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CS-330

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Project Reflection

In my layout of a temple ruins I created the temple in scene 3D. I did the blocks leading up to the temple and the trees leading up to the temple. It was a good choice for my work because I wanted to do an outdoor scene of some ruins. The plane was a great choice for the ground and I enlarged it so the scene had a lot of space to work on. I gave it a grassy texture so it looked like a field. The trees are cylinders for the trunks, they are programmed to be very thin and tall; then there are spheres for the tops of the tress will a leaf pattern textured onto them. There are two trees, I wanted to make more but I did not want the code to get too long so I just stuck with two trees since every time you build a sphere or a cylinder it seemed you had to declare another buffer. I am not sure this is true if I could have done it in an array like I did with my cubes and pyramids I would have made many more trees, and perhaps I could have. The pyramid is enlarged to fill most of the scene and has a texture that I created in a paint program for it. I wanted to mix two textures here there are two textures on the pyramid but the bottom texture does not really show through, I was going to do a texture mix with the shaders but it messed with the lighting then so building a texture in paint seemed the best option. There are three rectangular like cubes that I stretched a bit for the stone blocks leading up to the pyramid in the ruin they have a granite like texture added to them. I then added a cylinder as a fireplace it is also textured in granite and is located in front of the pyramid. The fireplace holds the fire which is composed of ten pyramids. Five of them have a red flame texture and five of the have a yellow flame texture. They are positioned where they overlap a bit in the fire place center and in the code the red ones are on for six frames and then the yellow ones are on for six frames to produce a flicker effect. There are three stars in the sky that cast white light down on the scene they are spheres. There is one light that casts an orange light then no light as it flickers the light itself is not displayed and the light that shines is made to look like it comes from the fire.

The camera is set up for ease of navigation throughout the scene. The WASD keys are mapped to move it forward, backward, left and right. Q and E will move the camera up and down, and the mouse will pan the camera around in the position it is at based on the mouse motion to look around. The scroll wheel on the mouse slows down or speeds up camera movement; it goes faster if you scroll the wheel up and slower if you scroll the wheel down. There is also a function to switch views. This is done with the P button; pressing the button switches between perspective (3D) and orthographic (2D) views.

There is some custom programing in this code. Some of the functions used are tied to the processing of input that takes place when the navigation keys for the camera are pressed. This process input block can be put into another program that has camera.h attached to it and it will give the camera functionality. Another one of the several functions in this code is the texture loader function that allows you to load textures quickly without having to rewrite the same code over and over again. Some of the custom code I use is done to set timers to turn off lights and shapes on a delay to give an effect of firelight and the appearance of fire flames. You could reuse this anytime you want something to blink in and out.