

Final Project: Animation of Sun

By: Courtney Boortz

This project was created using visual studios with imported packages to use
OpenGL and GLM

Inspiration

With all the animated movies and short clips that exist, I wanted to see if I could create a simple animation myself. I picked an animation of a day/night because I figured with the sun going in a circular path it wouldn't be as complicated to create. I also wanted to challenge my use of colors and lighting sources within a scene.

The Beginning

The first challenge was with starting, because there was a starter pack for the first few assignments and given my choice of the GLM library over Eigen I couldn't reuse much of the old code. However, Google came to the rescue and I discovered how amazing the NuGet Package Manager in VS could be, 3 simple install commands and a dependency link later and all the libraries I needed were linked to the program. At which point, I could create a blank window.

Let There Be Light

The next challenge was creating a light source in scene. This caused many hours of frustration. OpenGL tutorials were helpful in figuring out what kind of lighting I wanted my sun to have. I used the Phong lighting method and later added the spotlight effect to try and create a more of a glowing appearance for my sun, it sort of worked.

The Animation

This part turned out to be easy I just adjusted the x & y origin coords with sin and cos using time as theta. By making a function that adjusted these variables for me I could call it within my render loop to redraw every time. These variables were extremely useful in working with the colors later.

Pretty Colors

Working with the colors was a lot of trial and error. One of the things I was hoping to show was the way the light seems to change when the sun is rising and setting. And although I was able to adjust the way the light looked using a `lightColor 3d` vector, I couldn't make it look good...at all. Either my sky was a weird green/gray or the whole scene would become purple or red. I kept the code for it just incase I ever figure out how to get it to work just right.

Result

For the most part though I am happy with my creation it does all the basic things I hoped it would. The sun is the light source, the sun moves, and the scene gets darker when it is gone.