Large-scale grass rendering

High-performance grass for mobile

USER GUIDE

Release 1.0

Nov 2018

Email:yxriyin@163.com

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Overview

Very early gpu gems series books have been introduced to the rendering of large-scale grass, although the technology inside is old but very practical. I made a certain modification on the basis of their description, by increasing the vertices without using any alpha test, and reducing the use of the billboard through the intersection of a super large grid.

In addition, I have added additional interactive features that require OpenGL 3.0 support. You can see that when the ball moves, the grass will fall in the right direction.

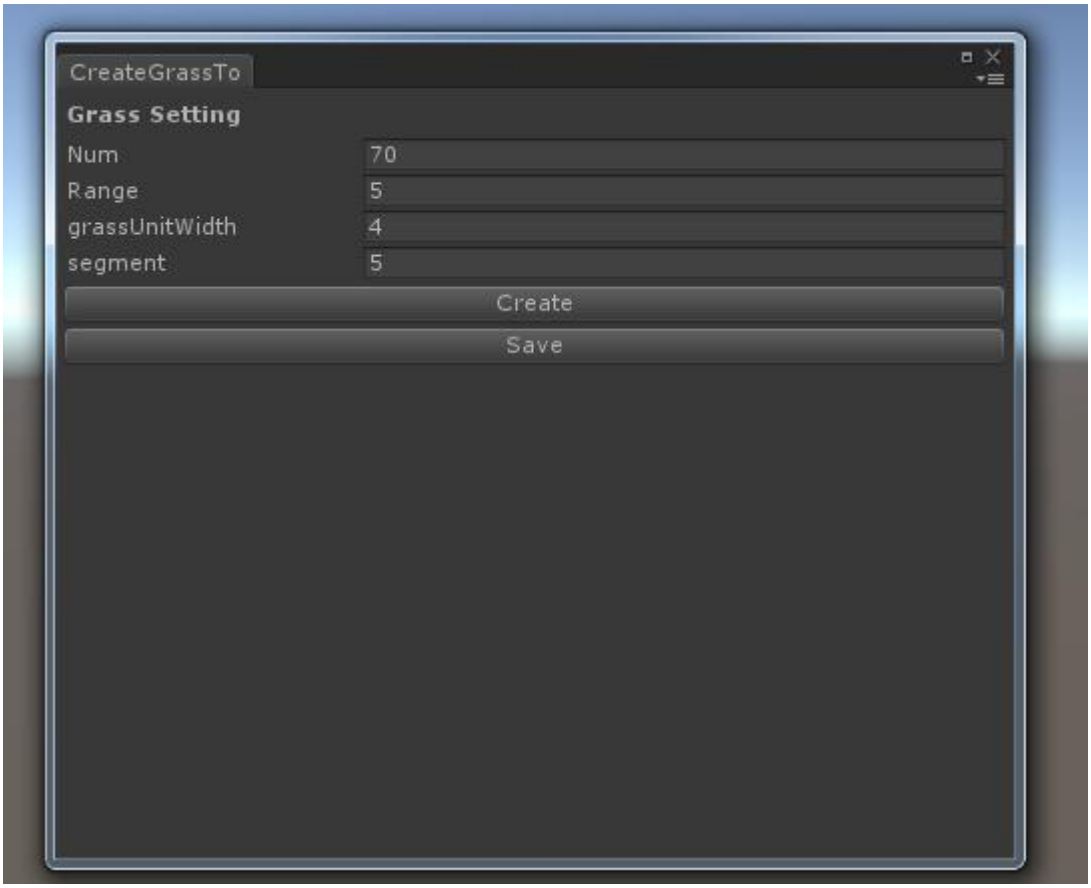
I drew a love through the ball.

The entire grassland can still have excellent performance on mobile phones.

This document describes the basic usage of the high-performance mobile platform's grass of and its parameter configuration instructions.

Quick Start

Click Tools-->CreateGrassTool to open the panel for building the grass.



Num – You create the number of sides of the grass, and the final total is the square of num.

Range – The length of the land size created by the grass

GrassUnitWidth – Width ratio of each grass

Segment – Number of segments required for each grass

Create – create the grass

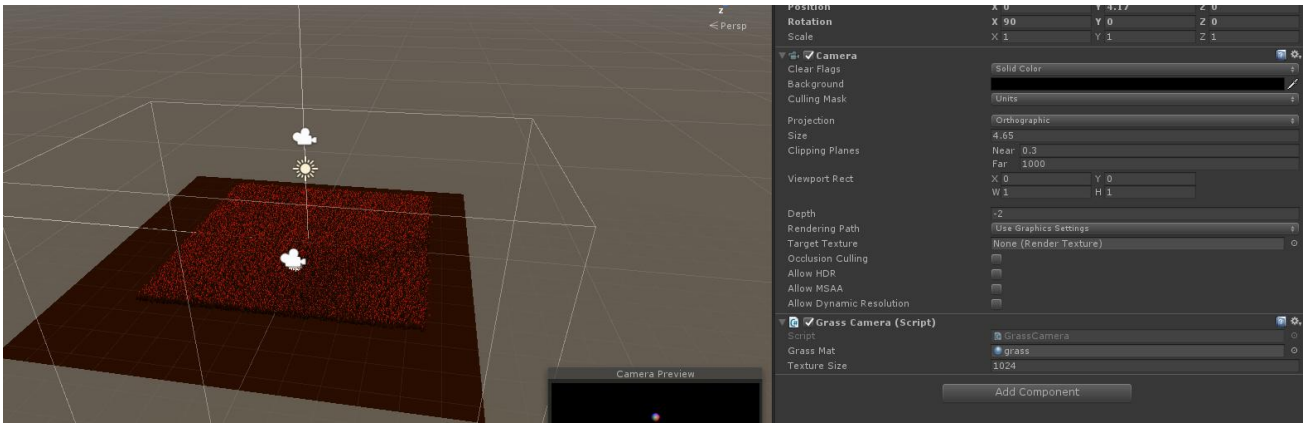
Save – save the grass

You can also use MobileGrass.prefab in the MobileGrass/Prefab directory directly and adjust it to the size you want by zooming.

Then form a prairie by means of multiple prefab stitching.

Note that if you create more grassy vertices than 65535, you will get an error.

PreparationForInteraction

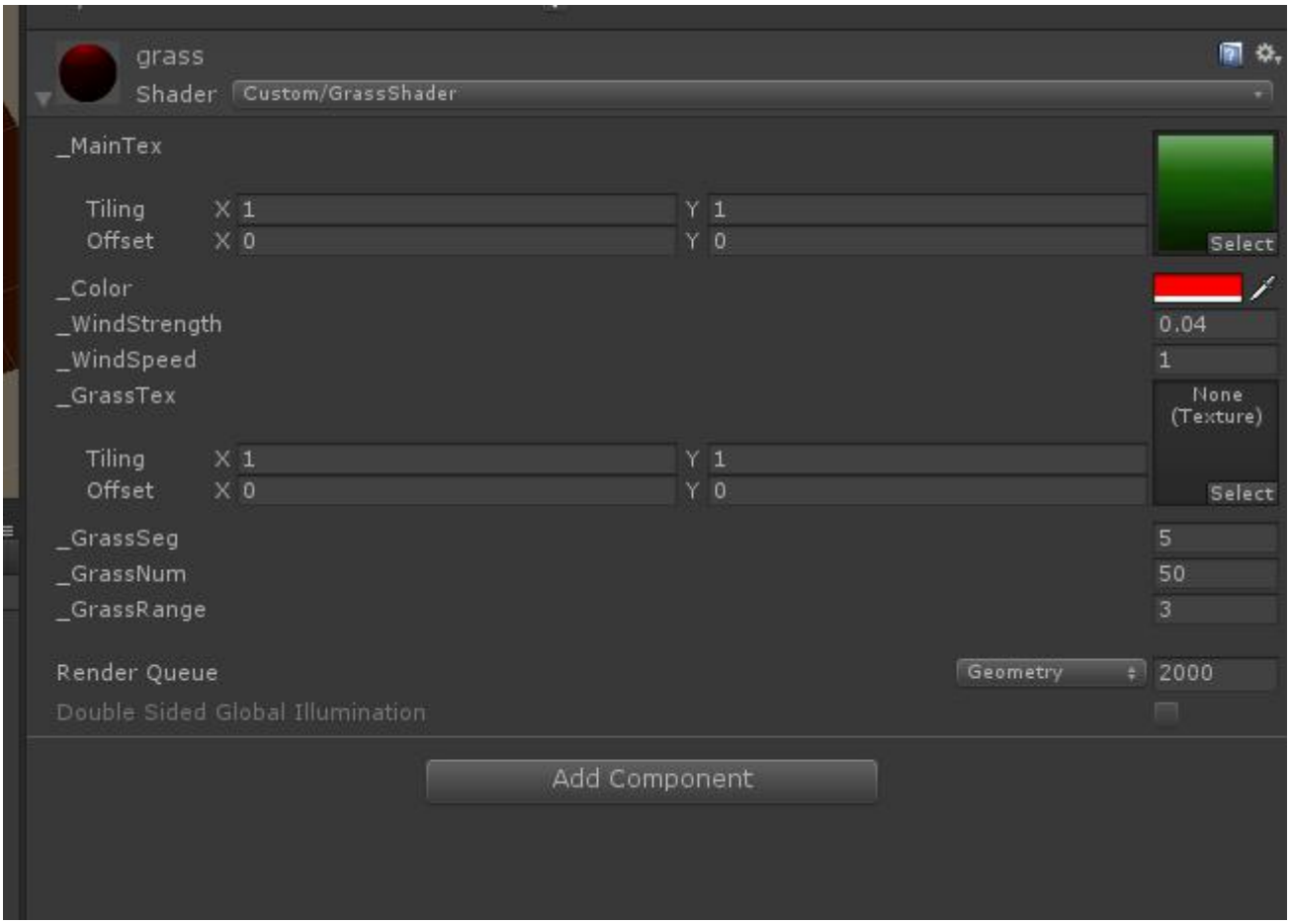


Create a new Units layer, drag MobileGrass/Prefab/GrassCamera to the scene, and adjust it to the top of the grass. Just adjust the size of the camera to just include the entire grass.

Drag MobileGrass/Prefab/Sphere to the scene, or you can use your own model, but add the corresponding script MoveTrail and set the parameters. Then you need to drag drawSelf below your model and set the appropriate size.

Then you can add scripts for moving objects yourself to draw shapes like love.

Shader



_MainTex – The main texture of grass

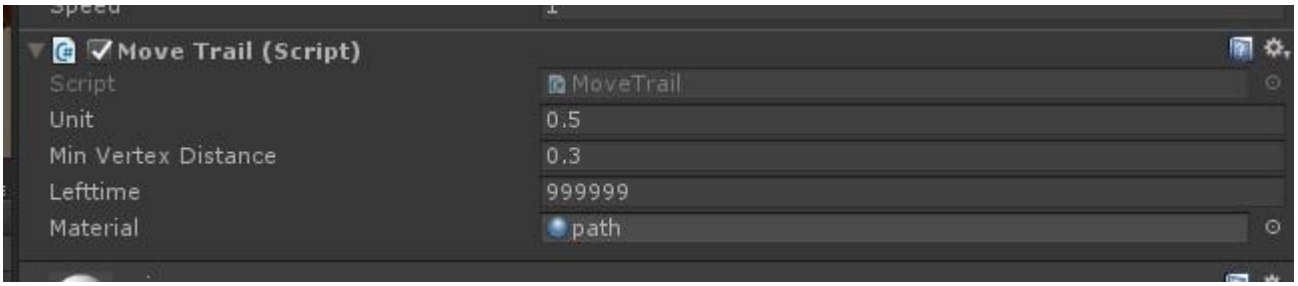
_Color – The color of the grass

_WindStrength – the strength of wind

_WindSpeed – The speed of wind

_GrassSeg ,_GrassNum ,_GrassRange– Will be automatically populated by the tool, no need to modify

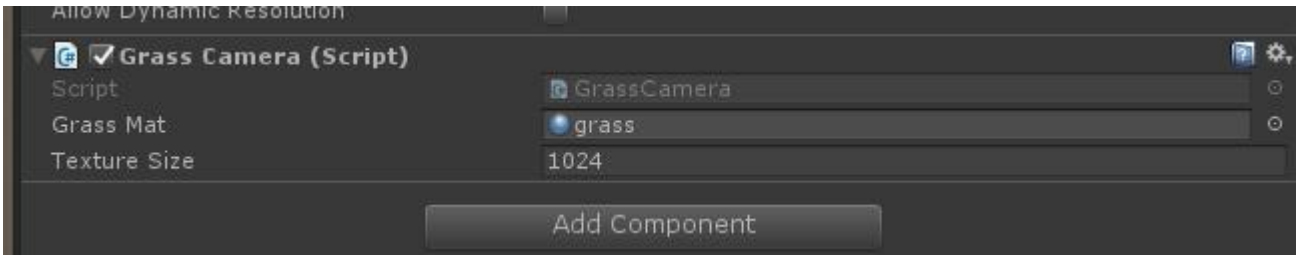
Scripts



Unit – Proportion of the role of the character interacting with the grass

Min Vertex Distance– Need to regenerate the minimum size of the vertices

Lifetime – The time it takes for the grass to return to its original shape



Texture Size– The size of the interactive map

Future Content

1. Increase the ability to generate grass based on terrain

2. Improve the grass collision detail experience

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