Tutorial 11: Billboarding in OSG

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Abstract

This tutorial will show how you can easily achieve a billboarding effect in OSG.

1 Introduction to Billboarding

Billboarding is a well known technique in computer graphics aiming at reduce the number of vertives, and therefore geometry needed to render objects having one or many axes of rotation. Billboarded objects always face the viewer. Achieving billboarding in OpenGL is quite tricky but as we will see, this can be easily done in OSG.
OSG wraps OpenGL billboards within a class called **Billboard**. This class acts exactly like a Geode class. This means that users must attach a Drawable object to it. That object represents the billboarded object.
The algorithm is as follows:

1. Create a Billboard object (line 188)
2. Set the properties of that object. These include the axis of rotation, normal and the mode (lines 207-209)
3. Add a Drawable object, a geometry object or a shape drawable, to the Billboard object

2 Scene graph of our scene

The scene graph is shown at the following figure.

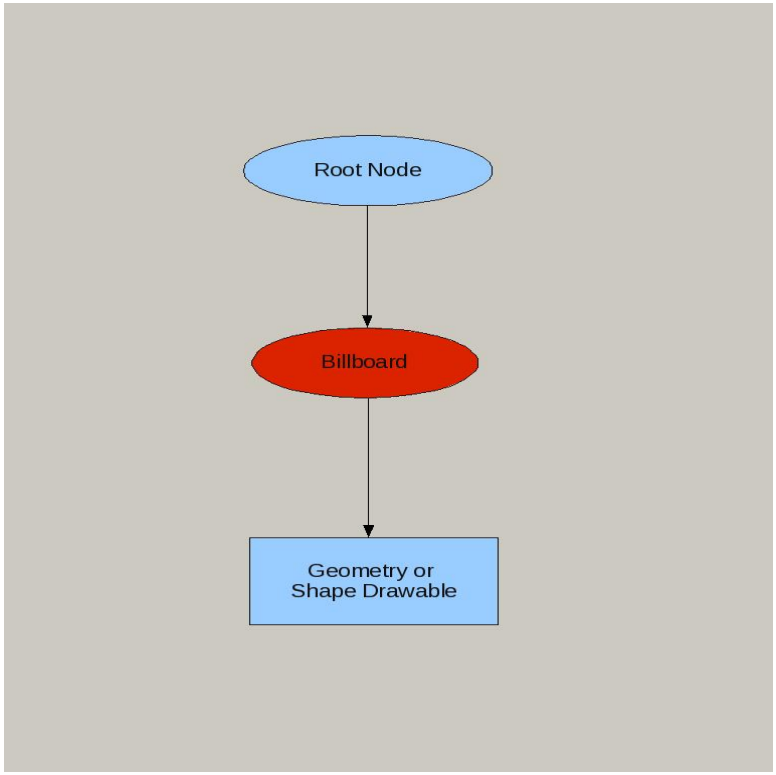

Figure 1: Our scene graph

3 Results

The result is shown at the figure 2.

4 Do-it-yourself

1. Your first task is to understand the code and add a shape drawable. What happens when you add a Box?
2. Using the left button of the mouse, you can rotate the world. What will occur if you look at the top of the scene?

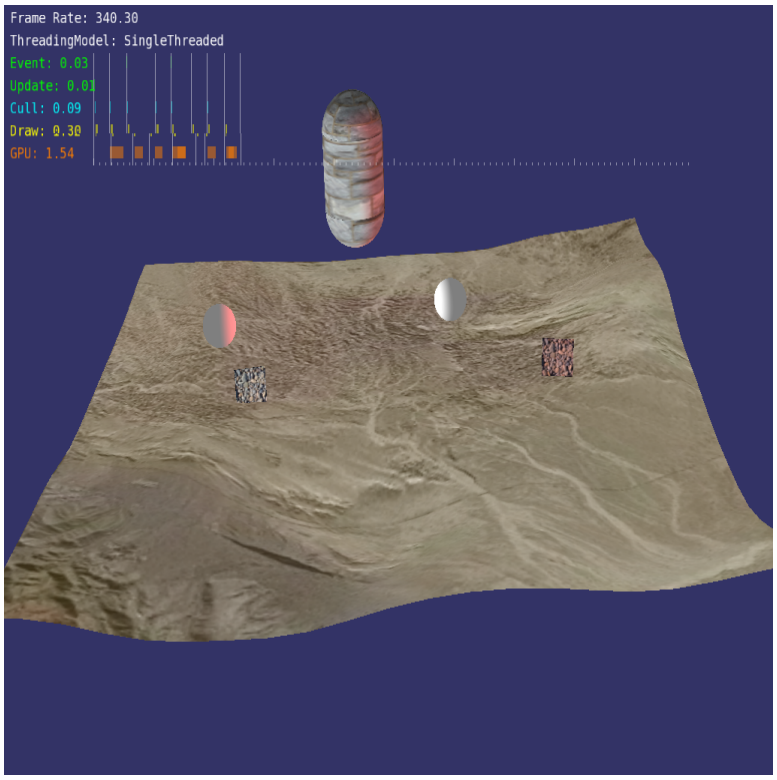

Figure 2: A scene lit with 2 light sources and 2 billboards