

Aqua

Generated by Doxygen 1.9.1



---

<b>1 Class Index</b>	<b>1</b>
1.1 Class List . . . . .	1
<b>2 Class Documentation</b>	<b>3</b>
2.1 GLSL::NOISE::PerlinNoise Class Reference . . . . .	3
2.1.1 Detailed Description . . . . .	5
2.1.2 Member Function Documentation . . . . .	6
2.1.2.1 colorFromHeight() . . . . .	6
2.1.2.2 fractalNoise() . . . . .	6
2.1.2.3 perlin() . . . . .	6
2.1.2.4 randomGradient() . . . . .	7
<b>Index</b>	<b>9</b>



# Chapter 1

## Class Index

### 1.1 Class List

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

<a href="#">GLSL::NOISE::PerlinNoise</a>	
Simple 2D perlin noise shader . . . . .	<a href="#">3</a>



## Chapter 2

# Class Documentation

### 2.1 GLSL::NOISE::PerlinNoise Class Reference

Simple 2D perlin noise shader.

Collaboration diagram for GLSL::NOISE::PerlinNoise:

GLSL::NOISE::PerlinNoise
<ul style="list-style-type: none"> <li>+ uniform vec2 u_seed</li> <li>+ uniform int u_octaves</li> <li>+ uniform float u_gridSize</li> <li>+ uniform float u_amplitude</li> <li>+ uniform float u_water_level</li> <li>+ uniform float u_sand_level</li> <li>+ uniform vec4 col_low_water</li> <li>+ uniform vec4 col_high_water</li> <li>+ uniform vec4 col_low_sand</li> <li>+ uniform vec4 col_high_sand</li> <li>+ uniform vec4 col_low_grass</li> <li>+ uniform vec4 col_high_grass</li> <li>+ uniform vec2 u_resolution</li> <li>+ uniform vec2 u_top_left</li> <li>+ uniform vec2 u_bottom_right</li> </ul>
<ul style="list-style-type: none"> <li>+ float interpolate(float a, float b, float w)</li> <li>+ float cap(float value)</li> <li>+ vec2 randomGradient(ivec2 cord)</li> <li>+ float dotGridGradient(ivec2 cord, vec2 pos)</li> <li>+ float perlin(vec2 pos)</li> <li>+ float fractalNoise(vec2 pos)</li> <li>+ vec4 colorFromHeight(float height)</li> <li>+ void main()</li> </ul>

## Public Member Functions

- float [interpolate](#) (float a, float b, float w)  
*Smoothly interpolates between two values.*
- float [cap](#) (float value)  
*Caps a value between [0, 1].*
- vec2 [randomGradient](#) (ivec2 cord)  
*Computes a pseudo random gradient vector for a given integer coordinate.*
- float [dotGridGradient](#) (ivec2 cord, vec2 pos)  
*Computes the dot product of a random gradient vector and a given position.*



- float [perlin](#) (vec2 pos)  
*2D Perlin noise*
- float [fractalNoise](#) (vec2 pos)  
*Computes a fractal sum of perlin noise.*
- vec4 [colorFromHeight](#) (float height)  
*Computes a color based on the height.*
- void [main](#) ()  
*Main function.*

## Public Attributes

- uniform vec2 [u\\_seed](#)  
*Seed used as offset.*
- uniform int [u\\_octaves](#)  
*Number of patterns to sum.*
- uniform float [u\\_gridSize](#)  
*Size of the grid.*
- uniform float [u\\_amplitude](#)  
*Start amplitude of the noise.*
- uniform float [u\\_water\\_level](#)  
*Threshold for water [0, 1].*
- uniform float [u\\_sand\\_level](#)  
*Threshold for sand [0, 1].*
- uniform vec4 [col\\_low\\_water](#)  
*Color for deep water.*
- uniform vec4 [col\\_high\\_water](#)  
*Color for shallow water.*
- uniform vec4 [col\\_low\\_sand](#)  
*Color for low sand.*
- uniform vec4 [col\\_high\\_sand](#)  
*Color for high sand.*
- uniform vec4 [col\\_low\\_grass](#)  
*Color for low grass.*
- uniform vec4 [col\\_high\\_grass](#)  
*Color for high grass.*
- uniform vec2 [u\\_resolution](#)  
*Size of the window.*
- uniform vec2 [u\\_top\\_left](#)  
*Top left corner of the visible area.*
- uniform vec2 [u\\_bottom\\_right](#)  
*Bottom right corner of the visible area.*

### 2.1.1 Detailed Description

Simple 2D perlin noise shader.

Code based on the the Perlin noise wikipedia page: [https://en.wikipedia.org/wiki/Perlin\\_noise](https://en.wikipedia.org/wiki/Perlin_noise)

Remarks

**Fragment-Shader**

## 2.1.2 Member Function Documentation

### 2.1.2.1 colorFromHeight()

```
vec4 GLSL::NOISE::PerlinNoise::colorFromHeight (
    float height ) [inline]
```

Computes a color based on the height.

#### Parameters

<i>height</i>	in [0, 1]
---------------	-----------

### 2.1.2.2 fractalNoise()

```
float GLSL::NOISE::PerlinNoise::fractalNoise (
    vec2 pos ) [inline]
```

Computes a fractal sum of perlin noise.

#### Returns

[0, 1]

### 2.1.2.3 perlin()

```
float GLSL::NOISE::PerlinNoise::perlin (
    vec2 pos ) [inline]
```

2D Perlin noise

#### Parameters

<i>pos</i>	Position in 2D space
------------	----------------------

#### Returns

[-1, 1]

#### 2.1.2.4 randomGradient()

```
vec2 GLSL::NOISE::PerlinNoise::randomGradient (
    ivec2 cord ) [inline]
```

Computes a pseudo random gradient vector for a given integer coordinate.

##### Returns

Vector with length 1

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

- src/perlin.frag



# Index

colorFromHeight  
    GLSL::NOISE::PerlinNoise, [6](#)

fractalNoise  
    GLSL::NOISE::PerlinNoise, [6](#)

GLSL::NOISE::PerlinNoise, [3](#)  
    colorFromHeight, [6](#)  
    fractalNoise, [6](#)  
    perlin, [6](#)  
    randomGradient, [6](#)

perlin  
    GLSL::NOISE::PerlinNoise, [6](#)

randomGradient  
    GLSL::NOISE::PerlinNoise, [6](#)