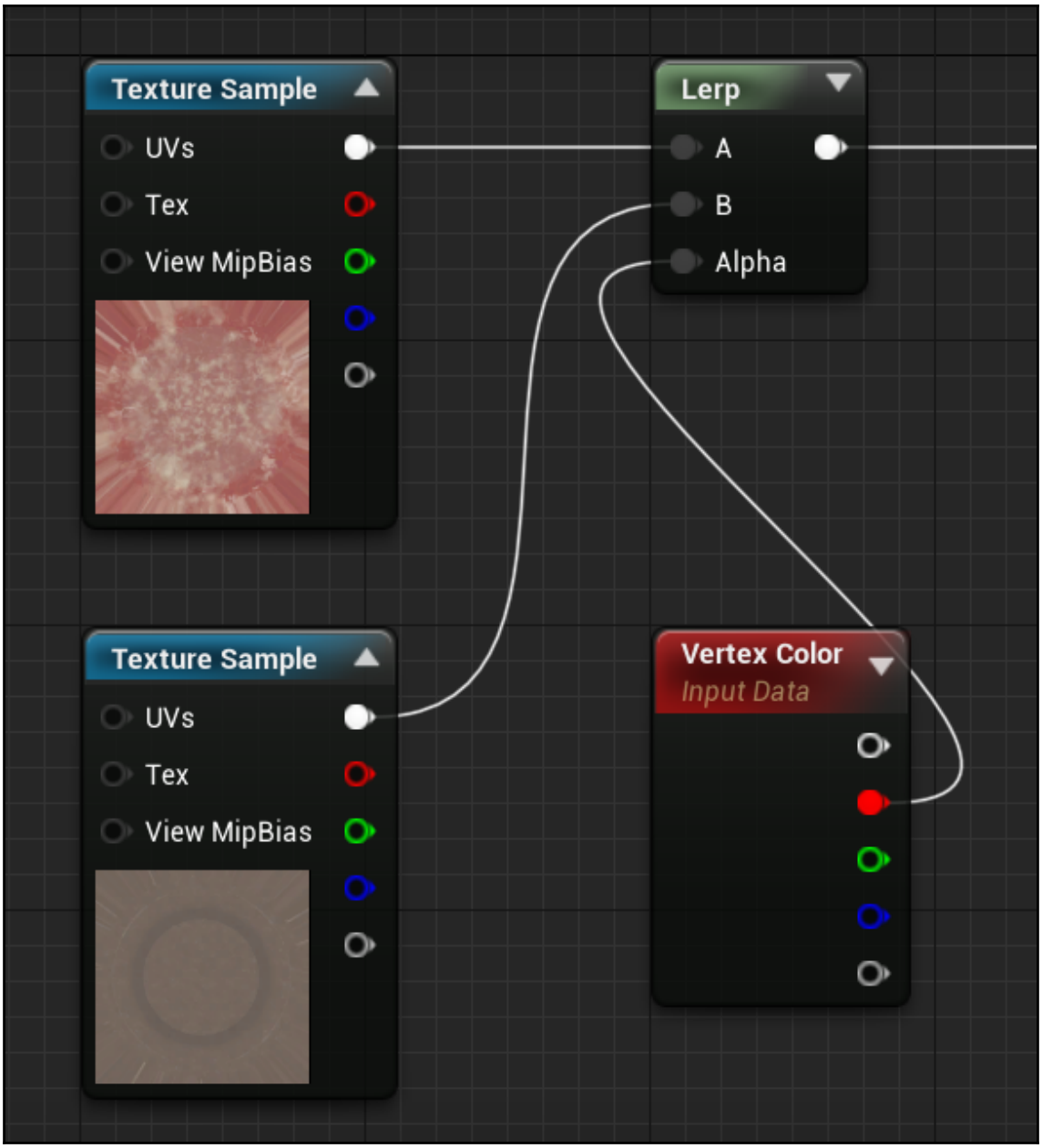

Add pin
64.0
Clamp (float)
Value
Return Value
Min
-64.0
Max
Add pin
64.0
Clamp (float)
Value
Return Value
Min
-64.0
Max

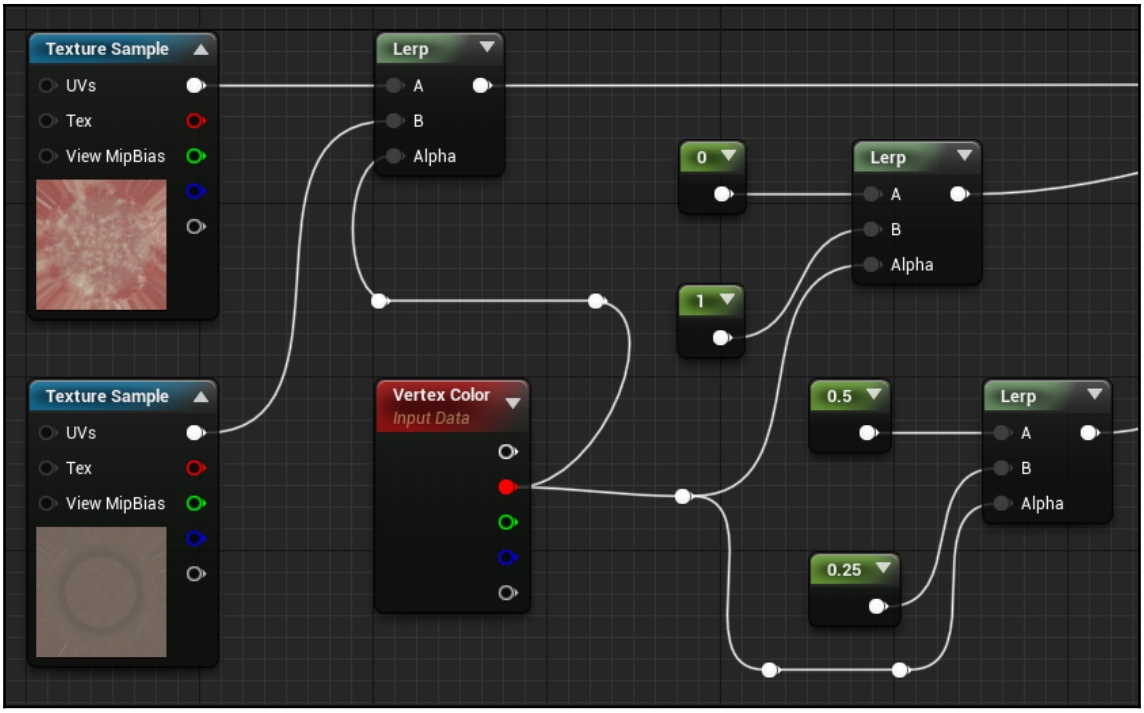

Set Render Transform
Target is Widget
Target
In Transform Translation X
In Transform Translation Y
In Transform Scale
X 1.0
Y 1.0
In Transform Shear
X 0.0
Y 0.0
In Transform Angle
0.0
I Player Location
Clamp (float)
Value
Return Value
Min
-64.0
Max
Clamp (float)
Value
Return Value
Min
-64.0
Max

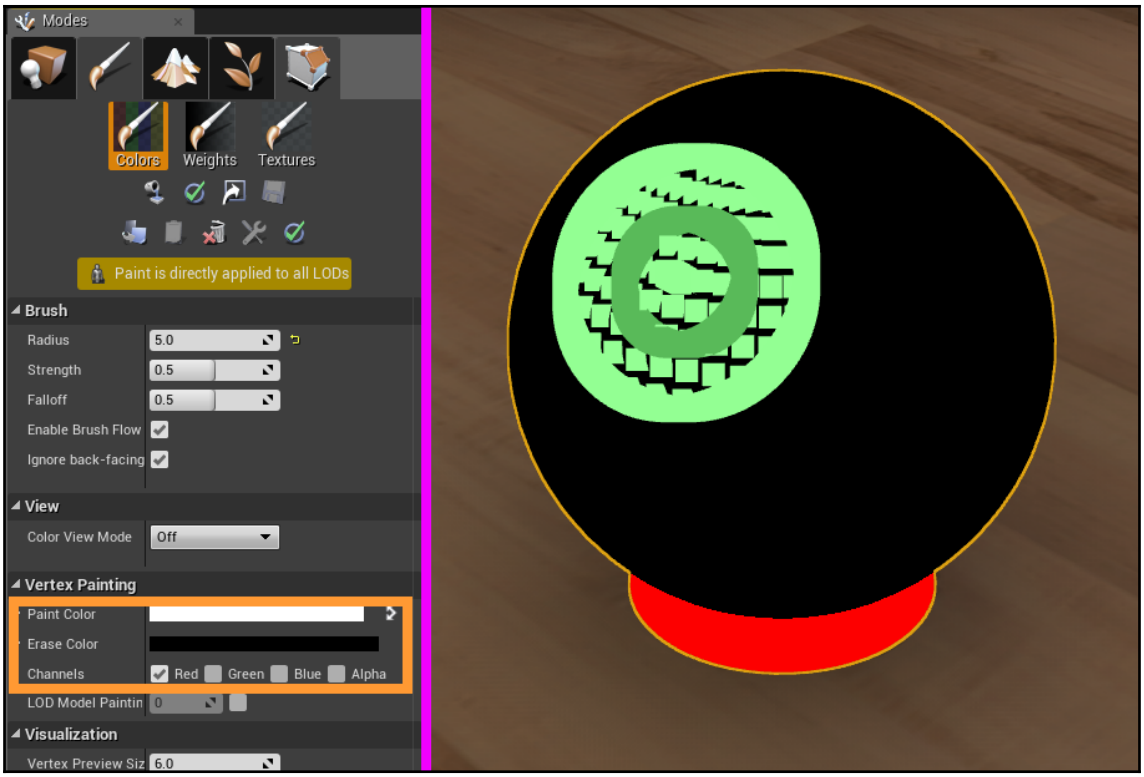

Event BeginPlay
Create UI Minimap and Compass Widget
Class
UI Minimap and (
Return Value
Owning Player
SET
UI
Add to Viewport
Target is User Widget
Target
Get Player Controller
Player Index
0
Return Value

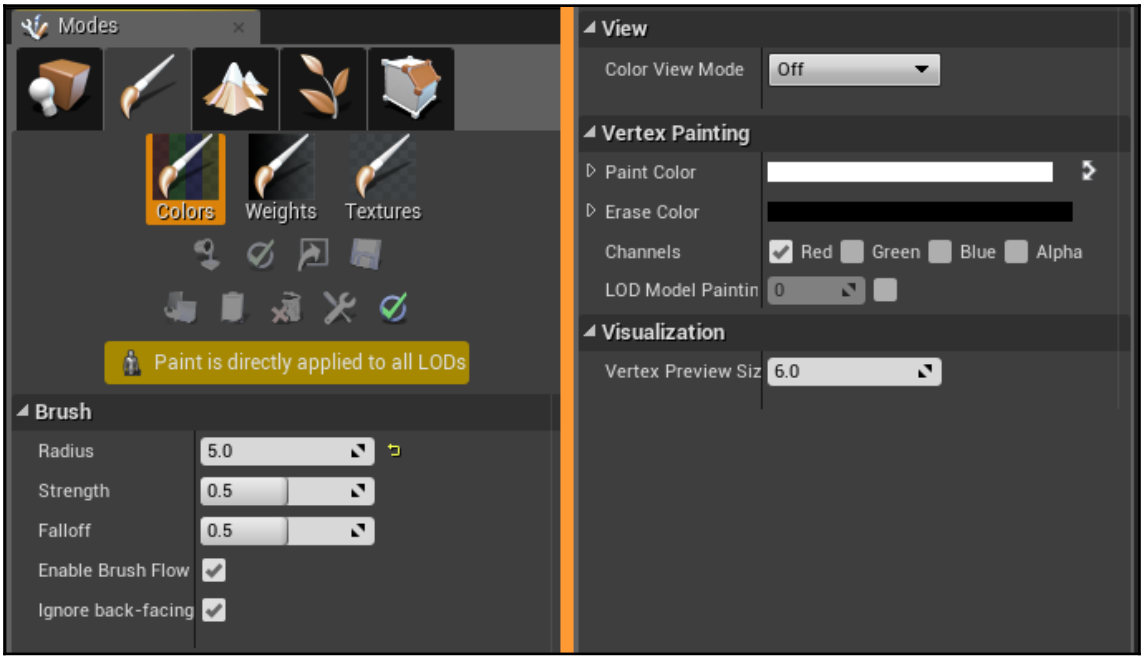
Chapter 6: Advanced Material Techniques

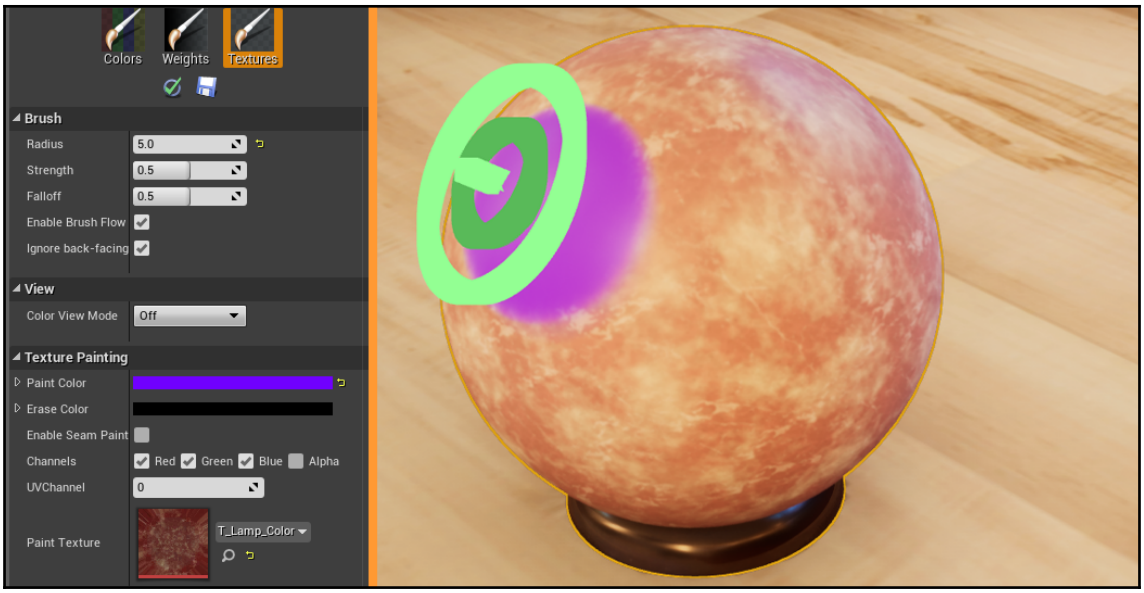


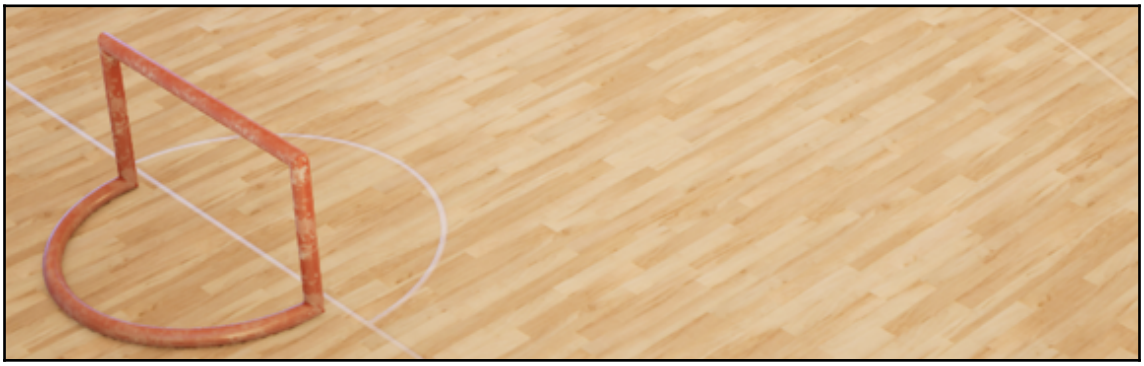

Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha
Texture Sample
UVs
Tex
View MipBias
Vertex Color
Input Data

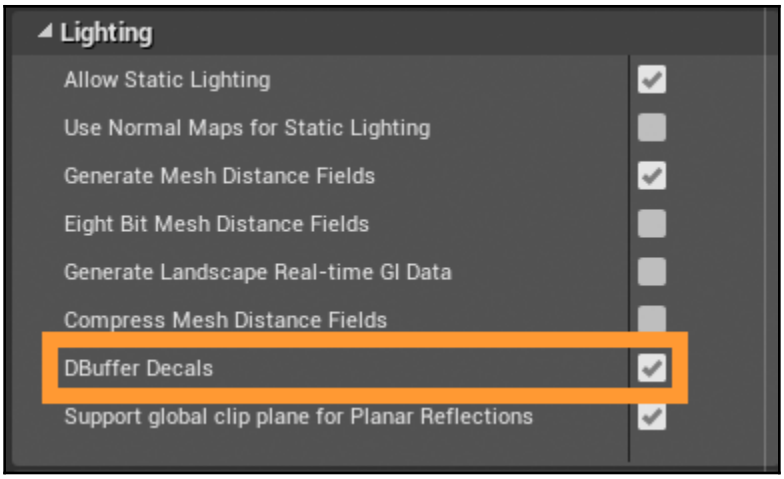

Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha
0
Lerp
A
B
Alpha
1
Texture Sample
UVs
Tex
View MipBias
Vertex Color
Input Data
0.5
Lerp
A
B
Alpha
0.25

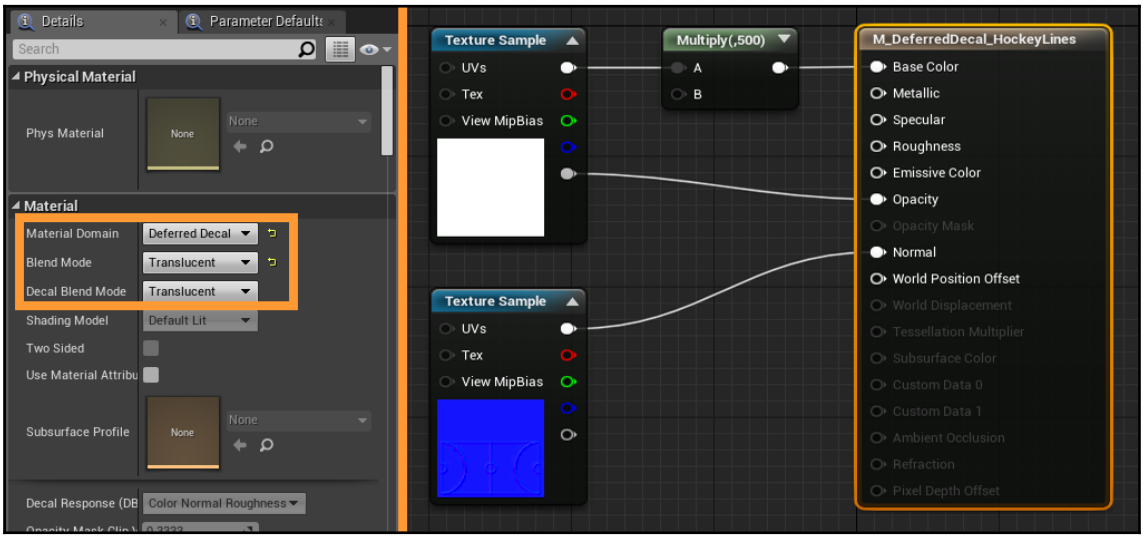

Modes
Colors
Weights
Textures
Paint is directly applied to all LODs
Brush
Radius
5.0
Strength
0.5
Falloff
0.5
Enable Brush Flow
Ignore back-facing
View
Color View Mode
Off
Vertex Painting
Paint Color
Erase Color
Channels
Red
Green
Blue
Alpha
LOD Model Paintin
Visualization
Vertex Preview Siz
6.0

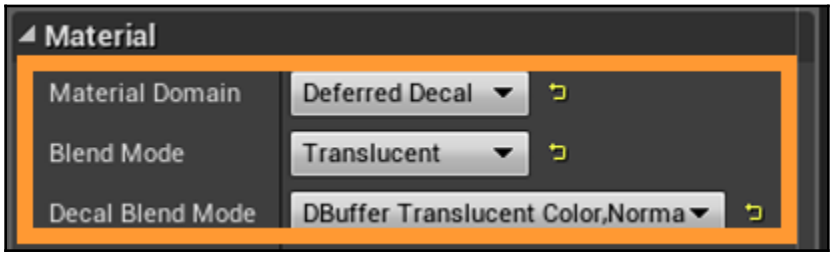

Modes
Colors
Weights
Textures
Paint is directly applied to all LODs
Brush
Radius
5.0
Strength
0.5
Falloff
0.5
Enable Brush Flow
Ignore back-facing
View
Color View Mode
Off
Vertex Painting
Paint Color
Erase Color
Channels
Red
Green
Blue
Alpha
LOD Model Paintin
0
Visualization
Vertex Preview Siz
6.0

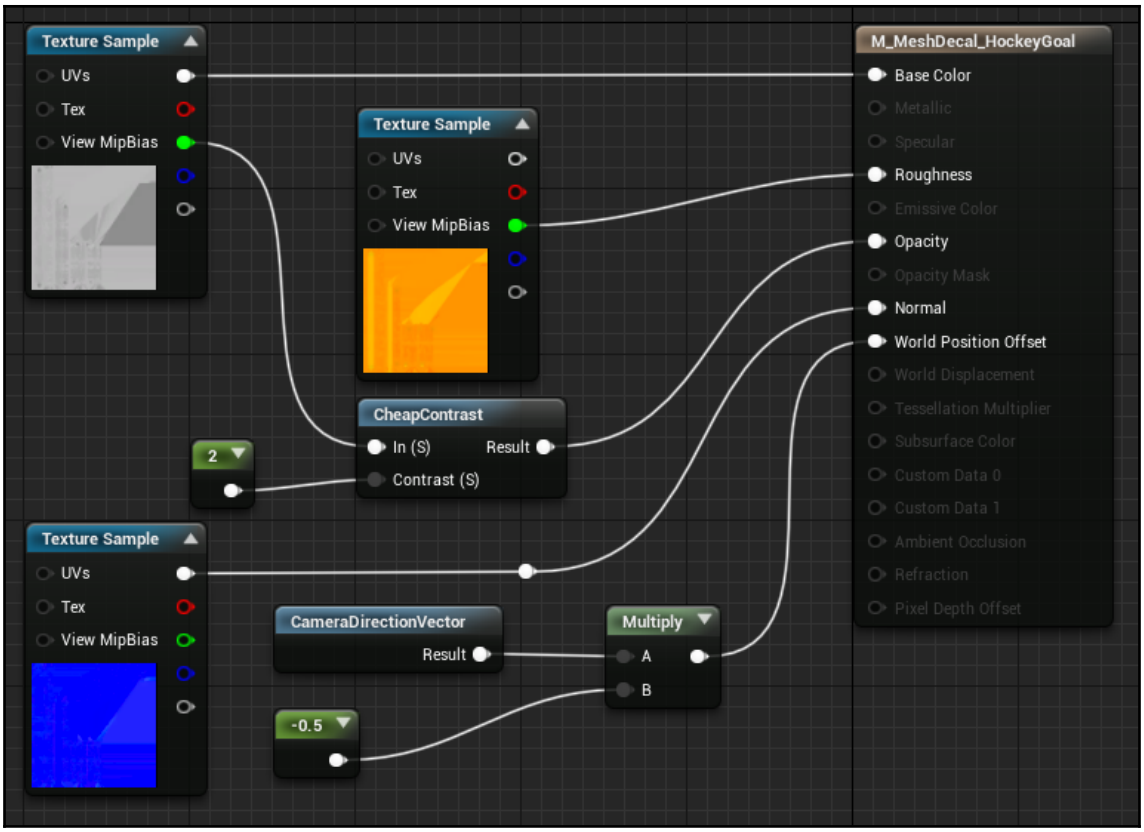

Colors
Weights
Textures
Brush
Radius
5.0
Strength
0.5
Falloff
0.5
Enable Brush Flow
Ignore back-facing
View
Color View Mode
Off
Texture Painting
Paint Color
Erase Color
Enable Seam Paint
Channels
Red
Green
Blue
Alpha
UVChannel
0
Paint Texture
T_Lamp_Color

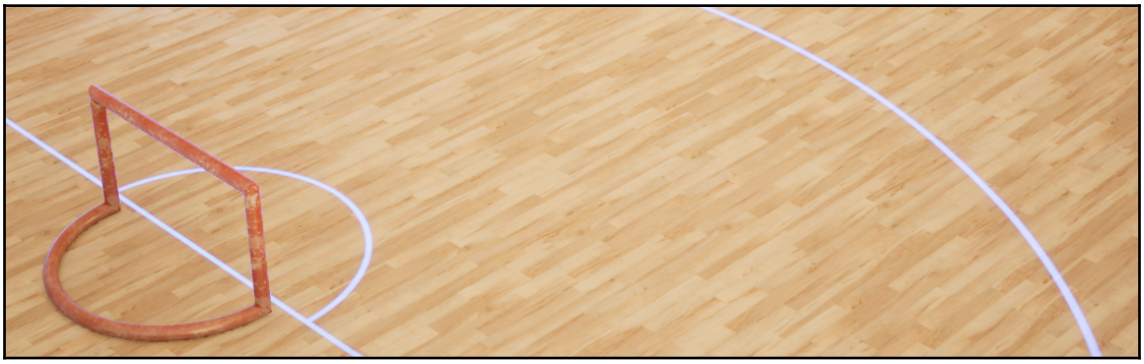


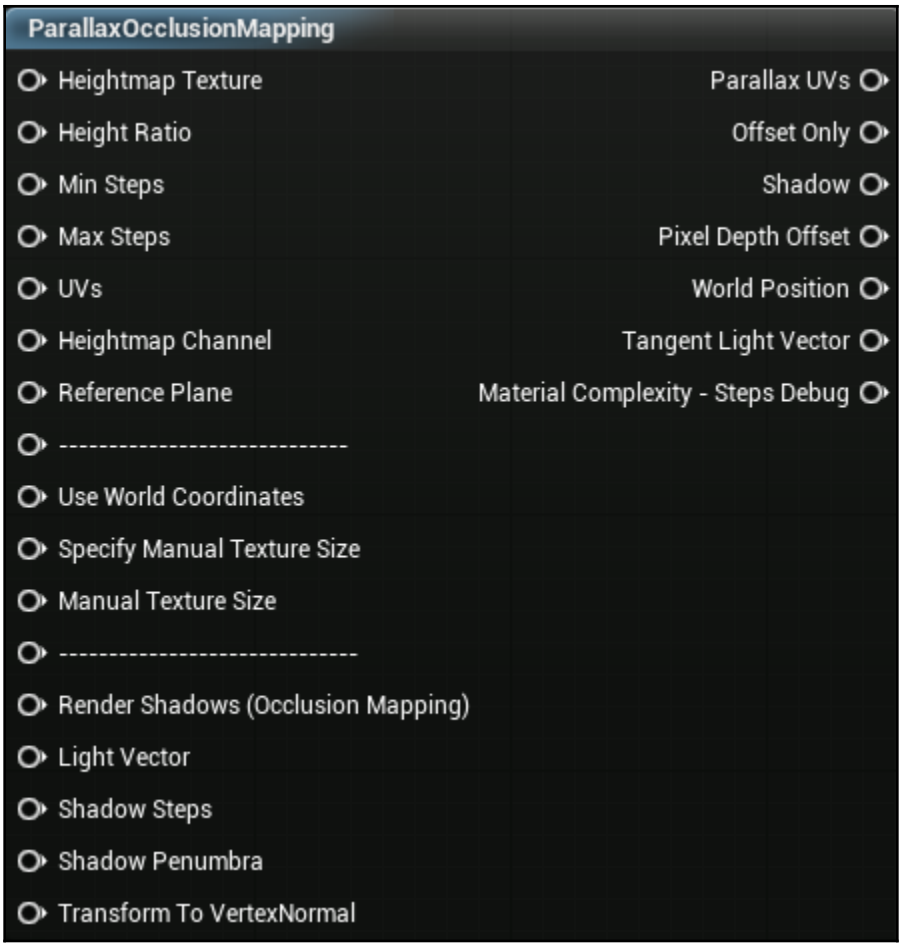

Lighting
Allow Static Lighting
Use Normal Maps for Static Lighting
Generate Mesh Distance Fields
Eight Bit Mesh Distance Fields
Generate Landscape Real-time GI Data
Compress Mesh Distance Fields
DBuffer Decals
Support global clip plane for Planar Reflections


Details
Parameter Defaults
Search
Physical Material
Phys Material
None
Material
Material Domain
Deferred Decal
Blend Mode
Translucent
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attribu
Subsurface Profile
Decal Response (DB
Color Normal Roughness
Texture Sample
UVs
Tex
View MipBias
Multiply(,500)
A
B
M_DeferredDecal_HockeyLines
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset


Material
Material Domain
Deferred Decal
Blend Mode
Translucent
Decal Blend Mode
DBuffer Translucent Color,Norma

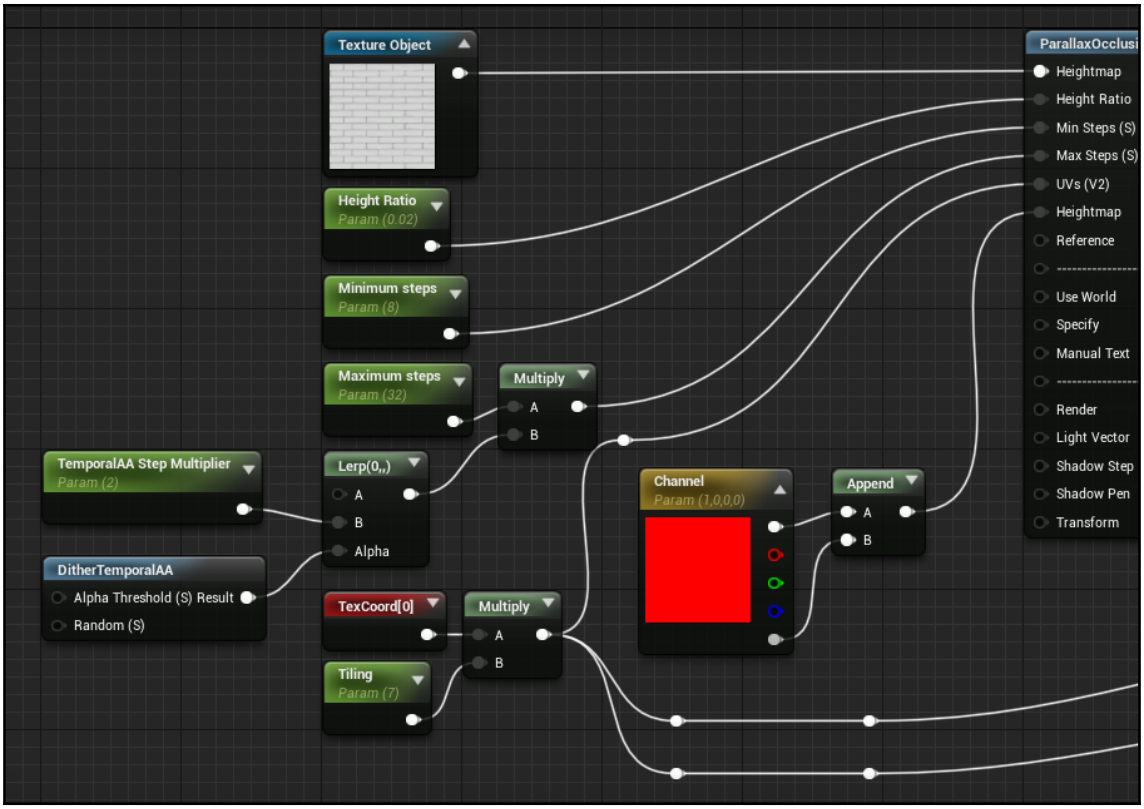

Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
M_MeshDecal_HockeyGoal
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
CheapContrast
In (S)
Result
Contrast (S)
2
Texture Sample
UVs
Tex
View MipBias
CameraDirectionVector
Result
Multiply
A
B
-0.5

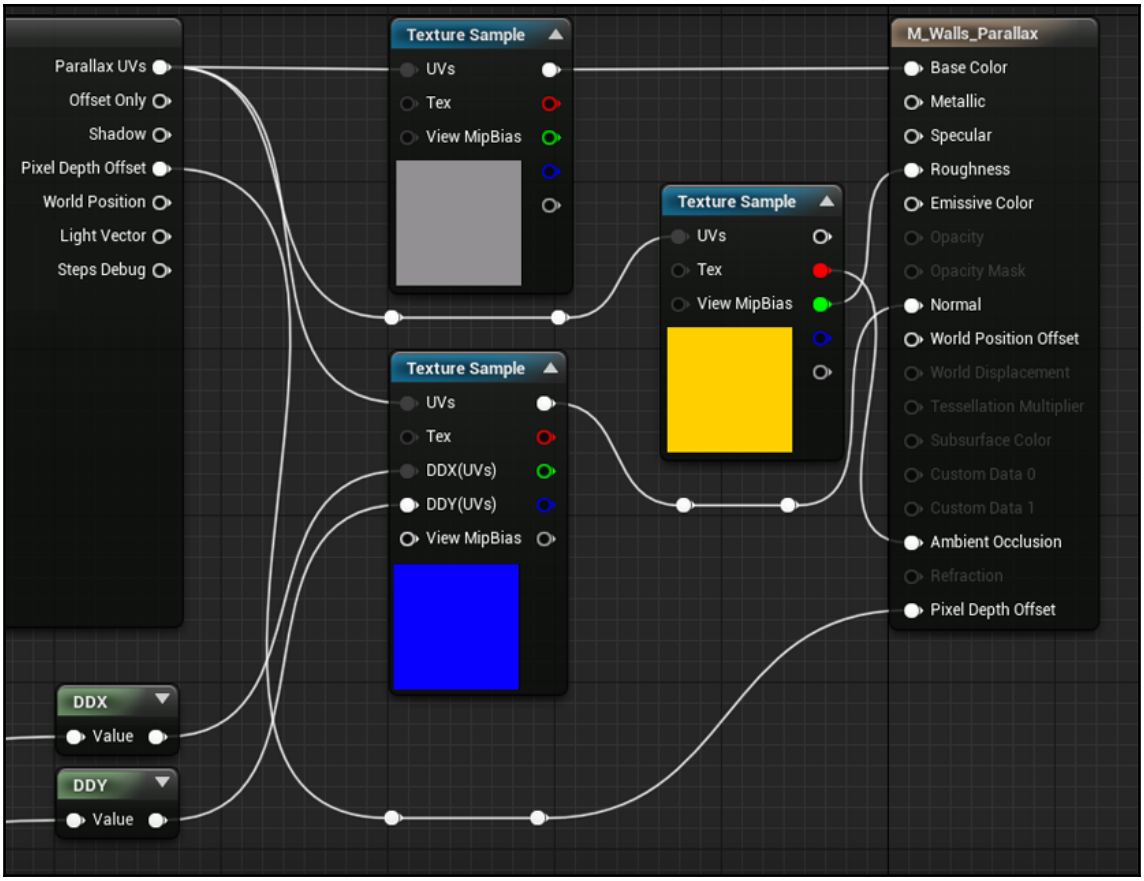


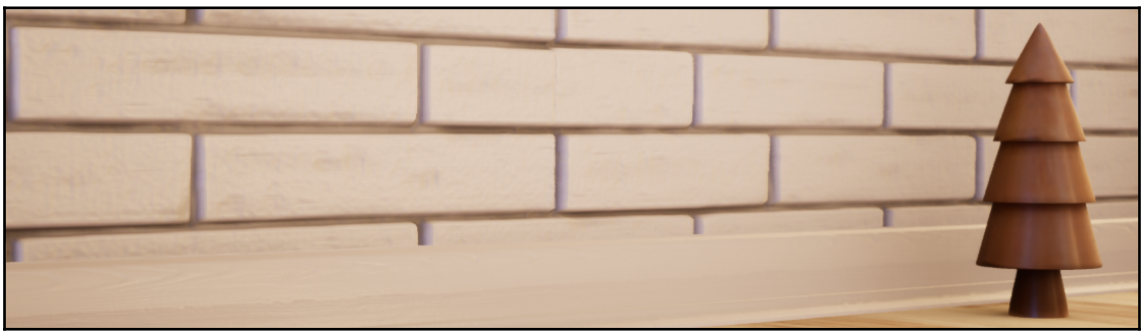

ParallaxOcclusionMapping
Heightmap Texture
Height Ratio
Min Steps
Max Steps
UVs
Heightmap Channel
Reference Plane

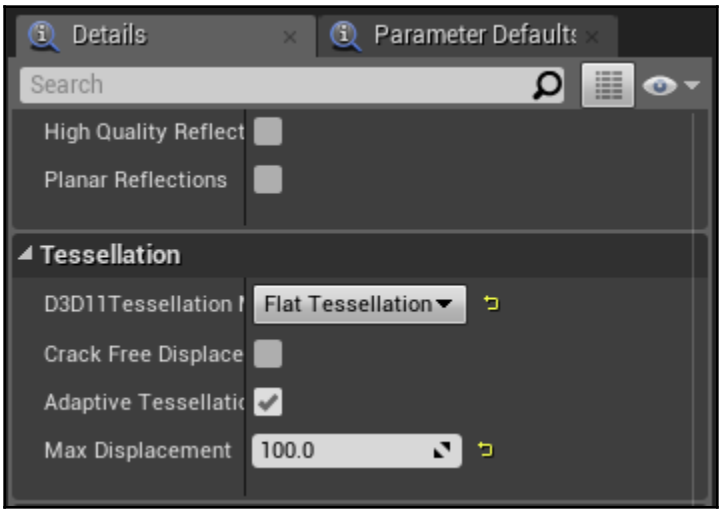
Use World Coordinates
Specify Manual Texture Size
Manual Texture Size

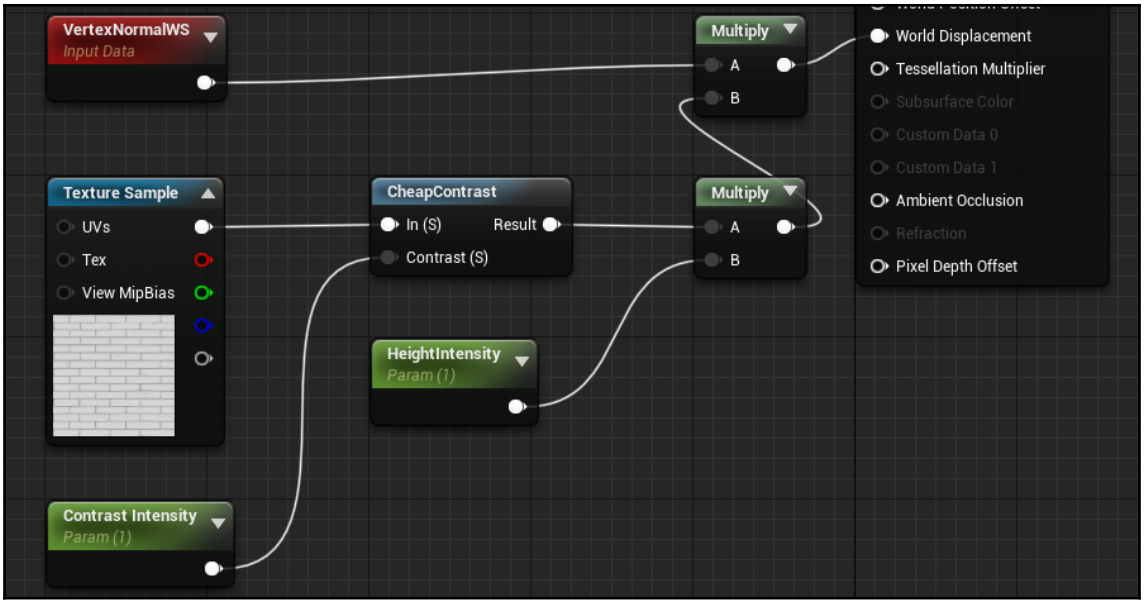
Render Shadows (Occlusion Mapping)
Light Vector
Shadow Steps
Shadow Penumbra
Transform To VertexNormal
Parallax UVs
Offset Only
Shadow
Pixel Depth Offset
World Position
Tangent Light Vector
Material Complexity - Steps Debug

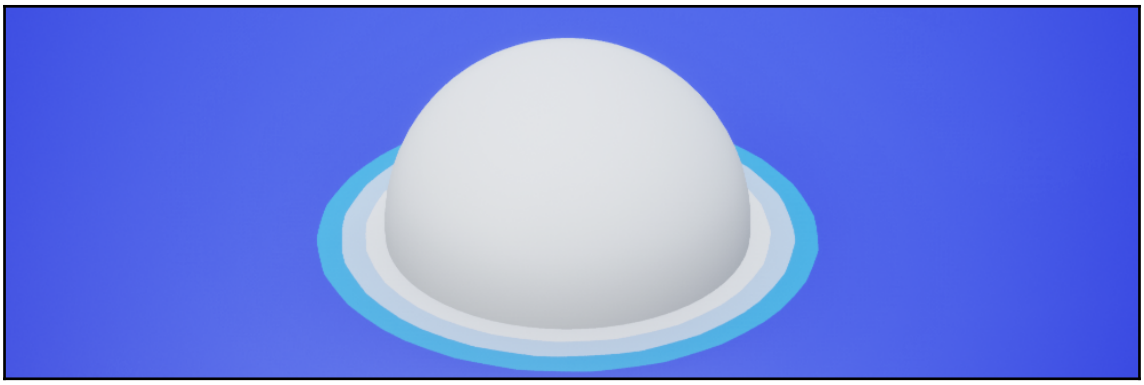

Texture Object
Height Ratio
Param (0.02)
Minimum steps
Param (8)
Maximum steps
Param (32)
Multiply
A
B
TemporalAA Step Multiplier
Param (2)
Lerp(0,,)
A
B
Alpha
DitherTemporalAA
Alpha Threshold (S) Result
Random (S)
TexCoord[0]
Multiply
A
B
Tiling
Param (7)
Channel
Param (1,0,0,0)
Append
A
B
ParallaxOcclusi
Heightmap
Height Ratio
Min Steps (S)
Max Steps (S)
UVs (V2)
Heightmap
Reference
Use World
Specify
Manual Text
Render
Light Vector
Shadow Step
Shadow Pen
Transform

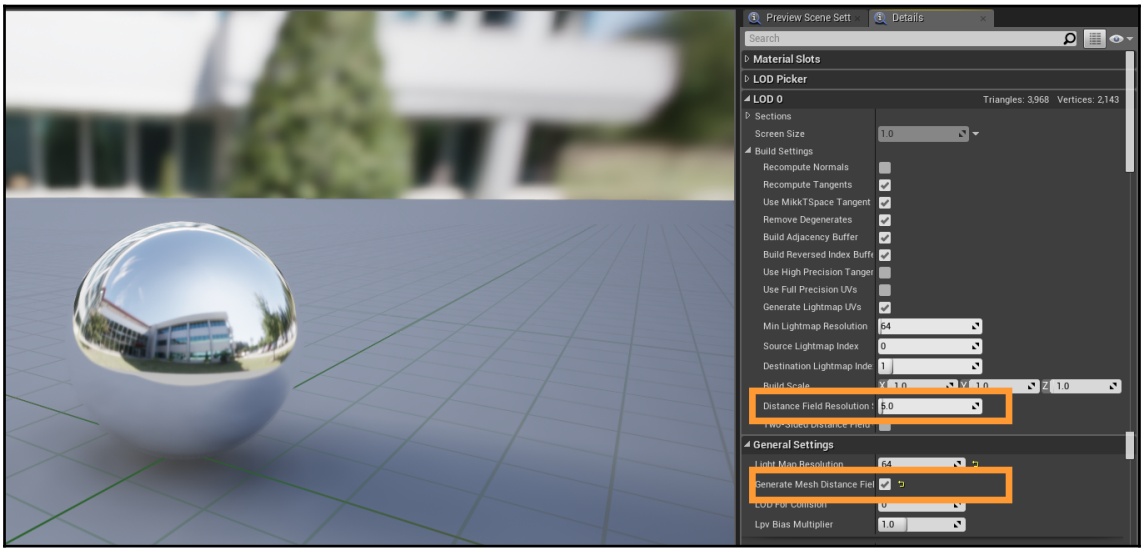

Parallax UVs
Offset Only
Shadow
Pixel Depth Offset
World Position
Light Vector
Steps Debug
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
DDX(UVs)
DDY(UVs)
View MipBias
DDX
Value
DDY
Value
M_Walls_Parallax
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset

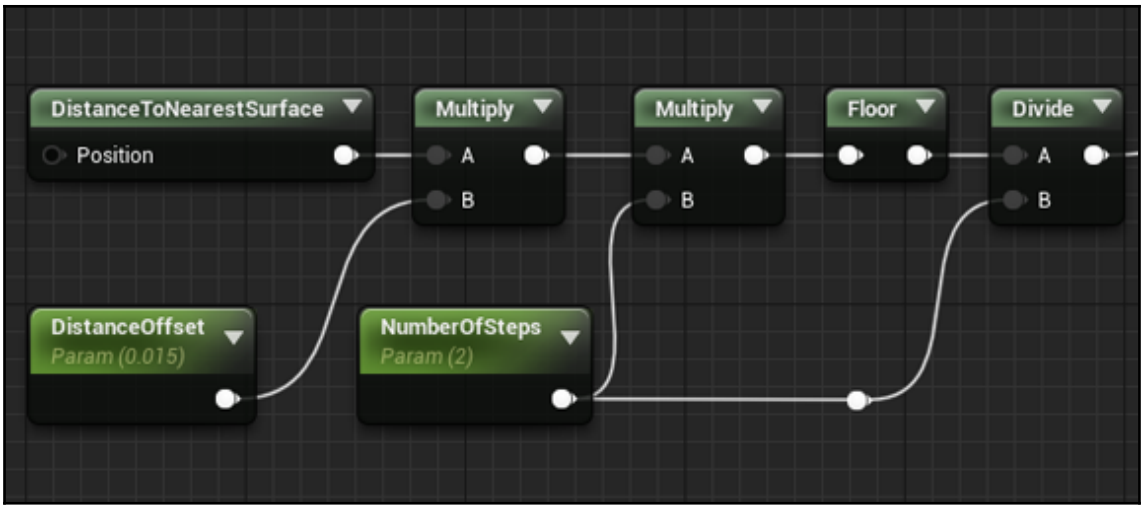


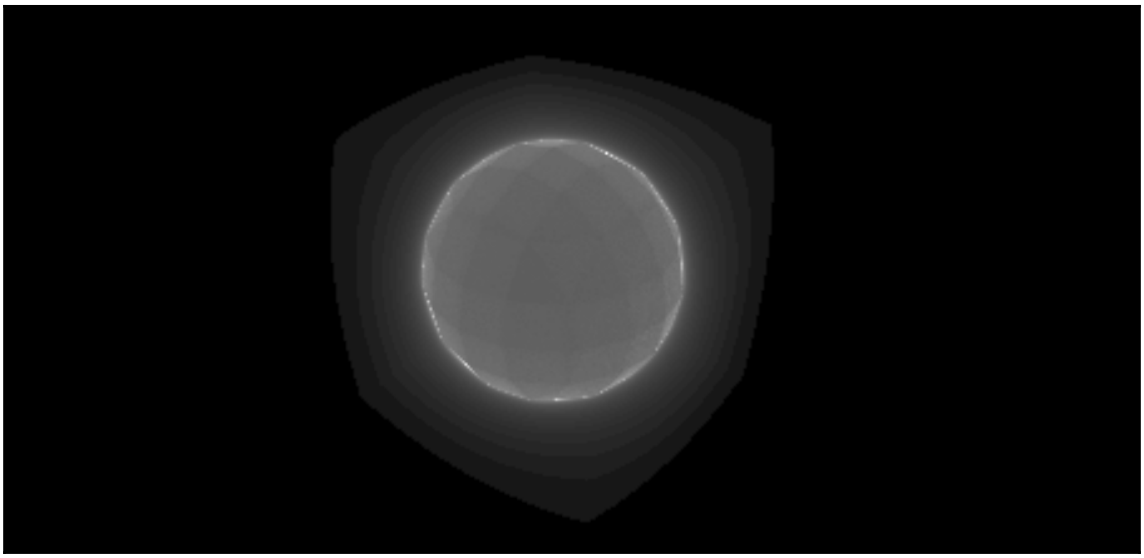

Details
Parameter Defaults
Search
High Quality Reflect
Planar Reflections
Tessellation
D3D11Tessellation M
Flat Tessellation
Crack Free Displace
Adaptive Tessellatic
Max Displacement
100.0


VertexNormalWS
Input Data
Multiply
A
B
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
Multiply
A
B
HeightIntensity
Param (1)
Contrast Intensity
Param (1)

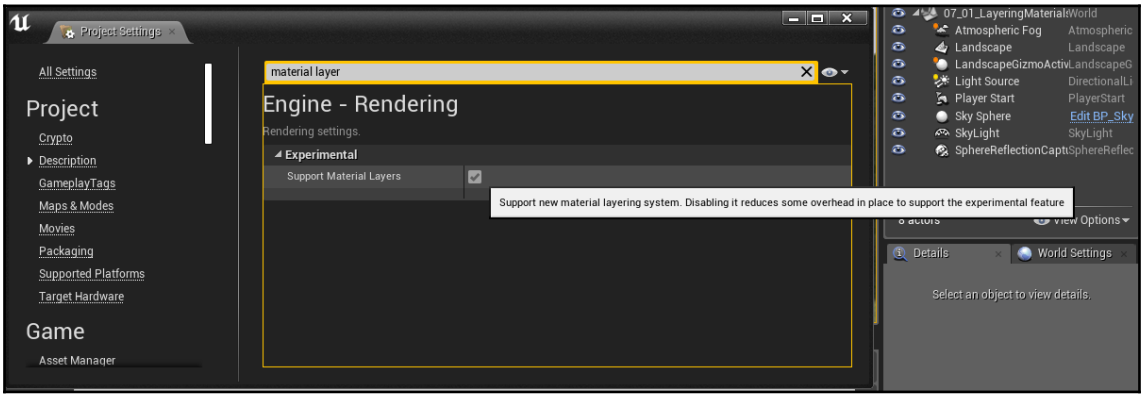


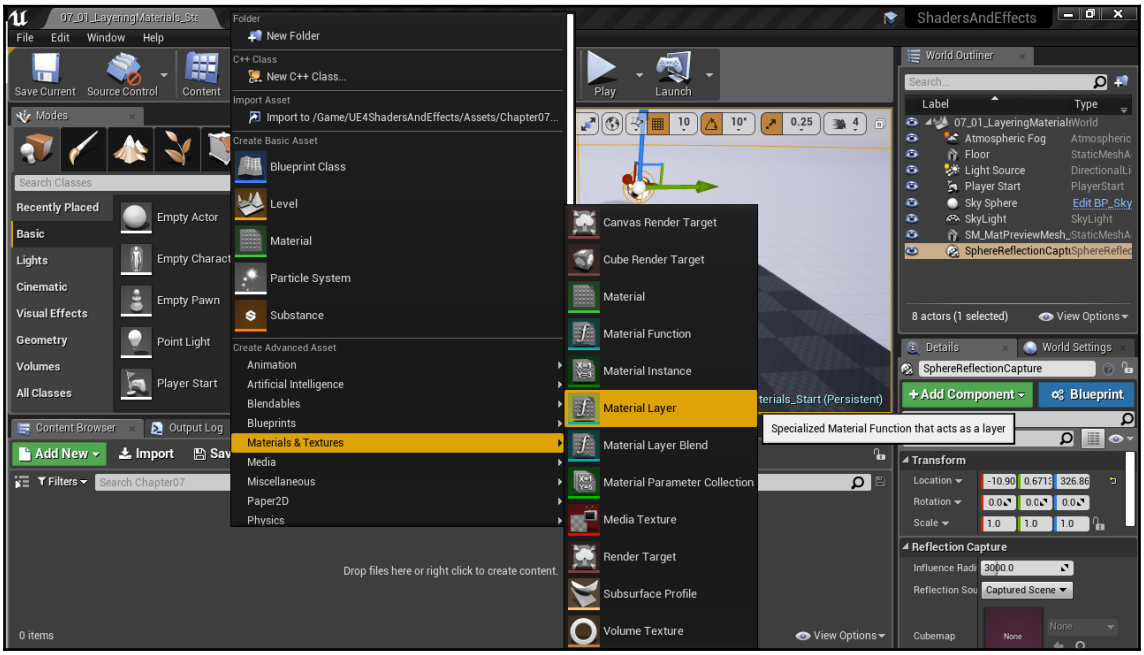

Preview Scene Sett
Details
Search
Material Slots
LOD Picker
LOD 0
Triangles: 3,968 Vertices: 2,143
Sections
Screen Size
1.0
Build Settings
Recompute Normals
Recompute Tangents
Use MikkTSpace Tangent
Remove Degenerates
Build Adjacency Buffer
Build Reversed Index Buffe
Use High Precision Tanger
Use Full Precision UVs
Generate Lightmap UVs
Min Lightmap Resolution
64
Source Lightmap Index
0
Destination Lightmap Inde
1
Distance Field Resolution
5.0
General Settings
Generate Mesh Distance Fiel
Lpv Bias Multiplier
1.0

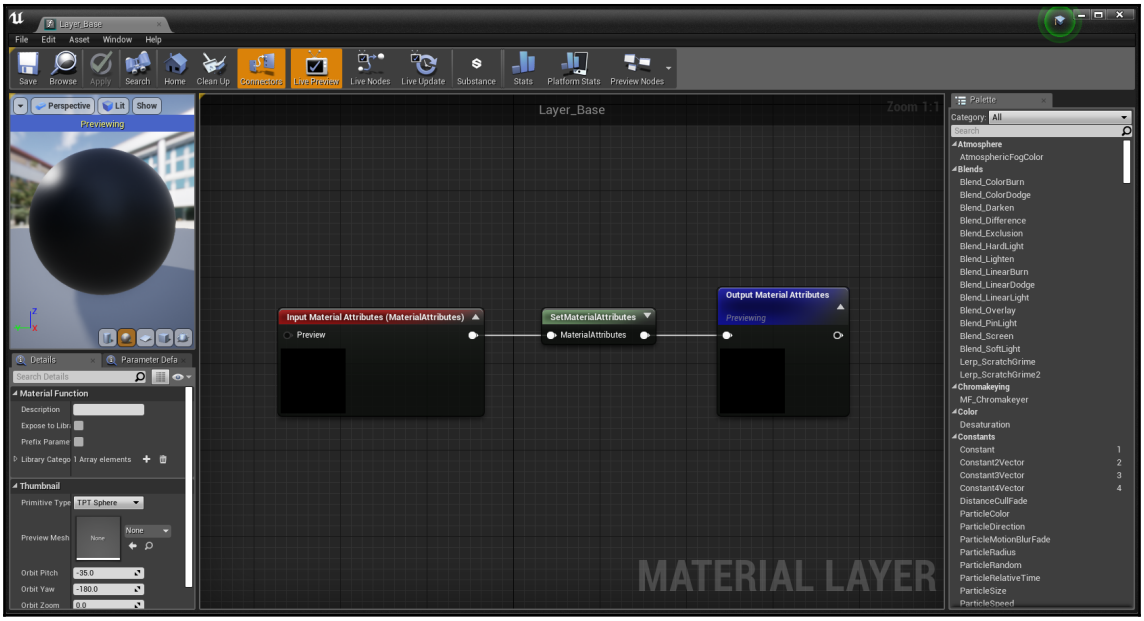

DistanceToNearestSurface
Position
Multiply
A
B
Multiply
A
B
Floor
Divide
A
B
DistanceOffset
Param (0.015)
NumberOfSteps
Param (2)

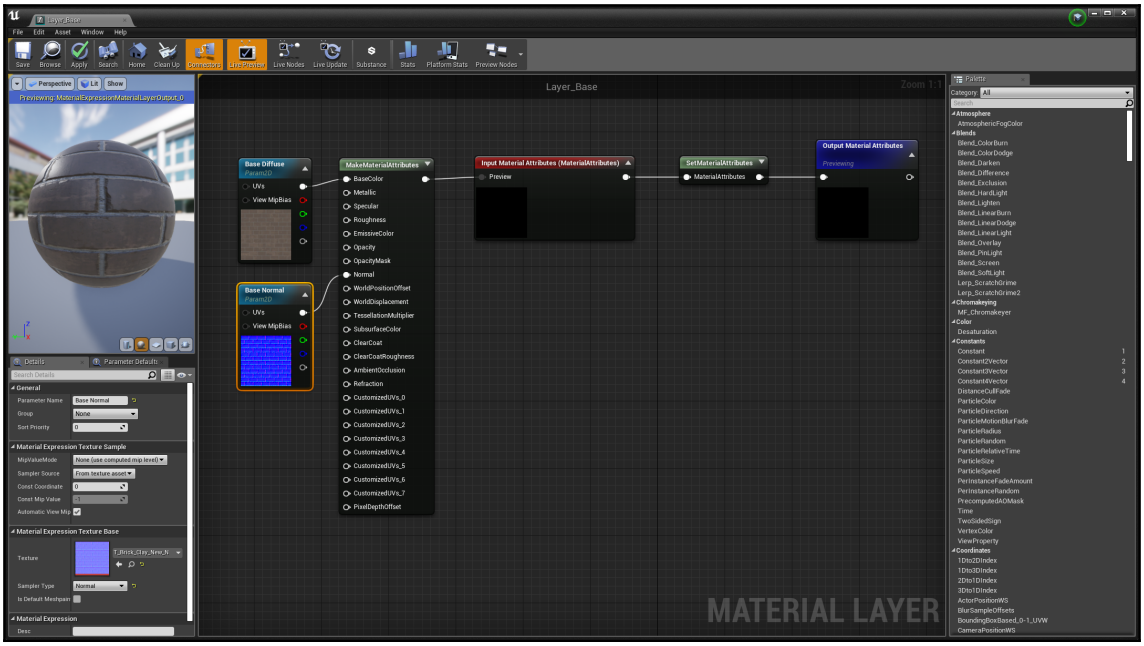


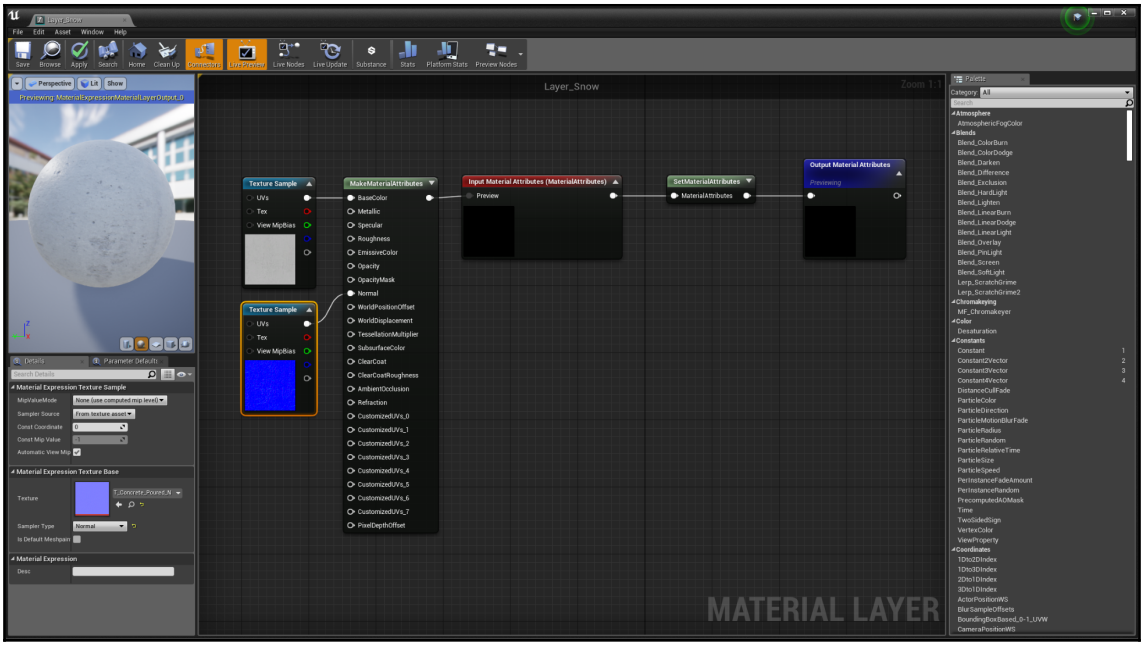
Chapter 7: Using Material Instances

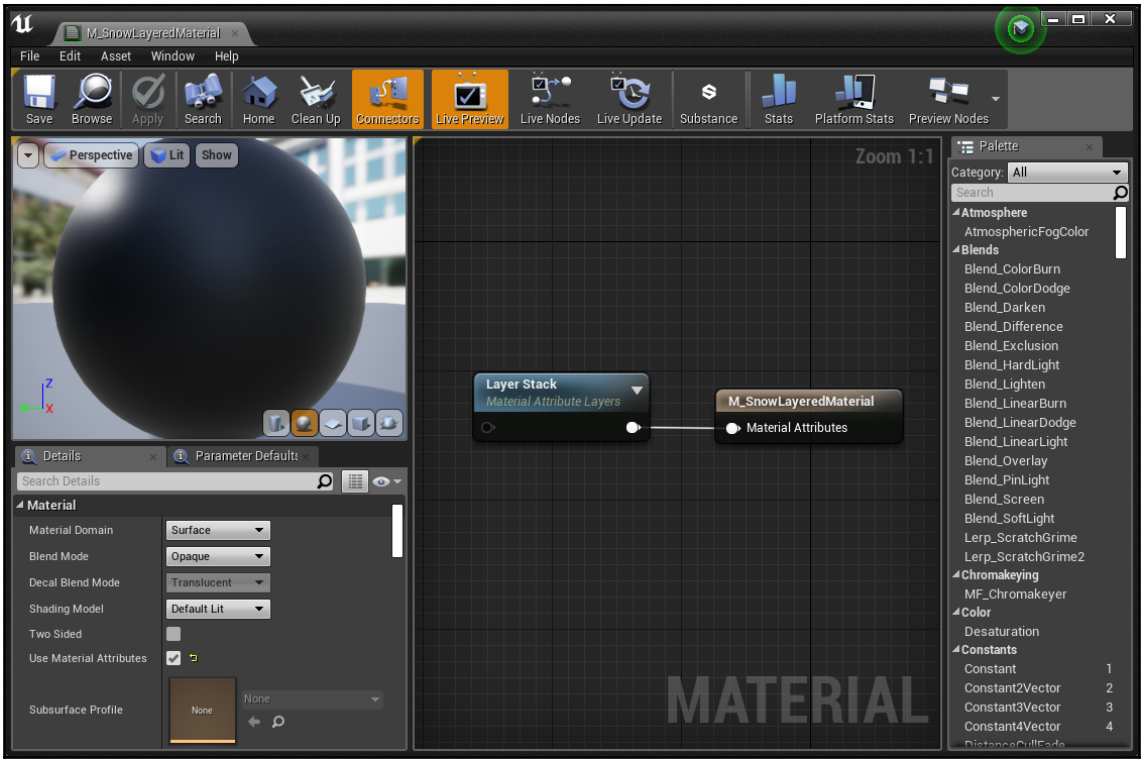


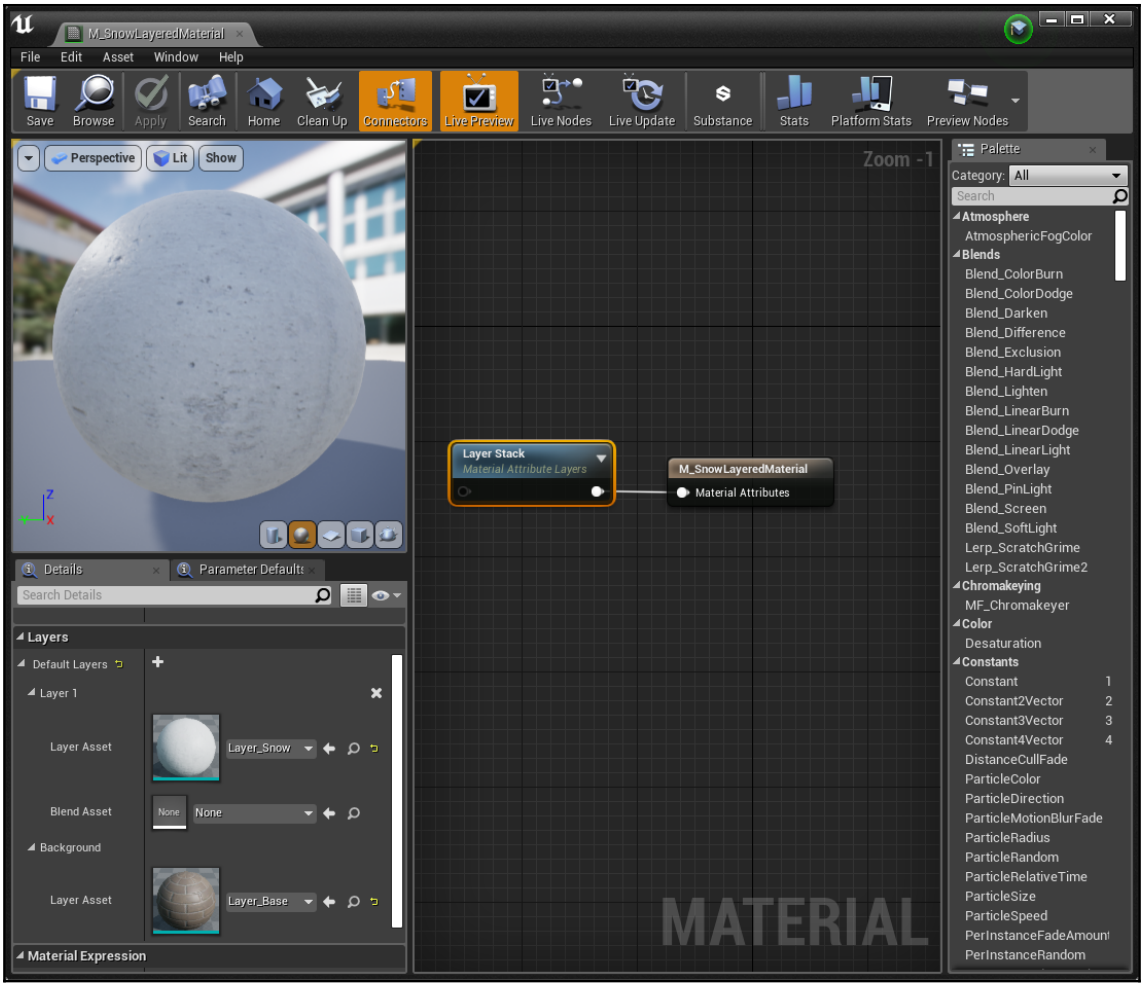


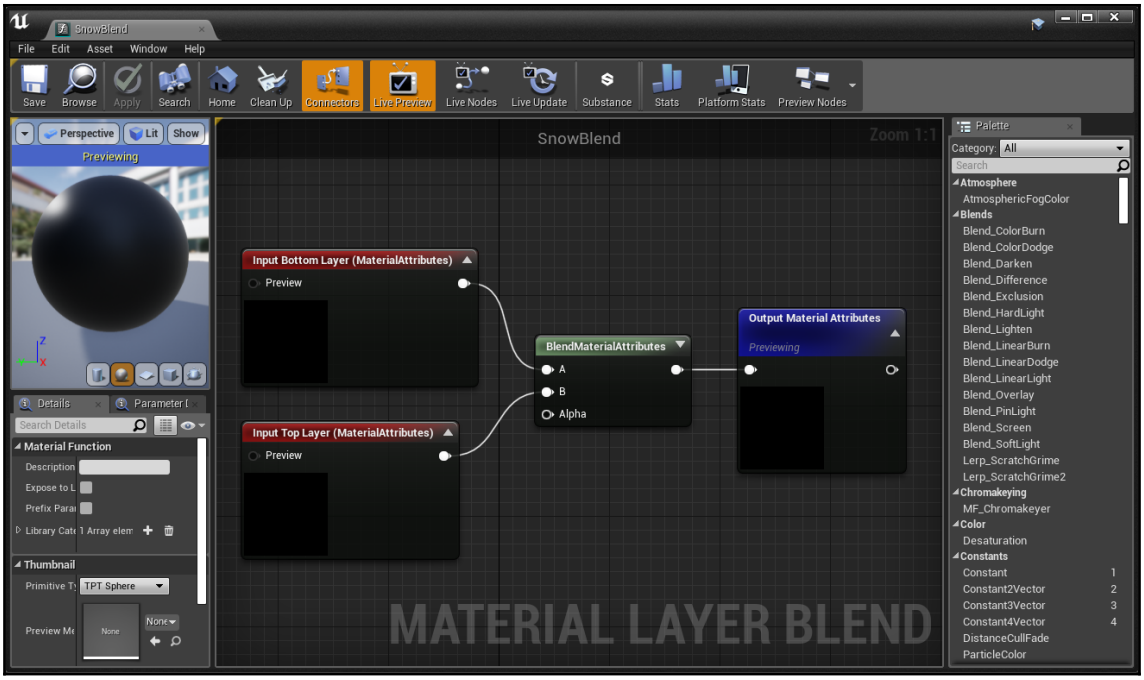

Layer_Base
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Previewing
Layer_Base
Zoom 1:1
Input Material Attributes (MaterialAttributes)
Preview
SetMaterialAttributes
MaterialAttributes
Output Material Attributes
Previewing
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
Details
Parameter Defa
Search Details
Material Function
Description
Expose to Libr.
Prefix Parame
Library Catego 1 Array elements
Thumbnail
Primitive Type TPT Sphere
Preview Mesh None
Orbit Pitch -35.0
Orbit Yaw -180.0
Orbit Zoom 0.0
MATERIAL LAYER

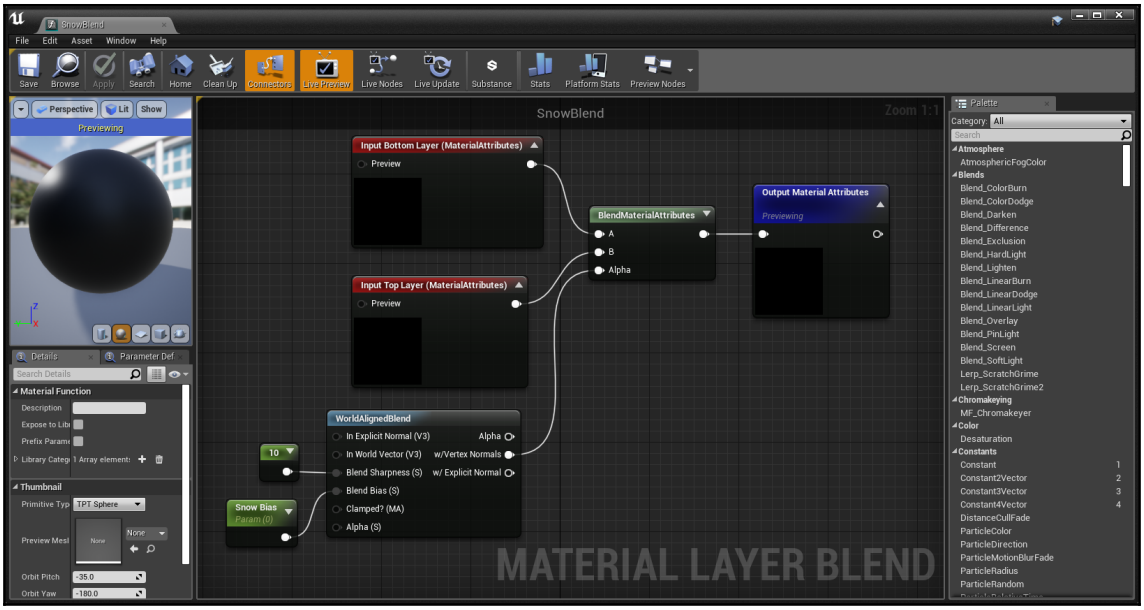

Layer_Base
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Previewing MaterialExpressionMaterialLayerOutput_0
Layer_Base
Zoom 1:1
Base Diffuse
Param2D
UVs
View MipBias
Base Normal
Param2D
UVs
View MipBias
MakeMaterialAttributes
BaseColor
Metallic
Specular
Roughness
EmissiveColor
Opacity
OpacityMask
Normal
WorldPositionOffset
WorldDisplacement
TessellationMultiplier
SubsurfaceColor
ClearCoat
ClearCoatRoughness
AmbientOcclusion
Refraction
CustomizedUVs_0
CustomizedUVs_1
CustomizedUVs_2
CustomizedUVs_3
CustomizedUVs_4
CustomizedUVs_5
CustomizedUVs_6
CustomizedUVs_7
PixelDepthOffset
Input Material Attributes (MaterialAttributes)
Preview
SetMaterialAttributes
MaterialAttributes
Output Material Attributes
Previewing
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
PerInstanceRandom
PrecomputedAOMask
Time
TwoSidedSign
VertexColor
ViewProperty
Coordinates
1Dto2DIndex
1Dto3DIndex
2Dto1DIndex
3Dto1DIndex
ActorPositionWS
BlurSampleOffsets
BoundingBoxBased_0-1_UVW
CameraPositionWS
Details
Parameter Defaults
Search Details
General
Parameter Name Base Normal
Group None
Sort Priority 0
Material Expression Texture Sample
MipValueMode None (use computed mip level)
Sampler Source From texture asset
Const Coordinate 0
Const Mip Value 0
Automatic View Mip
Material Expression Texture Base
Texture T_Brick_Clay_New_N
Sampler Type Normal
Is Default Meshpain
Material Expression
Desc
MATERIAL LAYER

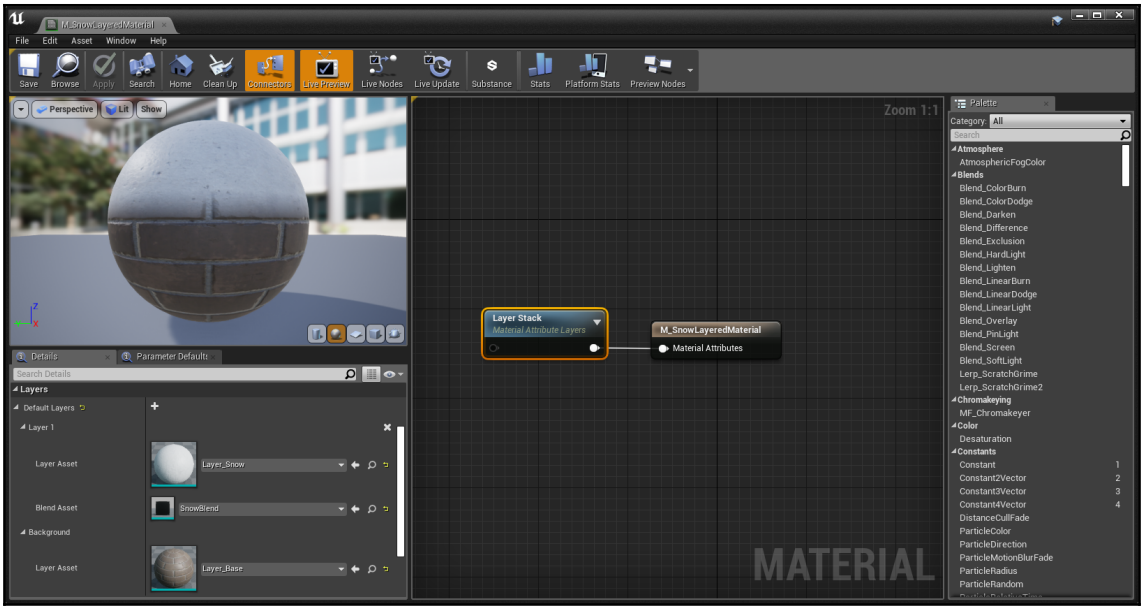

Layer_Snow
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
MakeMaterialAttributes
BaseColor
Metallic
Specular
Roughness
EmissiveColor
Opacity
OpacityMask
Normal
WorldPositionOffset
WorldDisplacement
TessellationMultiplier
SubsurfaceColor
ClearCoat
ClearCoatRoughness
AmbientOcclusion
Refraction
CustomizedUVs_0
CustomizedUVs_1
CustomizedUVs_2
CustomizedUVs_3
CustomizedUVs_4
CustomizedUVs_5
CustomizedUVs_6
CustomizedUVs_7
PixelDepthOffset
Input Material Attributes (MaterialAttributes)
Preview
SetMaterialAttributes
MaterialAttributes
Output Material Attributes
Previewing
MATERIAL LAYER

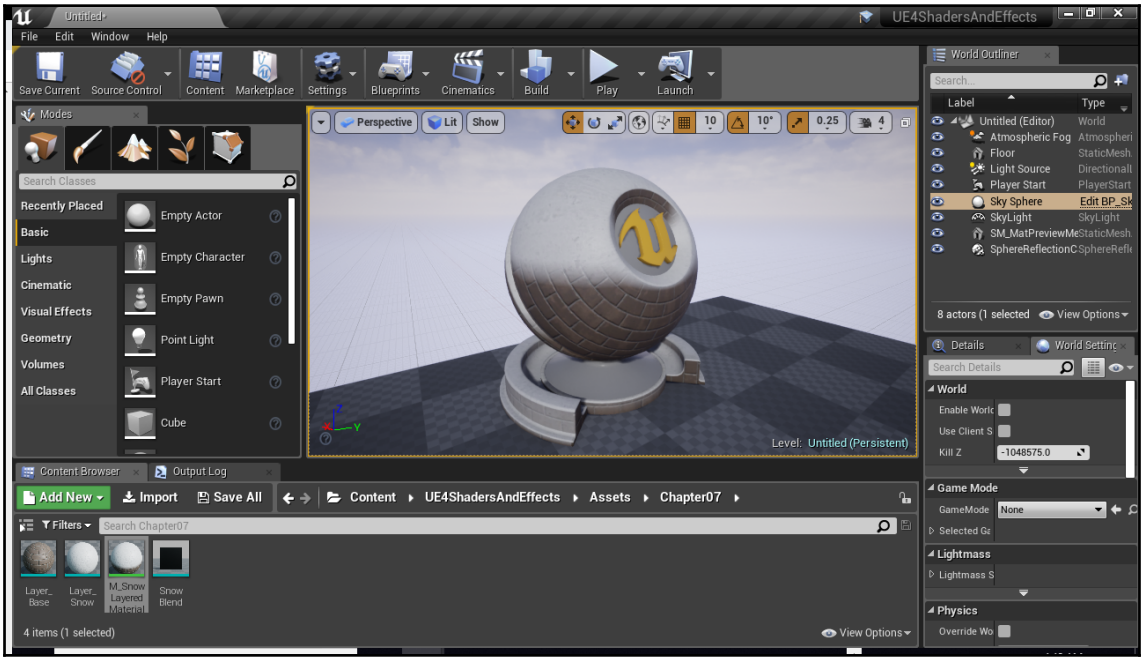

M_SnowLayeredMaterial
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Layer Stack
Material Attribute Layers
M_SnowLayeredMaterial
Material Attributes
MATERIAL
Palette
Category:
All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
Details
Parameter Defaults
Search Details
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attributes
Subsurface Profile
None

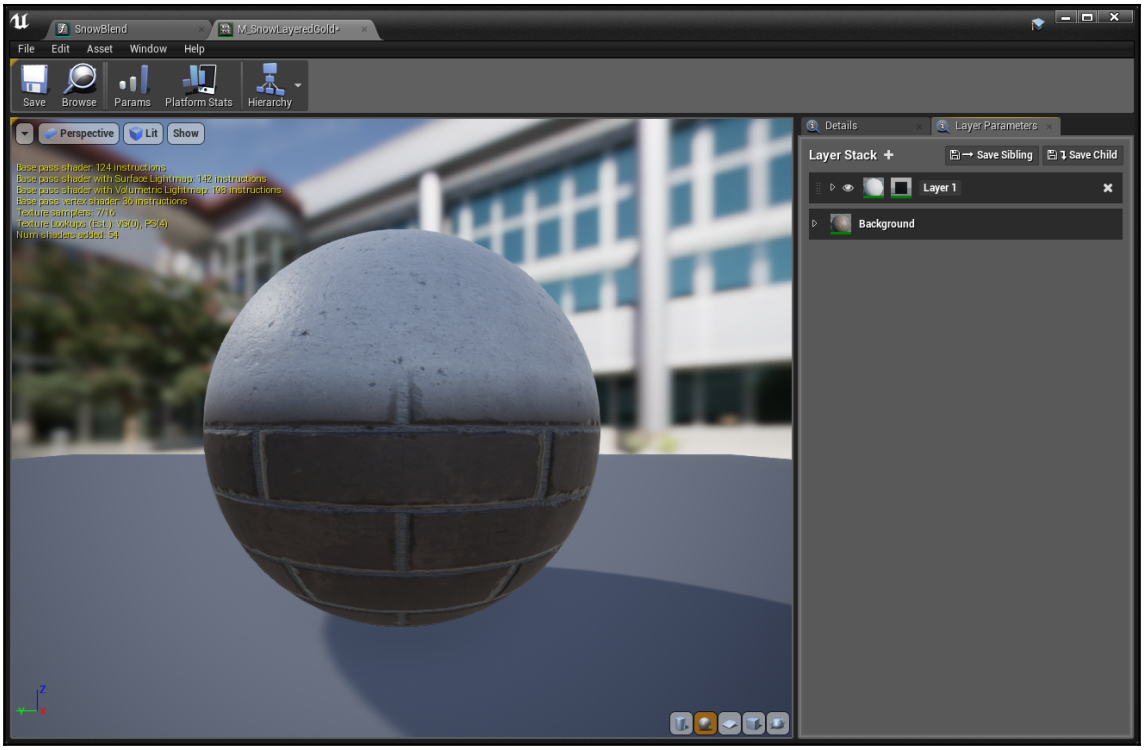

M_SnowLayeredMaterial
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom -1
Layer Stack
Material Attribute Layers
M_SnowLayeredMaterial
Material Attributes
MATERIAL
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant 1
Constant2Vector 2
Constant3Vector 3
Constant4Vector 4
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
PerInstanceRandom
Details
Parameter Defaults
Search Details
Layers
Default Layers
Layer 1
Layer Asset
Layer_Snow
Blend Asset
None
Background
Layer Asset
Layer_Base
Material Expression

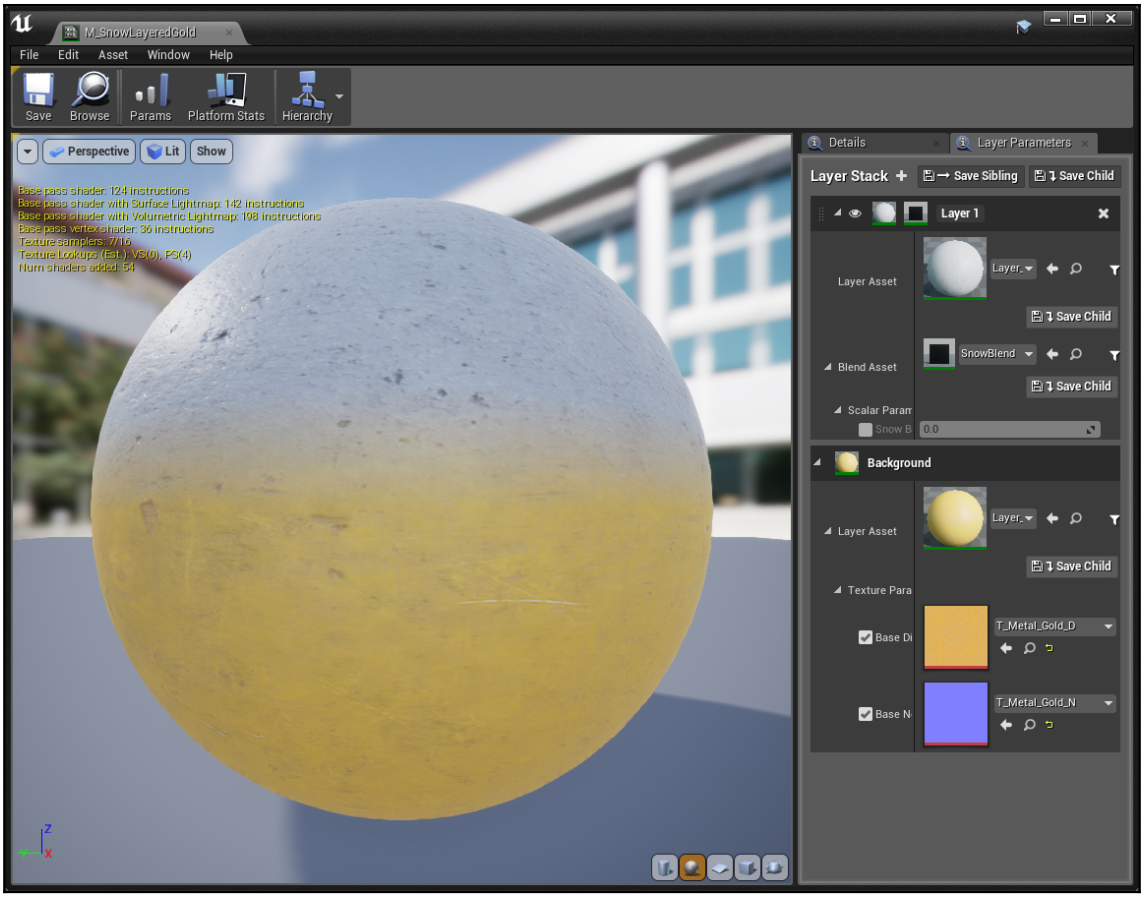

SnowBlend
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Previewing
Details Parameter
Material Function
Description
Thumbnail
Primitive Ty TPT Sphere
Preview Me None
SnowBlend
Zoom 1:1
Input Bottom Layer (MaterialAttributes)
Preview
Input Top Layer (MaterialAttributes)
Preview
BlendMaterialAttributes
A
B
Alpha
Output Material Attributes
Previewing
MATERIAL LAYER BLEND
Palette
Category All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant 1
Constant2Vector 2
Constant3Vector 3
Constant4Vector 4
DistanceCullFade
ParticleColor

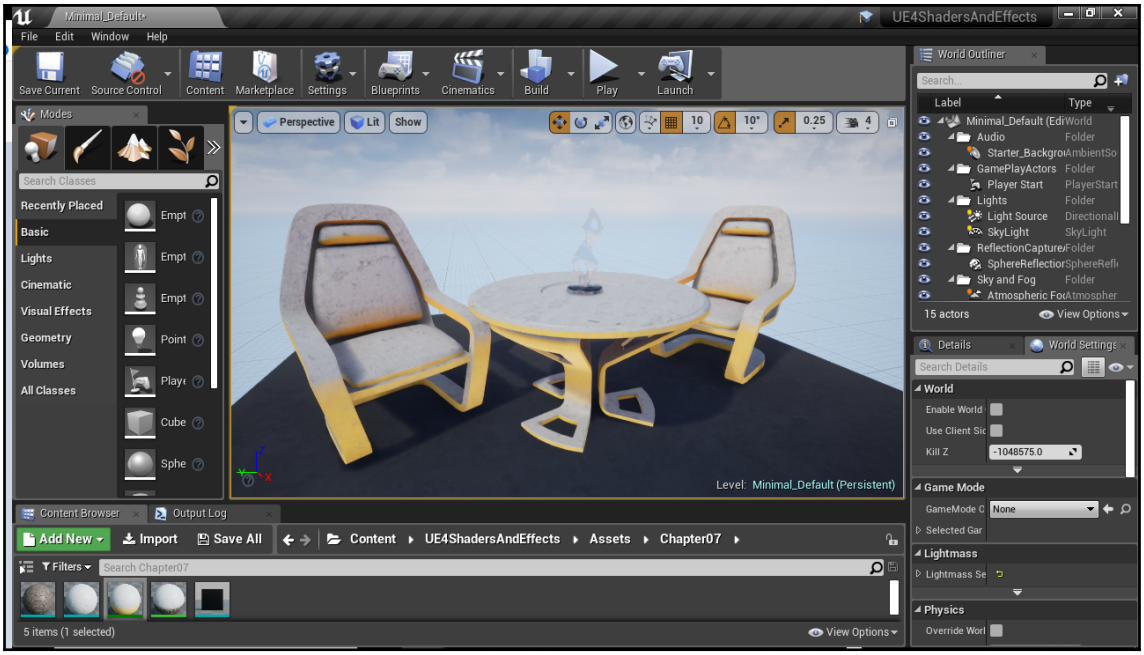

SnowBlend
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Previewing
Details Parameter Def
Material Function
Description
Thumbnail
Primitive Typ TPT Sphere
Orbit Pitch -35.0
Orbit Yaw -180.0
SnowBlend
Zoom 1:1
Input Bottom Layer (MaterialAttributes)
Preview
Input Top Layer (MaterialAttributes)
Preview
BlendMaterialAttributes
A
B
Alpha
Output Material Attributes
Previewing
WorldAlignedBlend
In Explicit Normal (V3)
In World Vector (V3)
Blend Sharpness (S)
Blend Bias (S)
Clamped? (MA)
Alpha (S)
Alpha
w/Vertex Normals
w/ Explicit Normal
10
Snow Bias
Param (0)
MATERIAL LAYER BLEND
Palette
Category All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant 1
Constant2Vector 2
Constant3Vector 3
Constant4Vector 4
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom

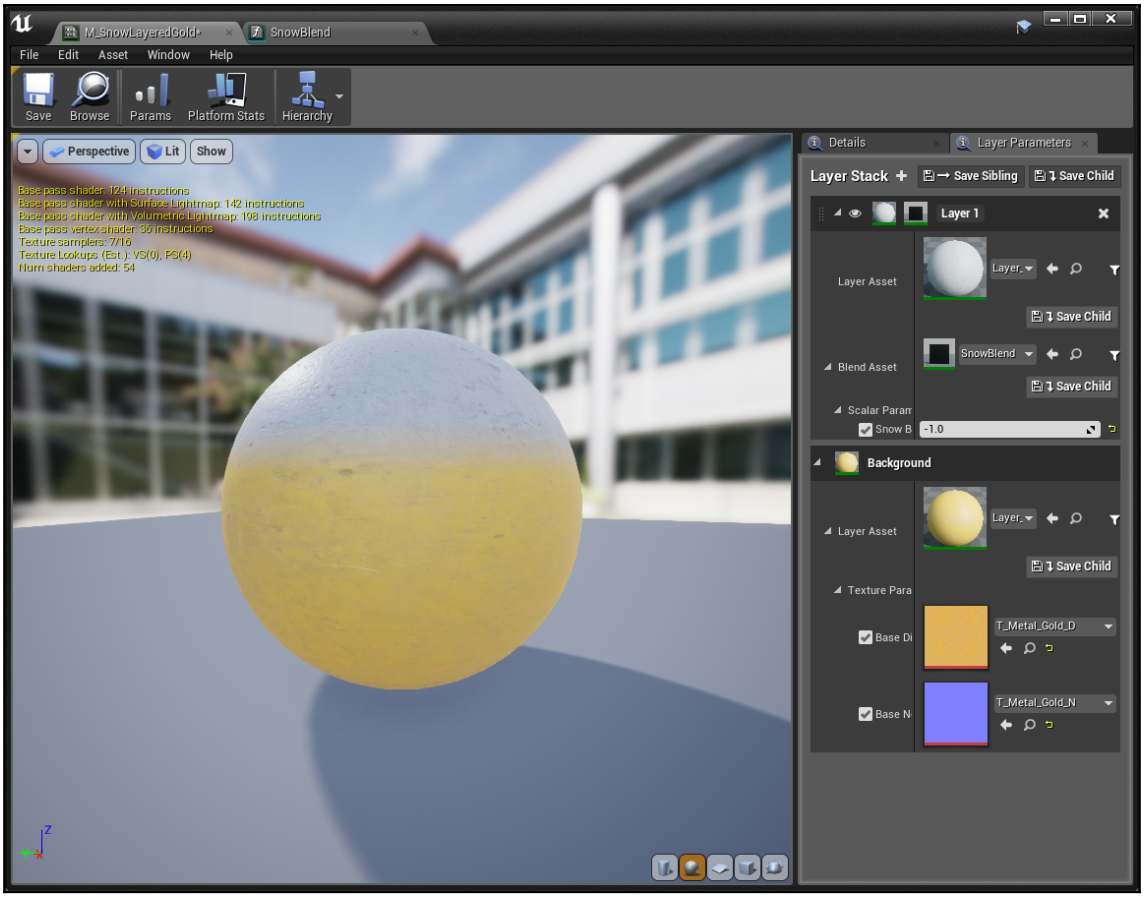

M_SnowLayeredMaterial
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Zoom 1:1
Palette
Category All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
Layer Stack
Material Attribute Layers
M_SnowLayeredMaterial
Material Attributes
Details
Parameter Defaults
Search Details
Layers
Default Layers
Layer 1
Layer Asset
Layer_Snow
Blend Asset
SnowBlend
Background
Layer Asset
Layer_Base
MATERIAL

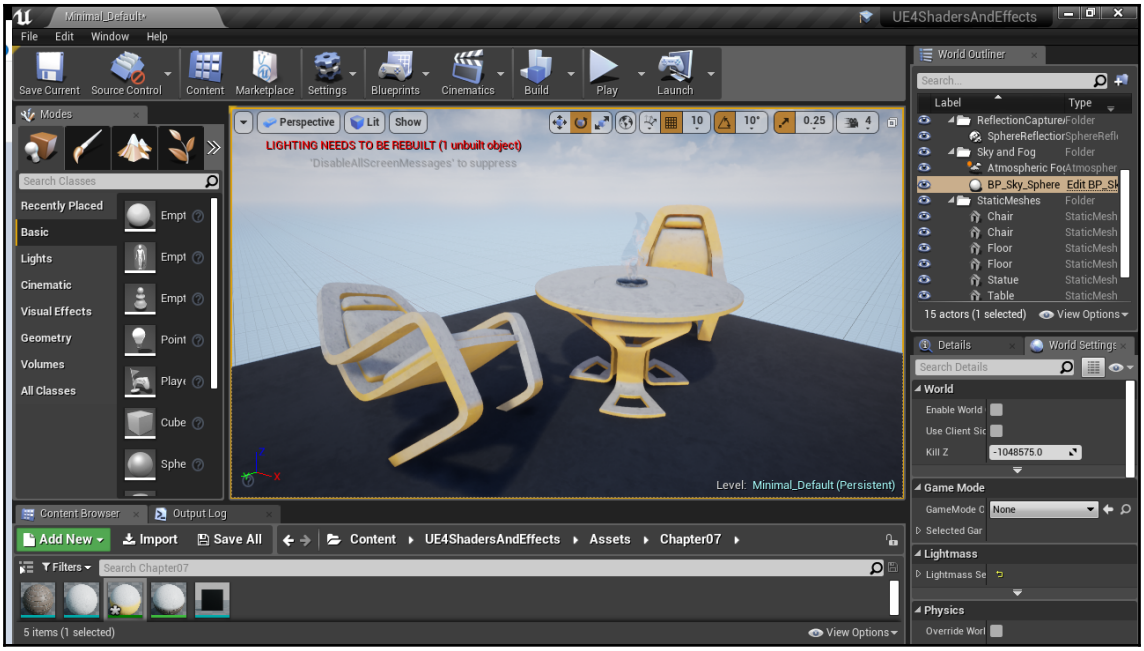

Untitled
UE4ShadersAndEffects
File Edit Window Help
Save Current Source Control Content Marketplace Settings Blueprints Cinematics Build Play Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Cube
Perspective Lit Show
Level: Untitled (Persistent)
World Outliner
Search...
Label
Type
Untitled (Editor)
Atmospheric Fog
Floor
Light Source
Player Start
Sky Sphere
SkyLight
SM_MatPreviewMe
SphereReflectionC
8 actors (1 selected
View Options
Details
World Setting
Search Details
World
Enable Worl
Use Client S
Kill Z
-1048575.0
Game Mode
GameMode
None
Selected Ga
Lightmass
Lightmass S
Physics
Override Wo
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
Layer_ Base
Layer_ Snow
M_Snow Layered Material
Snow Blend
4 items (1 selected)
View Options

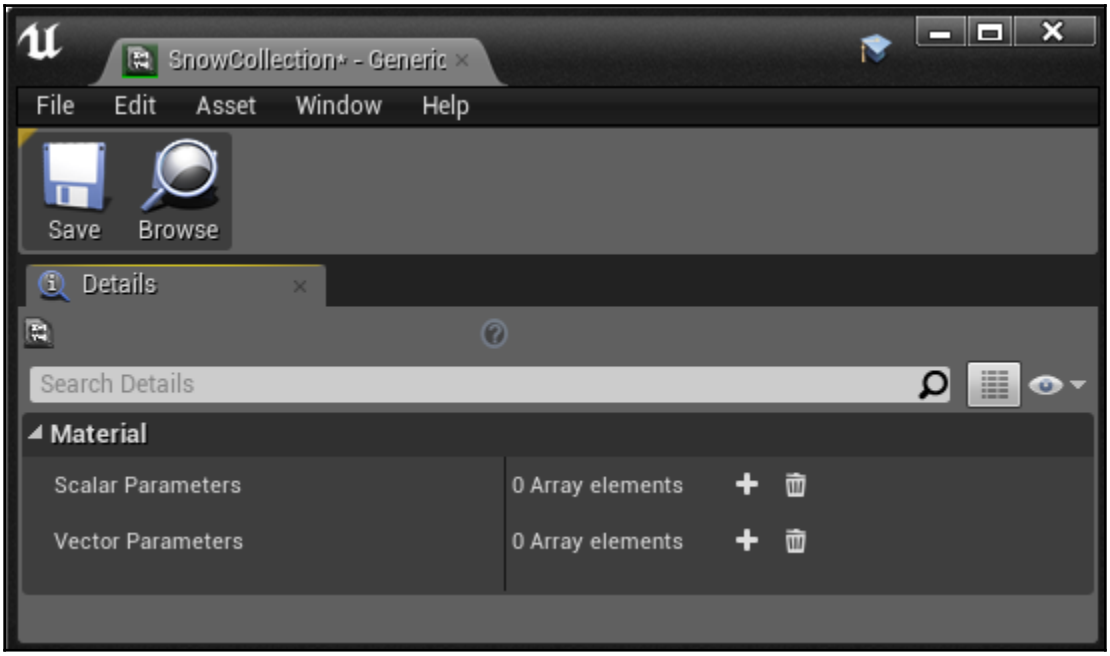

SnowBlend
M_SnowLayeredGold*
File
Edit
Asset
Window
Help
Save
Browse
Params
Platform Stats
Hierarchy
Perspective
Lit
Show
Base pass shader: 124 instructions
Base pass shader with Surface Lightmap: 142 instructions
Base pass shader with Volumetric Lightmap: 168 instructions
Base pass vertex shader: 86 instructions
Texture samplers: 7/16
Texture Lookups (Est.): VS(0), PS(4)
Num shaders added: 54
Details
Layer Parameters
Layer Stack
Save Sibling
Save Child
Layer 1
Background

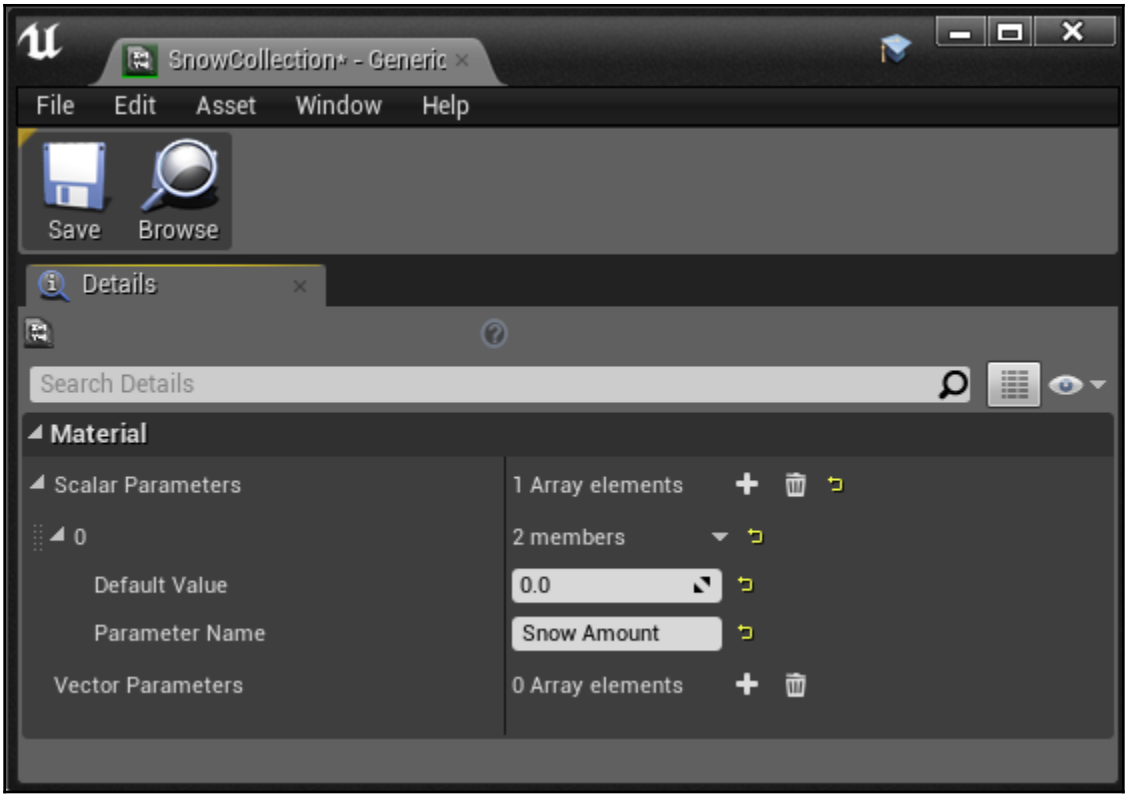

M_SnowLayeredGold
File
Edit
Asset
Window
Help
Save
Browse
Params
Platform Stats
Hierarchy
Perspective
Lit
Show
Base pass shader: 124 instructions
Base pass shader with Surface Lightmap: 142 instructions
Base pass shader with Volumetric Lightmap: 198 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 7/16
Texture Lookups (Est.): VS(0), PS(4)
Num shaders added: 54
Details
Layer Parameters
Layer Stack
Save Sibling
Save Child
Layer 1
Layer Asset
Layer...
Save Child
Blend Asset
SnowBlend
Save Child
Scalar Param
Snow B
0.0
Background
Layer Asset
Layer...
Save Child
Texture Para
Base Di
T_Metal_Gold_D
Base N
T_Metal_Gold_N


Minimal_Default
UE4ShadersAndEffects
File
Edit
Window
Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective
Lit
Show
Level: Minimal_Default (Persistent)
World Outliner
Search...
Label
Type
Minimal_Default (Edi
World
Audio
Folder
Starter_Backgrou
AmbientSo
GamePlayActors
Folder
Player Start
PlayerStart
Lights
Folder
Light Source
Directionall
SkyLight
SkyLight
ReflectionCapture
Folder
SphereReflectior
SphereRefl
Sky and Fog
Folder
Atmospheric Fo
Atmospher
15 actors
View Options
Details
World Settings
Search Details
World
Enable World
Use Client Sic
Kill Z
-1048575.0
Game Mode
GameMode C
None
Selected Gar
Lightmass
Lightmass Se
Physics
Override Worl
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
5 items (1 selected)
View Options


M_SnowLayeredGold*
SnowBlend
File
Edit
Asset
Window
Help
Save
Browse
Params
Platform Stats
Hierarchy
Perspective
Lit
Show
Base pass shader: 124 instructions
Base pass shader with Surface Lightmap: 142 instructions
Base pass shader with Volumetric Lightmap: 198 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 7/16
Texture Lookups (Est.): VS(0), PS(4)
Num shaders added: 54
Details
Layer Parameters
Layer Stack
Save Sibling
Save Child
Layer 1
Layer Asset
Save Child
Blend Asset
SnowBlend
Save Child
Scalar Param
Snow B
-1.0
Background
Layer Asset
Save Child
Texture Para
Base Di
T_Metal_Gold_D
Base N
T_Metal_Gold_N


Minimal_Default*
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective
Lit
Show
LIGHTING NEEDS TO BE REBUILT (1 unbuilt object)
'DisableAllScreenMessages' to suppress
Level: Minimal_Default (Persistent)
World Outliner
Search...
Label
Type
15 actors (1 selected)
View Options
Details
World Settings
Search Details
World
Enable World
Use Client Sic
Kill Z
-1048575.0
Game Mode
GameMode C
None
Selected Gar
Lightmass
Lightmass Se
Physics
Override Worl
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
5 items (1 selected)
View Options


SnowCollection* - Generic
File Edit Asset Window Help
Save
Browse
Details
Search Details
Material
Scalar Parameters
0 Array elements
Vector Parameters
0 Array elements


SnowCollection* - Generic
File
Edit
Asset
Window
Help
Save
Browse
Details
Search Details
Material
Scalar Parameters
1 Array elements
0
2 members
Default Value
0.0
Parameter Name
Snow Amount
Vector Parameters
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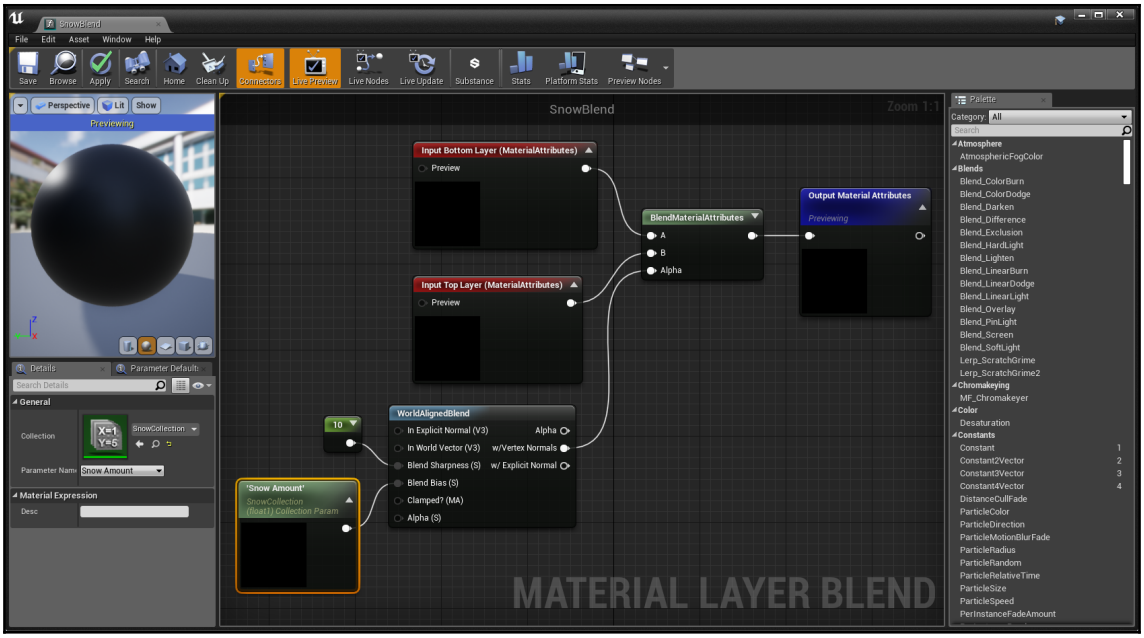
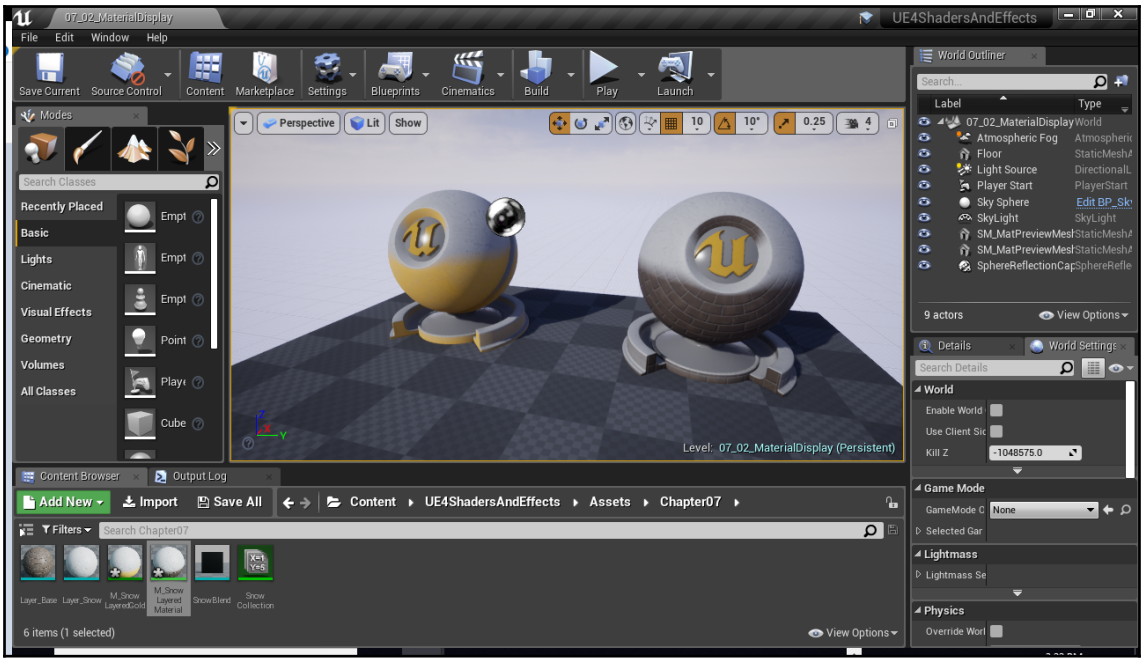
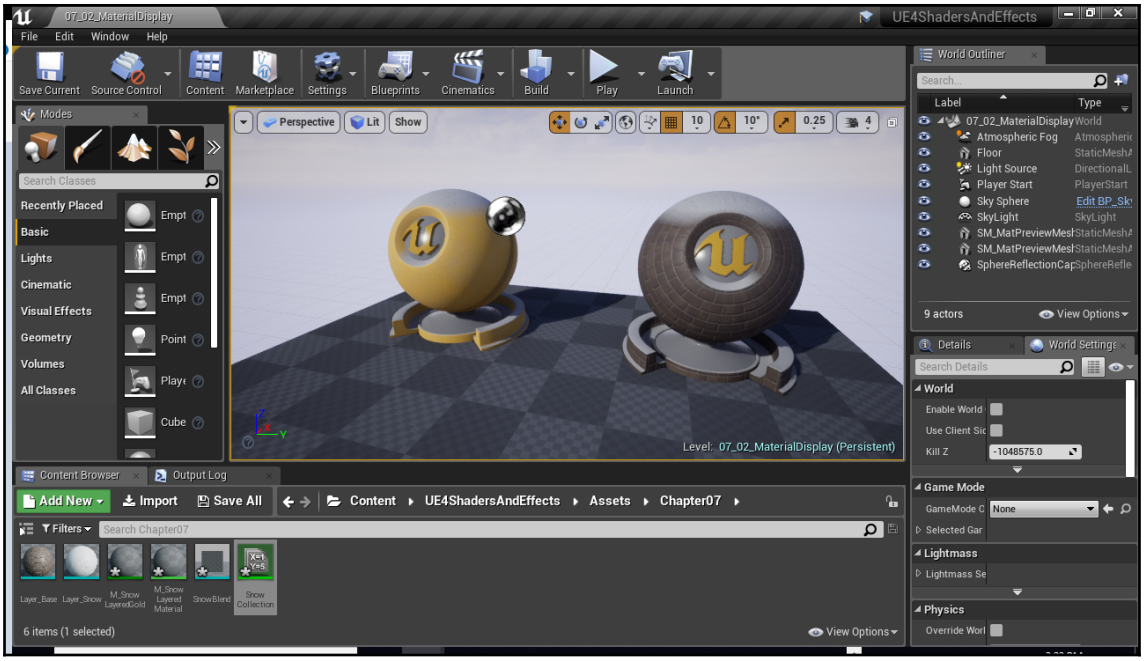
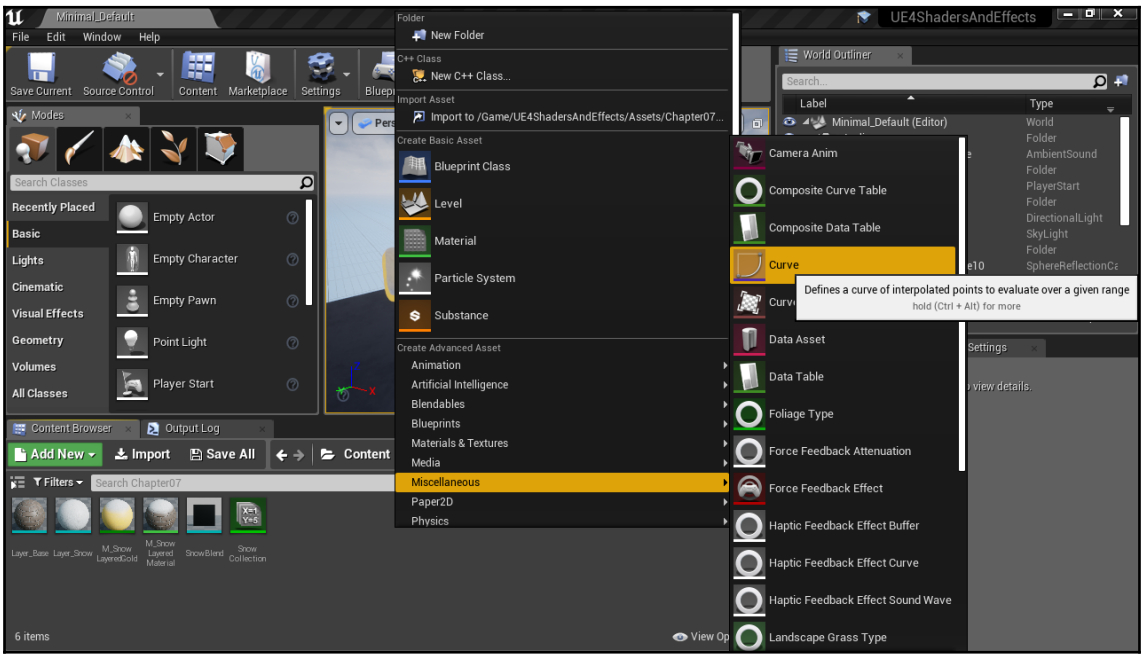
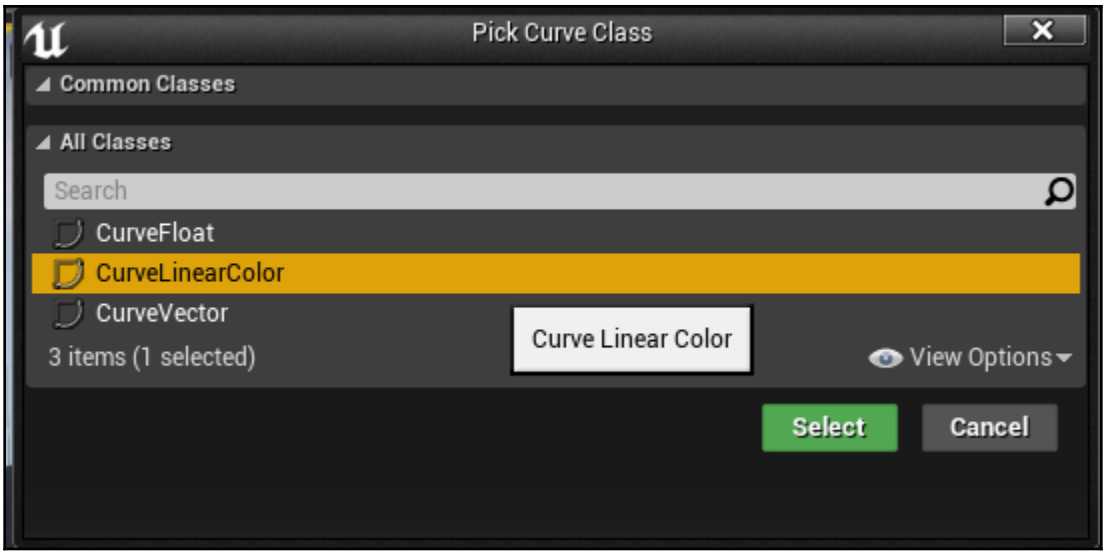
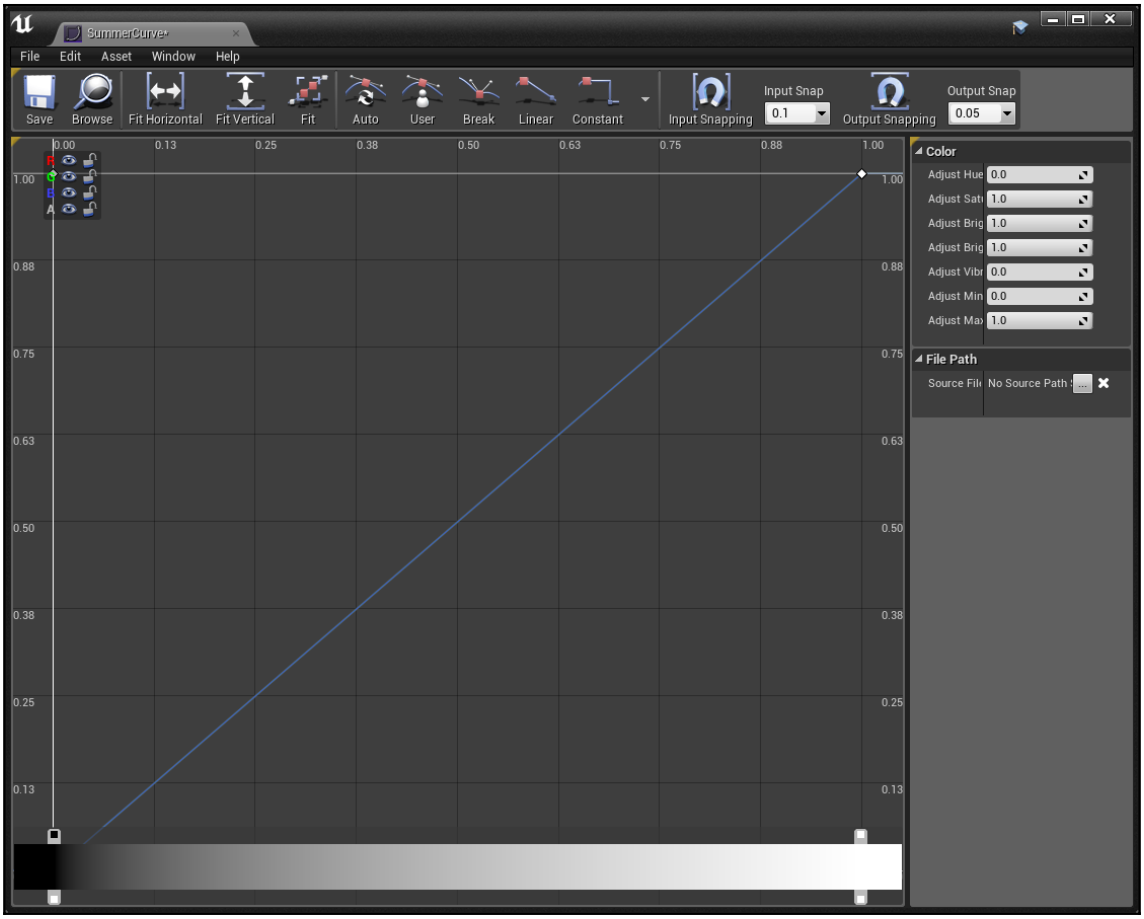

SnowBlend
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Previewing
SnowBlend
Zoom 1:1
Input Bottom Layer (MaterialAttributes)
Preview
Input Top Layer (MaterialAttributes)
Preview
BlendMaterialAttributes
A
B
Alpha
Output Material Attributes
Previewing
WorldAlignedBlend
In Explicit Normal (V3)
In World Vector (V3)
Blend Sharpness (S)
Blend Bias (S)
Clamped? (MA)
Alpha (S)
Alpha
w/Vertex Normals
w/ Explicit Normal
10
"Snow Amount"
SnowCollection
(float) Collection Param
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
Details
Parameter Default
Search Details
General
Collection
SnowCollection
Parameter Name
Snow Amount
Material Expression
Desc
MATERIAL LAYER BLEND

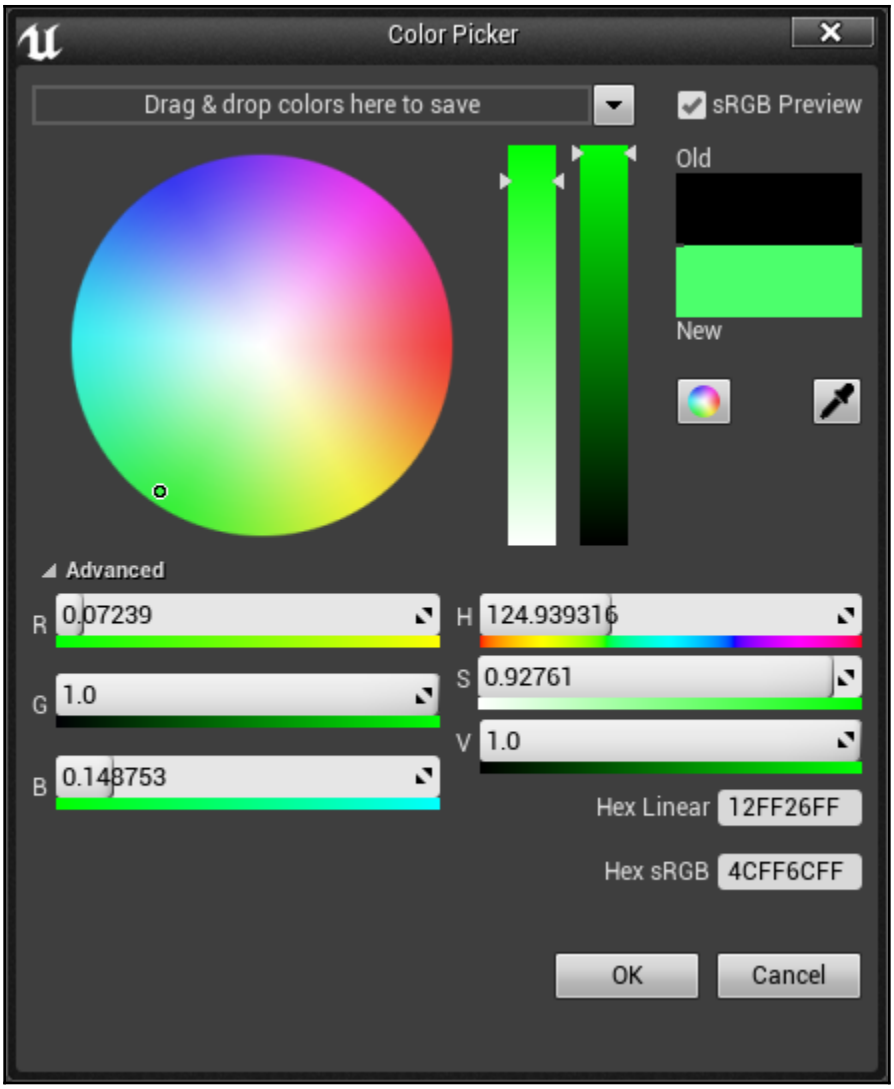

07_02_MaterialDisplay
UE4ShadersAndEffects
File Edit Window Help
Save Current Source Control Content Marketplace Settings Blueprints Cinematics Build Play Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective Lit Show
Level: 07_02_MaterialDisplay (Persistent)
World Outliner
Search...
Label
Type
07_02_MaterialDisplay
Atmospheric Fog
Floor
Light Source
Player Start
Sky Sphere
SkyLight
SM_MatPreviewMesh
SM_MatPreviewMesh
SphereReflectionCap
9 actors
View Options
Details
World Settings
Search Details
World
Enable World
Use Client Sic
Kill Z
-1048575.0
Game Mode
GameMode C
None
Selected Gar
Lightmass
Lightmass Se
Physics
Override Worl
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
Layer_Base
Layer_Snow
M_Snow LayeredGold
M_Snow Layered Material
SnowBlend
Snow Collection
6 items (1 selected)
View Options

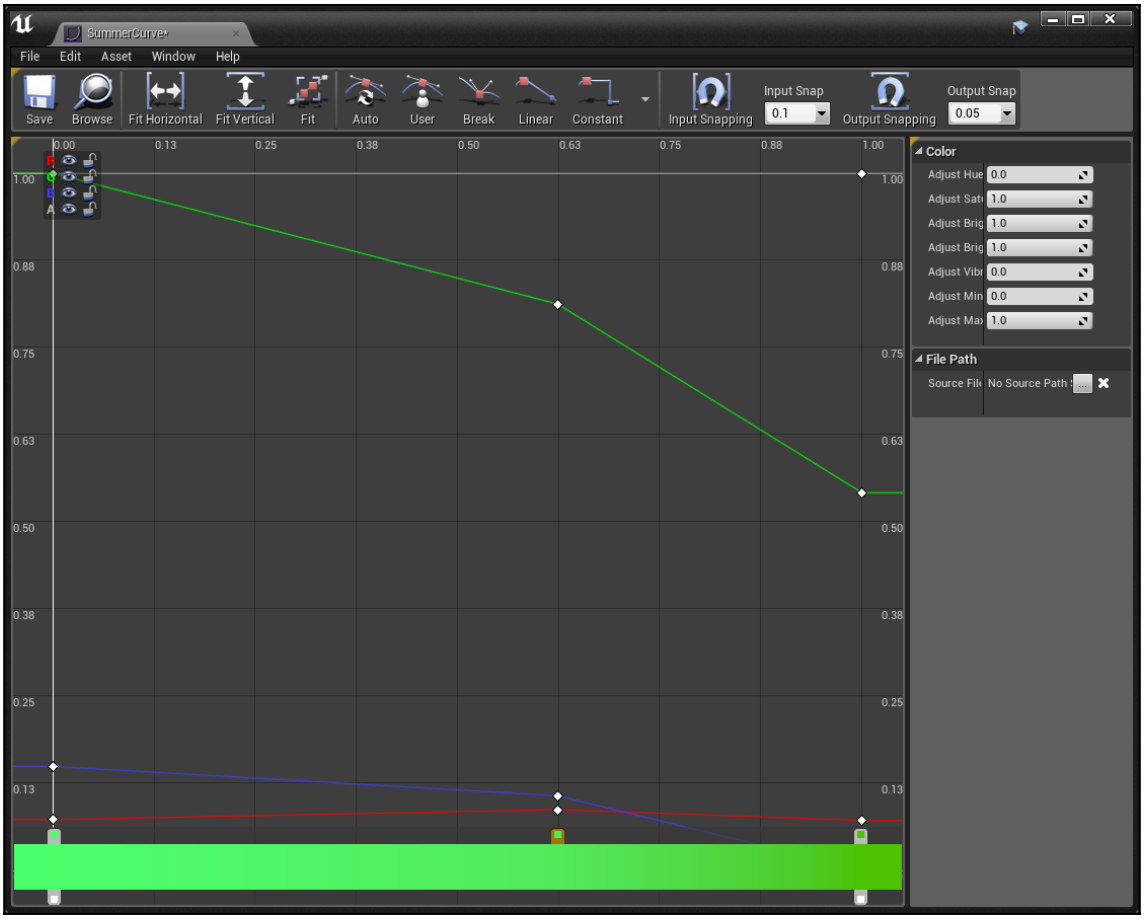

07_02_MaterialDisplay
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective
Lit
Show
World Outliner
Label
Type
Atmospheric Fog
Floor
Light Source
Player Start
Sky Sphere
SkyLight
9 actors
View Options
Details
World Settings
Search Details
World
Enable World
Use Client Sic
Kill Z
-1048575.0
Game Mode
GameMode C
None
Lightmass
Physics
Override Worl
Level: 07_02_MaterialDisplay (Persistent)
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
6 items (1 selected)
View Options

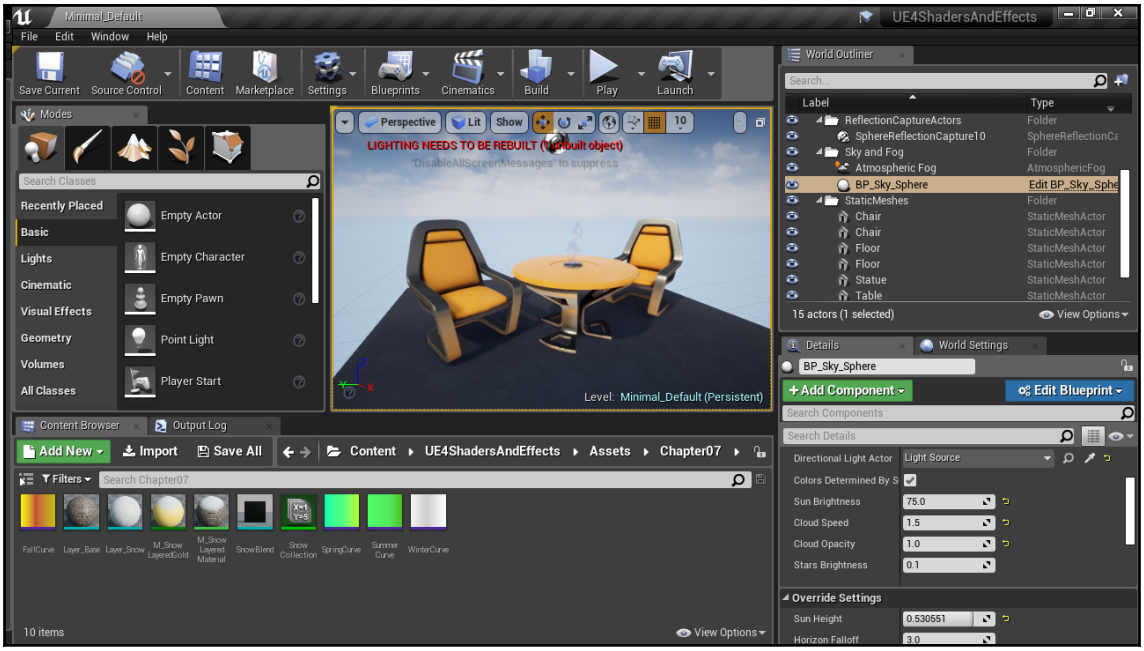

Minimal_Default
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Modes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Folder
New Folder
C++ Class
New C++ Class...
Import Asset
Import to /Game/UE4ShadersAndEffects/Assets/Chapter07...
Create Basic Asset
Blueprint Class
Level
Material
Particle System
Substance
Create Advanced Asset
Animation
Artificial Intelligence
Blendables
Blueprints
Materials & Textures
Media
Miscellaneous
Paper2D
Physics
World Outliner
Minimal_Default (Editor)
Camera Anim
Composite Curve Table
Composite Data Table
Curve
Data Asset
Data Table
Foliage Type
Force Feedback Attenuation
Force Feedback Effect
Haptic Feedback Effect Buffer
Haptic Feedback Effect Curve
Haptic Feedback Effect Sound Wave
Landscape Grass Type
Defines a curve of interpolated points to evaluate over a given range
hold (Ctrl + Alt) for more
Settings
Content Browser
Output Log
Add New
Import
Save All
Filters
Search Chapter07
6 items

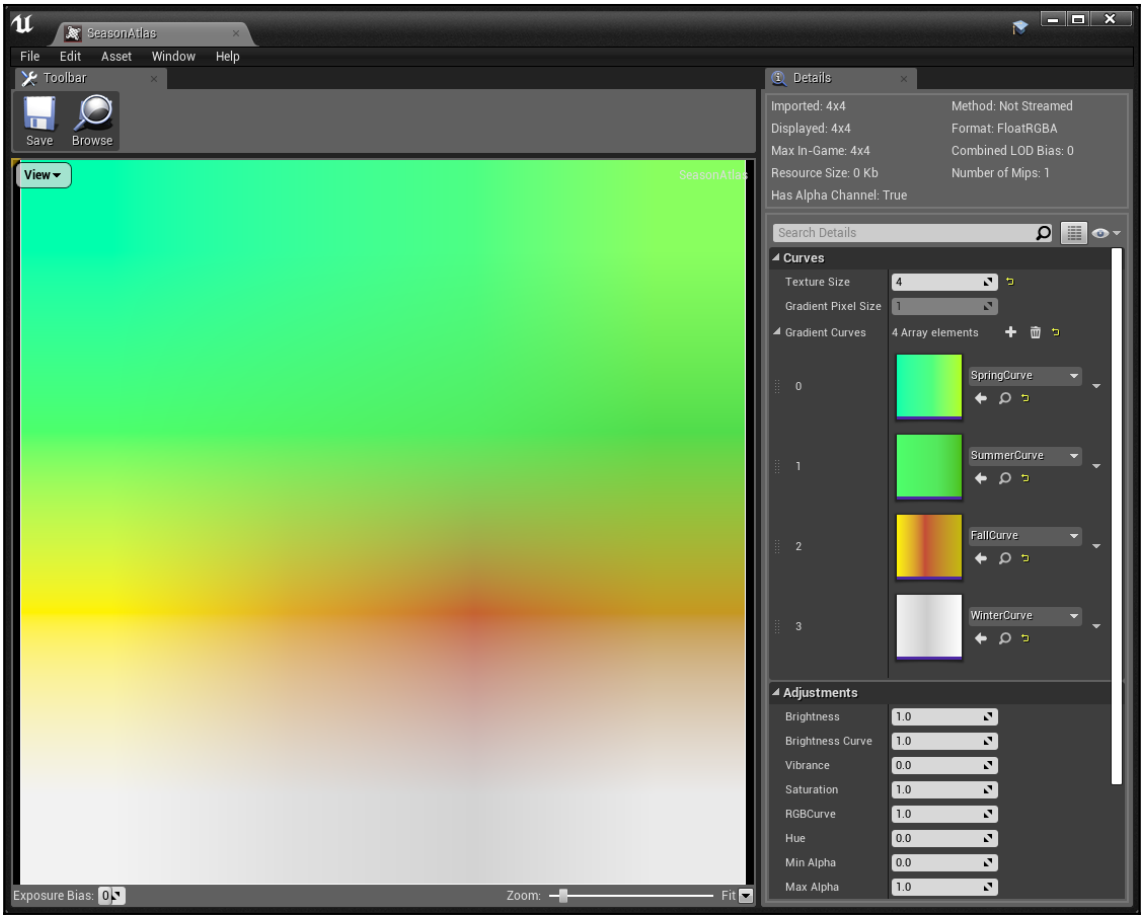

Pick Curve Class
Common Classes
All Classes
Search
CurveFloat
CurveLinearColor
CurveVector
3 items (1 selected)
Curve Linear Color
View Options
Select
Cancel

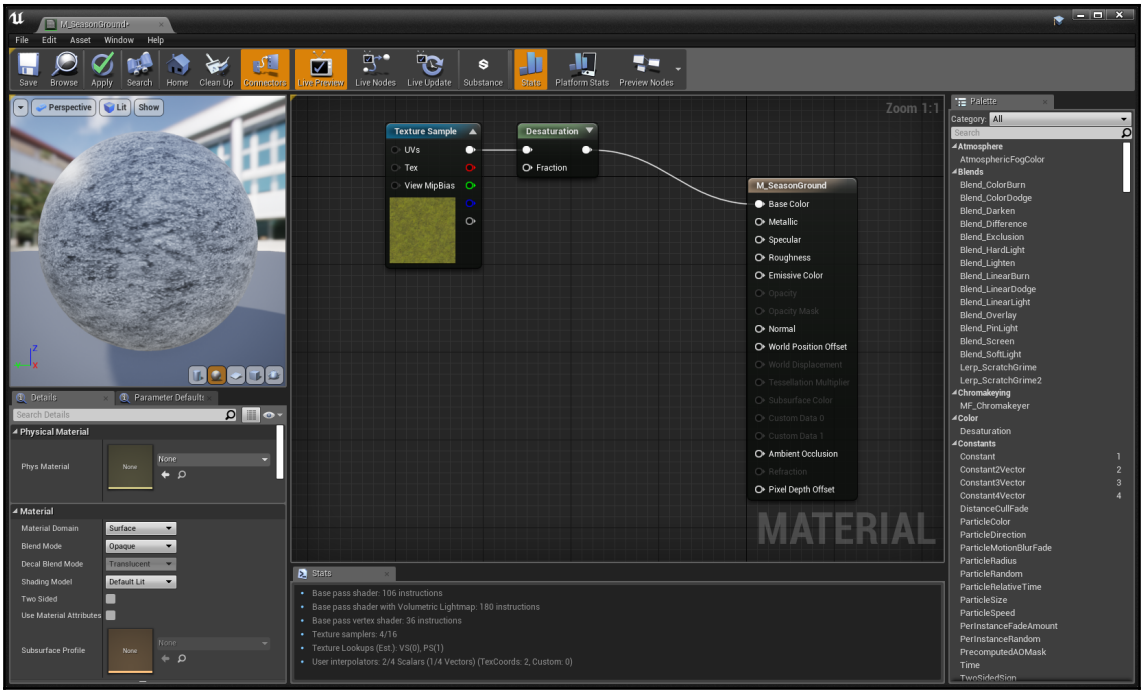

SummerCurve*
File
Edit
Asset
Window
Help
Save
Browse
Fit Horizontal
Fit Vertical
Fit
Auto
User
Break
Linear
Constant
Input Snapping
Input Snap
0.1
Output Snapping
Output Snap
0.05
0.00
0.13
0.25
0.38
0.50
0.63
0.75
0.88
1.00
Color
Adjust Hue
Adjust Sat
Adjust Brig
Adjust Brig
Adjust Vibr
Adjust Min
Adjust Max
0.0
1.0
File Path
Source File
No Source Path

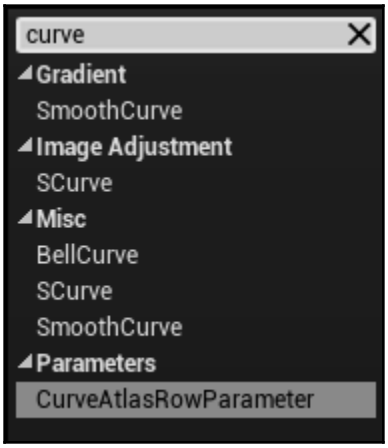

Color Picker
Drag & drop colors here to save
sRGB Preview
Old
New
Advanced
R 0.07239
G 1.0
B 0.148753
H 124.939316
S 0.92761
V 1.0
Hex Linear 12FF26FF
Hex sRGB 4CFF6CFF
OK
Cancel

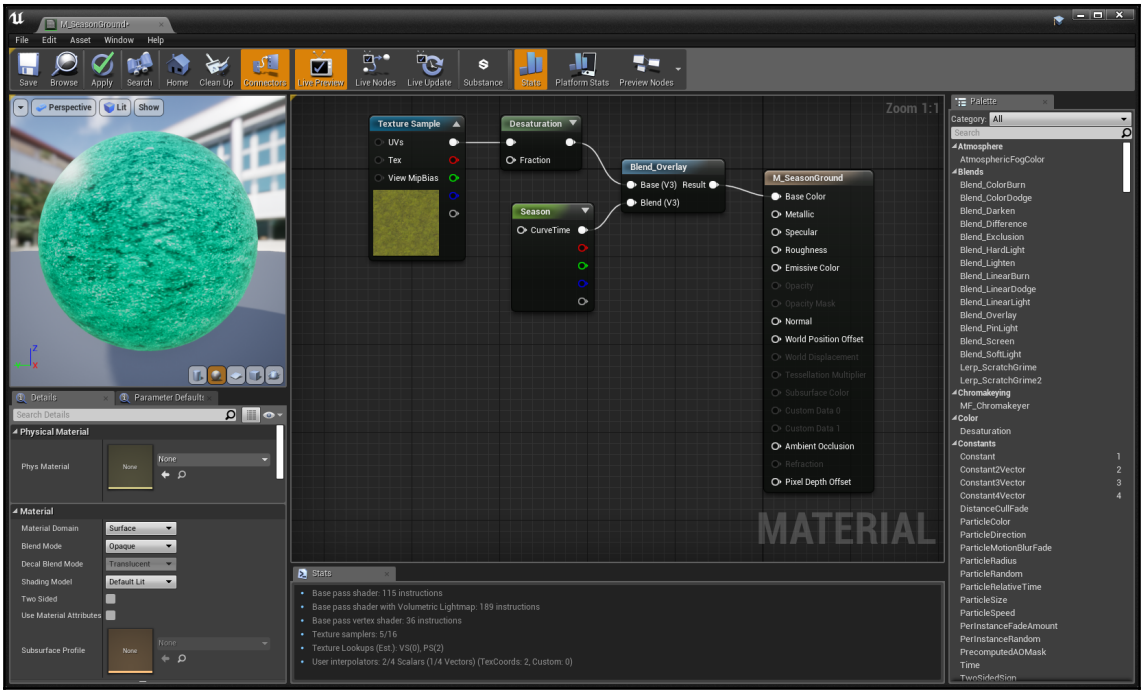

SummerCurve*
File
Edit
Asset
Window
Help
Save
Browse
Fit Horizontal
Fit Vertical
Fit
Auto
User
Break
Linear
Constant
Input Snapping
Input Snap
0.1
Output Snapping
Output Snap
0.05
0.00
0.13
0.25
0.38
0.50
0.63
0.75
0.88
1.00
Color
Adjust Hue
Adjust Sat
Adjust Brig
Adjust Brig
Adjust Vibr
Adjust Min
Adjust Max
0.0
1.0
File Path
Source File
No Source Path

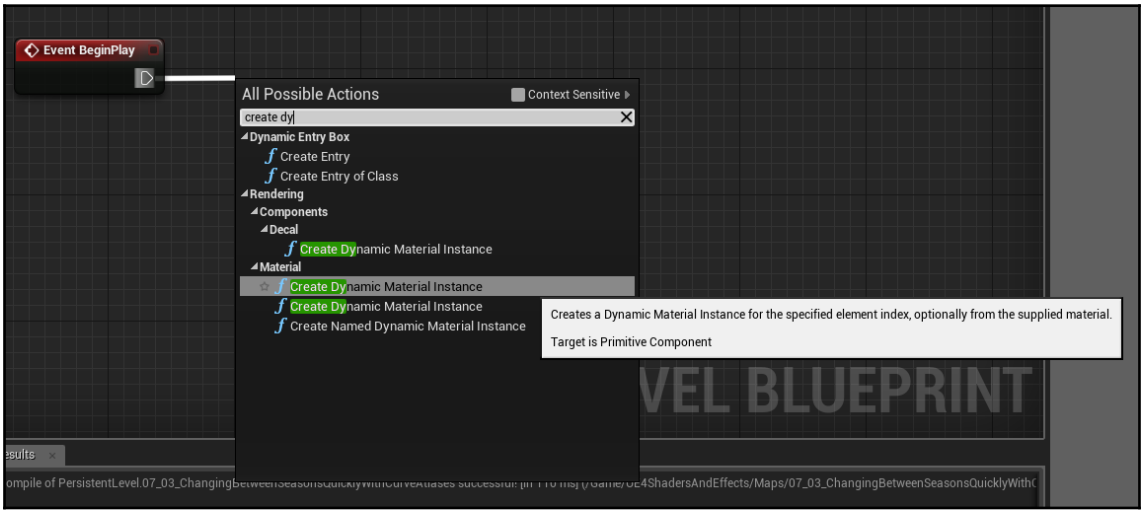

Minimal_Default
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
Perspective
Lit
Show
LIGHTING NEEDS TO BE REBUILT (1 unbuilt object)
'DisableAllScreenMessages' to suppress
Level: Minimal_Default (Persistent)
World Outliner
Search...
Label
Type
ReflectionCaptureActors
Folder
SphereReflectionCapture10
SphereReflectionCa
Sky and Fog
Folder
Atmospheric Fog
AtmosphericFog
BP_Sky_Sphere
Edit BP_Sky_Sphe
StaticMeshes
Folder
Chair
Chair
Floor
Floor
Statue
Table
StaticMeshActor
15 actors (1 selected)
View Options
Details
World Settings
BP_Sky_Sphere
+ Add Component
Edit Blueprint
Search Components
Search Details
Directional Light Actor
Light Source
Colors Determined By S
Sun Brightness
75.0
Cloud Speed
1.5
Cloud Opacity
1.0
Stars Brightness
0.1
Override Settings
Sun Height
0.530551
Horizon Falloff
3.0
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
FallCurve
Layer_Base
Layer_Snow
M_Snow LayeredGold
M_Snow Layered Material
SnowBlend
Snow Collection
SpringCurve
Summer Curve
WinterCurve
10 items
View Options

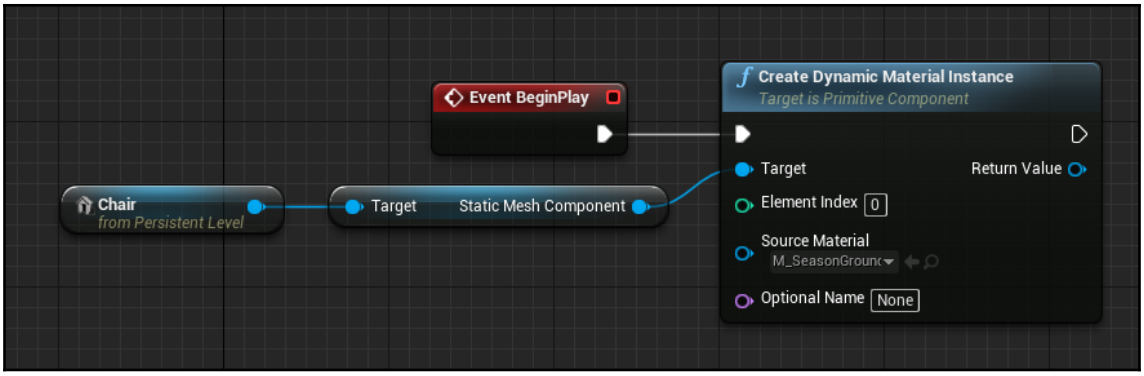

SeasonAtlas
File
Edit
Asset
Window
Help
Toolbar
Save
Browse
View
SeasonAtlas
Exposure Bias: 0
Zoom:
Fit
Details
Imported: 4x4
Displayed: 4x4
Max In-Game: 4x4
Resource Size: 0 Kb
Has Alpha Channel: True
Method: Not Streamed
Format: FloatRGBA
Combined LOD Bias: 0
Number of Mips: 1
Search Details
Curves
Texture Size
4
Gradient Pixel Size
1
Gradient Curves
4 Array elements
0
SpringCurve
1
SummerCurve
2
FallCurve
3
WinterCurve
Adjustments
Brightness
1.0
Brightness Curve
1.0
Vibrance
0.0
Saturation
1.0
RGBCurve
1.0
Hue
0.0
Min Alpha
0.0
Max Alpha
1.0

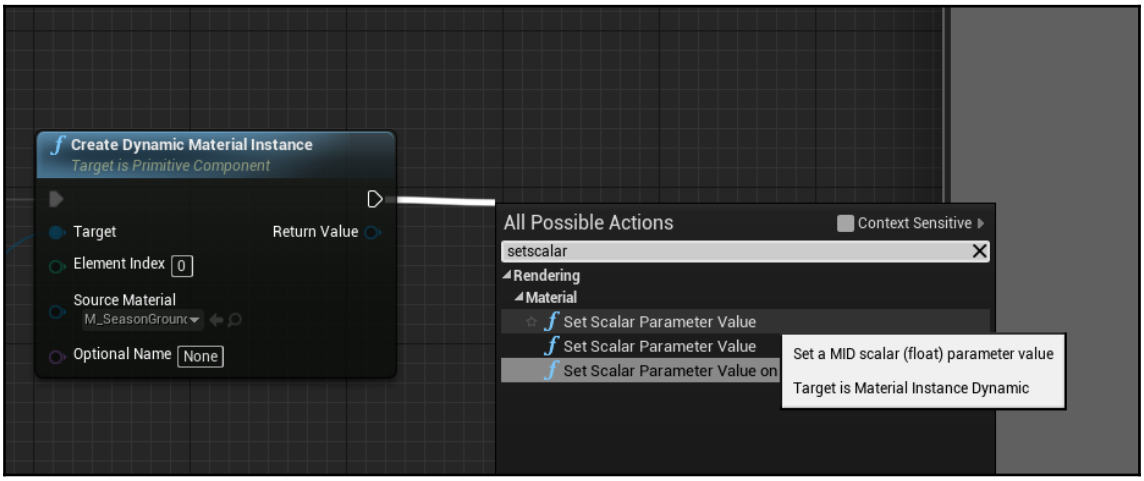

M_SeasonGround
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Texture Sample
UVs
Tex
View MipBias
Desaturation
Fraction
M_SeasonGround
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
Zoom 1:1
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
PerInstanceRandom
PrecomputedAOMask
Time
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
Material
Material Domain Surface
Blend Mode Opaque
Decal Blend Mode Translucent
Shading Model Default Lit
Two Sided
Use Material Attributes
Subsurface Profile
Stats
Base pass shader: 106 instructions
Base pass shader with Volumetric Lightmap: 180 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 4/16
Texture Lookups (Est.): VS(0), PS(1)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

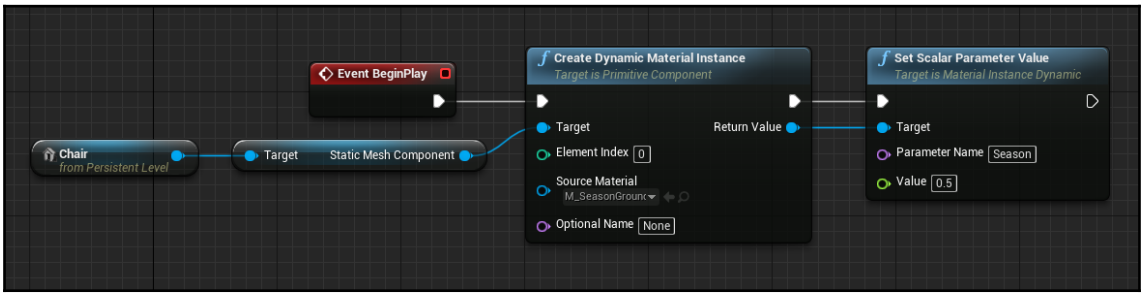

curve
Gradient
SmoothCurve
Image Adjustment
SCurve
Misc
BellCurve
SCurve
SmoothCurve
Parameters
CurveAtlasRowParameter

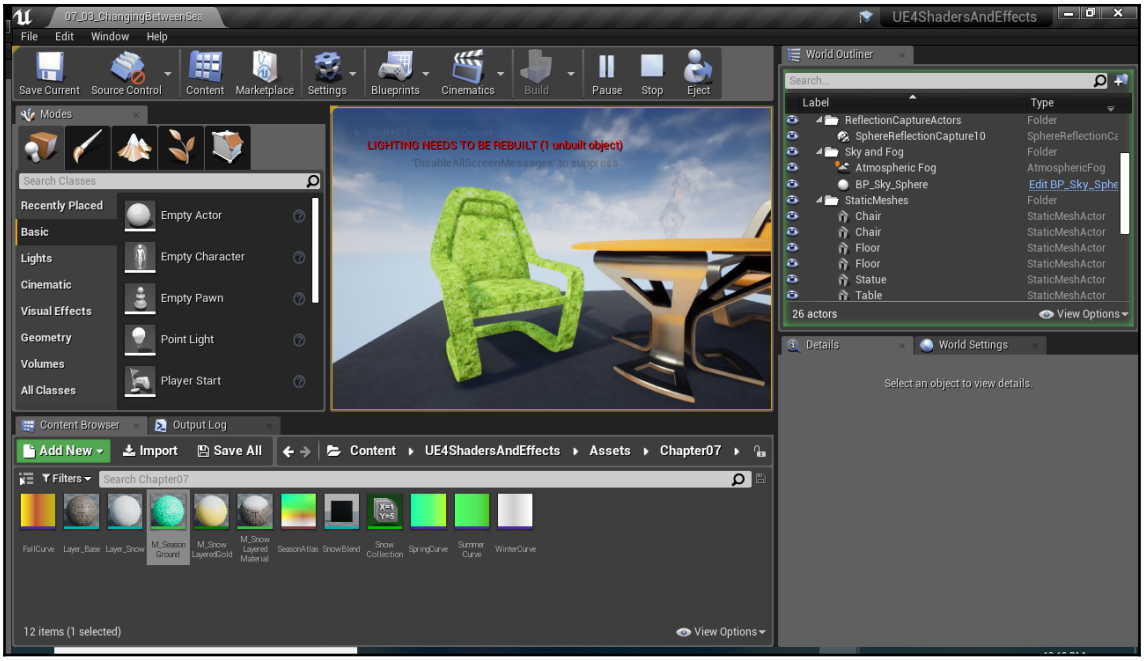

M_SeasonGround
File Edit Asset Window Help
Save Browse Apply Search Home Clean Up Connectors Live Preview Live Nodes Live Update Substance Stats Platform Stats Preview Nodes
Perspective Lit Show
Texture Sample
UVs
Tex
View MipBias
Desaturation
Fraction
Blend_Overlay
Base (V3)
Result
Blend (V3)
Season
CurveTime
M_SeasonGround
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Zoom 1:1
MATERIAL
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant
Constant2Vector
Constant3Vector
Constant4Vector
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
PerInstanceRandom
PrecomputedAOMask
Time
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Attributes
Subsurface Profile
Stats
Base pass shader: 115 instructions
Base pass shader with Volumetric Lightmap: 189 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 5/16
Texture Lookups (Est.): VS(0), PS(2)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

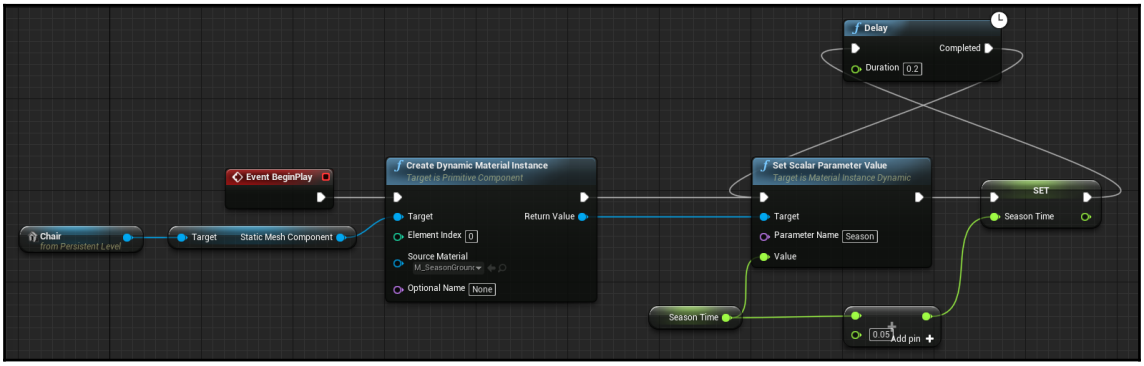

Event BeginPlay
All Possible Actions
Context Sensitive
create dy
Dynamic Entry Box
Create Entry
Create Entry of Class
Rendering
Components
Decal
Create Dynamic Material Instance
Material
Create Dynamic Material Instance
Create Dynamic Material Instance
Create Named Dynamic Material Instance
Creates a Dynamic Material Instance for the specified element index, optionally from the supplied material.
Target is Primitive Component
VEL BLUEPRINT
esults
ompile of PersistentLevel.07_03_ChangingBetweenSeasonsQuicklyWithCurveAtlases successful! [in 110 ms] (/Game/Oe4ShadersAndEffects/Maps/07_03_ChangingBetweenSeasonsQuicklyWithC

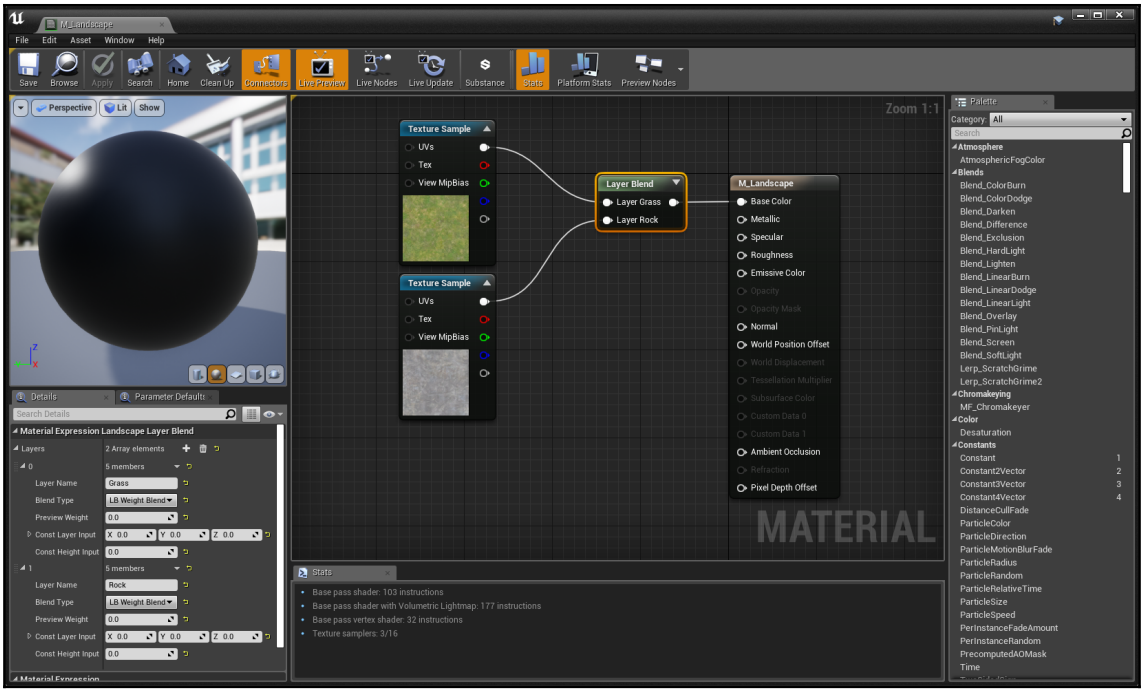

Event BeginPlay
Create Dynamic Material Instance
Target is Primitive Component
Chair
from Persistent Level
Target
Static Mesh Component
Target
Return Value
Element Index 0
Source Material
M_SeasonGrounc
Optional Name None

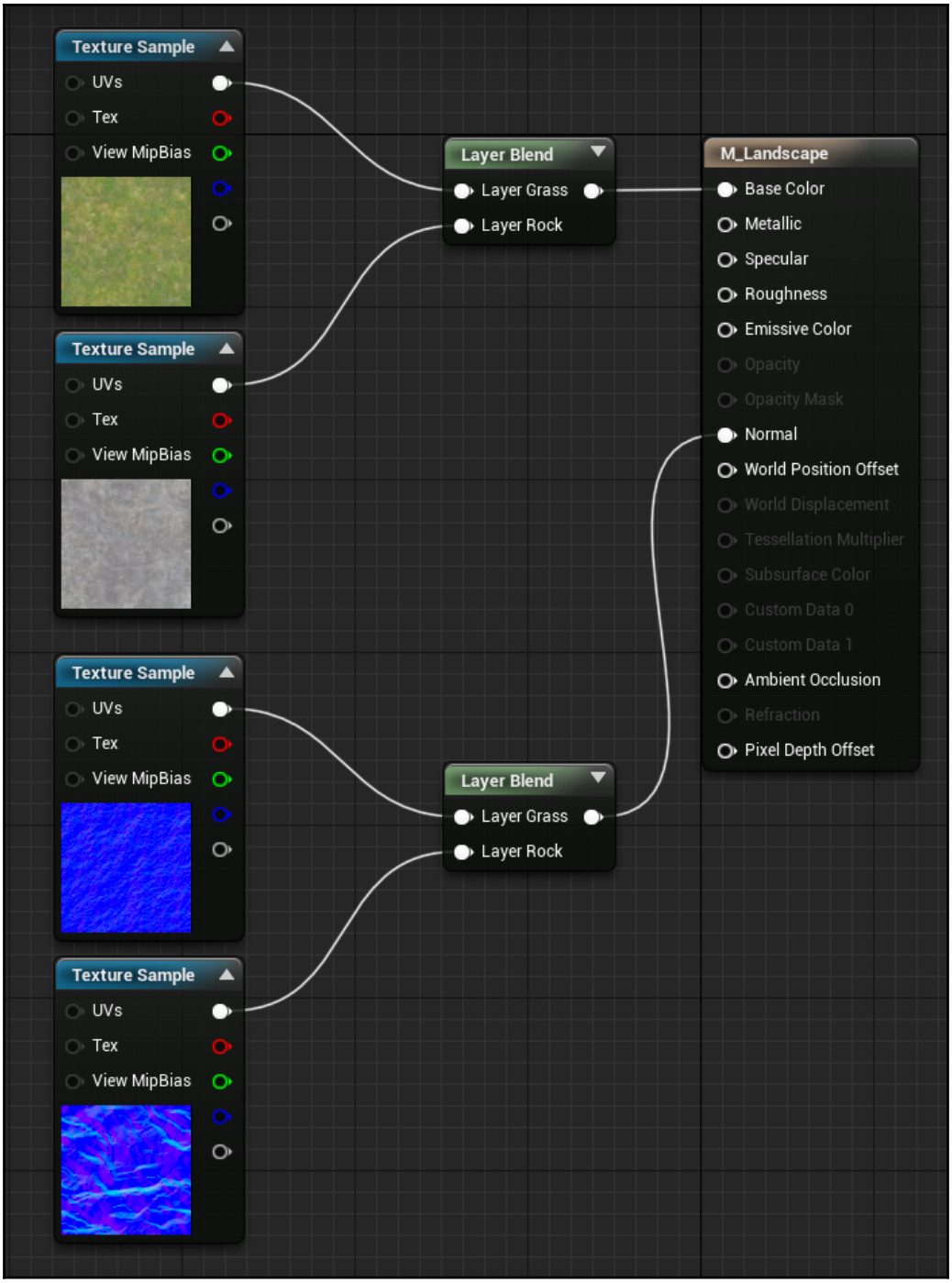

Create Dynamic Material Instance
Target is Primitive Component
Target
Return Value
Element Index 0
Source Material
M_SeasonGrounc
Optional Name None
All Possible Actions
Context Sensitive
setscalar
Rendering
Material
Set Scalar Parameter Value
Set Scalar Parameter Value
Set Scalar Parameter Value on
Set a MID scalar (float) parameter value
Target is Material Instance Dynamic

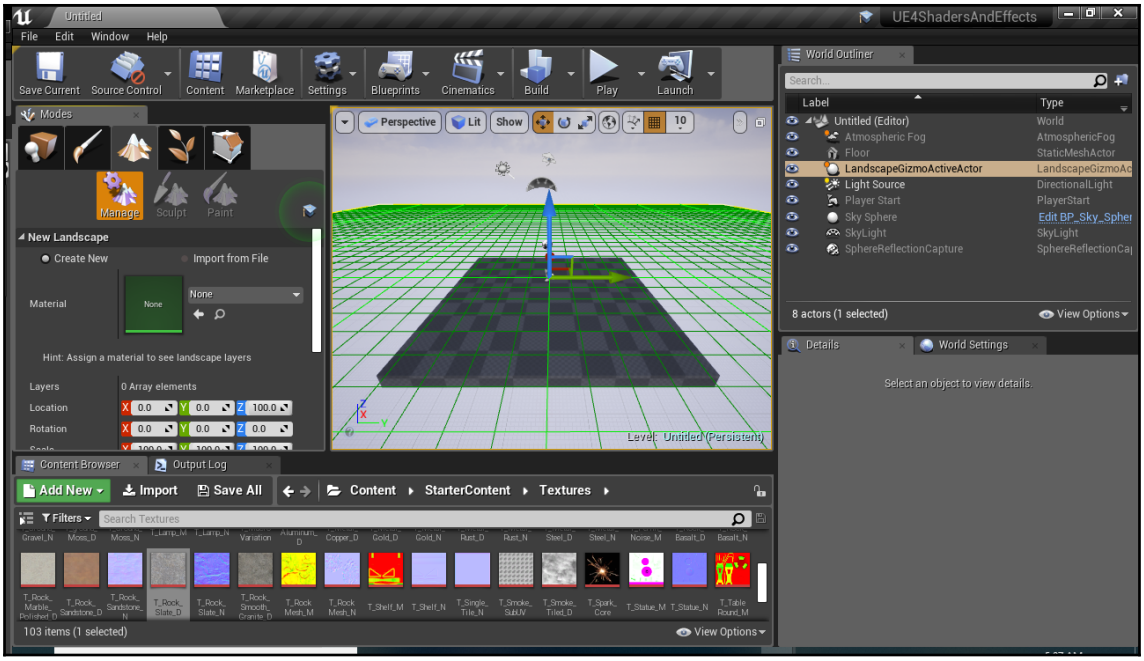

Event BeginPlay
Create Dynamic Material Instance
Target is Primitive Component
Set Scalar Parameter Value
Target is Material Instance Dynamic
Chair
from Persistent Level
Target
Static Mesh Component
Target
Return Value
Element Index 0
Source Material
M_SeasonGrounc
Optional Name None
Target
Parameter Name Season
Value 0.5

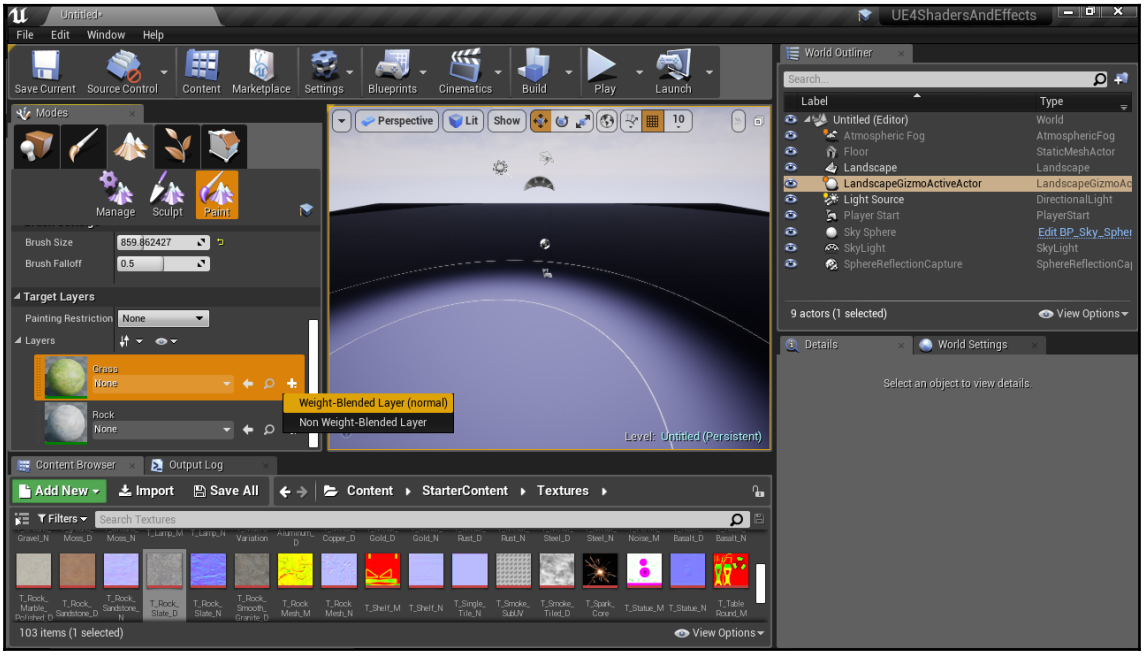

07_03_ChangingBetweenSea
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Pause
Stop
Eject
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Empty Actor
Empty Character
Empty Pawn
Point Light
Player Start
LIGHTING NEEDS TO BE REBUILT (1 unbuilt object)
'DisableAllScreenMessages' to suppress
World Outliner
Search...
Label
Type
ReflectionCaptureActors
SphereReflectionCapture10
Sky and Fog
Atmospheric Fog
BP_Sky_Sphere
StaticMeshes
Chair
Chair
Floor
Floor
Statue
Table
Folder
StaticMeshActor
26 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
12 items (1 selected)
View Options

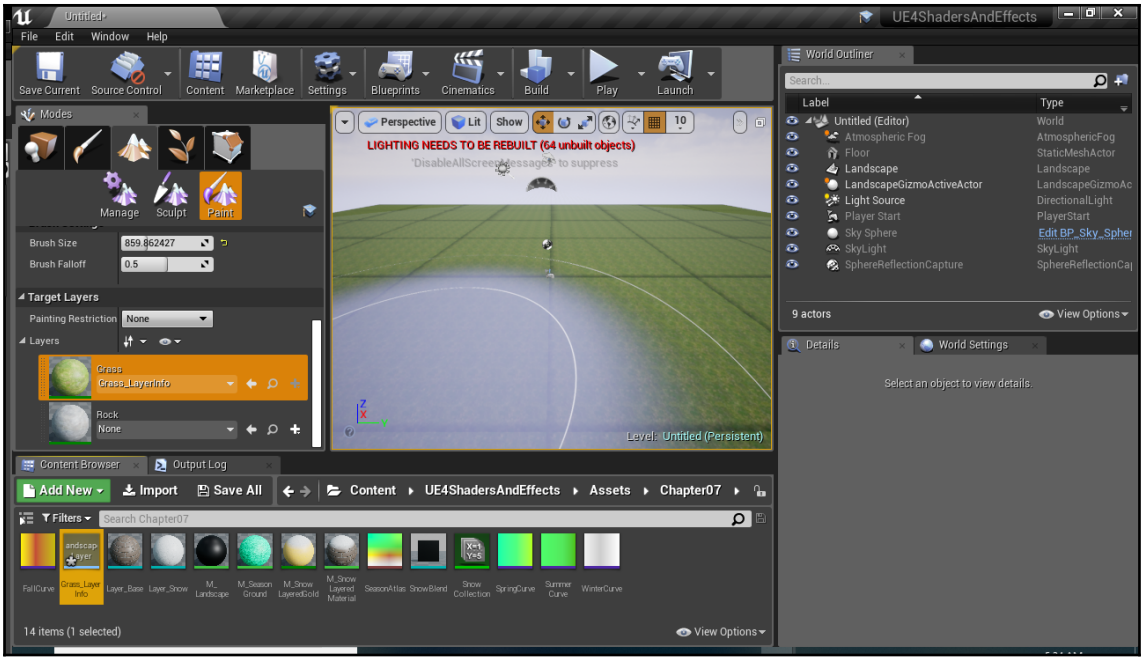

Delay
Completed
Duration 0.2
Event BeginPlay
Create Dynamic Material Instance
Target is Primitive Component
Target
Return Value
Element Index 0
Source Material
Optional Name None
Set Scalar Parameter Value
Target is Material Instance Dynamic
Target
Parameter Name Season
Value
SET
Season Time
Chair
from Persistent Level
Target
Static Mesh Component
Season Time
0.05
Add pin

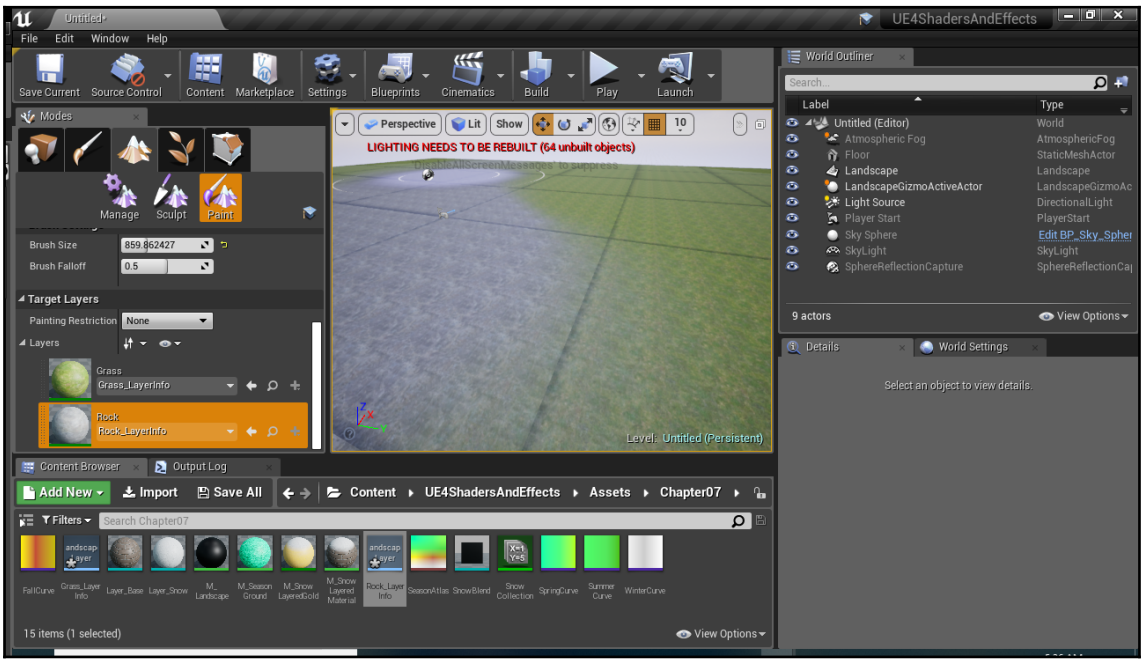

M_Landscape
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Layer Blend
Layer Grass
Layer Rock
M_Landscape
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
Palette
Category: All
Search
Atmosphere
AtmosphericFogColor
Blends
Blend_ColorBurn
Blend_ColorDodge
Blend_Darken
Blend_Difference
Blend_Exclusion
Blend_HardLight
Blend_Lighten
Blend_LinearBurn
Blend_LinearDodge
Blend_LinearLight
Blend_Overlay
Blend_PinLight
Blend_Screen
Blend_SoftLight
Lerp_ScratchGrime
Lerp_ScratchGrime2
Chromakeying
MF_Chromakeyer
Color
Desaturation
Constants
Constant 1
Constant2Vector 2
Constant3Vector 3
Constant4Vector 4
DistanceCullFade
ParticleColor
ParticleDirection
ParticleMotionBlurFade
ParticleRadius
ParticleRandom
ParticleRelativeTime
ParticleSize
ParticleSpeed
PerInstanceFadeAmount
PerInstanceRandom
PrecomputedAOMask
Time
Details
Parameter Defaults
Search Details
Material Expression Landscape Layer Blend
Layers
2 Array elements
0
5 members
Layer Name
Grass
Blend Type
LB Weight Blend
Preview Weight
0.0
Const Layer Input
X 0.0
Y 0.0
Z 0.0
Const Height Input
0.0
1
5 members
Layer Name
Rock
Blend Type
LB Weight Blend
Preview Weight
0.0
Const Layer Input
X 0.0
Y 0.0
Z 0.0
Const Height Input
0.0
Material Expression
Stats
Base pass shader: 103 instructions
Base pass shader with Volumetric Lightmap: 177 instructions
Base pass vertex shader: 32 instructions
Texture samplers: 3/16

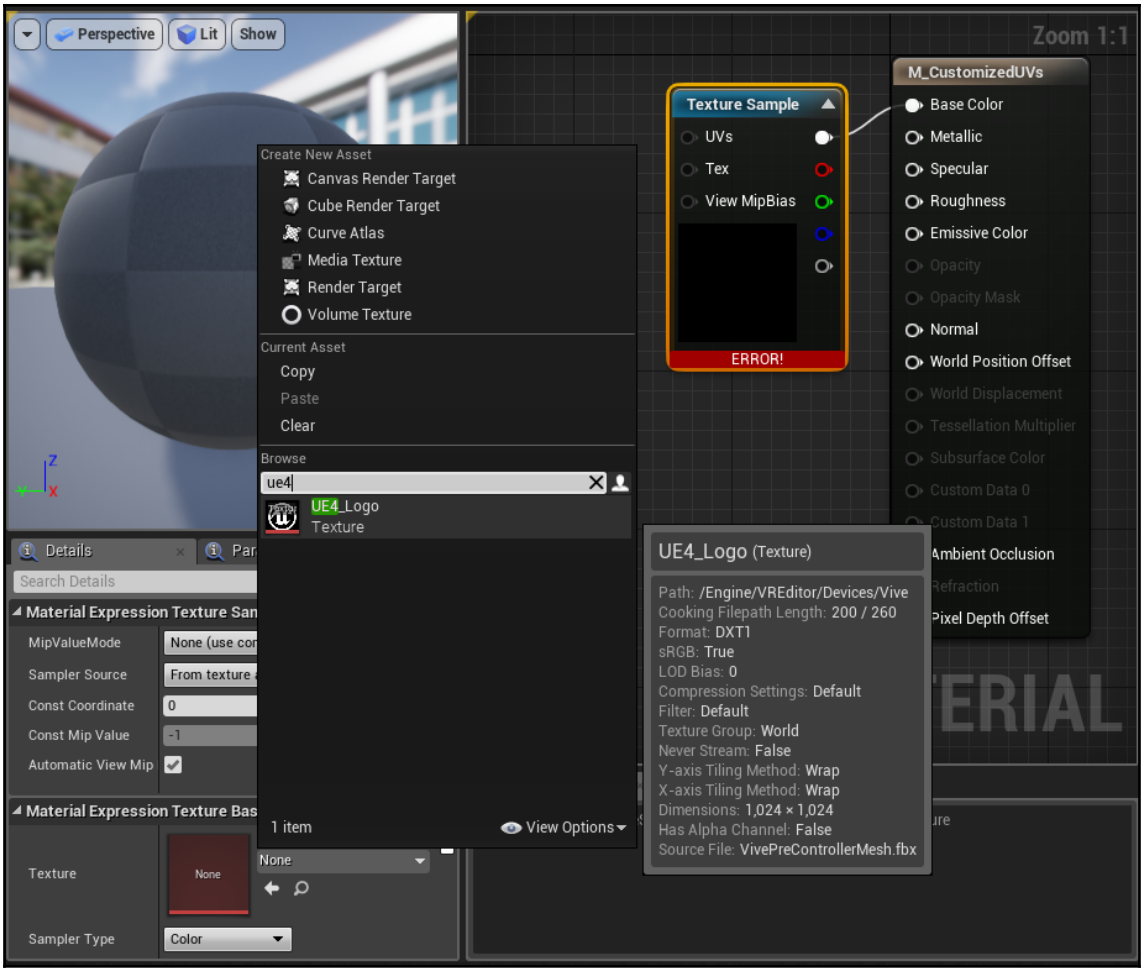

Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Layer Blend
Layer Grass
Layer Rock
Layer Blend
Layer Grass
Layer Rock
M_Landscape
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset

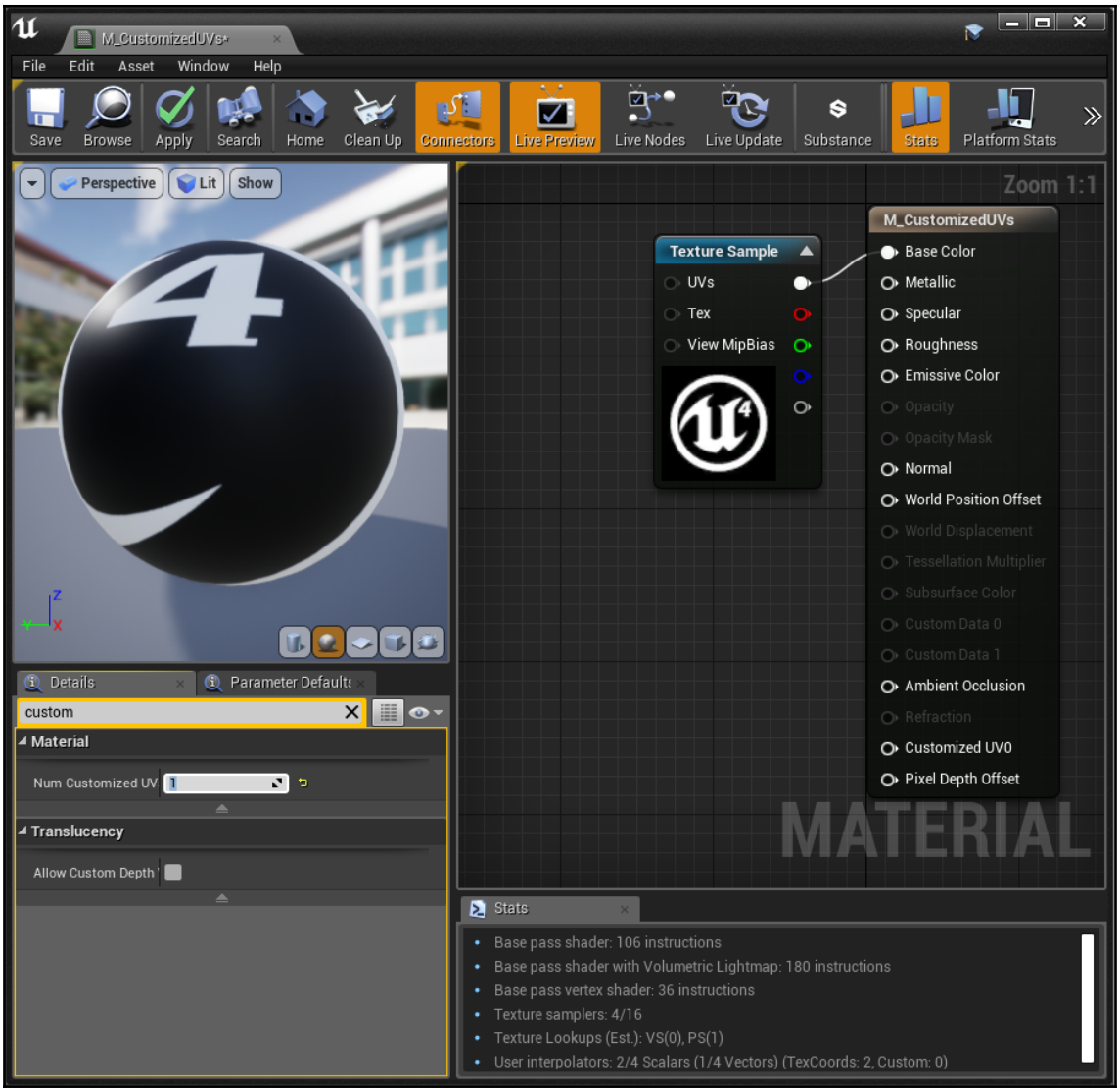

Untitled
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Manage
Sculpt
Paint
New Landscape
Create New
Import from File
Material
None
Hint: Assign a material to see landscape layers
Layers
0 Array elements
Location
Rotation
Perspective
Lit
Show
Level: Untitled (Persistent)
World Outliner
Search...
Label
Type
Untitled (Editor)
World
Atmospheric Fog
AtmosphericFog
Floor
StaticMeshActor
LandscapeGizmoActiveActor
Light Source
DirectionalLight
Player Start
PlayerStart
Sky Sphere
SkyLight
SphereReflectionCapture
8 actors (1 selected)
View Options
Details
World Settings
Select an object to view details.
Content Browser
Output Log
Add New
Import
Save All
Content
StarterContent
Textures
Filters
Search Textures
103 items (1 selected)
View Options

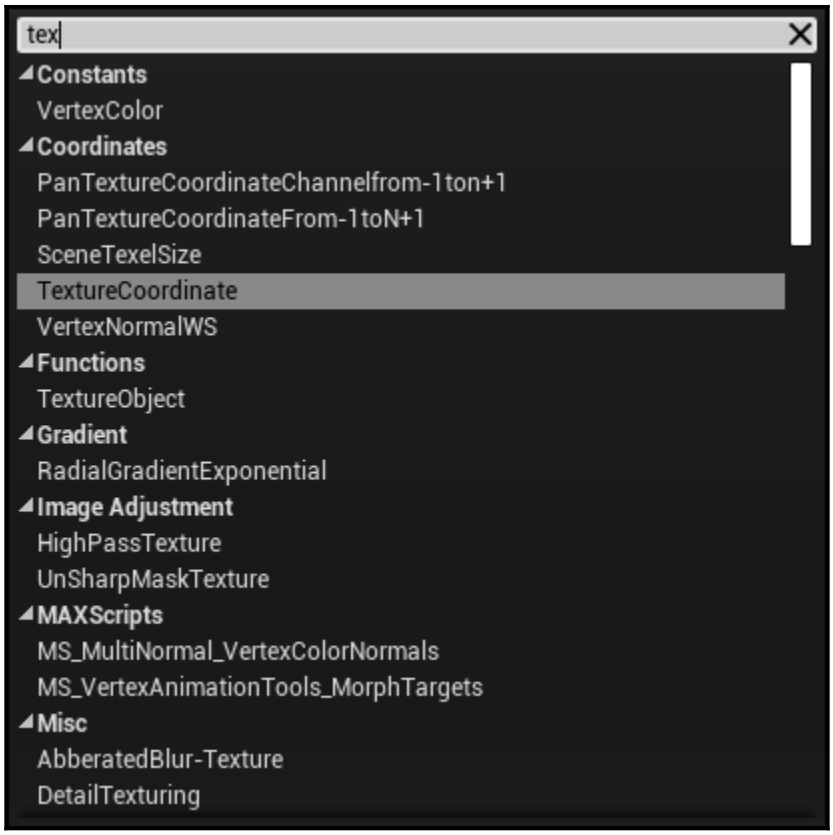

Untitled
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Manage
Sculpt
Paint
Brush Size
859.862427
Brush Falloff
0.5
Target Layers
Painting Restriction
None
Layers
Grass
None
Rock
None
Weight-Blended Layer (normal)
Non Weight-Blended Layer
Perspective
Lit
Show
Level: Untitled (Persistent)
World Outliner
Search...
Label
Type
Untitled (Editor)
World
Atmospheric Fog
AtmosphericFog
Floor
StaticMeshActor
Landscape
Landscape
LandscapeGizmoActiveActor
Light Source
DirectionalLight
Player Start
PlayerStart
Sky Sphere
SkyLight
SphereReflectionCapture
9 actors (1 selected)
View Options
Details
World Settings
Select an object to view details.
Content Browser
Output Log
Add New
Import
Save All
Content
StarterContent
Textures
Filters
Search Textures
103 items (1 selected)
View Options

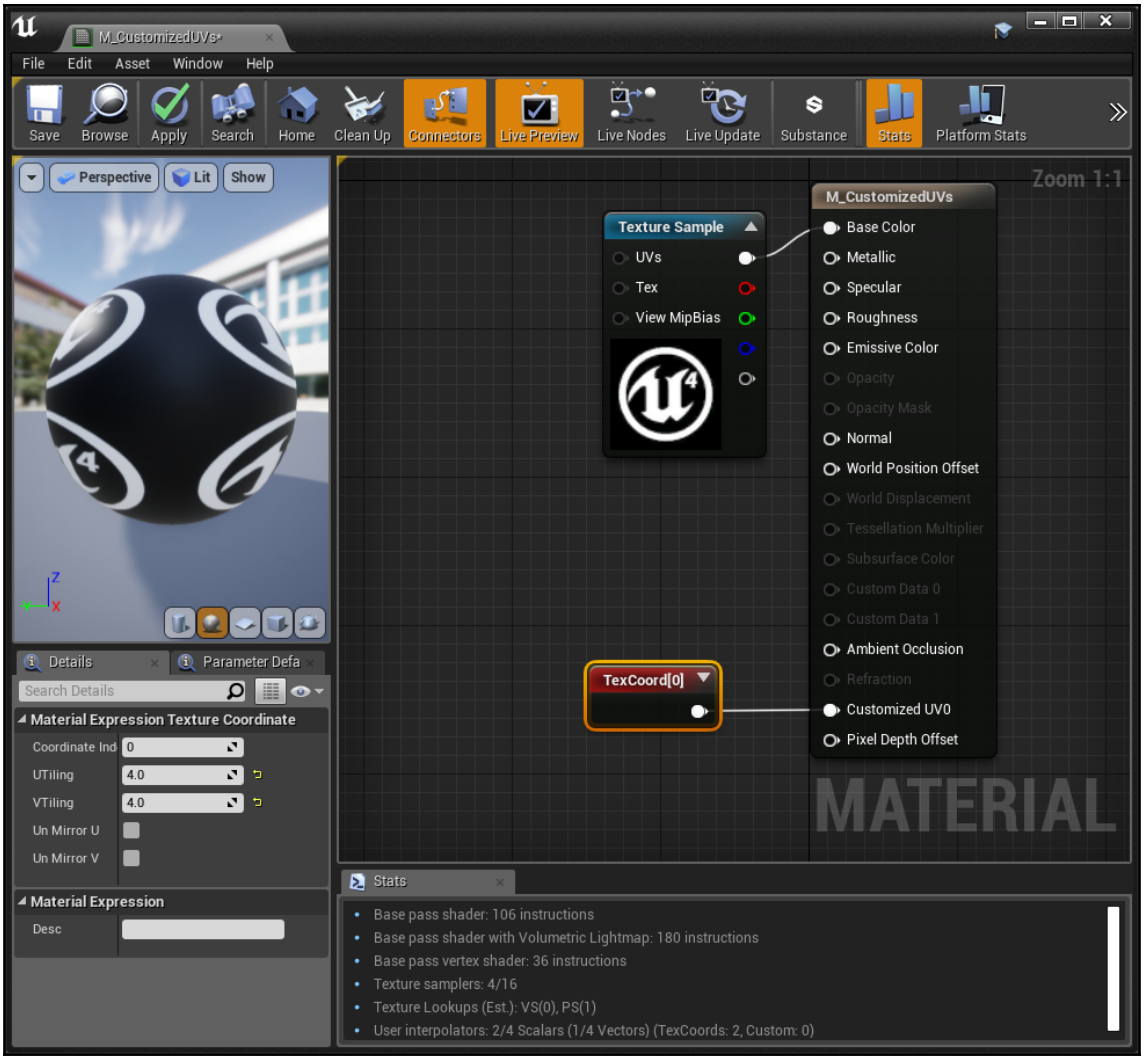

Untitled
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Manage
Sculpt
Paint
Brush Size
859.862427
Brush Falloff
0.5
Target Layers
Painting Restriction
None
Layers
Grass
Grass_LayerInfo
Rock
None
Perspective
Lit
Show
LIGHTING NEEDS TO BE REBUILT (64 unbuilt objects)
Level: Untitled (Persistent)
World Outliner
Search...
Label
Type
Untitled (Editor)
World
Atmospheric Fog
AtmosphericFog
Floor
StaticMeshActor
Landscape
LandscapeGizmoActiveActor
Light Source
DirectionalLight
Player Start
PlayerStart
Sky Sphere
Edit BP_Sky_Sphere
SkyLight
SphereReflectionCapture
9 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
FallCurve
Grass_Layer Info
Layer_Base
Layer_Snow
M_ Landscape
M_Season Ground
M_Snow LayeredGold
M_Snow Layered Material
SeasonAtlas
SnowBlend
Snow Collection
SpringCurve
Summer Curve
WinterCurve
14 items (1 selected)
View Options


Untitled
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Modes
Manage
Sculpt
Paint
Brush Size
859.862427
Brush Falloff
0.5
Target Layers
Painting Restriction
None
Layers
Grass
Grass_LayerInfo
Rock
Rock_LayerInfo
Perspective
Lit
Show
LIGHTING NEEDS TO BE REBUILT (64 unbuilt objects)
Level: Untitled (Persistent)
World Outliner
Search...
Label
Type
Untitled (Editor)
World
Atmospheric Fog
AtmosphericFog
Floor
StaticMeshActor
Landscape
LandscapeGizmoActiveActor
Light Source
DirectionalLight
Player Start
PlayerStart
Sky Sphere
Edit BP_Sky_Sphere
SkyLight
SphereReflectionCapture
9 actors
View Options
Details
World Settings
Select an object to view details.
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter07
Filters
Search Chapter07
FallCurve
Grass_Layer Info
Layer_Base
Layer_Snow
M_ Landscape
M_Season Ground
M_Snow LayeredGold
M_Snow Layered Material
Rock_Layer Info
SeasonAtlas
SnowBlend
Snow Collection
SpringCurve
Summer Curve
WinterCurve
15 items (1 selected)
View Options


Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
ERROR!
M_CustomizedUVs
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Create New Asset
Canvas Render Target
Cube Render Target
Curve Atlas
Media Texture
Render Target
Volume Texture
Current Asset
Copy
Paste
Clear
Browse
ue4
UE4_Logo
Texture
1 item
View Options
None
Details
Search Details
Material Expression Texture Sam
MipValueMode
None (use cor
Sampler Source
From texture
Const Coordinate
0
Const Mip Value
-1
Automatic View Mip
Material Expression Texture Bas
Texture
None
Sampler Type
Color
UE4_Logo (Texture)
Path: /Engine/VREditor/Devices/Vive
Cooking Filepath Length: 200 / 260
Format: DXT1
sRGB: True
LOD Bias: 0
Compression Settings: Default
Filter: Default
Texture Group: World
Never Stream: False
Y-axis Tiling Method: Wrap
X-axis Tiling Method: Wrap
Dimensions: 1,024 × 1,024
Has Alpha Channel: False
Source File: VivePreControllerMesh.fbx


M_CustomizedUVs*
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
M_CustomizedUVs
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Customized UV0
Pixel Depth Offset
MATERIAL
Details
Parameter Defaults
custom
Material
Num Customized UV
1
Translucency
Allow Custom Depth
Stats
Base pass shader: 106 instructions
Base pass shader with Volumetric Lightmap: 180 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 4/16
Texture Lookups (Est.): VS(0), PS(1)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)


tex
Constants
VertexColor
Coordinates
PanTextureCoordinateChannelfrom-1ton+1
PanTextureCoordinateFrom-1toN+1
SceneTexelSize
TextureCoordinate
VertexNormalWS
Functions
TextureObject
Gradient
RadialGradientExponential
Image Adjustment
HighPassTexture
UnSharpMaskTexture
MAXScripts
MS_MultiNormal_VertexColorNormals
MS_VertexAnimationTools_MorphTargets
Misc
AbberatedBlur-Texture
DetailTexturing


M_CustomizedUVs*
File
Edit
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Window
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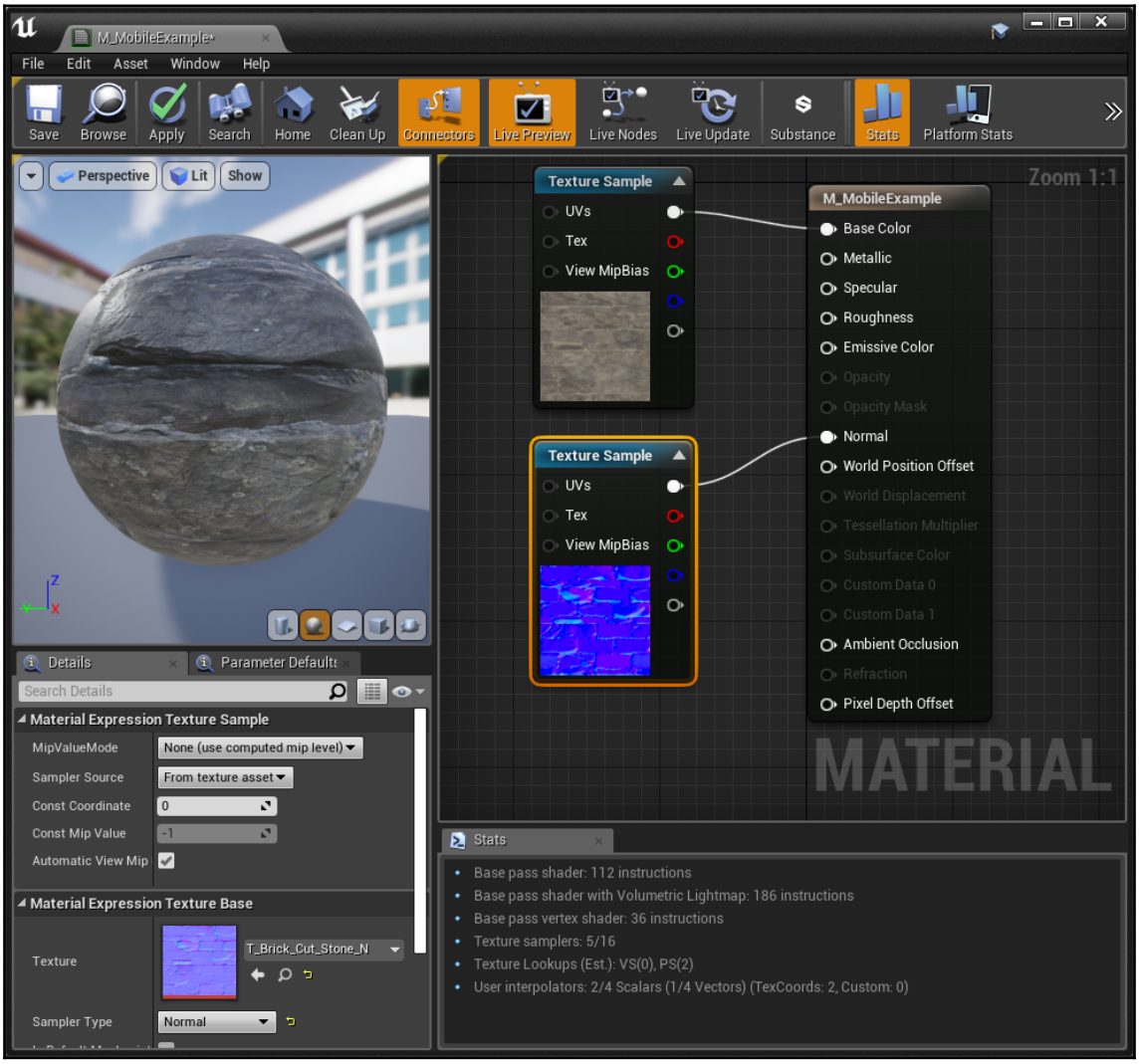
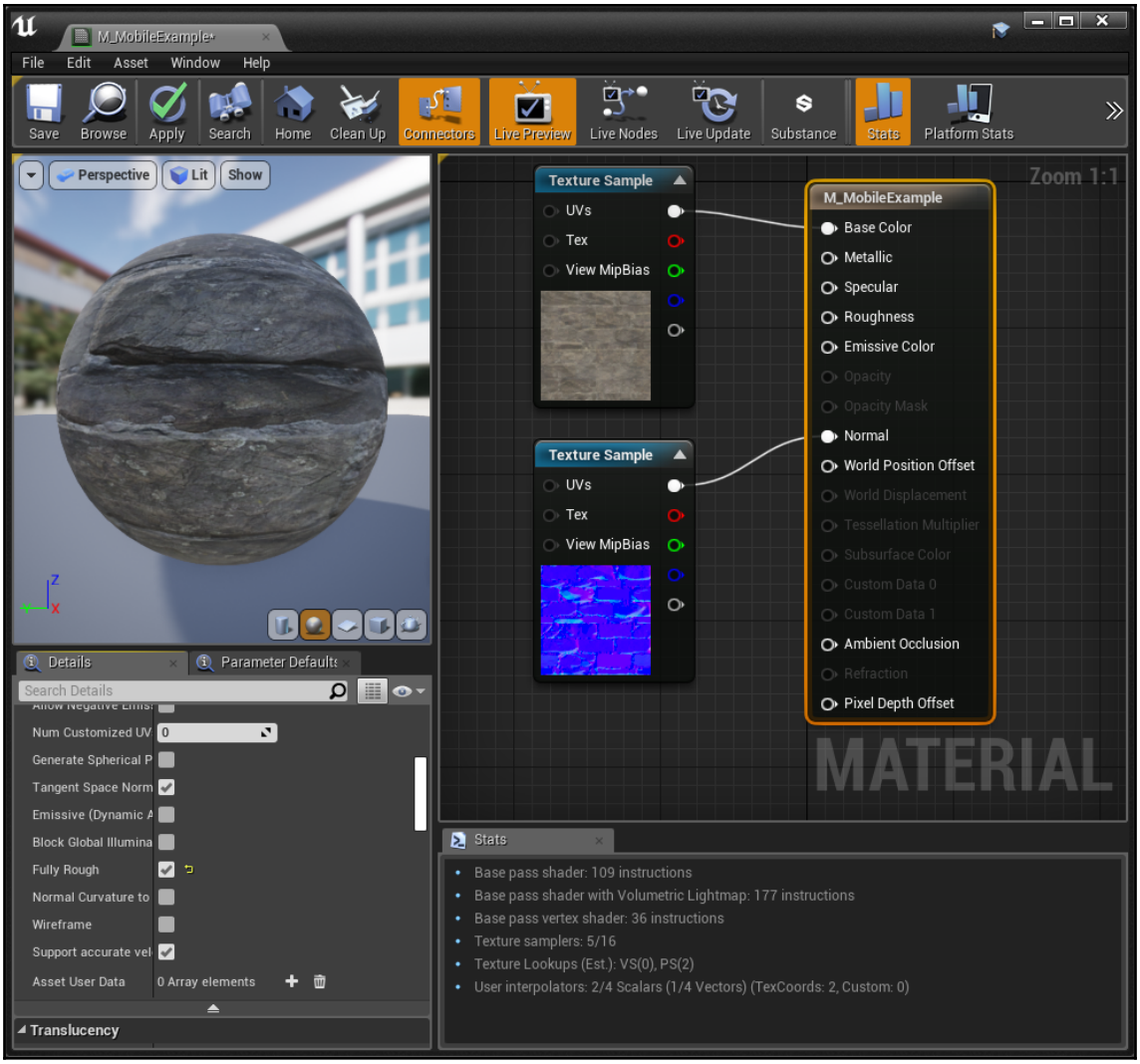
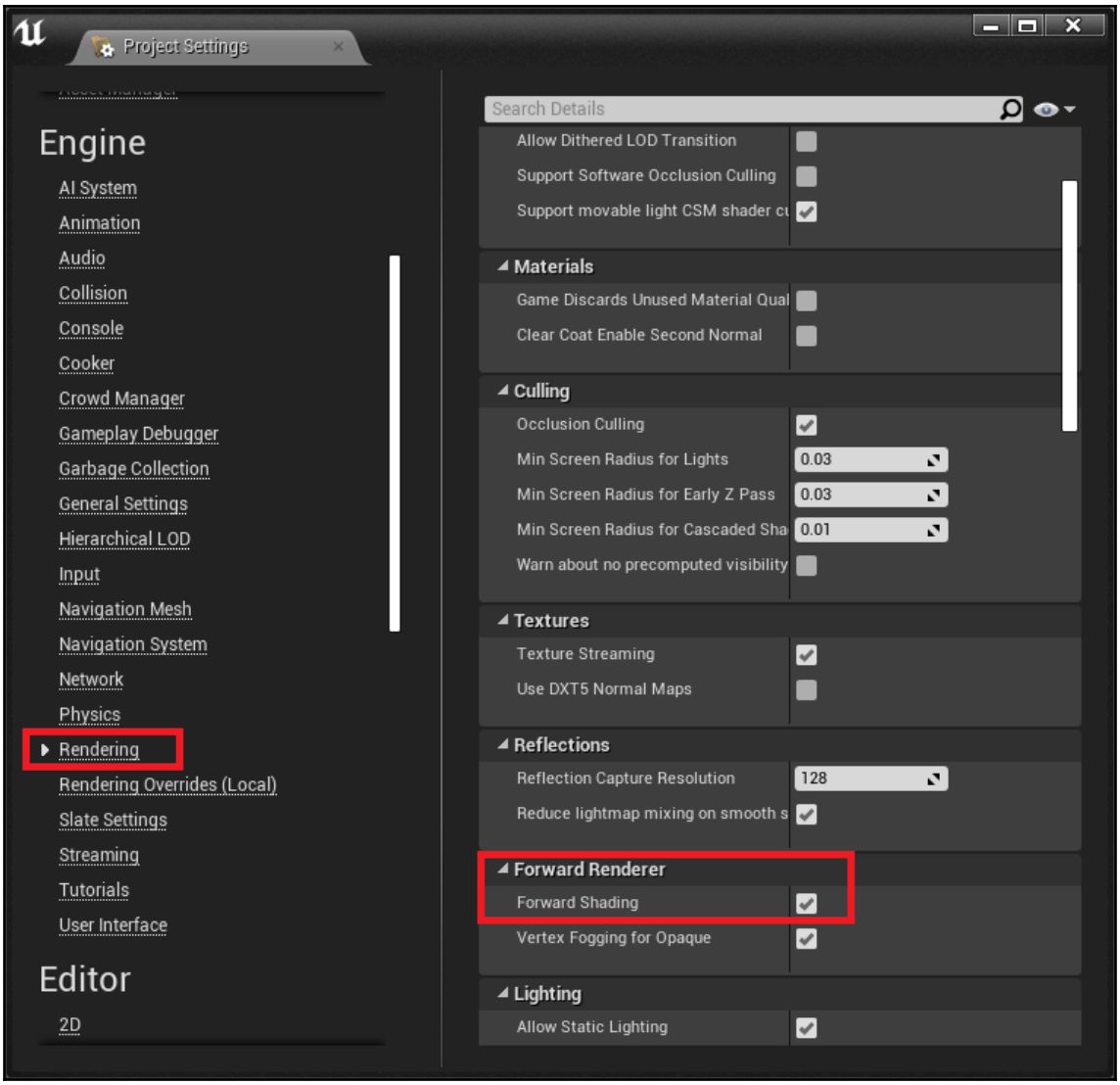
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
M_CustomizedUVs
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Customized UV0
Pixel Depth Offset
TexCoord[0]
MATERIAL
Details
Parameter Defa
Search Details
Material Expression Texture Coordinate
Coordinate Ind
0
UTiling
4.0
VTiling
4.0
Un Mirror U
Un Mirror V
Material Expression
Desc
Stats
Base pass shader: 106 instructions
Base pass shader with Volumetric Lightmap: 180 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 4/16
Texture Lookups (Est.): VS(0), PS(1)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

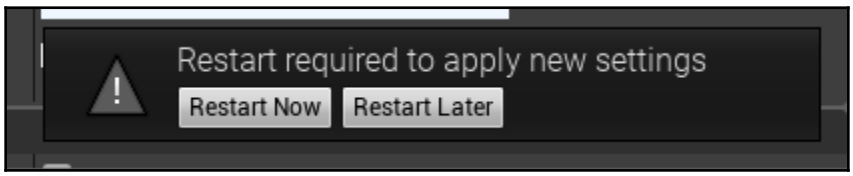
M_CustomizedUVs*
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
M_CustomizedUVs
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Customized UV0
Pixel Depth Offset
TexCoord[0]
Panner
Coordinate
Time
Speed
MATERIAL
Details
Parameter Defa
Search Details
Material Expression Panner
Speed X
1.0
Speed Y
2.0
Const Coordina
0
Fractional Part
Material Expression
Desc
Stats
Base pass shader: 106 instructions
Base pass shader with Volumetric Lightmap: 180 instructions
Base pass vertex shader: 37 instructions
Texture samplers: 4/16
Texture Lookups (Est.): VS(0), PS(1)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

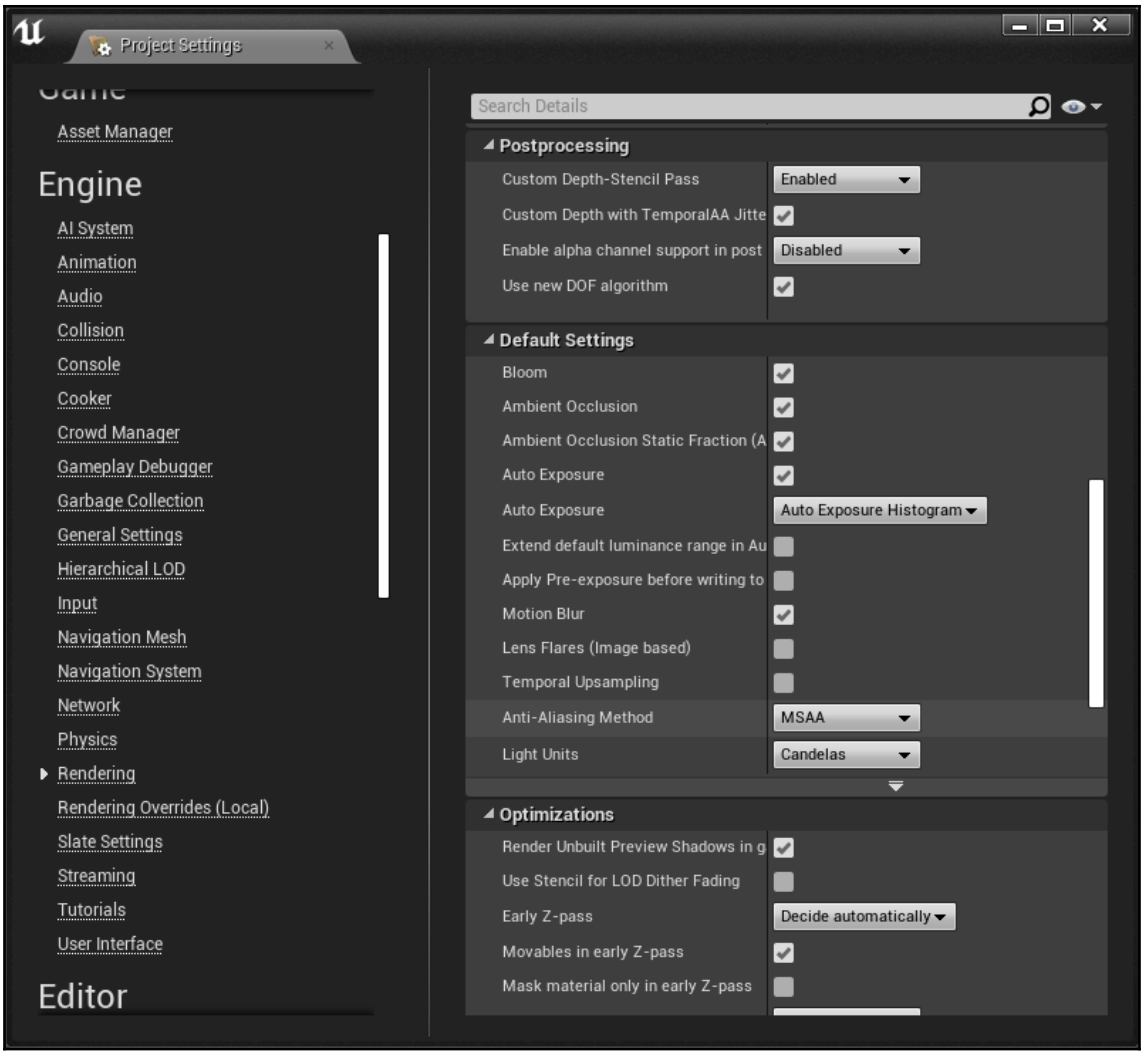
Chapter 8: Mobile Shaders and Material Optimization

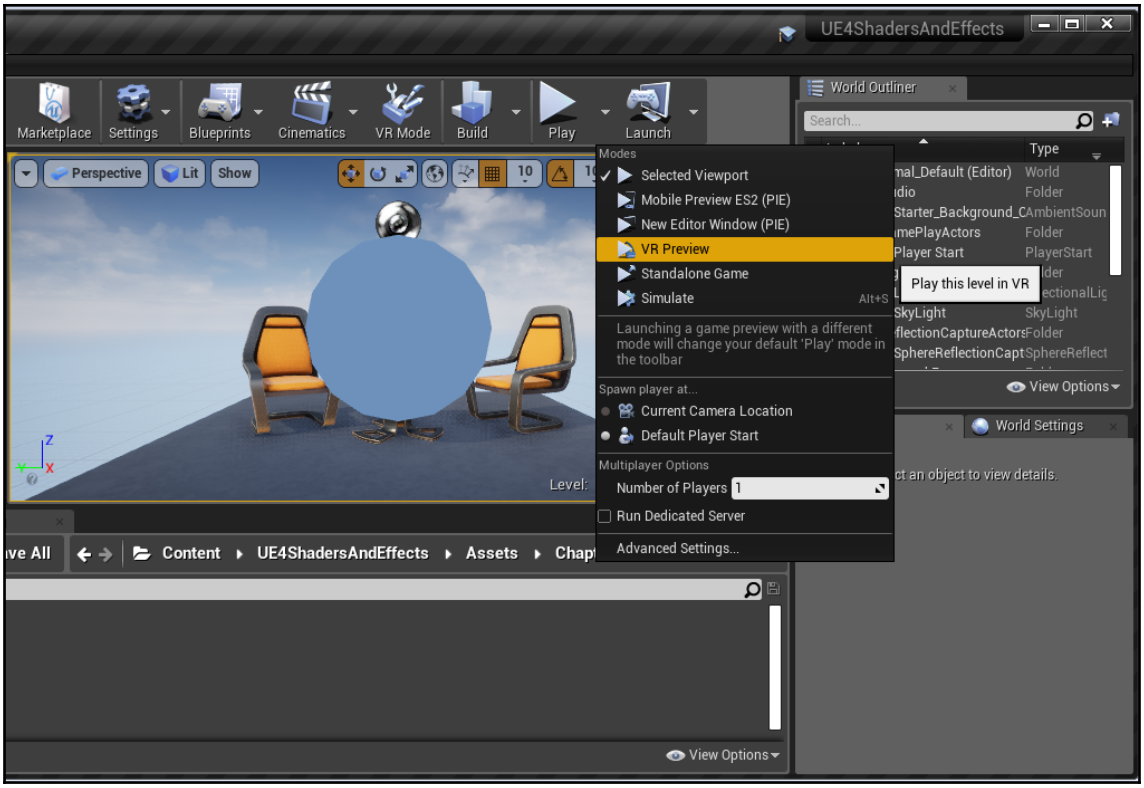


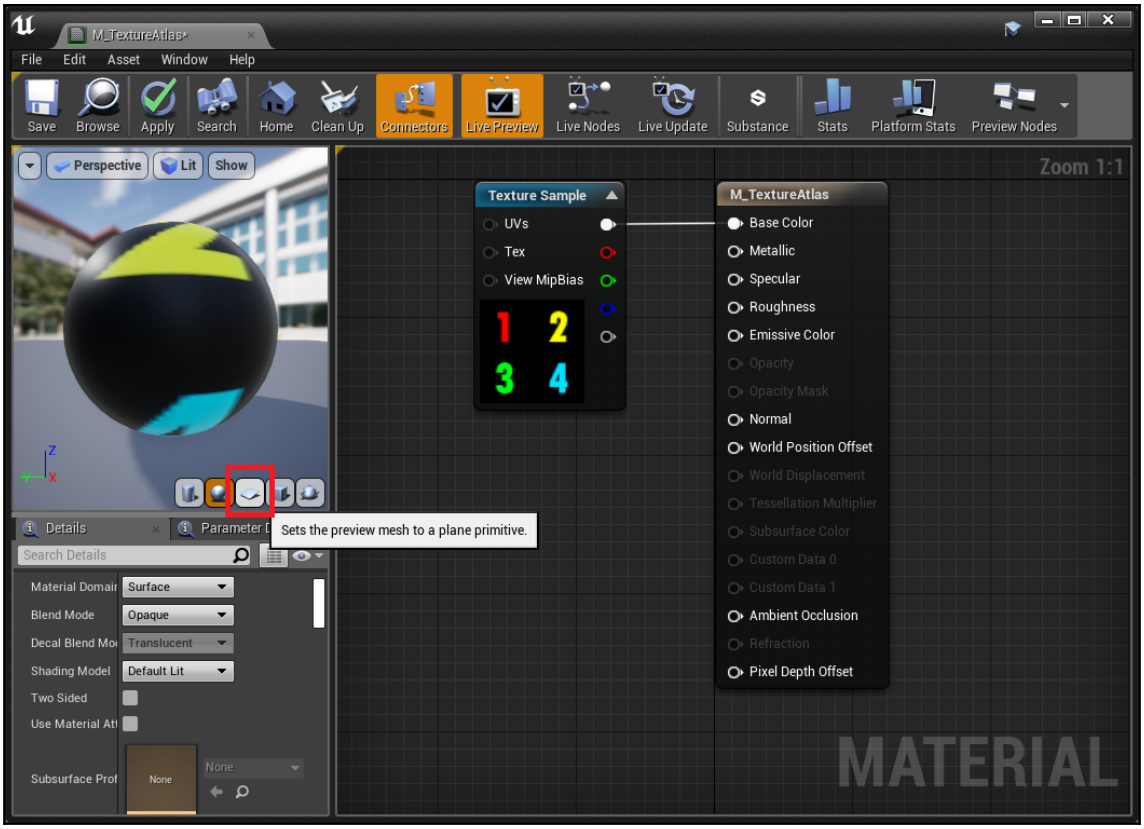

M_MobileExample
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Perspective
Lit
Show
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
M_MobileExample
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Zoom 1:1
MATERIAL
Details
Parameter Defaults
Search Details
Num Customized UV
0
Generate Spherical P
Tangent Space Norm
Emissive (Dynamic A
Block Global Illumina
Fully Rough
Normal Curvature to
Wireframe
Support accurate vel
Asset User Data
0 Array elements
Translucency
Stats
Base pass shader: 109 instructions
Base pass shader with Volumetric Lightmap: 177 instructions
Base pass vertex shader: 36 instructions
Texture samplers: 5/16
Texture Lookups (Est.): VS(0), PS(2)
User interpolators: 2/4 Scalars (1/4 Vectors) (TexCoords: 2, Custom: 0)

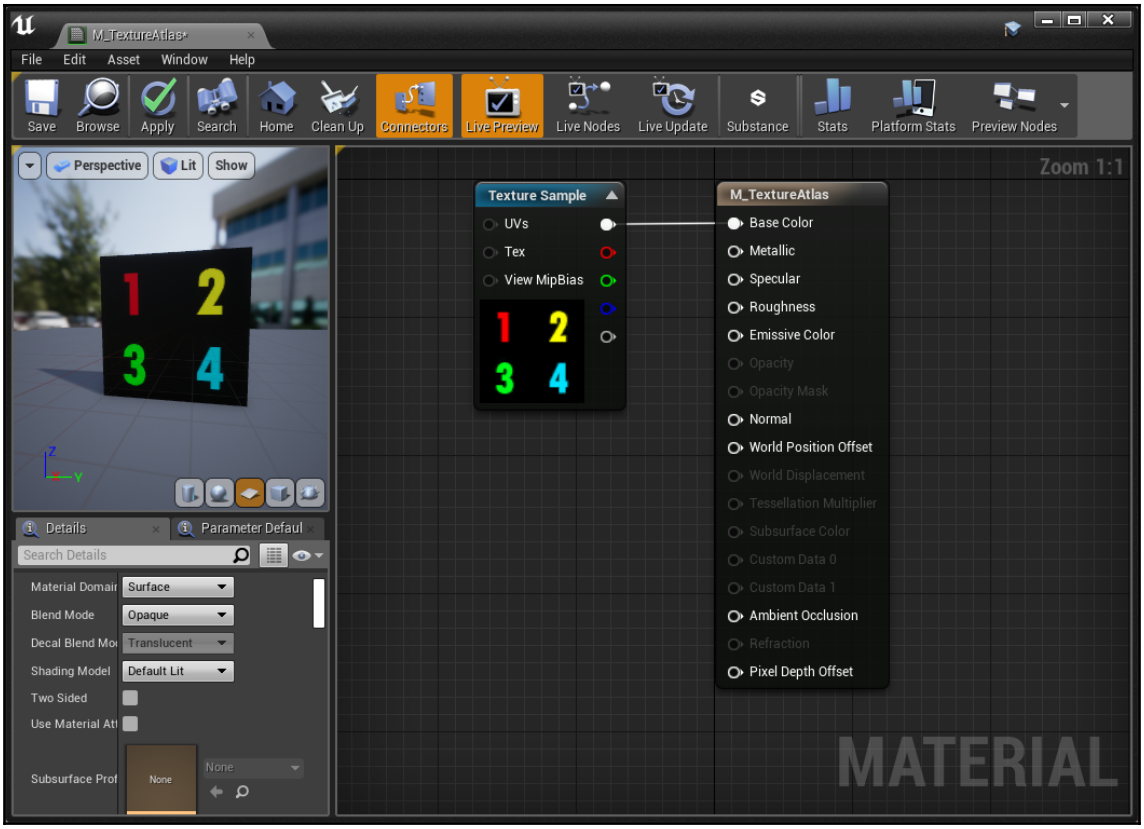

Project Settings
Engine
AI System
Animation
Audio
Collision
Console
Cooker
Crowd Manager
Gameplay Debugger
Garbage Collection
General Settings
Hierarchical LOD
Input
Navigation Mesh
Navigation System
Network
Physics
Rendering
Rendering Overrides (Local)
Slate Settings
Streaming
Tutorials
User Interface
Editor
2D
Search Details
Allow Dithered LOD Transition
Support Software Occlusion Culling
Support movable light CSM shader cu
Materials
Game Discards Unused Material Qual
Clear Coat Enable Second Normal
Culling
Occlusion Culling
Min Screen Radius for Lights
0.03
Min Screen Radius for Early Z Pass
0.03
Min Screen Radius for Cascaded Sha
0.01
Warn about no precomputed visibility
Textures
Texture Streaming
Use DXT5 Normal Maps
Reflections
Reflection Capture Resolution
128
Reduce lightmap mixing on smooth s
Forward Renderer
Forward Shading
Vertex Fogging for Opaque
Lighting
Allow Static Lighting


Restart required to apply new settings
Restart Now
Restart Later


Project Settings
Asset Manager
Engine
AI System
Animation
Audio
Collision
Console
Cooker
Crowd Manager
Gameplay Debugger
Garbage Collection
General Settings
Hierarchical LOD
Input
Navigation Mesh
Navigation System
Network
Physics
Rendering
Rendering Overrides (Local)
Slate Settings
Streaming
Tutorials
User Interface
Editor
Search Details
Postprocessing
Custom Depth-Stencil Pass
Enabled
Custom Depth with TemporalAA Jitte
Enable alpha channel support in post
Disabled
Use new DOF algorithm
Default Settings
Bloom
Ambient Occlusion
Ambient Occlusion Static Fraction (A
Auto Exposure
Auto Exposure
Auto Exposure Histogram
Extend default luminance range in Au
Apply Pre-exposure before writing to
Motion Blur
Lens Flares (Image based)
Temporal Upsampling
Anti-Aliasing Method
MSAA
Light Units
Candelas
Optimizations
Render Unbuilt Preview Shadows in g
Use Stencil for LOD Dither Fading
Early Z-pass
Decide automatically
Movables in early Z-pass
Mask material only in early Z-pass


UE4ShadersAndEffects
Marketplace
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Launch
Perspective
Lit
Show
Level:
Modes
Selected Viewport
Mobile Preview ES2 (PIE)
New Editor Window (PIE)
VR Preview
Standalone Game
Simulate
Alt+S
Launching a game preview with a different mode will change your default 'Play' mode in the toolbar
Spawn player at...
Current Camera Location
Default Player Start
Multiplayer Options
Number of Players
1
Run Dedicated Server
Advanced Settings...
Play this level in VR
World Outliner
Search...
Type
World
Folder
PlayerStart
SkyLight
Folder
SphereReflect
View Options
World Settings
Content
UE4ShadersAndEffects
Assets
View Options


M_TextureAtlas*
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
1
2
3
4
M_TextureAtlas
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Details
Parameter
Sets the preview mesh to a plane primitive.
Search Details
Material Domain
Surface
Blend Mode
Opaque
Translucent
Shading Model
Default Lit
Two Sided
Use Material Att
Subsurface Prof
None
MATERIAL


M_TextureAtlas*
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Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
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Lit
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Details
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Search Details
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
Two Sided
Use Material Att
Subsurface Prof
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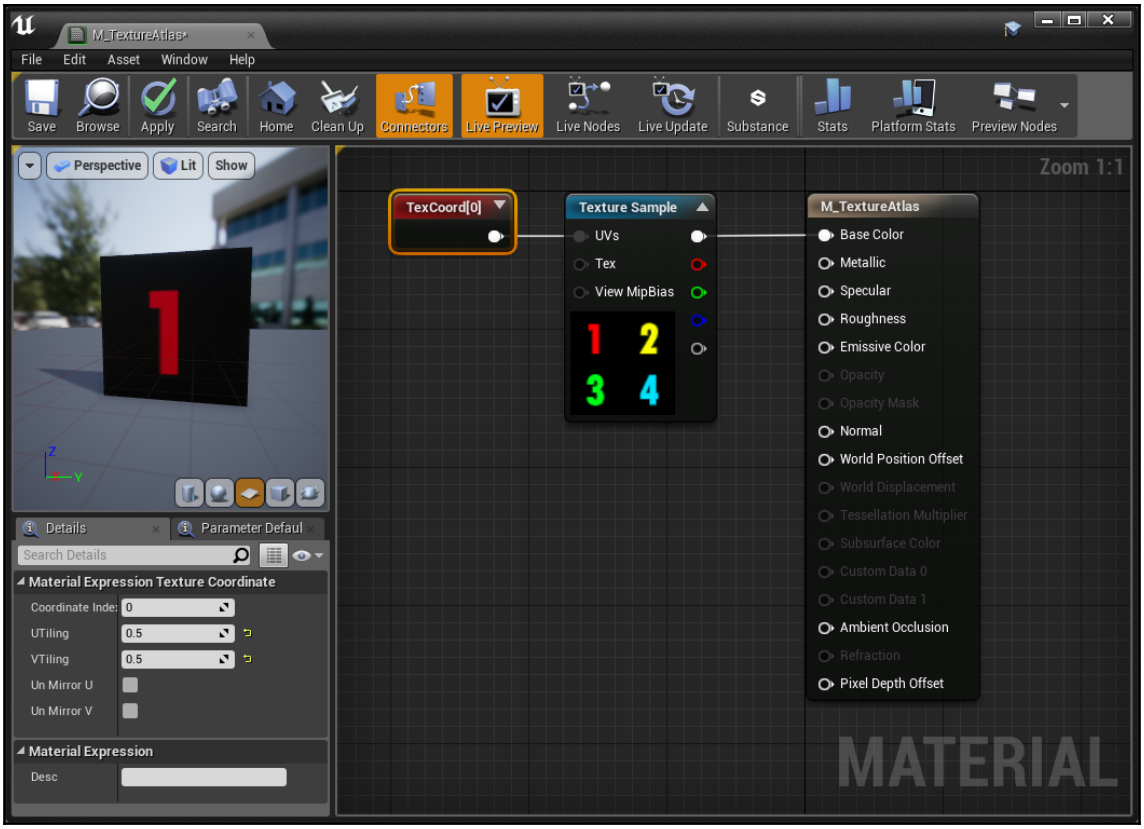
None
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
M_TextureAtlas
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL


M_TextureAtlas*
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Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
TexCoord[0]
Texture Sample
UVs
Tex
View MipBias
1
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3
4
M_TextureAtlas
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
Details
Parameter Defaul
Search Details
Material Expression Texture Coordinate
Coordinate Inde:
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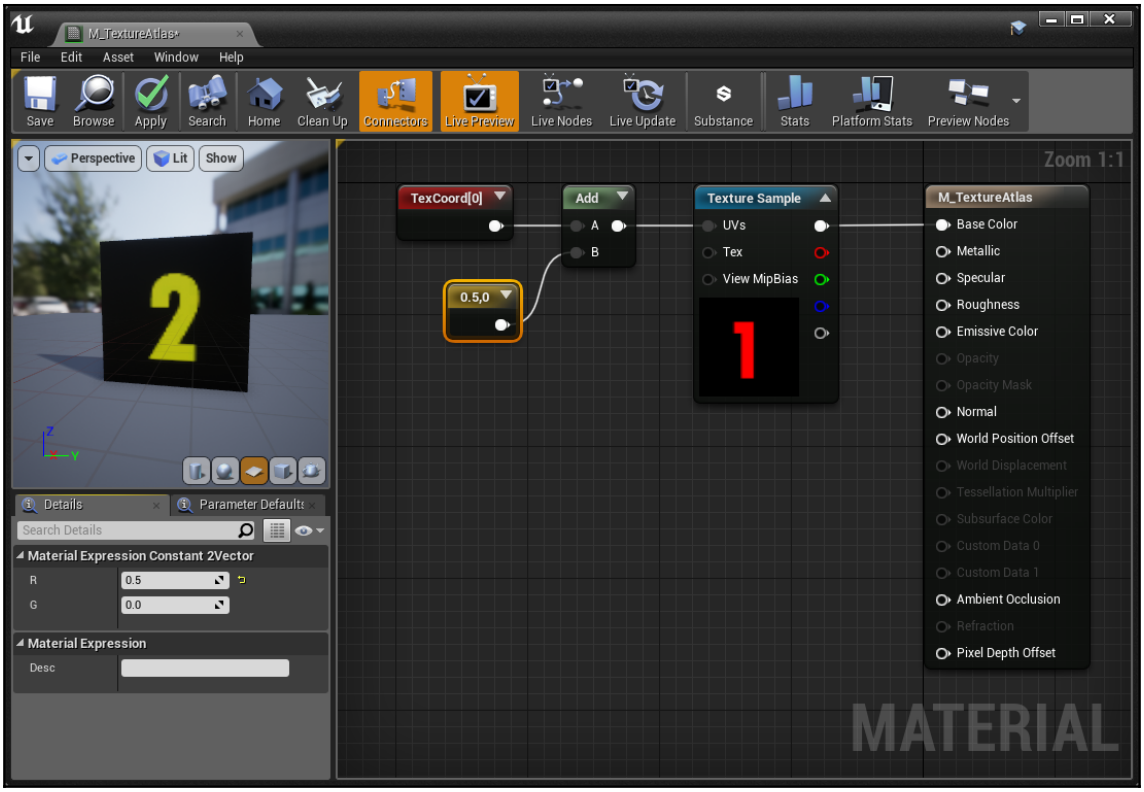
VTiling
0.5
Un Mirror U
Un Mirror V
Material Expression
Desc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Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
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Texture Sample
UVs
Tex
View MipBias
1
M_TextureAtlas
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
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Parameter Defaults
Search Details
Material Expression Constant 2Vector
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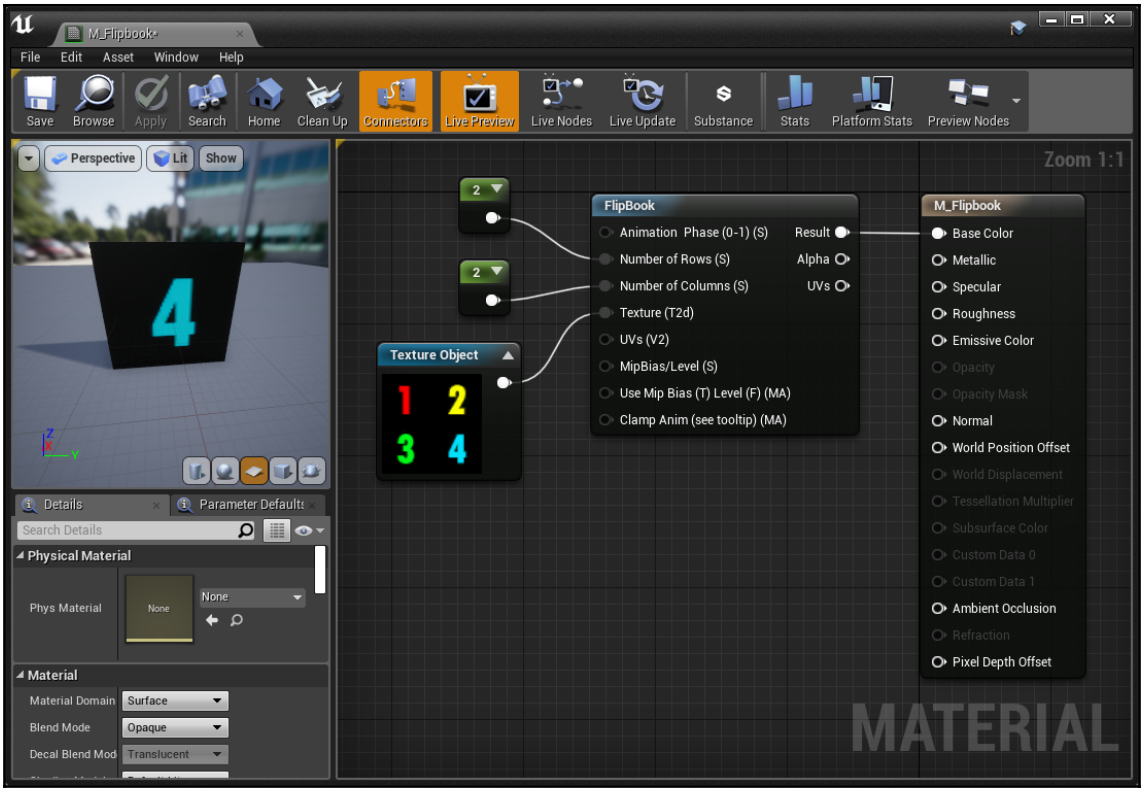
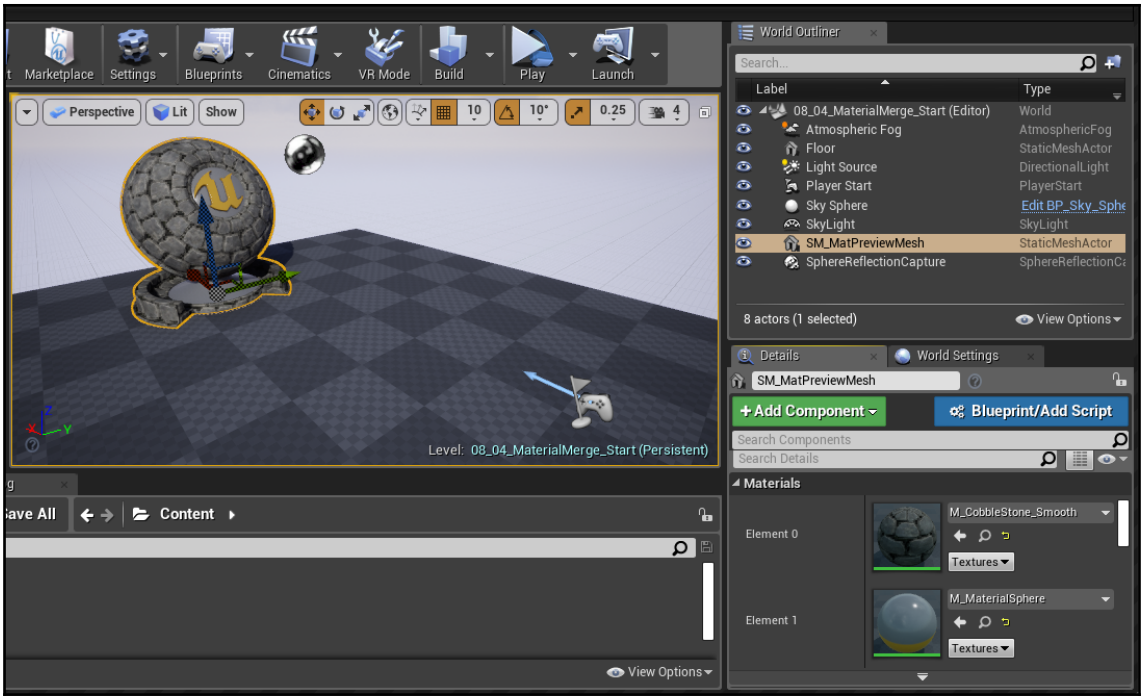
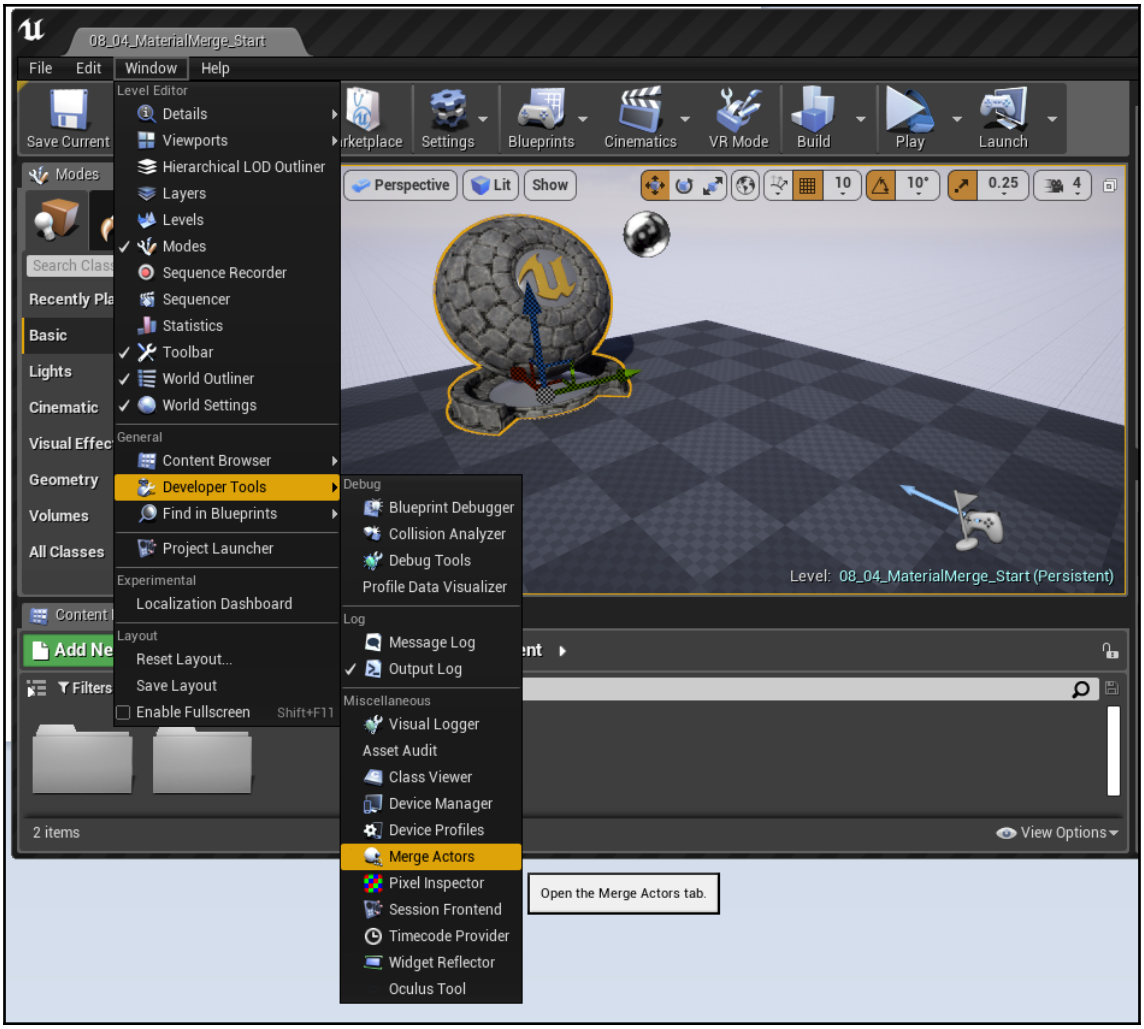
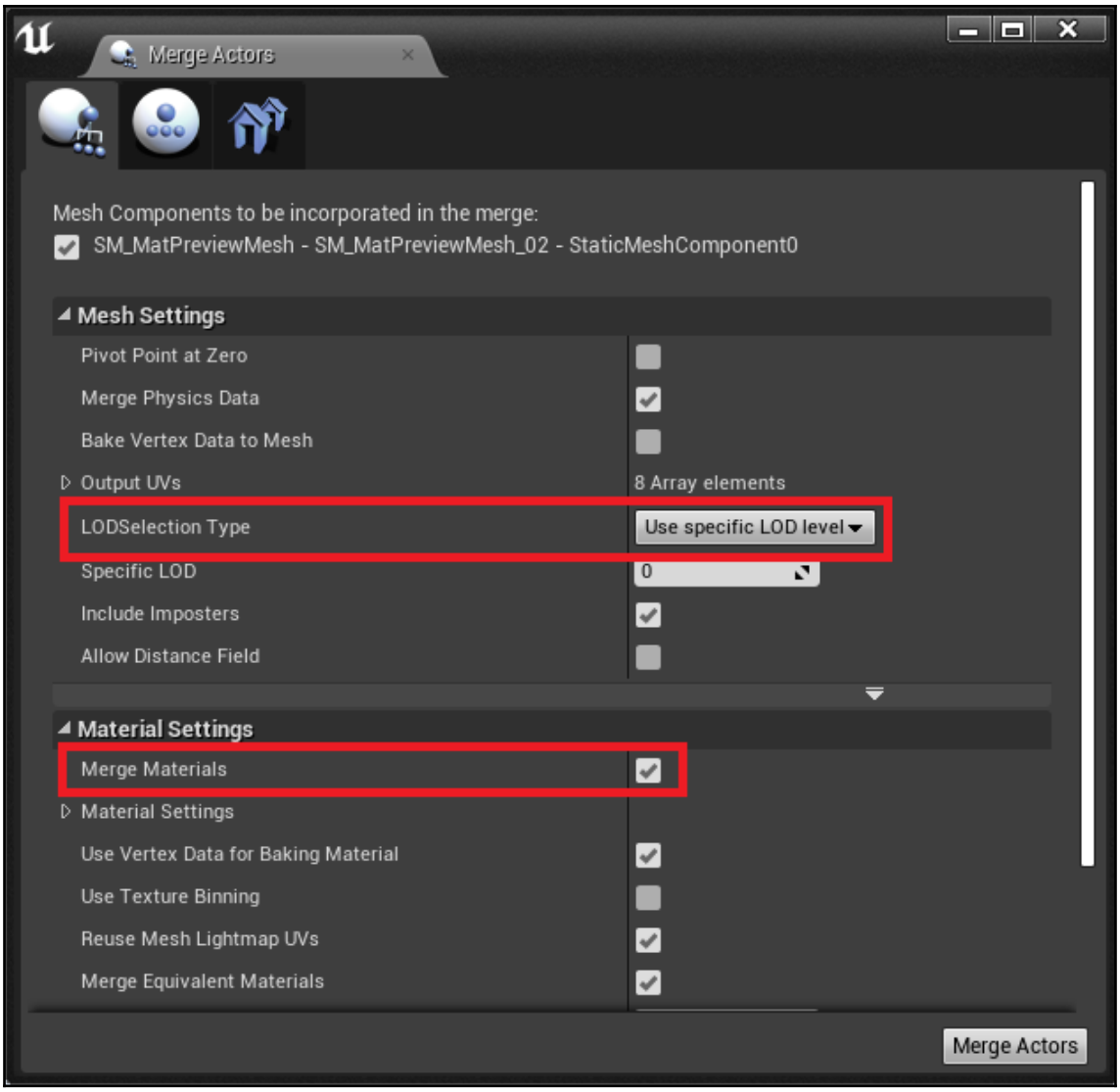
0.5
G
0.0
Material Expression
Desc

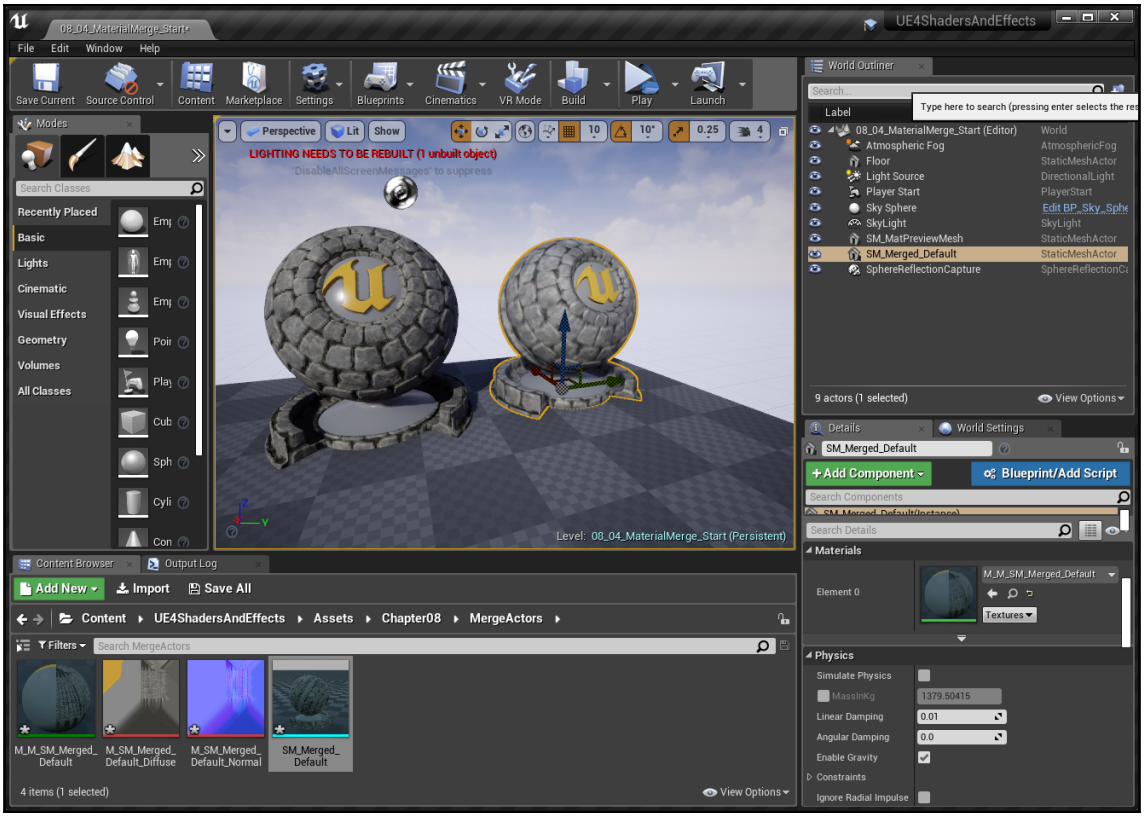

M_Flipbook*
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
2
2
Texture Object
1
2
3
4
FlipBook
Animation Phase (0-1) (S)
Number of Rows (S)
Number of Columns (S)
Texture (T2d)
UVs (V2)
MipBias/Level (S)
Use Mip Bias (T) Level (F) (MA)
Clamp Anim (see tooltip) (MA)
Result
Alpha
UVs
M_Flipbook
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mod
Translucent


Marketplace
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Launch
Perspective
Lit
Show
Level: 08_04_MaterialMerge_Start (Persistent)
Save All
Content
View Options
World Outliner
Search...
Label
Type
08_04_MaterialMerge_Start (Editor)
World
Atmospheric Fog
AtmosphericFog
Floor
StaticMeshActor
Light Source
DirectionalLight
Player Start
PlayerStart
Sky Sphere
Edit BP_Sky_Sphe
SkyLight
SkyLight
SM_MatPreviewMesh
StaticMeshActor
SphereReflectionCapture
8 actors (1 selected)
View Options
Details
World Settings
SM_MatPreviewMesh
+ Add Component
Blueprint/Add Script
Search Components
Search Details
Materials
Element 0
M_CobbleStone_Smooth
Textures
Element 1
M_MaterialSphere
Textures

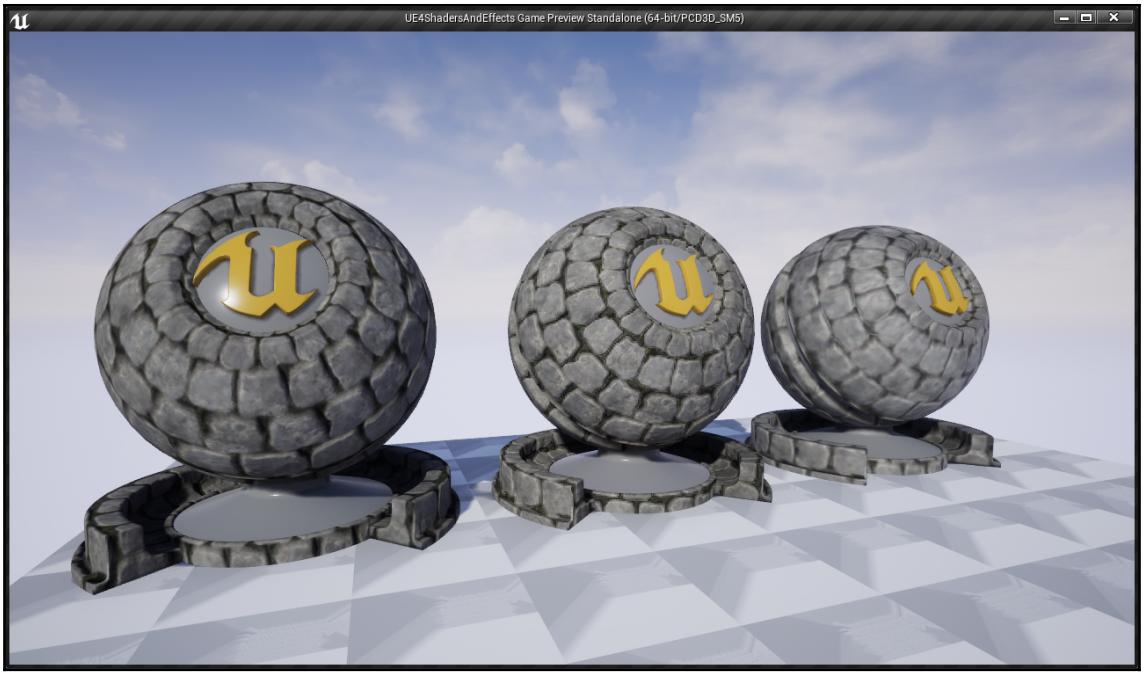

08_04_MaterialMerge_Start
File
Edit
Window
Help
Level Editor
Details
Viewports
Hierarchical LOD Outliner
Layers
Levels
Modes
Sequence Recorder
Sequencer
Statistics
Toolbar
World Outliner
World Settings
General
Content Browser
Developer Tools
Find in Blueprints
Project Launcher
Experimental
Localization Dashboard
Layout
Reset Layout...
Save Layout
Enable Fullscreen
Shift+F11
Debug
Blueprint Debugger
Collision Analyzer
Debug Tools
Profile Data Visualizer
Log
Message Log
Output Log
Miscellaneous
Visual Logger
Asset Audit
Class Viewer
Device Manager
Device Profiles
Merge Actors
Pixel Inspector
Session Frontend
Timecode Provider
Widget Reflector
Oculus Tool
Open the Merge Actors tab.
Save Current
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Launch
Modes
Recently Pla
Basic
Lights
Cinematic
Visual Effec
Geometry
Volumes
All Classes
Perspective
Lit
Show
Level: 08_04_MaterialMerge_Start (Persistent)
Add Ne
Filters
2 items
View Options

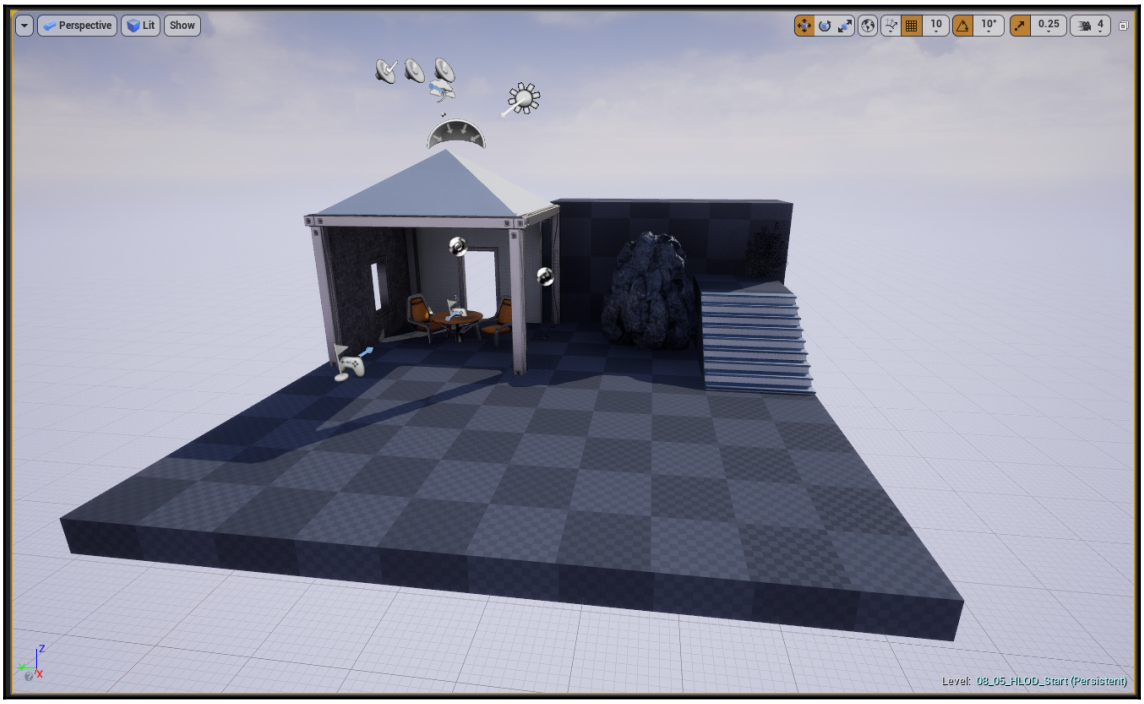

Merge Actors
Mesh Components to be incorporated in the merge:
SM_MatPreviewMesh - SM_MatPreviewMesh_02 - StaticMeshComponent0
Mesh Settings
Pivot Point at Zero
Merge Physics Data
Bake Vertex Data to Mesh
Output UVs
8 Array elements
LODSelection Type
Use specific LOD level
Specific LOD
0
Include Imposters
Allow Distance Field
Material Settings
Merge Materials
Material Settings
Use Vertex Data for Baking Material
Use Texture Binning
Reuse Mesh Lightmap UVs
Merge Equivalent Materials
Merge Actors

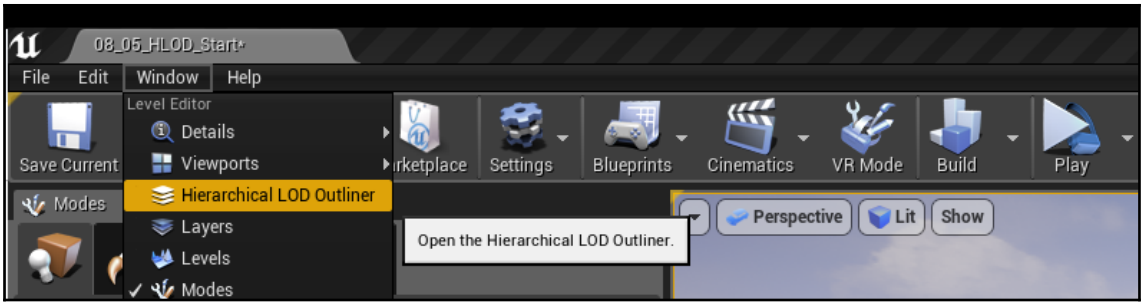
Create Merged Actor
Search Folders
Search Assets
Content
StarterContent
UE4ShadersAndEffects
Assets
Chapter07
Chapter08
MergeActors
Maps
Engine Content
Drop files here or right click to create content.
0 items
View Options
Path: /Game/UE4ShadersAndEffects/Assets/Chapter08/MergeActors
Name: SM_Merged_Default
Save
Cancel

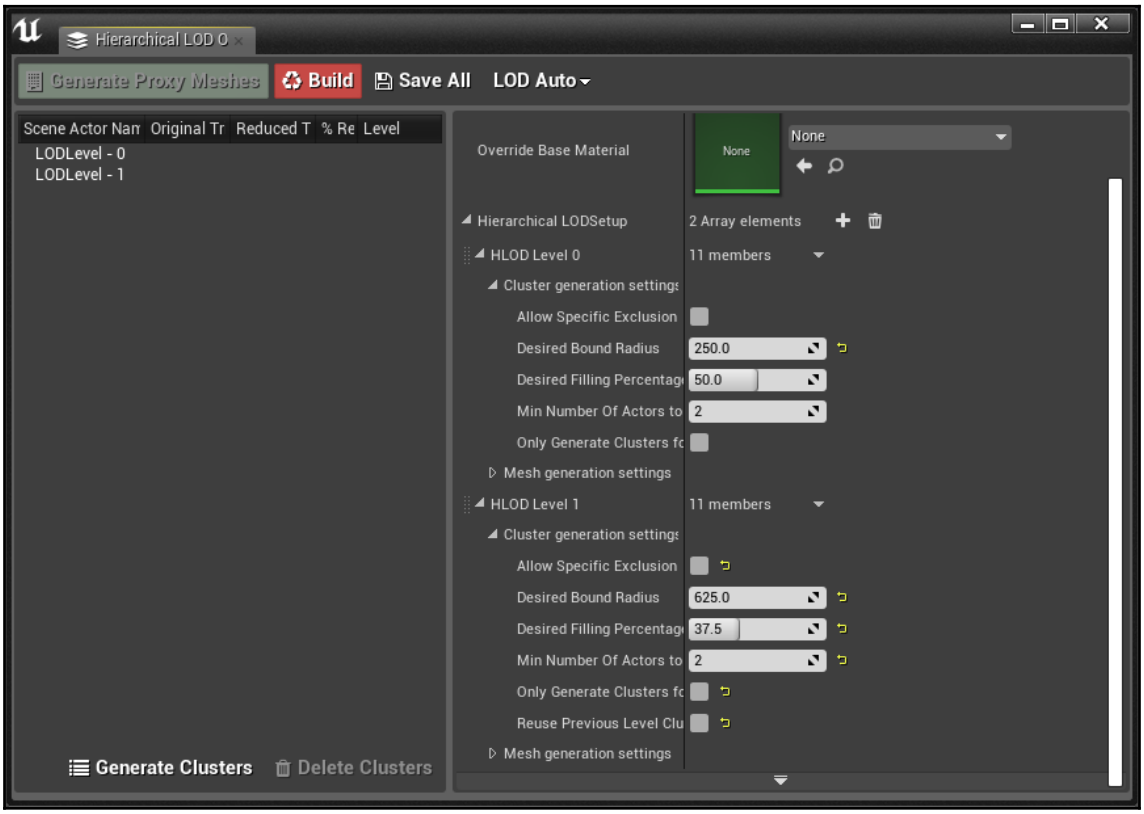

08_04_MaterialMerge_Start
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective
Lit
Show
LIGHTING NEEDS TO BE REBUILT (1 unbuilt object)
"DisableAllScreenMessages" to suppress
Level: 08_04_MaterialMerge_Start (Persistent)
World Outliner
Label
08_04_MaterialMerge_Start (Editor)
Atmospheric Fog
Floor
Light Source
Player Start
Sky Sphere
SkyLight
SM_MatPreviewMesh
SM_Merged_Default
SphereReflectionCapture
9 actors (1 selected)
View Options
Details
World Settings
SM_Merged_Default
+ Add Component
Blueprint/Add Script
Search Components
Search Details
Materials
Element 0
Textures
Physics
Simulate Physics
MassInKg
1379.50415
Linear Damping
0.01
Angular Damping
0.0
Enable Gravity
Constraints
Ignore Radial Impulse
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Assets
Chapter08
MergeActors
Filters
Search MergeActors
M_M_SM_Merged_Default
M_SM_Merged_Default_Diffuse
M_SM_Merged_Default_Normal
SM_Merged_Default
4 items (1 selected)
View Options

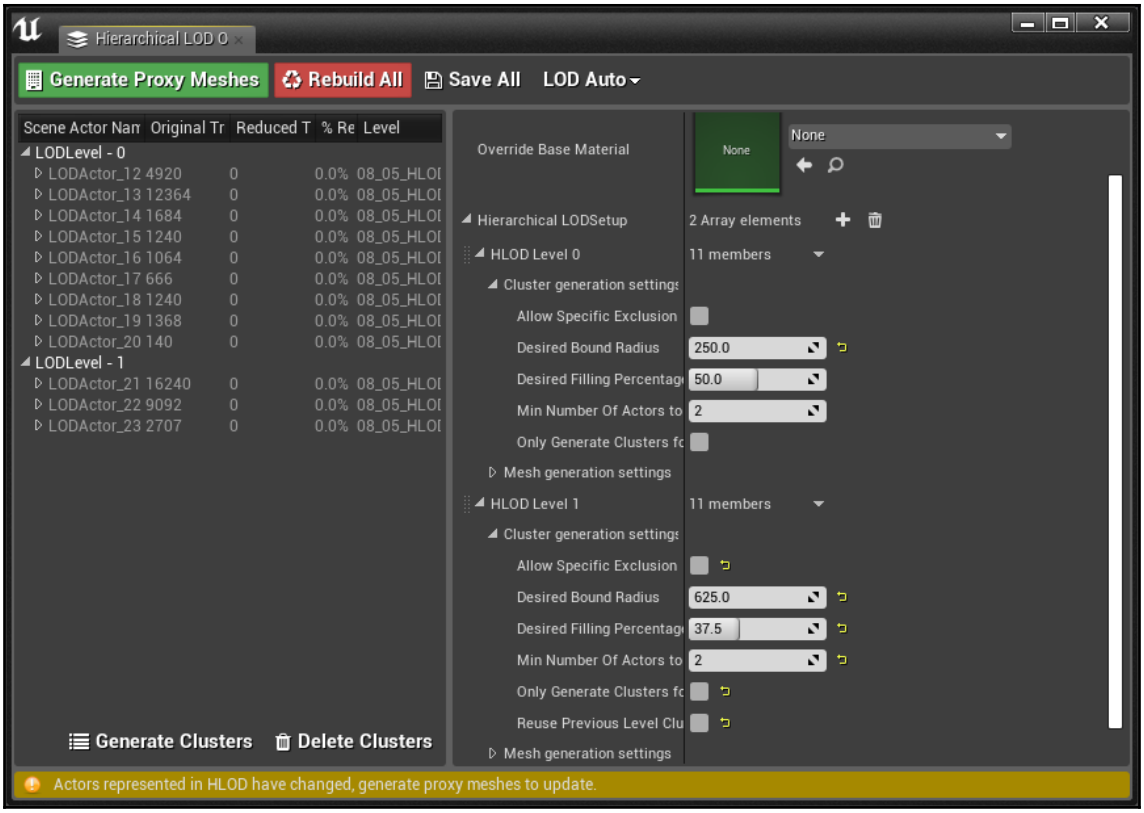
Merge Actors
Merge Materials
Material Settings
Texture Size
X 2048
Y 2048
Texture Sizing Type
Use TextureSize for all material properties
Normal Map
Metallic Map
Metallic Constant
0.0
Roughness Map
Roughness Constant
0.5
Specular Map
Specular Constant
0.5
Emissive Map
Opacity Map
Opacity Constant
1.0
Opacity Mask Map
Opacity Mask Constant
1.0
Ambient Occlusion Map
Ambient Occlusion Constant
1.0
Blend Mode
Opaque
Use Vertex Data for Baking Material
Use Texture Binning
Reuse Mesh Lightmap UVs
Merge Equivalent Materials
Gutter Size
2
Merge Actors

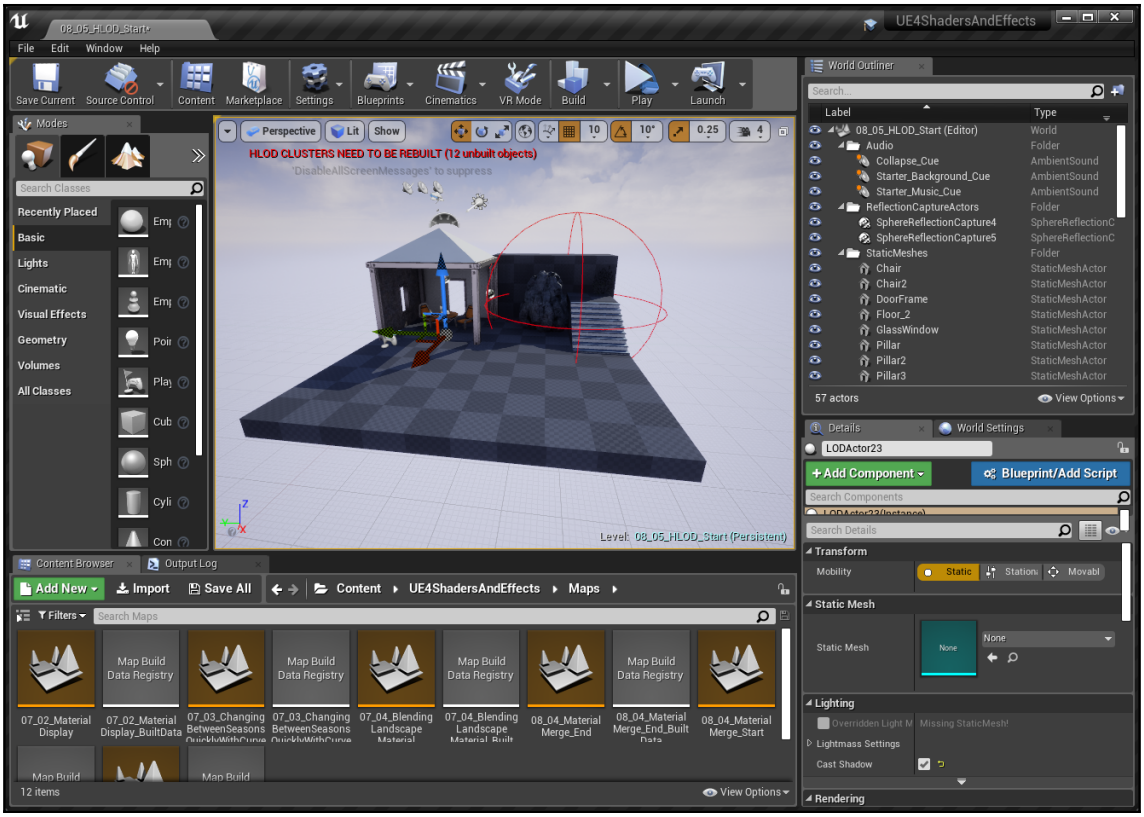

UE4ShadersAndEffects Game Preview Standalone (64-bit/PCD3D_SM5)

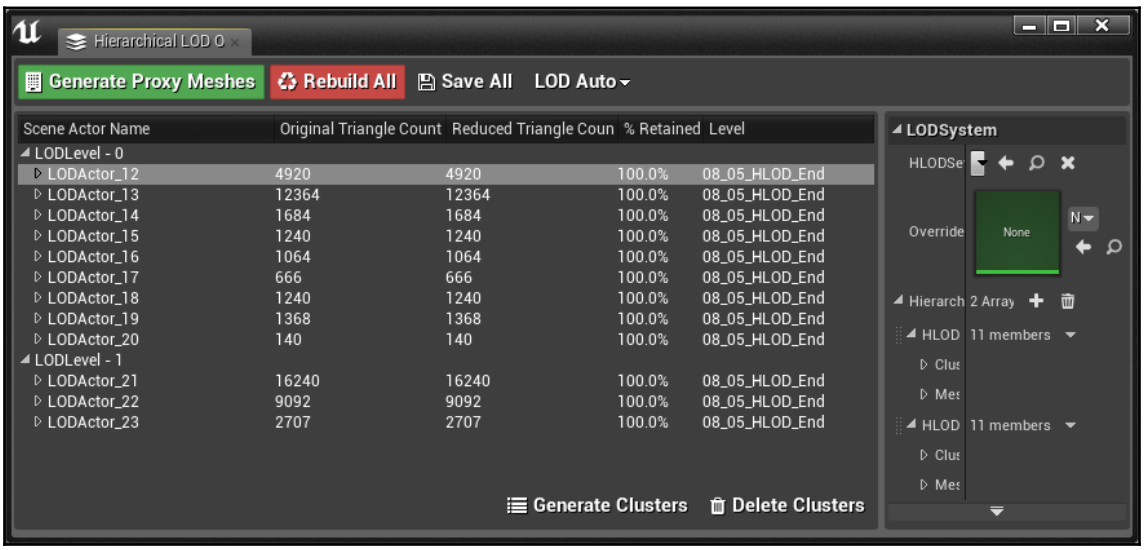

Perspective
Lit
Show
Level: 08_05_HLOD_Start (Persistent)

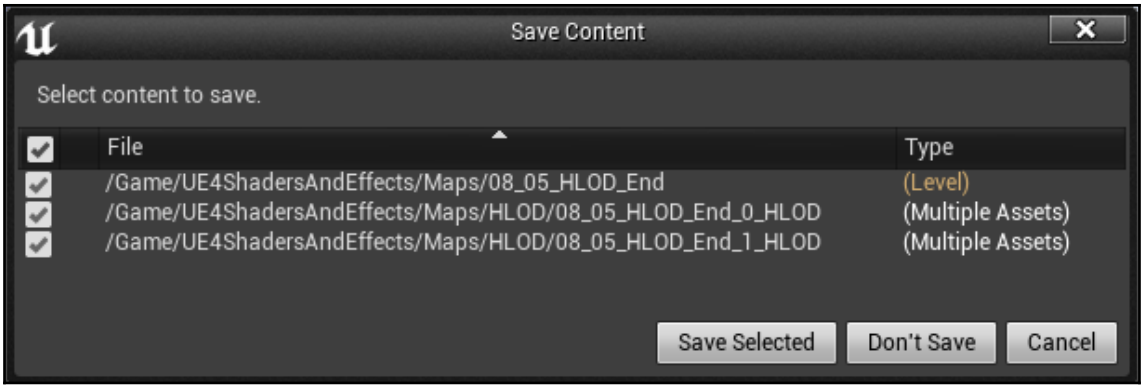

08_05_HLOD_Start*
File
Edit
Window
Help
Level Editor
Details
Viewports
Hierarchical LOD Outliner
Layers
Levels
Modes
Save Current
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Modes
Perspective
Lit
Show
Open the Hierarchical LOD Outliner.

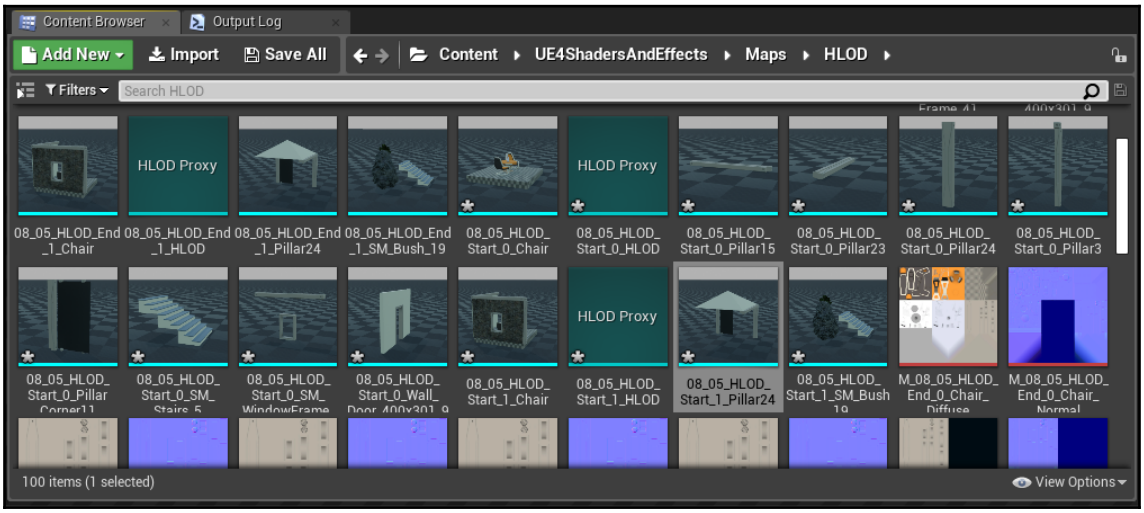

Hierarchical LOD 0
Generate Proxy Meshes
Build
Save All
LOD Auto
Scene Actor Nam
Original Tr
Reduced T
% Re
Level
LODLevel - 0
LODLevel - 1
Override Base Material
None
None
Hierarchical LODSetup
2 Array elements
HLOD Level 0
11 members
Cluster generation settings
Allow Specific Exclusion
Desired Bound Radius
250.0
Desired Filling Percentag
50.0
Min Number Of Actors to
2
Only Generate Clusters fc
Mesh generation settings
HLOD Level 1
11 members
Cluster generation settings
Allow Specific Exclusion
Desired Bound Radius
625.0
Desired Filling Percentag
37.5
Min Number Of Actors to
2
Only Generate Clusters fc
Reuse Previous Level Clu
Mesh generation settings
Generate Clusters
Delete Clusters

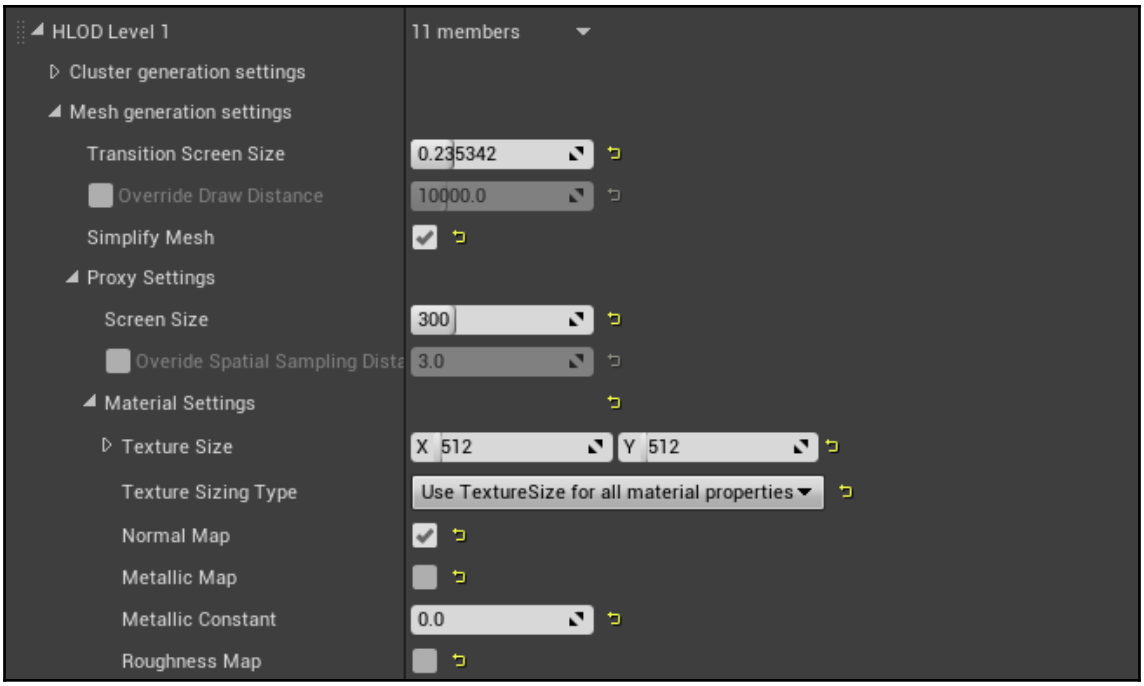

Hierarchical LOD 0
Generate Proxy Meshes
Rebuild All
Save All
LOD Auto
Scene Actor Nam
Original Tr
Reduced T
% Re
Level
LODLevel - 0
LODActor_12 4920 0 0.0% 08_05_HLOI
LODActor_13 12364 0 0.0% 08_05_HLOI
LODActor_14 1684 0 0.0% 08_05_HLOI
LODActor_15 1240 0 0.0% 08_05_HLOI
LODActor_16 1064 0 0.0% 08_05_HLOI
LODActor_17 666 0 0.0% 08_05_HLOI
LODActor_18 1240 0 0.0% 08_05_HLOI
LODActor_19 1368 0 0.0% 08_05_HLOI
LODActor_20 140 0 0.0% 08_05_HLOI
LODLevel - 1
LODActor_21 16240 0 0.0% 08_05_HLOI
LODActor_22 9092 0 0.0% 08_05_HLOI
LODActor_23 2707 0 0.0% 08_05_HLOI
Generate Clusters
Delete Clusters
Override Base Material
None
None
Hierarchical LODSetup
2 Array elements
HLOD Level 0
11 members
Cluster generation settings
Allow Specific Exclusion
Desired Bound Radius
250.0
Desired Filling Percentag
50.0
Min Number Of Actors to
2
Only Generate Clusters fo
Mesh generation settings
HLOD Level 1
11 members
Cluster generation settings
Allow Specific Exclusion
Desired Bound Radius
625.0
Desired Filling Percentag
37.5
Min Number Of Actors to
2
Only Generate Clusters fo
Reuse Previous Level Clu
Mesh generation settings
Actors represented in HLOD have changed, generate proxy meshes to update.

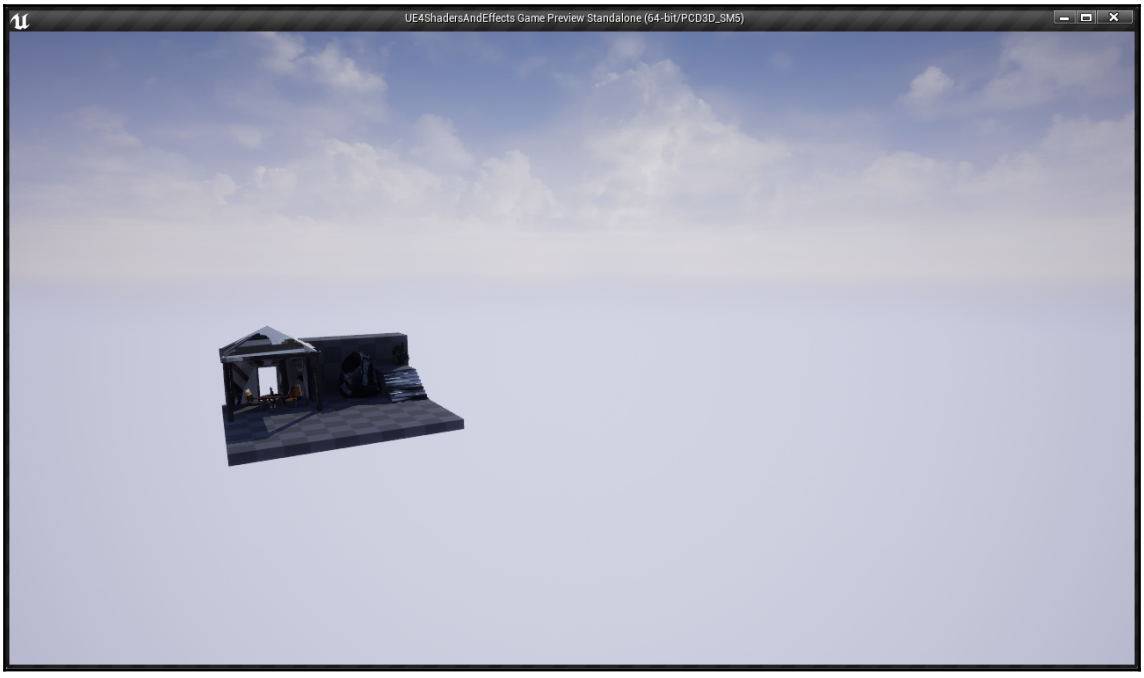

08_05_HLOD_Start*
UE4ShadersAndEffects
File Edit Window Help
Save Current
Source Control
Content
Marketplace
Settings
Blueprints
Cinematics
VR Mode
Build
Play
Launch
Modes
Search Classes
Recently Placed
Basic
Lights
Cinematic
Visual Effects
Geometry
Volumes
All Classes
Perspective
Lit
Show
HLOD CLUSTERS NEED TO BE REBUILT (12 unbuilt objects)
'DisableAllScreenMessages' to suppress
Level: 08_05_HLOD_Start (Persistent)
World Outliner
Search...
Label
Type
08_05_HLOD_Start (Editor)
Audio
Collapse_Cue
Starter_Background_Cue
Starter_Music_Cue
ReflectionCaptureActors
SphereReflectionCapture4
SphereReflectionCapture5
StaticMeshes
Chair
Chair2
DoorFrame
Floor_2
GlassWindow
Pillar
Pillar2
Pillar3
57 actors
View Options
Details
World Settings
LODActor23
+ Add Component
Blueprint/Add Script
Search Components
Search Details
Transform
Mobility
Static Mesh
Lighting
Lightmass Settings
Cast Shadow
Rendering
Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Maps
Filters
Search Maps
07_02_Material Display
07_02_Material Display_BuiltData
07_03_Changing BetweenSeasons
07_03_Changing BetweenSeasons
07_04_Blending Landscape Material
07_04_Blending Landscape Material_Built
08_04_Material Merge_End
08_04_Material Merge_End_Built Data
08_04_Material Merge_Start
Map Build Data Registry
12 items
View Options

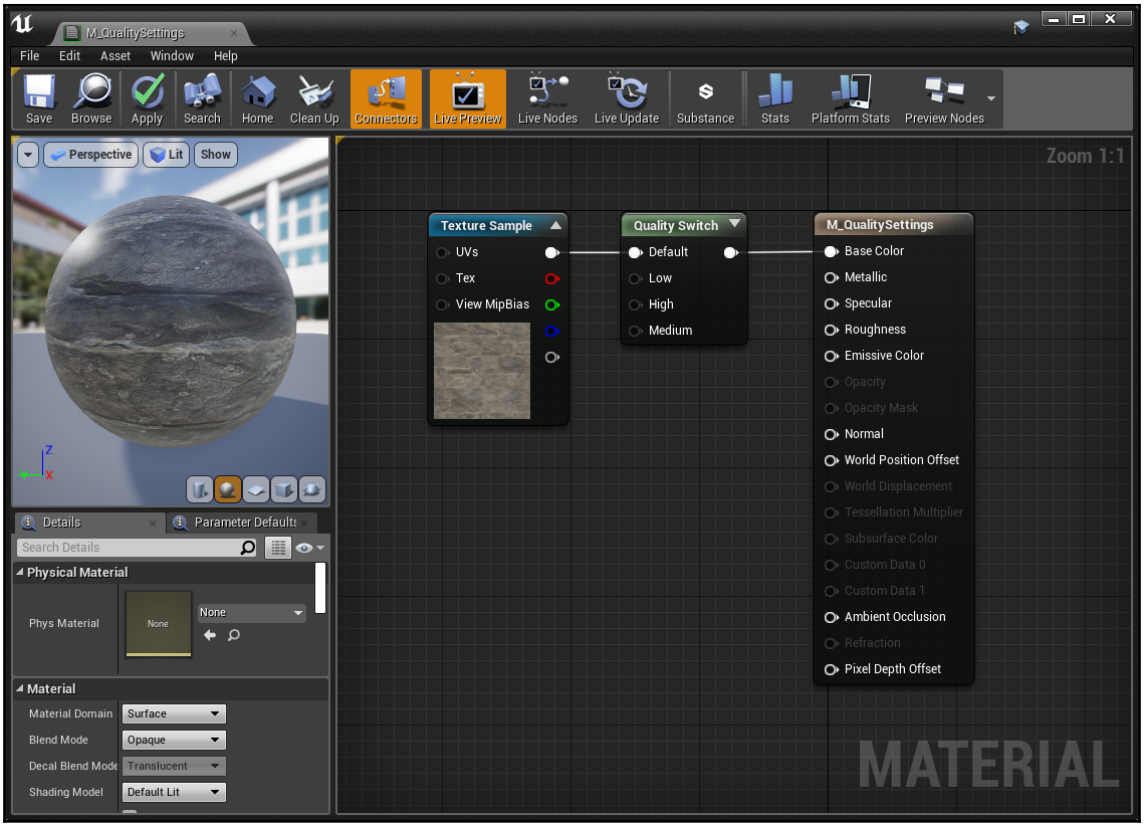

Hierarchical LOD 0
Generate Proxy Meshes
Rebuild All
Save All
LOD Auto
Scene Actor Name
Original Triangle Count
Reduced Triangle Coun
% Retained
Level
LODLevel - 0
LODActor_12 4920 4920 100.0% 08_05_HLOD_End
LODActor_13 12364 12364 100.0% 08_05_HLOD_End
LODActor_14 1684 1684 100.0% 08_05_HLOD_End
LODActor_15 1240 1240 100.0% 08_05_HLOD_End
LODActor_16 1064 1064 100.0% 08_05_HLOD_End
LODActor_17 666 666 100.0% 08_05_HLOD_End
LODActor_18 1240 1240 100.0% 08_05_HLOD_End
LODActor_19 1368 1368 100.0% 08_05_HLOD_End
LODActor_20 140 140 100.0% 08_05_HLOD_End
LODLevel - 1
LODActor_21 16240 16240 100.0% 08_05_HLOD_End
LODActor_22 9092 9092 100.0% 08_05_HLOD_End
LODActor_23 2707 2707 100.0% 08_05_HLOD_End
Generate Clusters
Delete Clusters
LODSystem
HLODSe
Override
None
Hierarch 2 Array
HLOD 11 members
HLOD 11 members

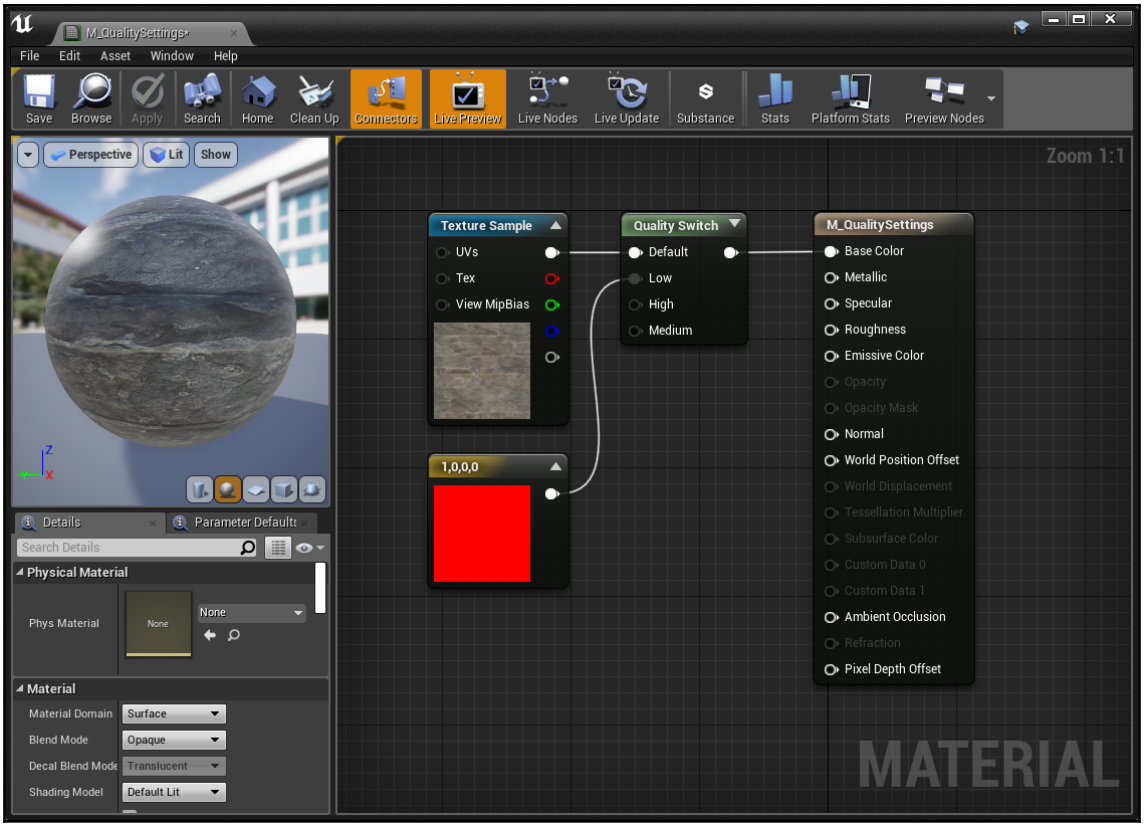

Save Content
Select content to save.
File
Type
/Game/UE4ShadersAndEffects/Maps/08_05_HLOD_End
(Level)
/Game/UE4ShadersAndEffects/Maps/HLOD/08_05_HLOD_End_0_HLOD
(Multiple Assets)
/Game/UE4ShadersAndEffects/Maps/HLOD/08_05_HLOD_End_1_HLOD
(Multiple Assets)
Save Selected
Don't Save
Cancel

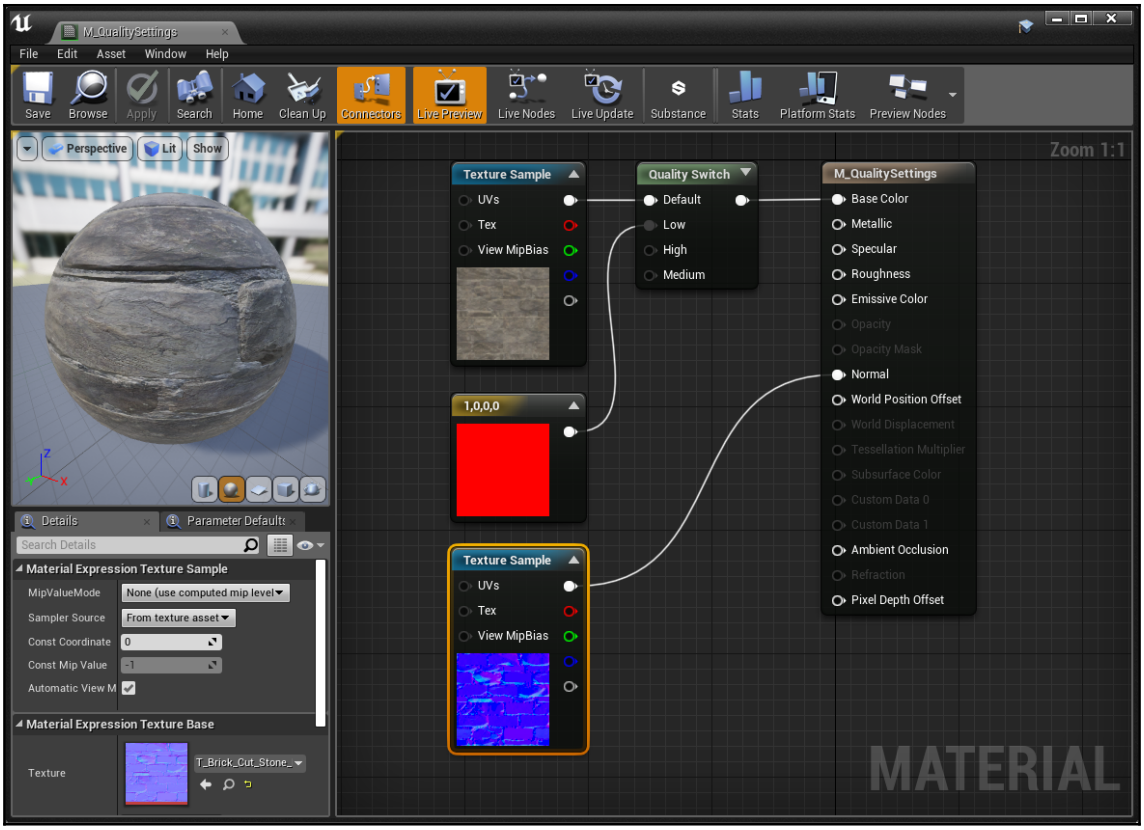

Content Browser
Output Log
Add New
Import
Save All
Content
UE4ShadersAndEffects
Maps
HLOD
Filters
Search HLOD
HLOD Proxy
HLOD Proxy
HLOD Proxy
08_05_HLOD_End_1_Chair
08_05_HLOD_End_1_HLOD
08_05_HLOD_End_1_Pillar24
08_05_HLOD_End_1_SM_Bush_19
08_05_HLOD_Start_0_Chair
08_05_HLOD_Start_0_HLOD
08_05_HLOD_Start_0_Pillar15
08_05_HLOD_Start_0_Pillar23
08_05_HLOD_Start_0_Pillar24
08_05_HLOD_Start_0_Pillar3
08_05_HLOD_Start_0_Pillar
08_05_HLOD_Start_0_SM_
08_05_HLOD_Start_0_SM_
08_05_HLOD_Start_0_Wall_
08_05_HLOD_Start_1_Chair
08_05_HLOD_Start_1_HLOD
08_05_HLOD_Start_1_Pillar24
08_05_HLOD_Start_1_SM_Bush
M_08_05_HLOD_End_0_Chair_
M_08_05_HLOD_End_0_Chair_
100 items (1 selected)
View Options

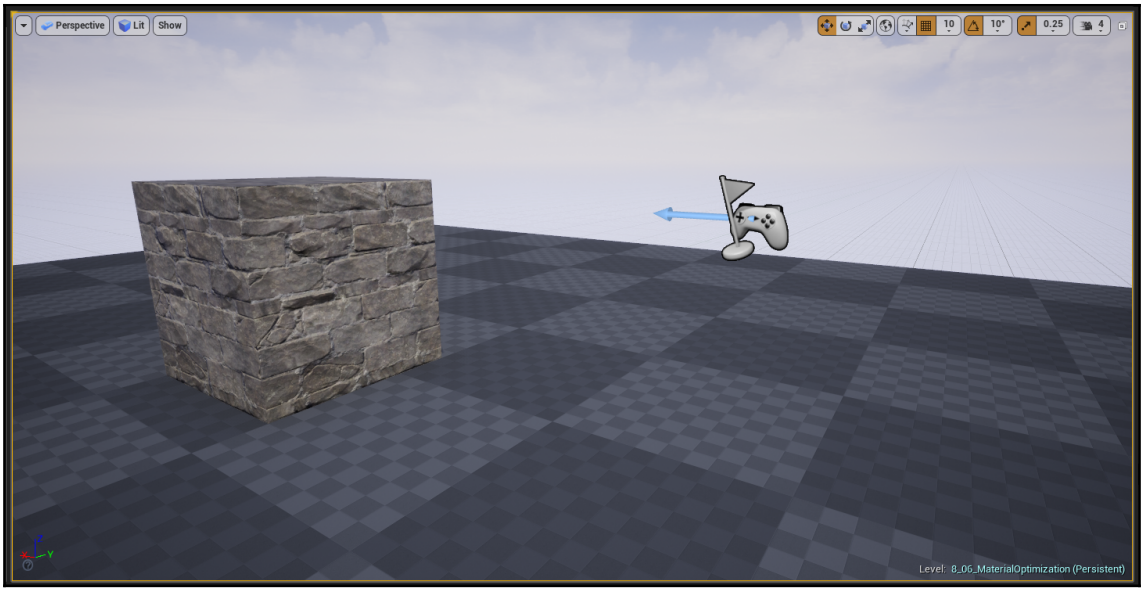

HLOD Level 1
11 members
Cluster generation settings
Mesh generation settings
Transition Screen Size
0.235342
Override Draw Distance
10000.0
Simplify Mesh
Proxy Settings
Screen Size
300
Overide Spatial Sampling Dista
3.0
Material Settings
Texture Size
X 512
Y 512
Texture Sizing Type
Use TextureSize for all material properties
Normal Map
Metallic Map
Metallic Constant
0.0
Roughness Map

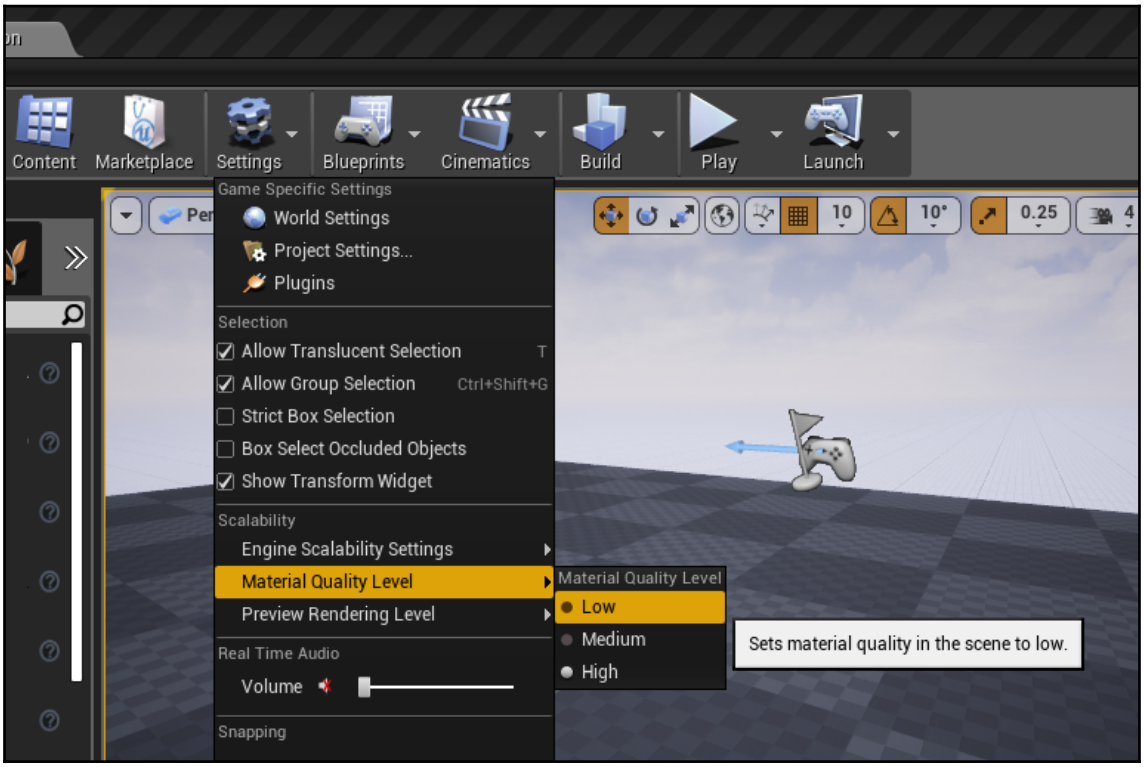

UE4ShadersAndEffects Game Preview Standalone (64-bit/PCD3D_SM5)

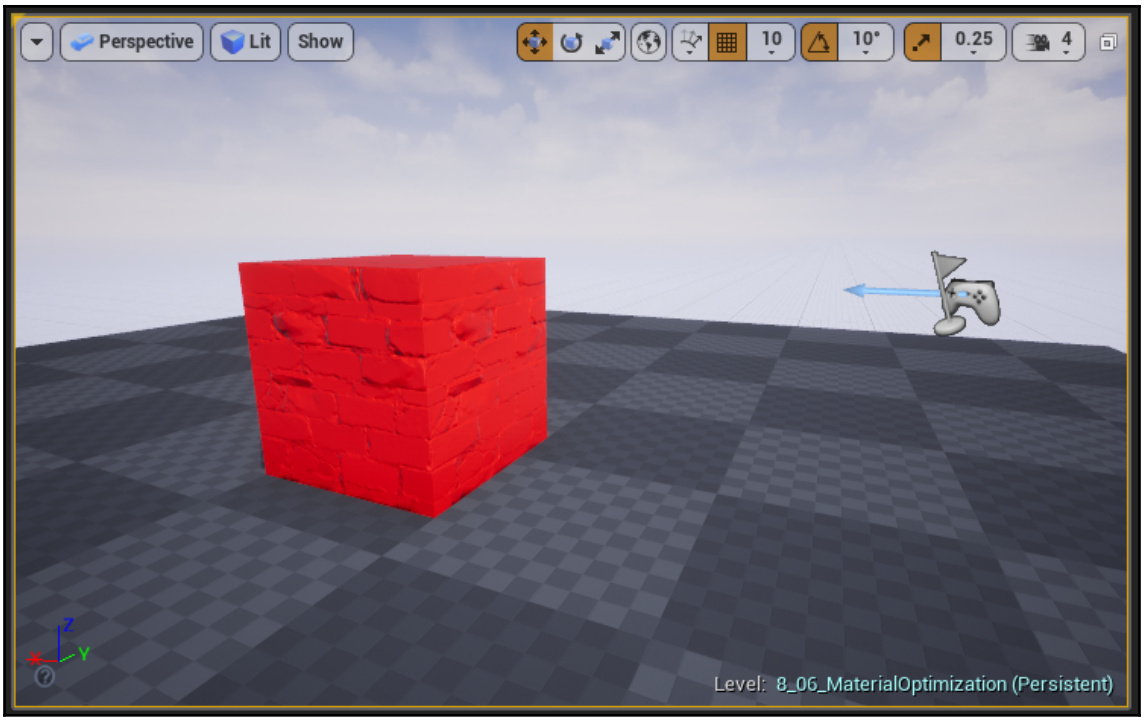

M_QualitySettings
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
Quality Switch
Default
Low
High
Medium
M_QualitySettings
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit
MATERIAL


M_QualitySettings
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
1,0,0,0
Quality Switch
Default
Low
High
Medium
M_QualitySettings
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
MATERIAL
Details
Parameter Defaults
Search Details
Physical Material
Phys Material
None
None
Material
Material Domain
Surface
Blend Mode
Opaque
Decal Blend Mode
Translucent
Shading Model
Default Lit

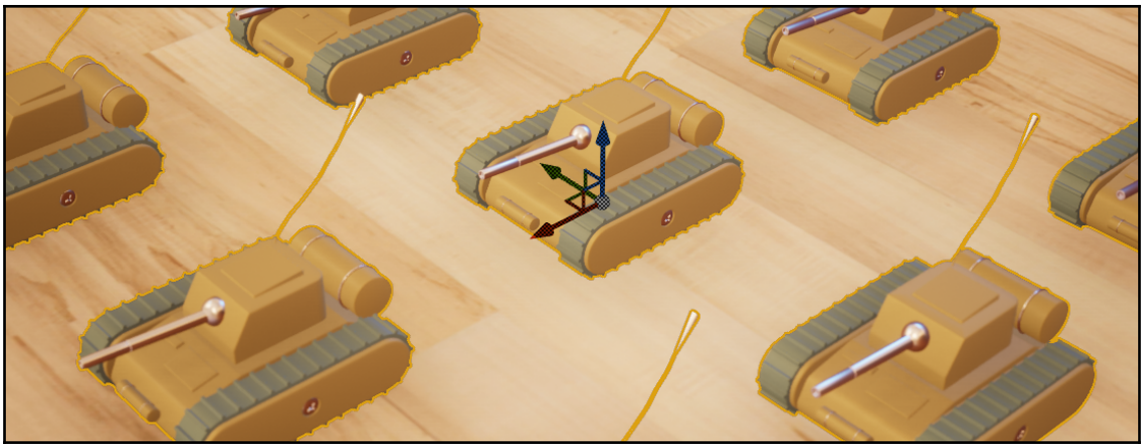

M_QualitySettings
File
Edit
Asset
Window
Help
Save
Browse
Apply
Search
Home
Clean Up
Connectors
Live Preview
Live Nodes
Live Update
Substance
Stats
Platform Stats
Preview Nodes
Perspective
Lit
Show
Zoom 1:1
Texture Sample
UVs
Tex
View MipBias
Quality Switch
Default
Low
High
Medium
M_QualitySettings
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0
Custom Data 1
Ambient Occlusion
Refraction
Pixel Depth Offset
1,0,0,0
Texture Sample
UVs
Tex
View MipBias
Details
Parameter Defaults
Search Details
Material Expression Texture Sample
MipValueMode
None (use computed mip level
Sampler Source
From texture asset
Const Coordinate
0
Const Mip Value
-1
Automatic View M
Material Expression Texture Base
Texture
T_Brick_Cut_Stone_
MATERIAL

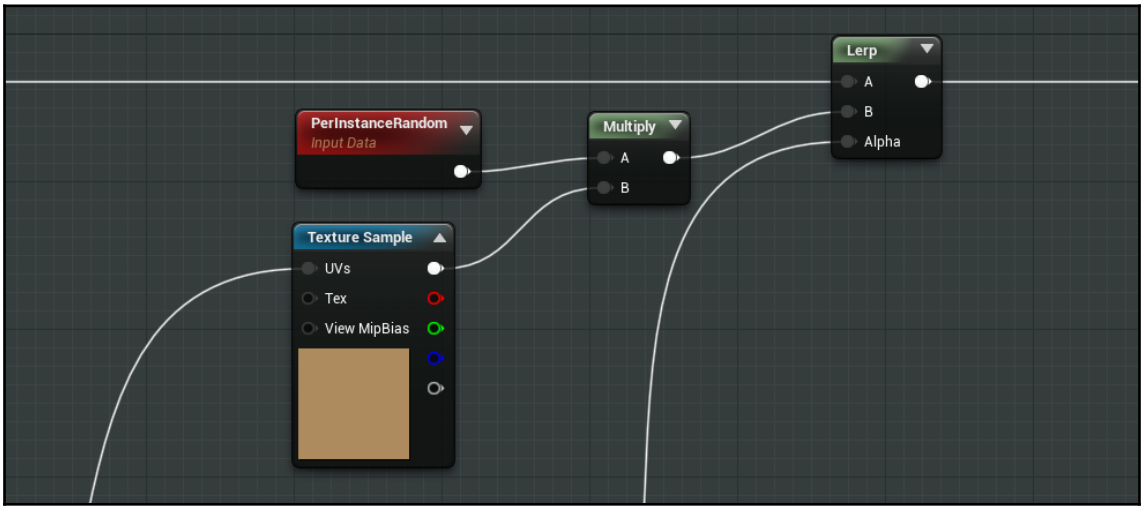

Perspective
Lit
Show
Level: 8_06_MaterialOptimization (Persistent)

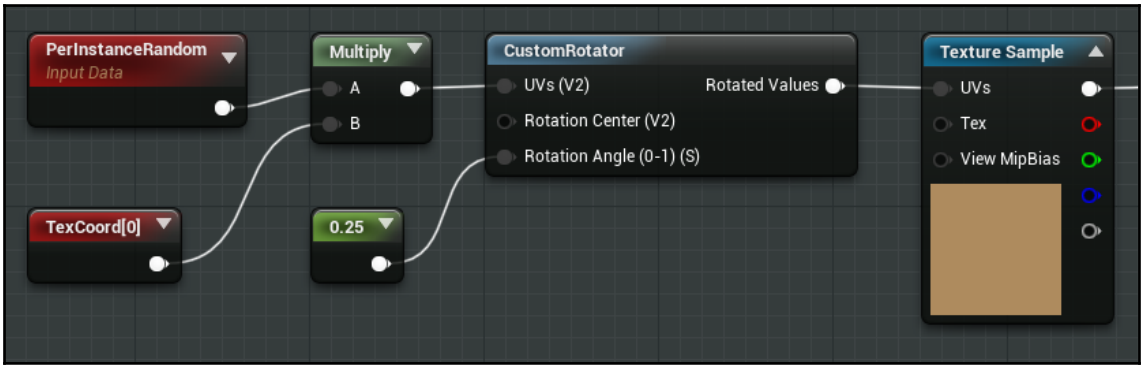

Content
Marketplace
Settings
Blueprints
Cinematics
Build
Play
Launch
Game Specific Settings
World Settings
Project Settings...
Plugins
Selection
Allow Translucent Selection T
Allow Group Selection Ctrl+Shift+G
Strict Box Selection
Box Select Occluded Objects
Show Transform Widget
Scalability
Engine Scalability Settings
Material Quality Level
Preview Rendering Level
Real Time Audio
Volume
Snapping
Material Quality Level
Low
Medium
High
Sets material quality in the scene to low.

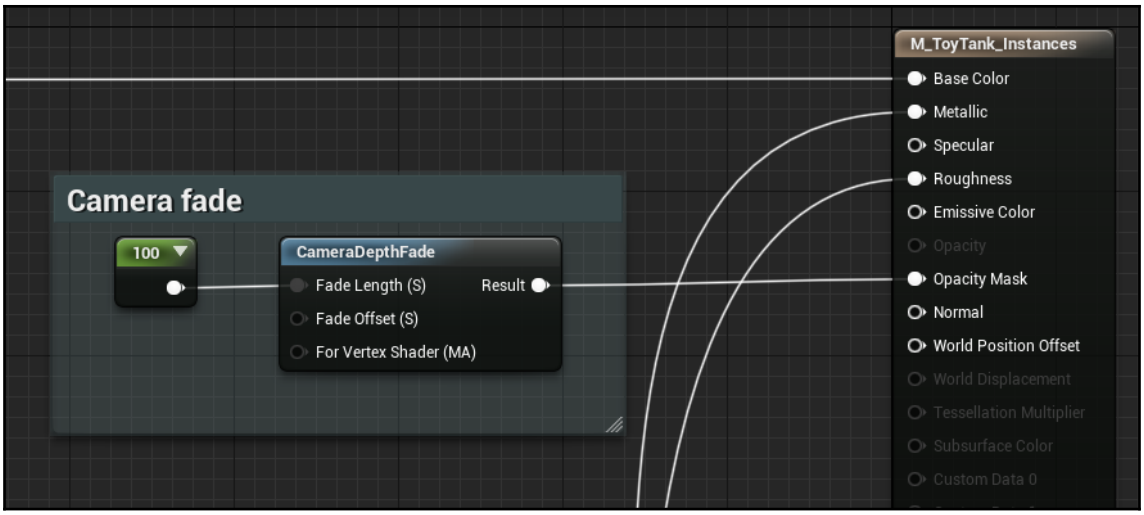

Perspective
Lit
Show
10
10°
0.25
4
Level: 8_06_MaterialOptimization (Persistent)

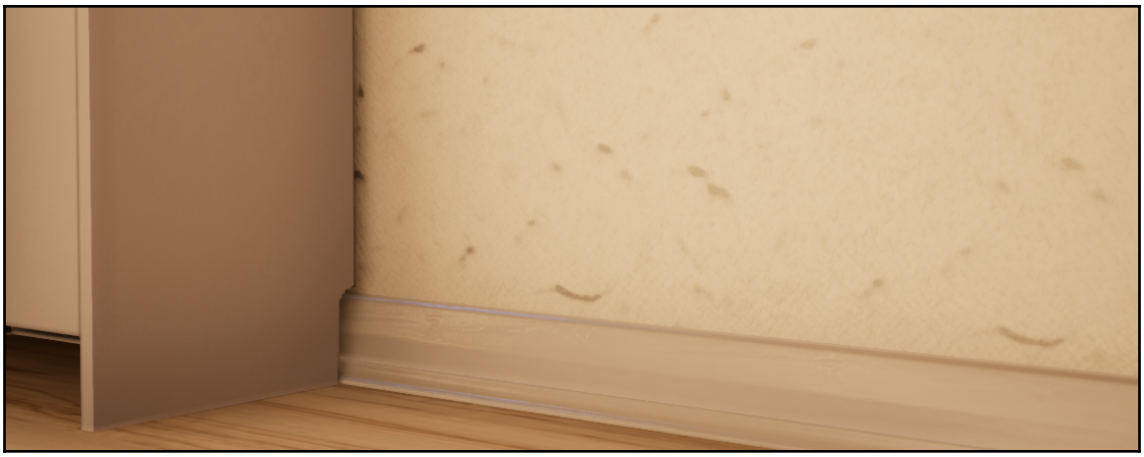
Chapter 9: Some Extra Useful Nodes



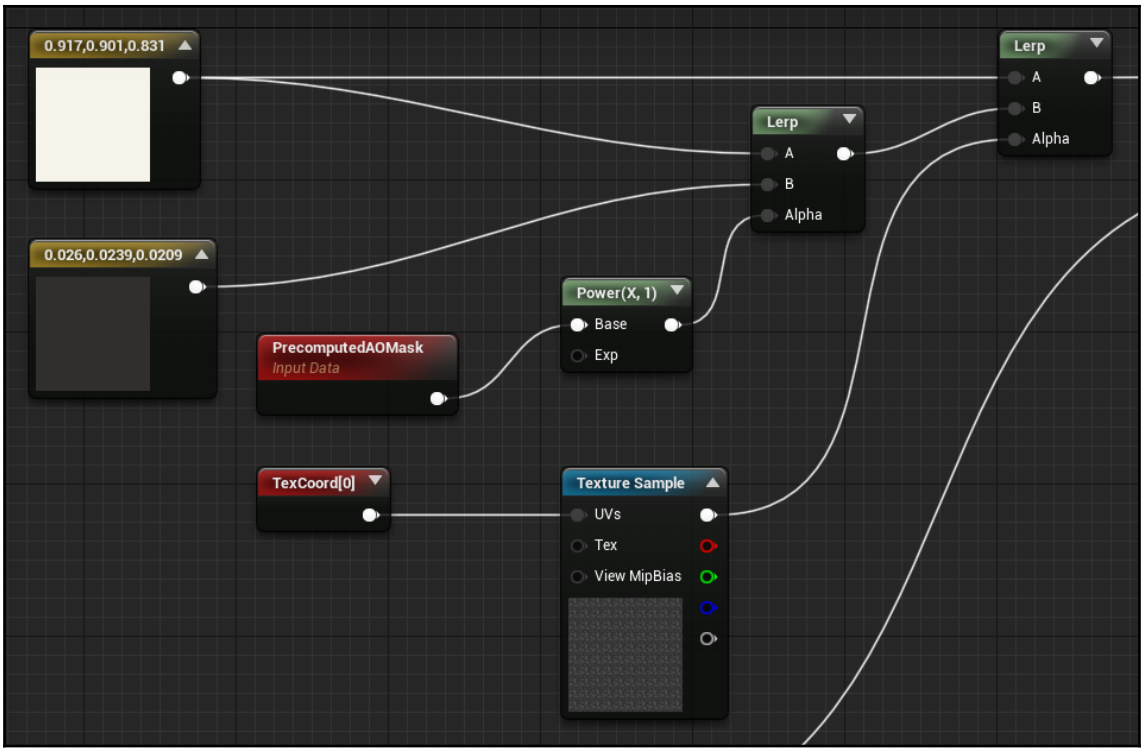

Lerp
A
B
Alpha
PerInstanceRandom
Input Data
Multiply
A
B
Texture Sample
UVs
Tex
View MipBias

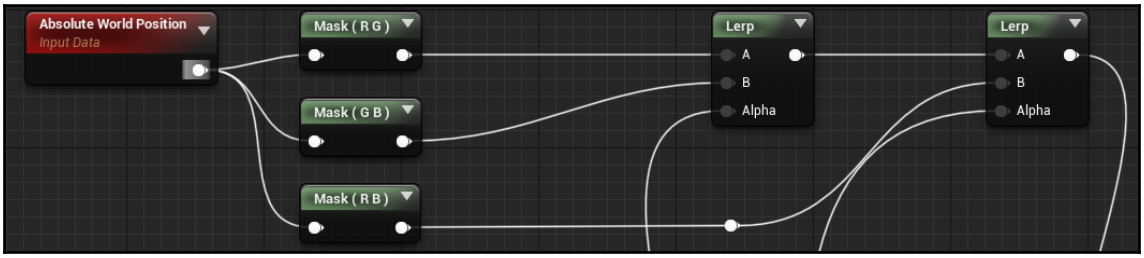

PerInstanceRandom
Input Data
Multiply
A
B
CustomRotator
UVs (V2)
Rotated Values
Rotation Center (V2)
Rotation Angle (0-1) (S)
Texture Sample
UVs
Tex
View MipBias
TexCoord[0]
0.25

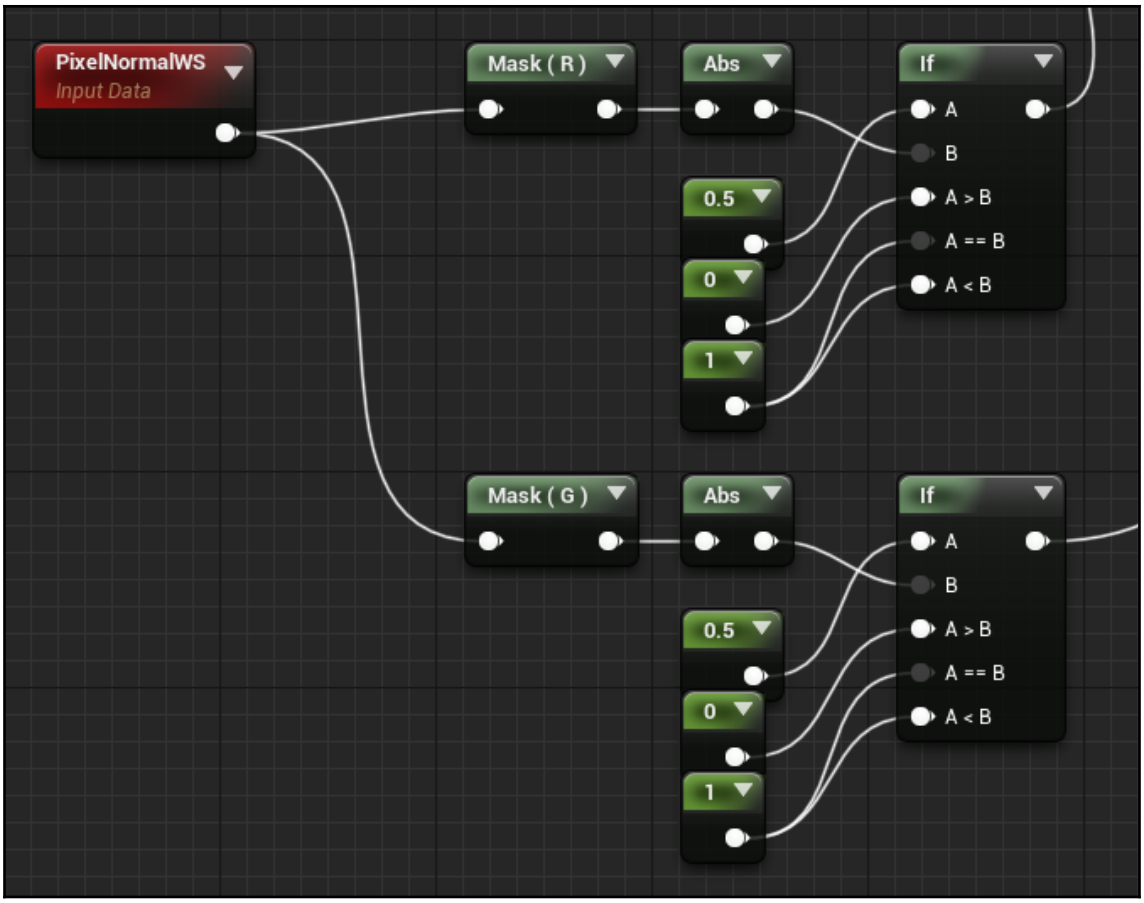

Camera fade
100
CameraDepthFade
Fade Length (S)
Result
Fade Offset (S)
For Vertex Shader (MA)
M_ToyTank_Instances
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
World Position Offset
World Displacement
Tessellation Multiplier
Subsurface Color
Custom Data 0

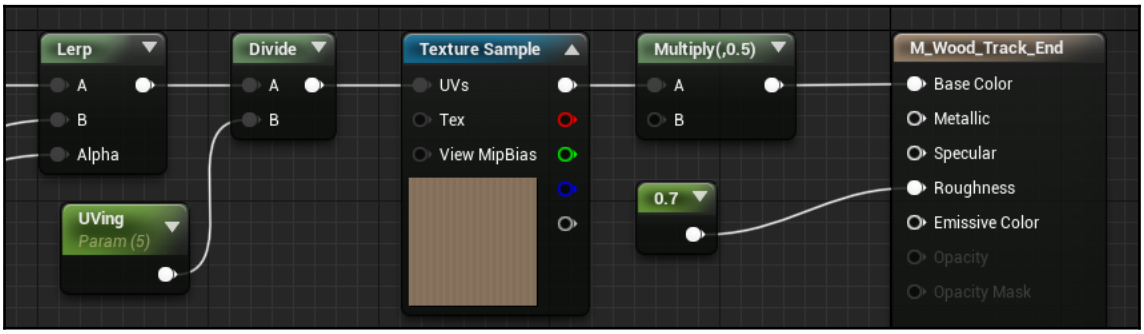


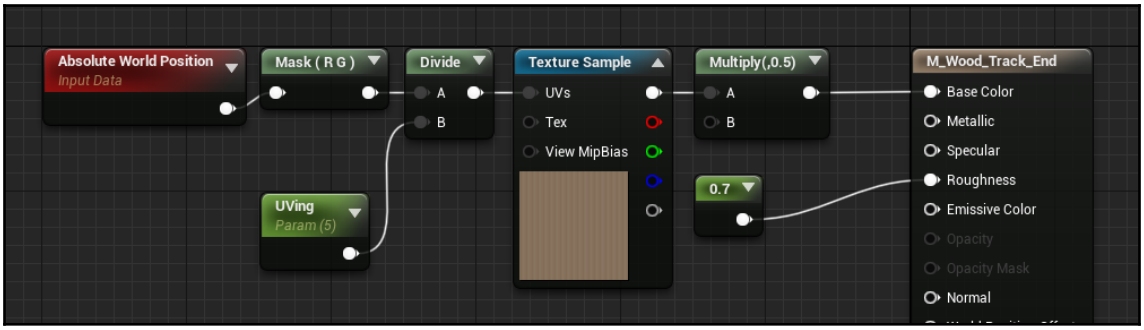
PrecomputedAOMask
Input Data
Power(X, 1)
Base
Exp

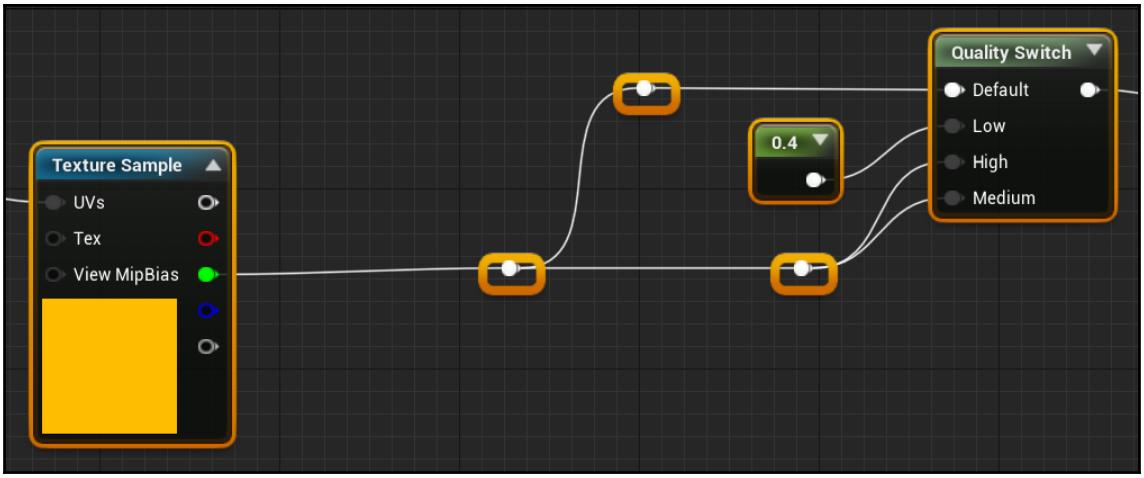

0.917,0.901,0.831
0.026,0.0239,0.0209
PrecomputedAOMask
Input Data
TexCoord[0]
Power(X, 1)
Base
Exp
Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha
Lerp
A
B
Alpha

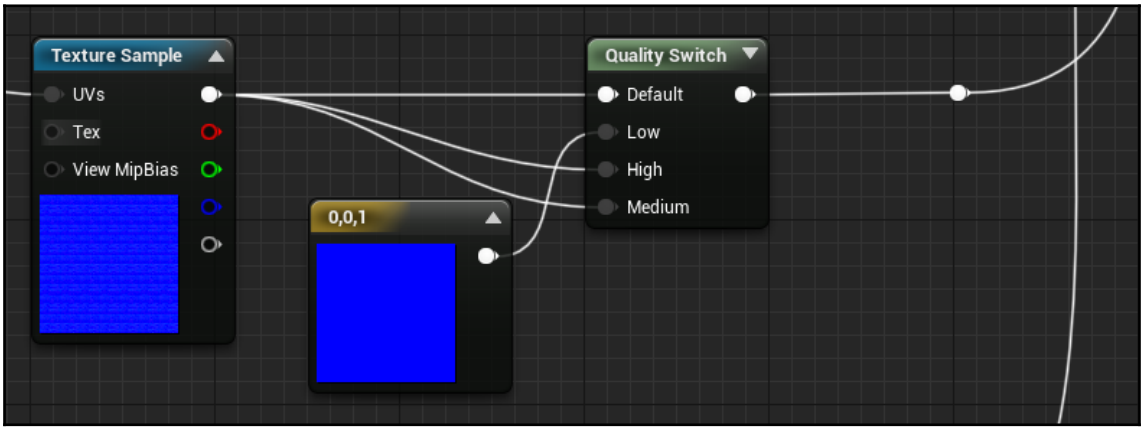

Absolute World Position
Input Data
Mask (R G)
Mask (G B)
Mask (R B)
Lerp
A
B
Alpha
Lerp
A
B
Alpha

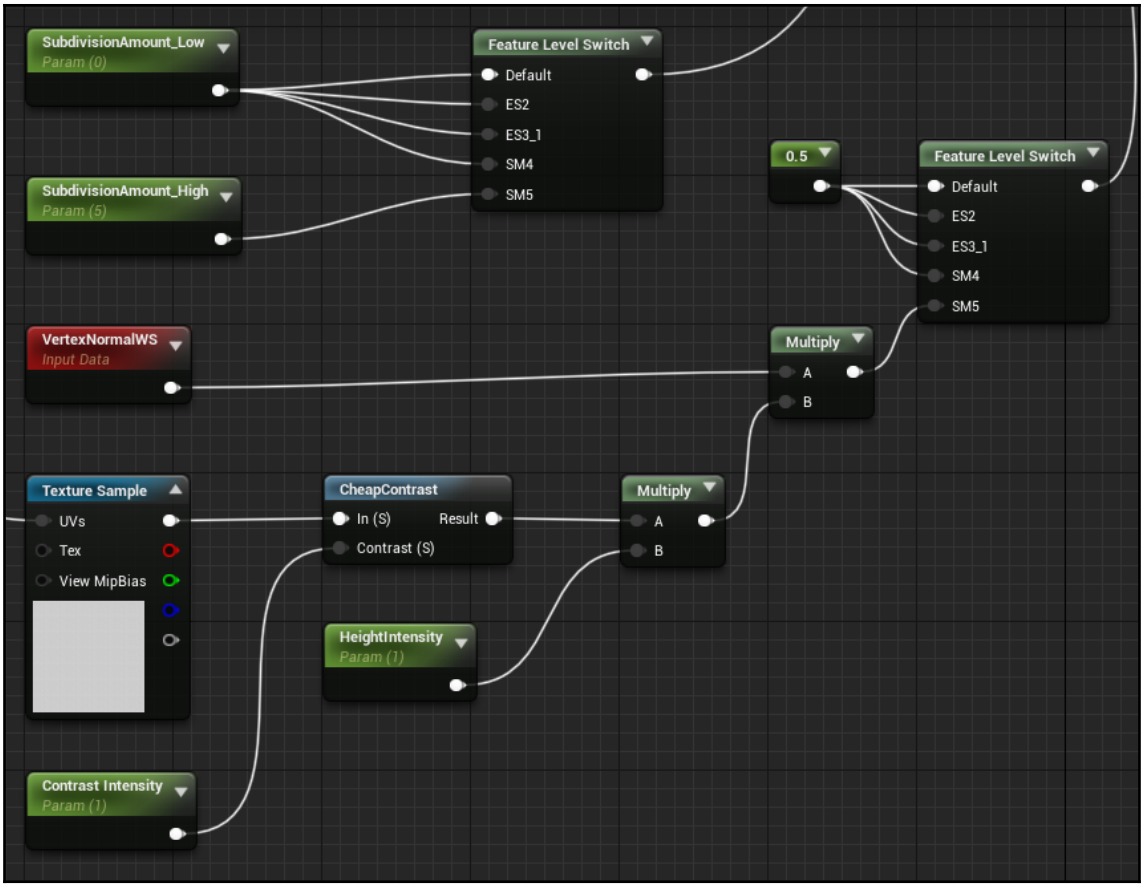

PixelNormalWS
Input Data
Mask (R)
Abs
If
A
B
A > B
A == B
A < B
0.5
0
1
Mask (G)
Abs
If
A
B
A > B
A == B
A < B
0.5
0
1

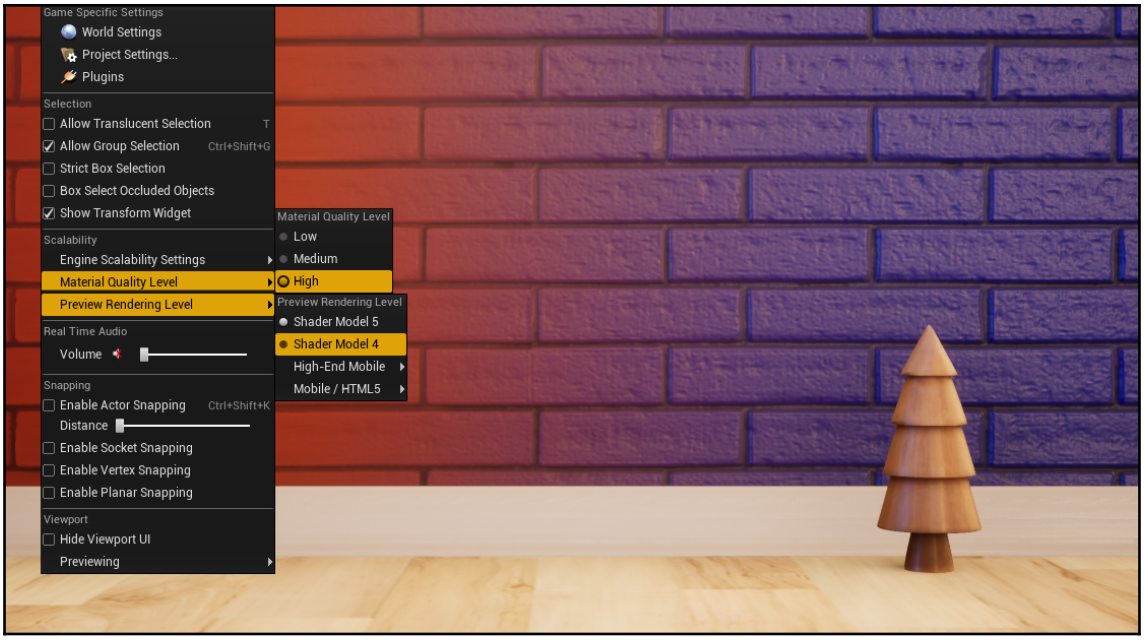

Lerp
A
B
Alpha
Divide
A
B
Texture Sample
UVs
Tex
View MipBias
Multiply(,0.5)
A
B
0.7
M_Wood_Track_End
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
UVing
Param (5)

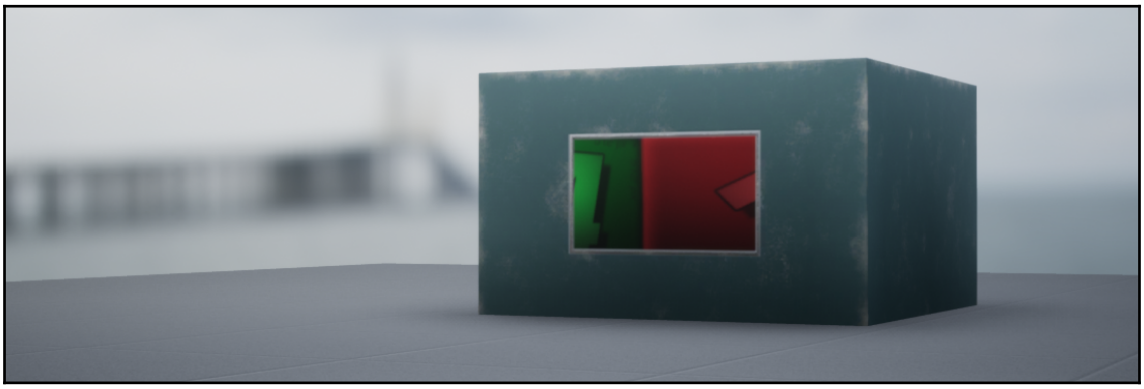

Absolute World Position
Input Data
Mask (R G)
Divide
A
B
Texture Sample
UVs
Tex
View MipBias
Multiply(,0.5)
A
B
M_Wood_Track_End
Base Color
Metallic
Specular
Roughness
Emissive Color
Opacity
Opacity Mask
Normal
UVing
Param (5)
0.7

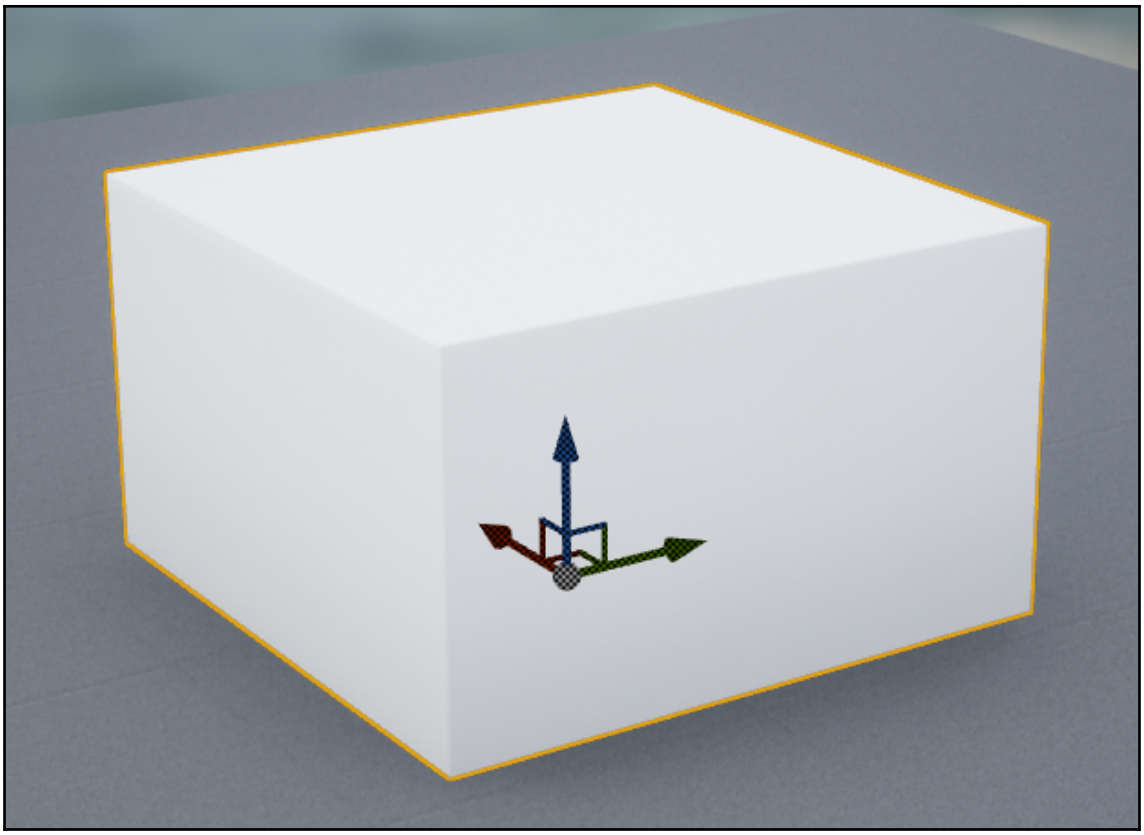

Texture Sample
UVs
Tex
View MipBias
0.4
Quality Switch
Default
Low
High
Medium

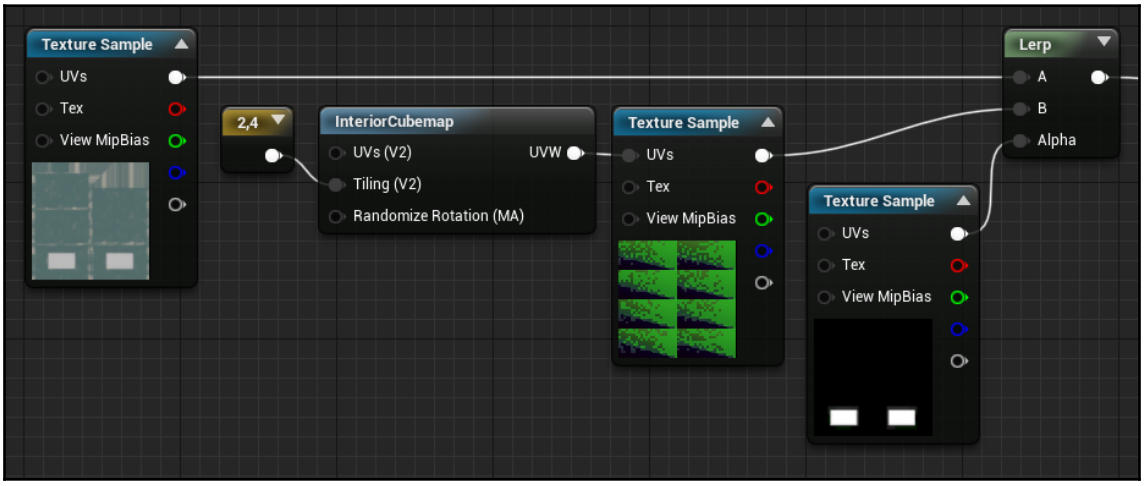

Texture Sample
UVs
Tex
View MipBias
0,0,1
Quality Switch
Default
Low
High
Medium

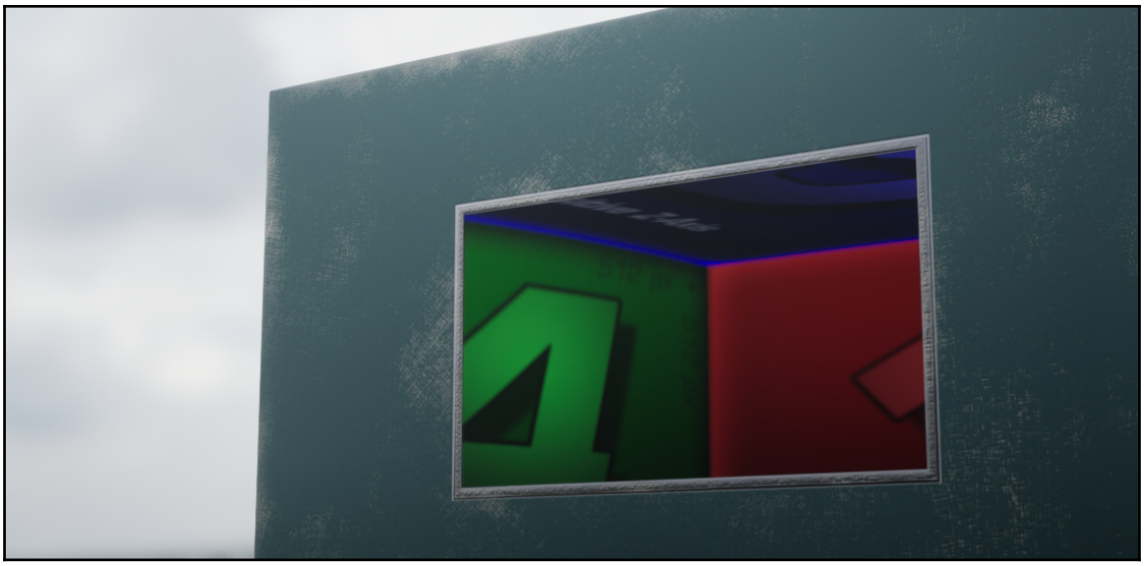

SubdivisionAmount_Low
Param (0)
SubdivisionAmount_High
Param (5)
Feature Level Switch
Default
ES2
ES3_1
SM4
SM5
0.5
Feature Level Switch
Default
ES2
ES3_1
SM4
SM5
VertexNormalWS
Input Data
Multiply
A
B
Texture Sample
UVs
Tex
View MipBias
CheapContrast
In (S)
Result
Contrast (S)
Multiply
A
B
HeightIntensity
Param (1)
Contrast Intensity
Param (1)

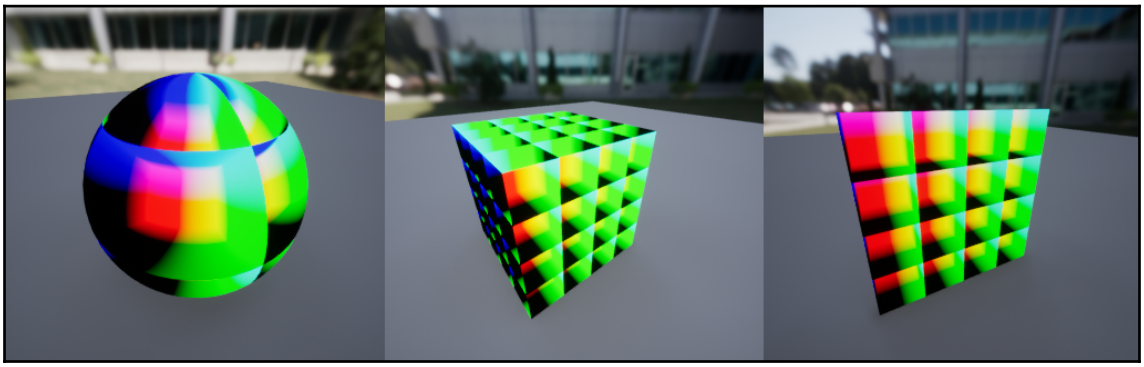

Game Specific Settings
World Settings
Project Settings...
Plugins
Selection
Allow Translucent Selection T
Allow Group Selection Ctrl+Shift+G
Strict Box Selection
Box Select Occluded Objects
Show Transform Widget
Scalability
Engine Scalability Settings
Material Quality Level
Preview Rendering Level
Real Time Audio
Volume
Snapping
Enable Actor Snapping Ctrl+Shift+K
Distance
Enable Socket Snapping
Enable Vertex Snapping
Enable Planar Snapping
Viewport
Hide Viewport UI
Previewing
Material Quality Level
Low
Medium
High
Preview Rendering Level
Shader Model 5
Shader Model 4
High-End Mobile
Mobile / HTML5



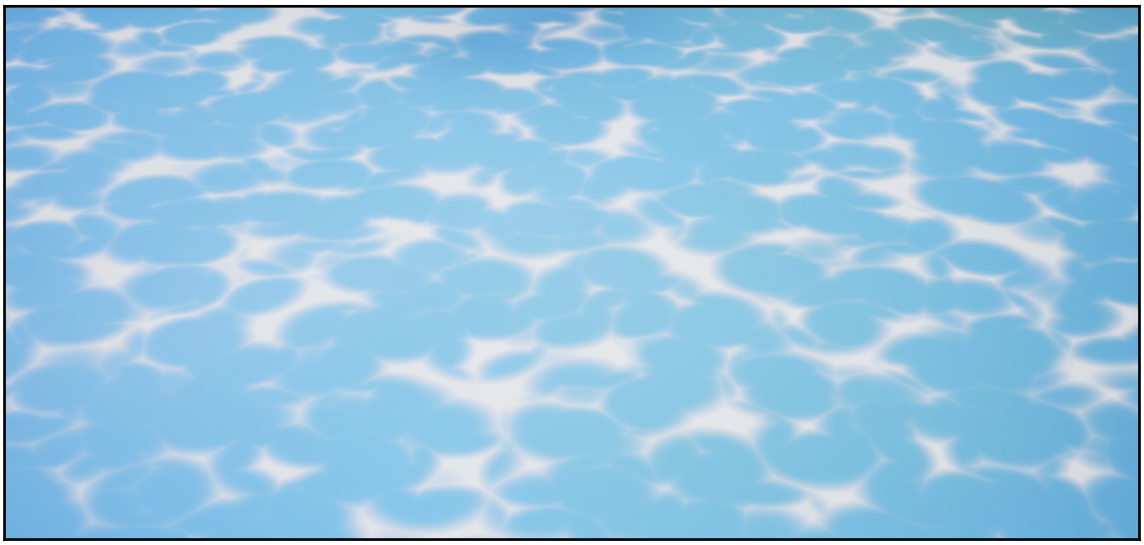


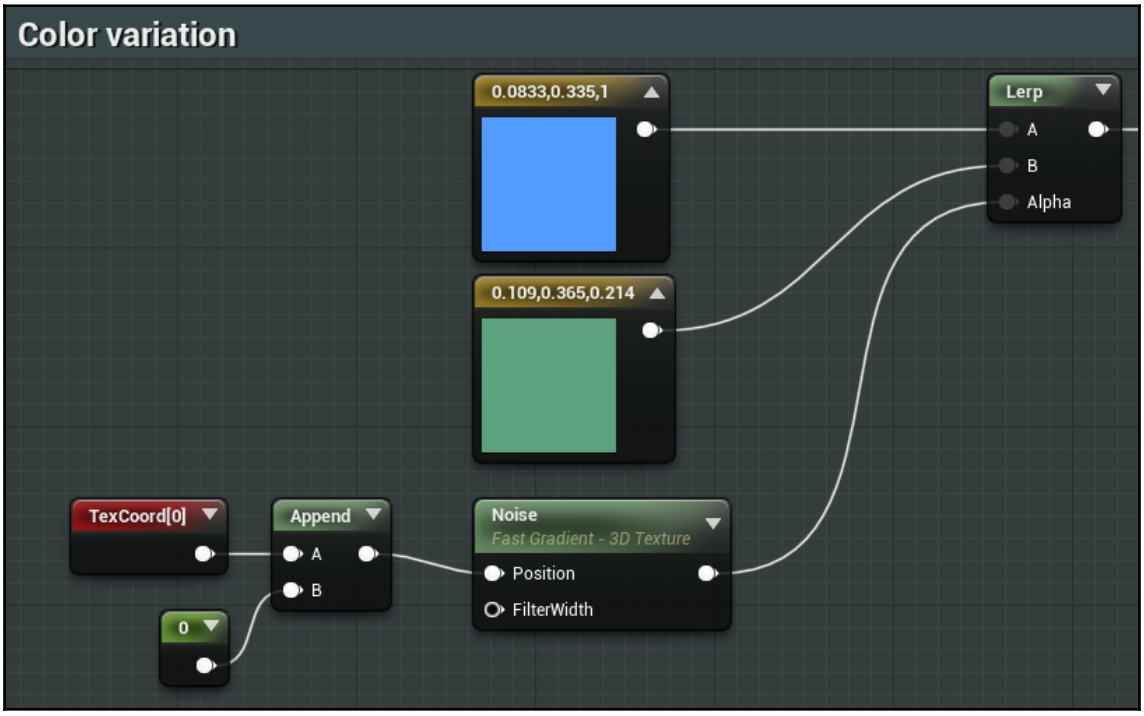

Texture Sample
UVs
Tex
View MipBias
2,4
InteriorCubemap
UVs (V2)
UVW
Tiling (V2)
Randomize Rotation (MA)
Texture Sample
UVs
Tex
View MipBias
Texture Sample
UVs
Tex
View MipBias
Lerp
A
B
Alpha

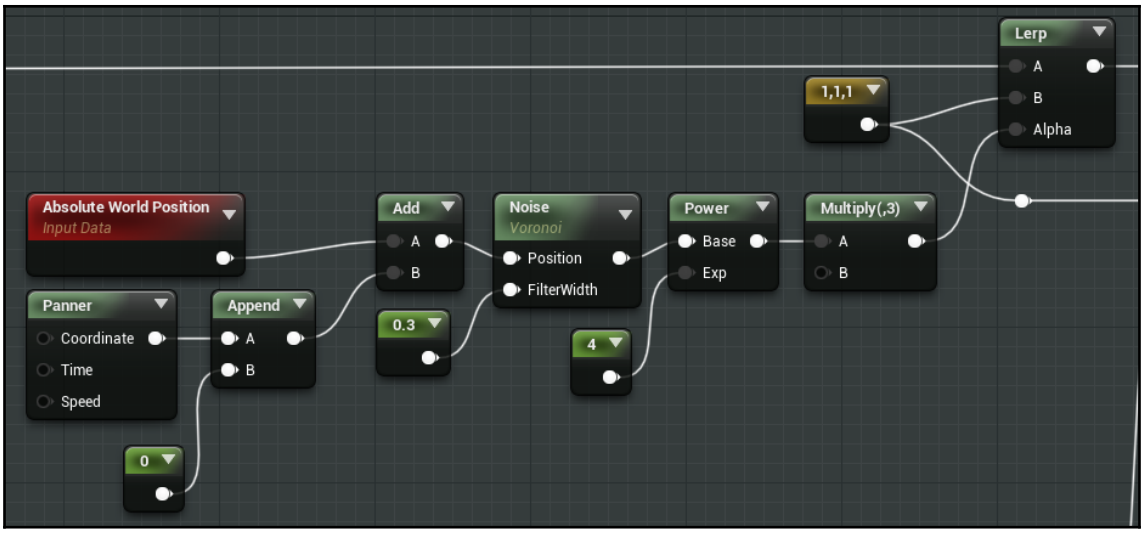


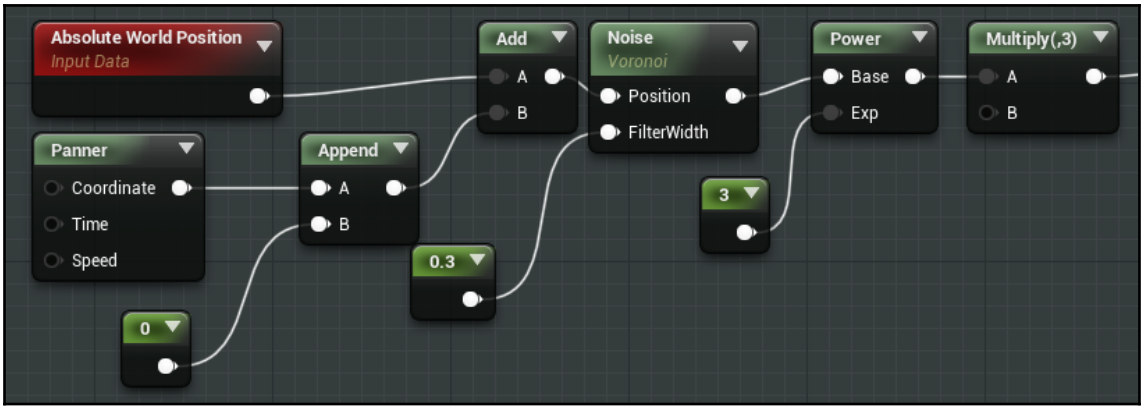


1
Positive X-Axis
2
Negative X-Axis
3
Positive Y-Axis
4
Negative Y-Axis
5
Positive Z-Axis
6
Negative Z-Axis




Color variation
0.0833,0.335,1
Lerp
A
B
Alpha
0.109,0.365,0.214
TexCoord[0]
Append
A
B
0
Noise
Fast Gradient - 3D Texture
Position
FilterWidth


Lerp
A
B
Alpha
1,1,1
Absolute World Position
Input Data
Add
A
B
Noise
Voronoi
Position
FilterWidth
Power
Base
Exp
Multiply(,3)
A
B
Panner
Coordinate
Time
Speed
Append
A
B
0.3
4
0


Absolute World Position
Input Data
Add
A
B
Noise
Voronoi
Position
FilterWidth
Power
Base
Exp
Multiply(,3)
A
B
Panner
Coordinate
Time
Speed
Append
A
B
3
0.3
0

Graphics Bundle Ends Here

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