

Noise Generators

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Chapter 1

Namespace Index

1.1 Package List

Here are the packages with brief descriptions (if available):

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Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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A generator object used to create a worley noise texture	30
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A MonoBehaviour component wrapping a WorleyNoiseGenerator object	33

Chapter 4

Namespace Documentation

4.1 SadSapphicGames Namespace Reference

4.2 SadSapphicGames.NoiseGenerators Namespace Reference

Classes

- class [AbstractLatticeNoiseGenerator](#)
Base abstract class used for noise generators that specifically use lattice based algorithms
- class [AbstractNoiseGenerator](#)
Base abstract class used for noise generators
- class [AbstractNoiseGeneratorComponent](#)
The abstract base class of all MonoBehaviour components wrapping an [AbstractNoiseGenerator](#)
- class [FractalNoiseGenerator](#)
A generator object for adding detail to an existing noise texture (or the texture generated by a [AbstractNoiseGenerator](#) instance) using fractal brownian motion
- class [FractalNoiseGeneratorComponent](#)
A MonoBehaviour component wrapping a [FractalNoiseGenerator](#) object
- class **HelperMethods**
- class [NoiseTextureDisplay](#)
A MonoBehaviour for displaying the results of a [AbstractNoiseGeneratorComponent](#) in the scene
- class [PerlinNoiseGenerator](#)
A generator object used to create perlin noise textures
- class [PerlinNoiseGeneratorComponent](#)
A MonoBehaviour component wrapping a [PerlinNoiseGenerator](#) object
- class [RandomNoiseGenerator](#)
A generator object used to create a purely random noise texture
- class [RandomNoiseGeneratorComponent](#)
A MonoBehaviour component wrapping a [RandomNoiseGenerator](#) object
- class [ValueNoiseGenerator](#)
A generator object used to create a value noise texture
- class [ValueNoiseGeneratorComponent](#)
A MonoBehaviour component wrapping a [ValueNoiseGenerator](#) object
- class [WorleyNoiseGenerator](#)
A generator object used to create a worley noise texture
- class [WorleyNoiseGeneratorComponent](#)
A MonoBehaviour component wrapping a [WorleyNoiseGenerator](#) object

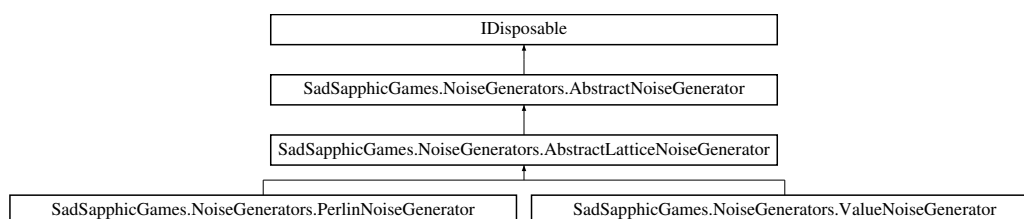
Chapter 5

Class Documentation

5.1 SadSapphicGames.NoiseGenerators.AbstractLatticeNoiseGenerator Class Reference

Base abstract class used for noise generators that specifically use lattice based algorithms

Inheritance diagram for SadSapphicGames.NoiseGenerators.AbstractLatticeNoiseGenerator:



Protected Member Functions

- **AbstractLatticeNoiseGenerator** (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _latticeCellSize, bool _allowPartialCells=false)
- override void [SetShaderParameters](#) ()
Sets the parameters of the compute shader
- override void [Dispose](#) (bool disposing)

Properties

- int **generateLatticeKernel** [get]
The kernel for the method in the compute shader to generate the lattice used for creating the noise texture
- int **wrapLatticeKernel** [get]
The kernel for the method in the compute shader to wrap the edges of the lattice around to each other to ensure seamless tiling
- Vector3Int **latticeThreadGroupCount** [get]
The number of thread groups to use when generating the lattice
- abstract int **LatticeBufferStride** [get]
The memory size of a single entry in the lattice buffer

- bool **AllowPartialCells** [get, set]
If the texture should be allowed to cut off the lattice cells along the edges, cannot be set to true if RequireSeamless↔Tiling is
- override bool **RequireSeamlessTiling** [get, set]
- Vector2Int **LatticeCellSize** [get, set]
The size in pixels of a single lattice cells, unless AllowPartialCells is set to true must be a factor of the texture size (the value will be adjust to the nearest factor automatically)

Additional Inherited Members

5.1.1 Detailed Description

Base abstract class used for noise generators that specifically use lattice based algorithms

5.1.2 Member Function Documentation

5.1.2.1 Dispose()

```
override void SadSapphicGames.NoiseGenerators.AbstractLatticeNoiseGenerator.Dispose (
    bool disposing ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

5.1.2.2 SetShaderParameters()

```
override void SadSapphicGames.NoiseGenerators.AbstractLatticeNoiseGenerator.SetShaderParameters
( ) [protected], [virtual]
```

Sets the parameters of the compute shader

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↔Runtime/NoiseGenerators/AbstractLatticeNoiseGenerator.cs

5.2 SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator Class Reference

Base abstract class used for noise generators

Inheritance diagram for SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator:



Public Member Functions

- virtual void **GenerateTexture** ()
Generates the noise texture
- void **Dispose** ()
Disposes the resources used to generate the texture, but not the texture itself. Remember to dispose of that through its Release() method when finished using it

Protected Member Functions

- **AbstractNoiseGenerator** (uint _texWidth, uint _texHeight, uint _seed)
- virtual void **SetShaderParameters** ()
Sets the parameters of the compute shader
- abstract void **InnerGenerateTexture** ()
The inner implementation of generated the noise texture
- virtual void **Dispose** (bool disposing)

Protected Attributes

- RenderTexture **noiseTexture**

Properties

- ComputeShader **NoiseGenShader** [get]
If the compute shader reference has never been set for this object loads it from the resource folder
- abstract string **ComputeShaderPath** [get]
The path in the resource folder to the compute shader
- virtual int **GenerateTextureKernel** [get]
The kernel of the method to generate the texture in the compute shader
- virtual Vector3Int **ThreadGroupSize** [get]
The number of threads per group in the compute shader
- Vector3Int **texThreadGroupCount** [get]
The number of thread groups used to generate the noise texture
- bool **RegenerateTextureOnParamChange** [get, set]
If [GenerateTexture\(\)](#) should be invoked every time a parameter is changed, defaults to false
- virtual bool **RequireSeamlessTiling** [get, set]
If the texture should be required to tile seamlessly, defaults to true
- uint **TexWidth** [get, set]
The pixel width of the texture
- uint **TexHeight** [get, set]
The pixel height of the texture
- uint **Seed** [get, set]
The seed for the pseudo-random number generator
- RenderTexture **NoiseTexture** [get]
The generated noise texture

Events

- Action **OnTextureGeneration**

5.2.1 Detailed Description

Base abstract class used for noise generators

5.2.2 Member Function Documentation

5.2.2.1 InnerGenerateTexture()

```
abstract void SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator.InnerGenerateTexture ( )
[protected], [pure virtual]
```

The inner implementation of generated the noise texture

Implemented in [SadSapphicGames.NoiseGenerators.FractalNoiseGenerator](#), [SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator](#), [SadSapphicGames.NoiseGenerators.RandomNoiseGenerator](#), [SadSapphicGames.NoiseGenerators.ValueNoiseGenerator](#), and [SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator](#).

5.2.2.2 SetShaderParameters()

```
virtual void SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator.SetShaderParameters ( )
[protected], [virtual]
```

Sets the parameters of the compute shader

Reimplemented in [SadSapphicGames.NoiseGenerators.AbstractLatticeNoiseGenerator](#), [SadSapphicGames.NoiseGenerators.FractalNoiseGenerator](#), and [SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator](#).

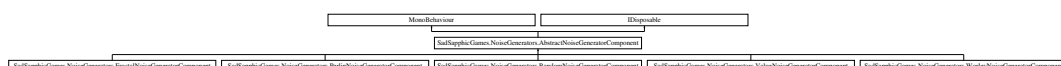
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↵
Runtime/NoiseGenerators/AbstractNoiseGenerator.cs

5.3 SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator↵ Component Class Reference

The abstract bass class of all MonoBehaviour components wrapping an [AbstractNoiseGenerator](#)

Inheritance diagram for SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent:



Public Member Functions

- void **GenerateTexture** ()
Generates the noise texture
- void **Dispose** ()
Disposes the NoiseGeneratorObject used to create the noise texture and the texture itself. Do not invoke this until done using the texture

Protected Member Functions

- abstract [AbstractNoiseGenerator](#) **CreateGeneratorObject** ()
Constructs the generator object and sets its parameters
- virtual void **UpdateGeneratorSettings** ()
- virtual void **Dispose** (bool disposing)

Protected Attributes

- uint **seed**
- uint **texWidth**
- uint **texHeight**

Properties

- [AbstractNoiseGenerator](#) **NoiseGeneratorObject** [get]
The object that generates the noise texture
- RenderTexture **NoiseTexture** [get]
The noise texture created by the generator
- uint **Seed** [get, set]
The seed that will be used in the pseudo-random number generation
- uint **TexWidth** [get, set]
The Width of the generated texture
- uint **TexHeight** [get, set]
The height of the generated texture

Events

- Action **OnTextureGeneration**
This event will be invoked when a new texture is generated

5.3.1 Detailed Description

The abstract bass class of all MonoBehaviour components wrapping an [AbstractNoiseGenerator](#)

5.3.2 Member Function Documentation

5.3.2.1 CreateGeneratorObject()

```
abstract AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent.↵
CreateGeneratorObject ( ) [protected], [pure virtual]
```

Constructs the generator object and sets its parameters

Implemented in [SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent](#), [SadSapphicGames.NoiseGenerators.PerlinNoiseGeneratorComponent](#), [SadSapphicGames.NoiseGenerators.RandomNoiseGeneratorComponent](#), [SadSapphicGames.NoiseGenerators.ValueNoiseGeneratorComponent](#) and [SadSapphicGames.NoiseGenerators.WorleyNoiseGeneratorComponent](#).

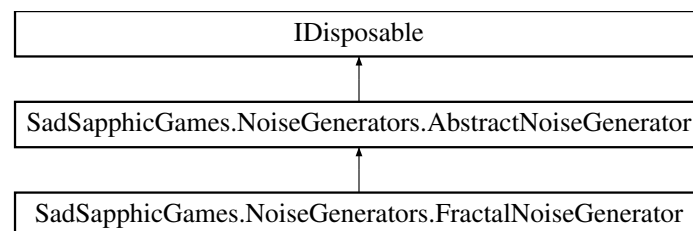
The documentation for this class was generated from the following file:

- [C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/Runtime/Components/AbstractNoiseGeneratorComponent.cs](#)

5.4 SadSapphicGames.NoiseGenerators.FractalNoiseGenerator Class Reference

A generator object for adding detail to an existing noise texture (or the texture generated by a [AbstractNoiseGenerator](#) instance) using fractal brownian motion

Inheritance diagram for SadSapphicGames.NoiseGenerators.FractalNoiseGenerator:



Public Member Functions

- [FractalNoiseGenerator](#) (uint _octaves, [AbstractNoiseGenerator](#) _baseNoiseGenerator, float _lacunarity=2, float _frequency=1, float _gain=.5f, float _amplitude=.5f)
Constructs a fractal noise generator using a separate noise generator object
- [FractalNoiseGenerator](#) (uint _octaves, RenderTexture _inputTexture, float _lacunarity=2, float _frequency=1, float _gain=.5f, float _amplitude=.5f)
Constructs a fractal noise texture that uses a pre-generated input texture

Static Public Member Functions

- static RenderTexture [GenerateTexture](#) (uint _octaves, RenderTexture _inputTexture, float _lacunarity=2, float _frequency=1, float _gain=.5f, float _amplitude=.5f)
Generates a fractal noise texture using the given input texture and parameters

Protected Member Functions

- override void [SetShaderParameters](#) ()
Sets the parameters of the compute shader
- override void [InnerGenerateTexture](#) ()
The inner implementation of generated the noise texture
- override void [Dispose](#) (bool disposing)

Properties

- override string **ComputeShaderPath** [get]
- int **normalizeTextureKernel** [get]
- override bool **RequireSeamlessTiling** [get, set]
- RenderTexture **InputTexture** [get, set]
- uint **Octaves** [get, set]
The number of times to layer detail from the input texture onto the final result
- float **Lacunarity** [get, set]
- float **Frequency** [get, set]
- float **Gain** [get, set]
- float **Amplitude** [get, set]
- bool **NormalizeAmplitude** [get, set]
If the affect of the initial amplitude should be normalized out of the final value

Additional Inherited Members

5.4.1 Detailed Description

A generator object for adding detail to an existing noise texture (or the texture generated by a [AbstractNoiseGenerator](#) instance) using fractal brownian motion

5.4.2 Constructor & Destructor Documentation

5.4.2.1 FractalNoiseGenerator() [1/2]

```
SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.FractalNoiseGenerator (
    uint _octaves,
    AbstractNoiseGenerator _baseNoiseGenerator,
    float _lacunarity = 2,
    float _frequency = 1,
    float _gain = .5f,
    float _amplitude = .5f )
```

Constructs a fractal noise generator using a separate noise generator object

Parameters

<code>_octaves</code>	The number of times detail will be added onto the final texture
<code>_baseNoiseGenerator</code>	The noise generator that creates the input texture
<code>_lacunarity</code>	The factor by which the frequency should increase with each octave
<code>_frequency</code>	The initial frequency in the first octave
<code>_gain</code>	The factor by which the amplitude should decrease each octave
<code>_amplitude</code>	The initial amplitude in the first octaves

5.4.2.2 FractalNoiseGenerator() [2/2]

```
SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.FractalNoiseGenerator (
    uint _octaves,
    RenderTexture _inputTexture,
    float _lacunarity = 2,
    float _frequency = 1,
    float _gain = .5f,
    float _amplitude = .5f )
```

Constructs a fractal noise texture that uses a pre-generated input texture

Parameters

<code>_octaves</code>	The number of times detail will be added onto the final texture
<code>_inputTexture</code>	The input texture used to layer detail onto the final result
<code>_lacunarity</code>	The factor by which the frequency should increase with each octave
<code>_frequency</code>	The initial frequency in the first octave
<code>_gain</code>	The factor by which the amplitude should decrease each octave
<code>_amplitude</code>	The initial amplitude in the first octaves

5.4.3 Member Function Documentation**5.4.3.1 Dispose()**

```
override void SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.Dispose (
    bool disposing ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

5.4.3.2 GenerateTexture()

```
static RenderTexture SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.GenerateTexture (
    uint _octaves,
    RenderTexture _inputTexture,
    float _lacunarity = 2,
    float _frequency = 1,
    float _gain = 0.5f,
    float _amplitude = 0.5f ) [static]
```

Generates a fractal noise texture using the given input texture and parameters

Parameters

<code>_octaves</code>	The number of times detail will be added onto the final texture
<code>_inputTexture</code>	The input texture used to layer detail onto the final result
<code>_lacunarity</code>	The factor by which the frequency should increase with each octave
<code>_frequency</code>	The initial frequency in the first octave
<code>_gain</code>	The factor by which the amplitude should decrease each octave
<code>_amplitude</code>	The initial amplitude in the first octaves

Returns

The generated noise texture

5.4.3.3 InnerGenerateTexture()

```
override void SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.InnerGenerateTexture ( )
[protected], [virtual]
```

The inner implementation of generated the noise texture

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

5.4.3.4 SetShaderParameters()

```
override void SadSapphicGames.NoiseGenerators.FractalNoiseGenerator.SetShaderParameters ( )
[protected], [virtual]
```

Sets the parameters of the compute shader

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

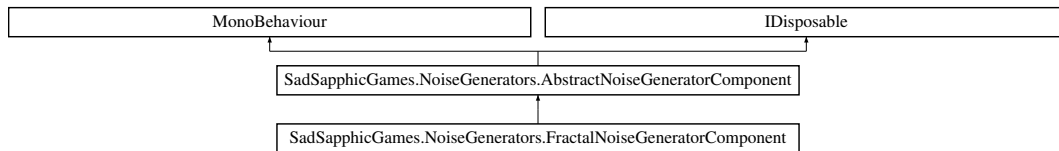
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/Runtime/NoiseGenerators/FractalNoiseGenerator.cs

5.5 SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent Class Reference [↔](#)

A MonoBehaviour component wrapping a [FractalNoiseGenerator](#) object

Inheritance diagram for SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent:



Protected Member Functions

- override [AbstractNoiseGenerator CreateGeneratorObject \(\)](#)
Constructs the generator object and sets its parameters
- override void [UpdateGeneratorSettings \(\)](#)
- override void [Dispose](#) (bool disposing)

Properties

- uint **Octaves** [get, set]
The number of times detail should be added onto the noise texture
- float **Lacunarity** [get, set]
The factor by which the frequency should increase with each octave
- float **Frequency** [get, set]
The initial frequency in the first octave
- float **Gain** [get, set]
The factor by which the amplitude should decrease each octave
- float **Amplitude** [get, set]
The initial amplitude in the first octaves, changing this has no affect is normalizeAmplitude is true
- bool **NormalizeAmplitude** [get, set]
If the affect of the initial amplitude should be normalized out of the final value

Additional Inherited Members

5.5.1 Detailed Description

A MonoBehaviour component wrapping a [FractalNoiseGenerator](#) object

5.5.2 Member Function Documentation

5.5.2.1 CreateGeneratorObject()

```
override AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent.CreateGeneratorObject ( ) [protected], [virtual]
```

Constructs the generator object and sets its parameters

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

5.5.2.2 Dispose()

```
override void SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent.Dispose ( bool disposing ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

5.5.2.3 UpdateGeneratorSettings()

```
override void SadSapphicGames.NoiseGenerators.FractalNoiseGeneratorComponent.UpdateGeneratorSettings ( ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

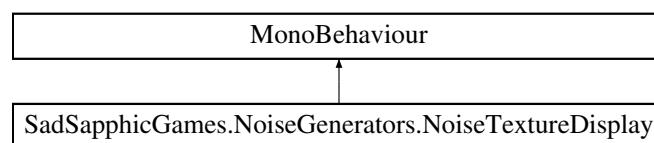
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/Runtime/Components/FractalNoiseGeneratorComponent.cs

5.6 SadSapphicGames.NoiseGenerators.NoiseTextureDisplay Class Reference

A monobehaviour for displaying the results of a [AbstractNoiseGeneratorComponent](#) in the scene

Inheritance diagram for SadSapphicGames.NoiseGenerators.NoiseTextureDisplay:



5.6.1 Detailed Description

A monobehaviour for displaying the results of a [AbstractNoiseGeneratorComponent](#) in the scene

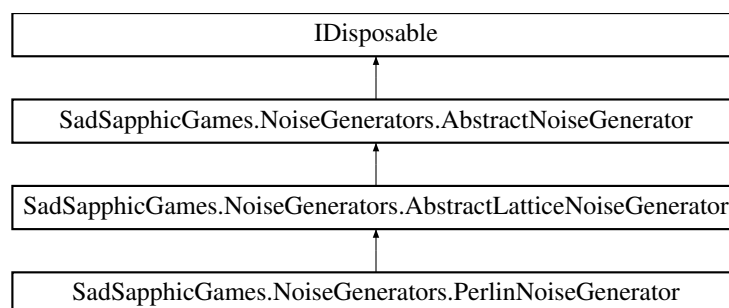
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/Runtime/Components/NoiseTextureDisplay.cs

5.7 SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator Class Reference

A generator object used to create perlin noise textures

Inheritance diagram for SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator:



Public Member Functions

- [PerlinNoiseGenerator](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _latticeCellSize, bool _allowPartialCells=false)
Constructs a [PerlinNoiseGenerator](#)

Static Public Member Functions

- static RenderTexture [GenerateTexture](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _latticeCellSize, bool _allowPartialCells=false, bool _requireSeamlessTiling=true)
Generates a perlin noise texture using the given parameters

Protected Member Functions

- override void [InnerGenerateTexture](#) ()
The inner implementation of generated the noise texture

Properties

- override int **LatticeBufferStride** [get]
The memory size of an entry in the lattice buffer (8 floats / 4 float2's)
- override string **ComputeShaderPath** [get]

Additional Inherited Members

5.7.1 Detailed Description

A generator object used to create perlin noise textures

5.7.2 Constructor & Destructor Documentation

5.7.2.1 PerlinNoiseGenerator()

```
SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator.PerlinNoiseGenerator (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _latticeCellSize,
    bool _allowPartialCells = false )
```

Constructs a [PerlinNoiseGenerator](#)

Parameters

<code>_texWidth</code>	The width of the generated texture
<code>_texHeight</code>	The height of the generated texture
<code>_seed</code>	The seed of the pseudo-random number generation
<code>_latticeCellSize</code>	The size in pixels of a single cell in the lattice
<code>_allowPartialCells</code>	If the texture should be allowed to cut off lattice cells along the edge, defaults to false

5.7.3 Member Function Documentation

5.7.3.1 GenerateTexture()

```
static RenderTexture SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator.GenerateTexture (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _latticeCellSize,
    bool _allowPartialCells = false,
    bool _requireSeamlessTiling = true ) [static]
```

Generates a perlin noise texture using the given parameters

Parameters

<code>_texWidth</code>	the width of the texture
<code>_texHeight</code>	the height of the texture
<code>_seed</code>	the seed for the pseudo random number generator
<code>_latticeCellSize</code>	the size in pixels of a single cell in the lattice
<code>_allowPartialCells</code>	if the texture should be allowed to cut off lattice cells
<code>_requireSeamlessTiling</code>	if the texture should tile seamlessly

Returns

the generated noise texture

5.7.3.2 InnerGenerateTexture()

```
override void SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator.InnerGenerateTexture ( )
[protected], [virtual]
```

The inner implementation of generated the noise texture

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

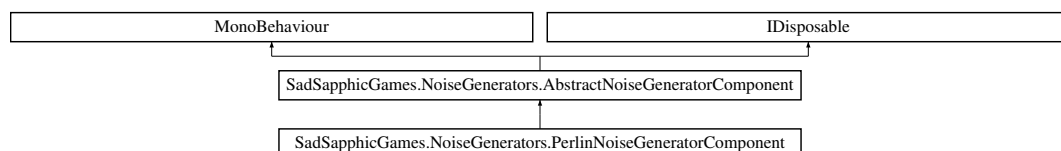
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↔ Runtime/NoiseGenerators/PerlinNoiseGenerator.cs

5.8 SadSapphicGames.NoiseGenerators.PerlinNoiseGenerator↔ Component Class Reference

A MonoBehaviour component wrapping a [PerlinNoiseGenerator](#) object

Inheritance diagram for SadSapphicGames.NoiseGenerators.PerlinNoiseGeneratorComponent:



Protected Member Functions

- override [AbstractNoiseGenerator CreateGeneratorObject](#) ()
Constructs a [PerlinNoiseGenerator](#) and sets its *RequireSeamlessTiling* property
- override void [UpdateGeneratorSettings](#) ()

Properties

- bool **TileTexture** [get, set]
If the texture should be required to tile seamlessly
- Vector2Int **LatticeCellSize** [get, set]
The pixel size of a single lattice cell

Additional Inherited Members

5.8.1 Detailed Description

A MonoBehaviour component wrapping a [PerlinNoiseGenerator](#) object

5.8.2 Member Function Documentation

5.8.2.1 CreateGeneratorObject()

```
override AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.PerlinNoiseGeneratorComponent.CreateGeneratorObject ( ) [protected], [virtual]
```

Constructs a [PerlinNoiseGenerator](#) and sets it's RequireSeamlessTiling property

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

5.8.2.2 UpdateGeneratorSettings()

```
override void SadSapphicGames.NoiseGenerators.PerlinNoiseGeneratorComponent.UpdateGeneratorSettings ( ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

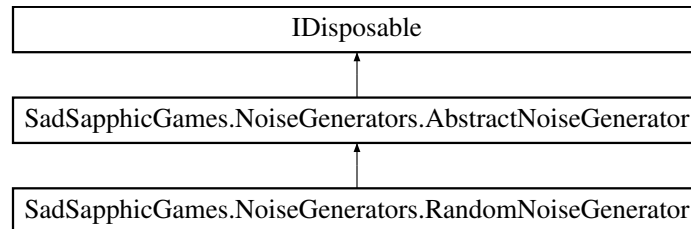
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↵ Runtime/Components/PerlinNoiseGeneratorComponent.cs

5.9 SadSapphicGames.NoiseGenerators.RandomNoiseGenerator Class Reference

A generator object used to create a purely random noise texture

Inheritance diagram for SadSapphicGames.NoiseGenerators.RandomNoiseGenerator:



Public Member Functions

- [RandomNoiseGenerator](#) (uint texWidth, uint texHeight, uint seed)
Constructs a [RandomNoiseGenerator](#)

Static Public Member Functions

- static RenderTexture [GenerateTexture](#) (uint _texWidth, uint _texHeight, uint _seed, bool _requireSeamless↵
Tiling=true)
Generates a random noise texture using the provided parameters

Protected Member Functions

- override void [InnerGenerateTexture](#) ()
The inner implementation of generated the noise texture

Properties

- override string **ComputeShaderPath** [get]

Additional Inherited Members

5.9.1 Detailed Description

A generator object used to create a purely random noise texture

5.9.2 Constructor & Destructor Documentation

5.9.2.1 RandomNoiseGenerator()

```

SadSapphicGames.NoiseGenerators.RandomNoiseGenerator.RandomNoiseGenerator (
    uint texWidth,
    uint texHeight,
    uint seed )
  
```

Constructs a [RandomNoiseGenerator](#)

Parameters

<i>texWidth</i>	The width of the generated texture
<i>texHeight</i>	The height of the generated texture
<i>seed</i>	The seed of the pseudo-random number generation

5.9.3 Member Function Documentation

5.9.3.1 GenerateTexture()

```
static RenderTexture SadSapphicGames.NoiseGenerators.RandomNoiseGenerator.GenerateTexture (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    bool _requireSeamlessTiling = true ) [static]
```

Generates a random noise texture using the provided parameters

Parameters

<i>_texWidth</i>	the width of the generated texture
<i>_texHeight</i>	the height of the generated texture
<i>_seed</i>	the seed of the pseudo-random number generation
<i>_requireSeamlessTiling</i>	If the texture should tile seamlessly

Returns

the generated texture

5.9.3.2 InnerGenerateTexture()

```
override void SadSapphicGames.NoiseGenerators.RandomNoiseGenerator.InnerGenerateTexture ( )
[protected], [virtual]
```

The inner implementation of generated the noise texture

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

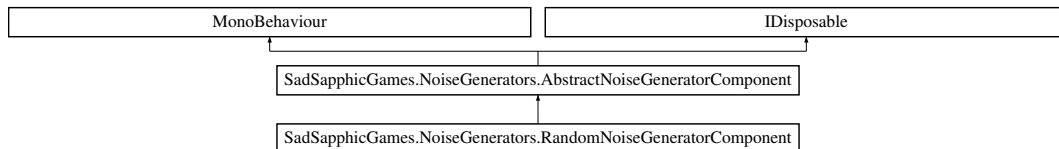
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↵ Runtime/NoiseGenerators/RandomNoiseGenerator.cs

5.10 SadSapphicGames.NoiseGenerators.RandomNoiseGeneratorComponent Class Reference ↔

A MonoBehaviour component wrapping a [RandomNoiseGenerator](#) object

Inheritance diagram for SadSapphicGames.NoiseGenerators.RandomNoiseGeneratorComponent:



Protected Member Functions

- override [AbstractNoiseGenerator CreateGeneratorObject \(\)](#)
Constructs a [RandomNoiseGenerator](#) object

Additional Inherited Members

5.10.1 Detailed Description

A MonoBehaviour component wrapping a [RandomNoiseGenerator](#) object

5.10.2 Member Function Documentation

5.10.2.1 CreateGeneratorObject()

```
override AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.RandomNoiseGeneratorComponent.↔  
CreateGeneratorObject ( ) [protected], [virtual]
```

Constructs a [RandomNoiseGenerator](#) object

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

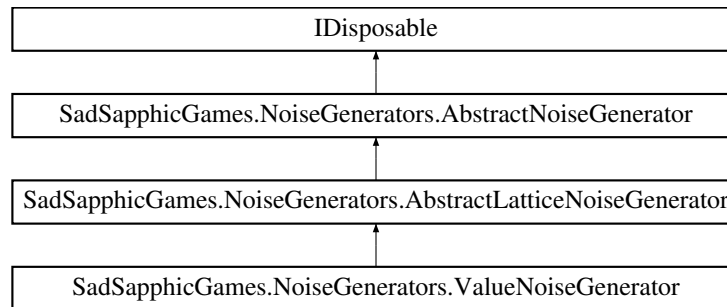
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↔
Runtime/Components/RandomNoiseGeneratorComponent.cs

5.11 SadSapphicGames.NoiseGenerators.ValueNoiseGenerator Class Reference

A generator object used to create a value noise texture

Inheritance diagram for SadSapphicGames.NoiseGenerators.ValueNoiseGenerator:



Public Member Functions

- [ValueNoiseGenerator](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _latticeCellSize, bool _allowPartialCells=false)
Constructs a [ValueNoiseGenerator](#)

Static Public Member Functions

- static RenderTexture [GenerateTexture](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _latticeCellSize, bool _allowPartialCells=false, bool _requireSeamlessTiling=true)
Generates a value noise texture

Protected Member Functions

- override void [InnerGenerateTexture](#) ()
The inner implementation of generated the noise texture

Properties

- override int **LatticeBufferStride** [get]
The memory size of an entry in the lattice buffer (four floats)
- override string **ComputeShaderPath** [get]

Additional Inherited Members

5.11.1 Detailed Description

A generator object used to create a value noise texture

5.11.2 Constructor & Destructor Documentation

5.11.2.1 ValueNoiseGenerator()

```
SadSapphicGames.NoiseGenerators.ValueNoiseGenerator.ValueNoiseGenerator (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _latticeCellSize,
    bool _allowPartialCells = false )
```

Constructs a [ValueNoiseGenerator](#)

Parameters

<code>_texWidth</code>	The width of the generated texture
<code>_texHeight</code>	The height of the generated texture
<code>_seed</code>	The seed for the pseudo-random number generation
<code>_latticeCellSize</code>	The size in pixels of a single cell in the lattice
<code>_allowPartialCells</code>	If the texture should be allowed to cut off lattice cells along the edge, defaults to false

5.11.3 Member Function Documentation

5.11.3.1 GenerateTexture()

```
static RenderTexture SadSapphicGames.NoiseGenerators.ValueNoiseGenerator.GenerateTexture (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _latticeCellSize,
    bool _allowPartialCells = false,
    bool _requireSeamlessTiling = true ) [static]
```

Generates a value noise texture

Parameters

<code>_texWidth</code>	the width of the texture
<code>_texHeight</code>	the height of the texture
<code>_seed</code>	the seed for the pseudo random number generator
<code>_latticeCellSize</code>	the size in pixels of a single cell in the lattice
<code>_allowPartialCells</code>	if the texture should be allowed to cut off lattice cells
<code>_requireSeamlessTiling</code>	if the texture should tile seamlessly

Returns

The generated texture

5.11.3.2 InnerGenerateTexture()

```
override void SadSapphicGames.NoiseGenerators.ValueNoiseGenerator.InnerGenerateTexture ( )
[protected], [virtual]
```

The inner implementation of generated the noise texture

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

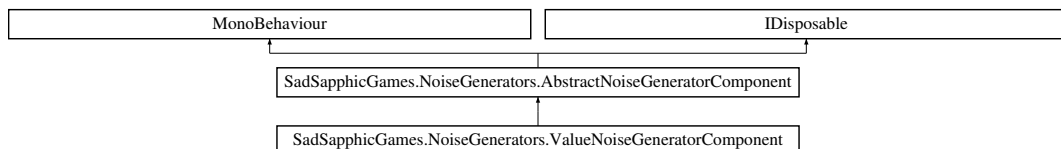
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↵
Runtime/NoiseGenerators/ValueNoiseGenerator.cs

5.12 SadSapphicGames.NoiseGenerators.ValueNoiseGenerator↵ Component Class Reference

A MonoBehaviour component wrapping a [ValueNoiseGenerator](#) object

Inheritance diagram for SadSapphicGames.NoiseGenerators.ValueNoiseGeneratorComponent:

**Protected Member Functions**

- override [AbstractNoiseGenerator CreateGeneratorObject](#) ()
Creates a ValueNoiseGeneratorObject and sets its RequireSeamlessTiling property
- override void [UpdateGeneratorSettings](#) ()

Properties

- bool **TileTexture** [get, set]
If the texture should be required to tile seamlessly
- Vector2Int **LatticeCellSize** [get, set]
The pixel size of a single lattice cell

Additional Inherited Members

5.12.1 Detailed Description

A MonoBehaviour component wrapping a [ValueNoiseGenerator](#) object

5.12.2 Member Function Documentation

5.12.2.1 CreateGeneratorObject()

```
override AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.ValueNoiseGeneratorComponent.CreateGeneratorObject ( ) [protected], [virtual]
```

Creates a ValueNoiseGeneratorObject and sets its RequireSeamlessTiling property

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

5.12.2.2 UpdateGeneratorSettings()

```
override void SadSapphicGames.NoiseGenerators.ValueNoiseGeneratorComponent.UpdateGeneratorSettings ( ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

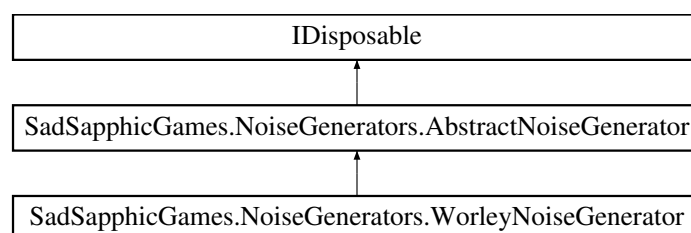
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/Runtime/Components/ValueNoiseGeneratorComponent.cs

5.13 SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator Class Reference

A generator object used to create a worley noise texture

Inheritance diagram for SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator:



Public Member Functions

- [WorleyNoiseGenerator](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _cellCount, TextureChannel _activeChannel)

Constructs a [WorleyNoiseGenerator](#)

Static Public Member Functions

- static RenderTexture [GenerateTexture](#) (uint _texWidth, uint _texHeight, uint _seed, Vector2Int _cellCount, TextureChannel _activeChannel, bool _requireSeamlessTiling=false, bool _invertTexture=false)

Generates a Worley noise texture using the given parameters

Protected Member Functions

- override void [SetShaderParameters](#) ()
Sets the parameters of the compute shader
- override void [InnerGenerateTexture](#) ()
The inner implementation of generated the noise texture
- override void [Dispose](#) (bool disposing)

Properties

- override string **ComputeShaderPath** [get]
- int **NormalizeTextureKernel** [get]
The kernel for normalizing the values of the final texture
- TextureChannel **ActiveChannel** [get, set]
The channel the noise is being stored in
- bool **InvertTexture** [get, set]
If the values of the texture should be inverted so the are brighter close to the control points and dark far
- Vector2Int **CellCounts** [get, set]
The number of cells along each axis to place a control point in

Additional Inherited Members

5.13.1 Detailed Description

A generator object used to create a worley noise texture

5.13.2 Constructor & Destructor Documentation

5.13.2.1 WorleyNoiseGenerator()

```
SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator.WorleyNoiseGenerator (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _cellCount,
    TextureChannel _activeChannel )
```

Constructs a [WorleyNoiseGenerator](#)

Parameters

<code>_texWidth</code>	The width of the generated texture
<code>_texHeight</code>	The height of the generated texture
<code>_seed</code>	The seed of the pseudo-random number generation
<code>_cellCount</code>	The number of cells along each axis to place a point int
<code>_activeChannel</code>	The channel to place the generated noise in, if TextureChannel.All generated a separate texture for each channel

5.13.3 Member Function Documentation

5.13.3.1 Dispose()

```
override void SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator.Dispose (
    bool disposing ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

5.13.3.2 GenerateTexture()

```
static RenderTexture SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator.GenerateTexture (
    uint _texWidth,
    uint _texHeight,
    uint _seed,
    Vector2Int _cellCount,
    TextureChannel _activeChannel,
    bool _requireSeamlessTiling = false,
    bool _invertTexture = false ) [static]
```

Generates a Worley noise texture using the given parameters

Parameters

<code>_texWidth</code>	the width of the texture
<code>_texHeight</code>	the height of the texture
<code>_seed</code>	the seed of the pseudo-random number generation
<code>_cellCount</code>	the number of cells to place a point in along each axis
<code>_activeChannel</code>	the channel to store the texture in, if TextureChannel.All each channel will store a different texture
<code>_requireSeamlessTiling</code>	if the texture should tile seamlessly
<code>_invertTexture</code>	if the values of the texture should be inverted

Returns

5.13.3.3 InnerGenerateTexture()

```
override void SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator.InnerGenerateTexture ( )
[protected], [virtual]
```

The inner implementation of generated the noise texture

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

5.13.3.4 SetShaderParameters()

```
override void SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator.SetShaderParameters ( )
[protected], [virtual]
```

Sets the parameters of the compute shader

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGenerator](#).

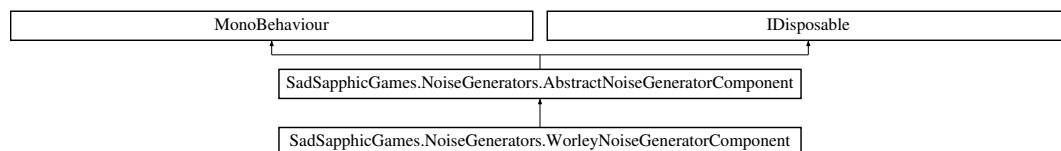
The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/↔ Runtime/NoiseGenerators/WorleyNoiseGenerator.cs

5.14 SadSapphicGames.NoiseGenerators.WorleyNoiseGenerator↔ Component Class Reference

A MonoBehaviour component wrapping a [WorleyNoiseGenerator](#) object

Inheritance diagram for SadSapphicGames.NoiseGenerators.WorleyNoiseGeneratorComponent:



Protected Member Functions

- override [AbstractNoiseGenerator CreateGeneratorObject](#) ()
Constructs a [WorleyNoiseGenerator](#) object and sets its *RequireSeamlessTiling* and *InvertTexture* properties
- override void [UpdateGeneratorSettings](#) ()

Properties

- TextureChannel **ActiveChannel** [get, set]
The texture channel the generated noise will be stored in (if all each channel will contain a different texture)
- bool **TileTexture** [get, set]
If the texture should be required to tile seamlessly
- bool **InvertTexture** [get, set]
If the values of the texture should be inverted (bright close to control points, dark far)
- Vector2Int **CellCounts** [get, set]
The number of cells along the x and y axis respectively

Additional Inherited Members

5.14.1 Detailed Description

A MonoBehaviour component wrapping a [WorleyNoiseGenerator](#) object

5.14.2 Member Function Documentation

5.14.2.1 CreateGeneratorObject()

```
override AbstractNoiseGenerator SadSapphicGames.NoiseGenerators.WorleyNoiseGeneratorComponent.↵
CreateGeneratorObject ( ) [protected], [virtual]
```

Constructs a [WorleyNoiseGenerator](#) object and sets it's RequireSeamlessTiling and InvertTexture properties

Implements [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

5.14.2.2 UpdateGeneratorSettings()

```
override void SadSapphicGames.NoiseGenerators.WorleyNoiseGeneratorComponent.UpdateGenerator↵
Settings ( ) [protected], [virtual]
```

Reimplemented from [SadSapphicGames.NoiseGenerators.AbstractNoiseGeneratorComponent](#).

The documentation for this class was generated from the following file:

- C:/Users/Layla/Documents/My Docs/GameDev/NoiseGenDevelopment/Assets/Packages/NoiseGenerators/[↵](#)
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