David Marquette
Dmm6247
Alejandro Malavet
adm9791

Project B Report

Instructions: The navigation controls for our world are very natural. In order to move the camera around the world, use the arrow keys. Press the up arrow to travel forward in the direction the camera is aiming, and press the down arrow key to travel in the reverse direction. In order to “strafe” the camera you can press the left and right arrow keys to travel along the plane perpendicular to our “look at” direction. The WASD keys are used to “aim” the camera without moving its position within the world. Use A and D to rotate the view either left or right respectively, and use W and S to rotate the view up and down respectively. Additionally, you can use the mouse to “drag rotate” the circle in the center of the plane. Simply click and drag the sphere to achieve whatever rotation you desire.

Results:

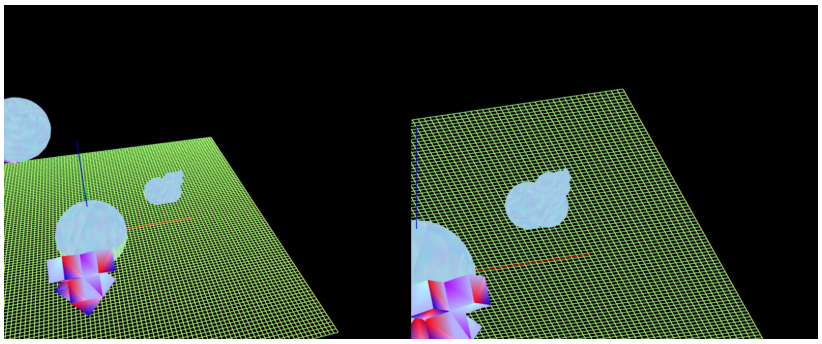

Figure 1: Ortho vs. Perspective

As seen in the above picture, we implemented both an orthographic projection of the scene as well as a perspective projection. The key differences are seen as we travel further from the eye point, as in the perspective view objects further away begin to appear smaller while there is no change in size in the orthographic projection.

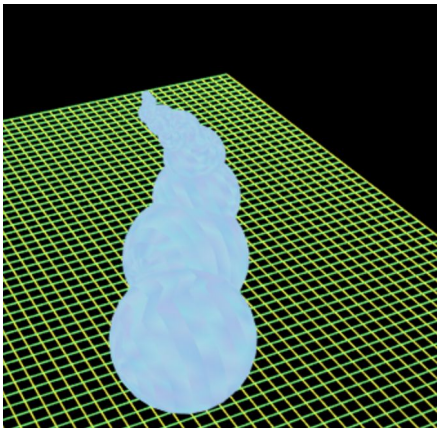

Figure 2: Animated Scene

The above figure is a screen capture of one of our animated objects. While it does use the same shape, we utilized a scene graph and varying rotation variables in order to achieve an almost “optical illusion” effect. Each part rotates in its own position with its own rate, but, since they all are apart of the same scene graph it creates a unique spiraling effect.

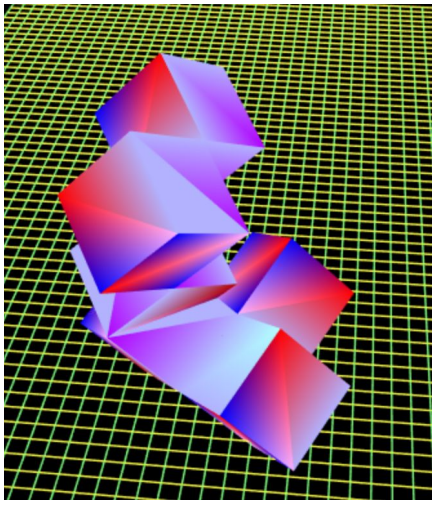

Figure 3: Abstract Cube Scene

This figure utilizes a simple cube shape in and many transformations in order to create a more abstract, nuanced shape. The transformations were applied carefully to ensure that all cubes were connected on either an edge or a face of another cube in the shape. The overall result is an abstract cube with a base and a top part that appears to be “sprouting out”.

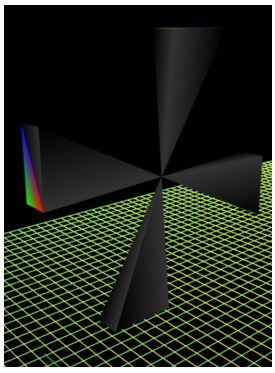

Figure 4: Propellor

This figure is taken from our project A code. It was originally a part of a helicopter assembly, but now we have isolated it and rotated it on its side. It rotates continuously around the model matrix’s y axis and features gradient RGB coloring on its sides.

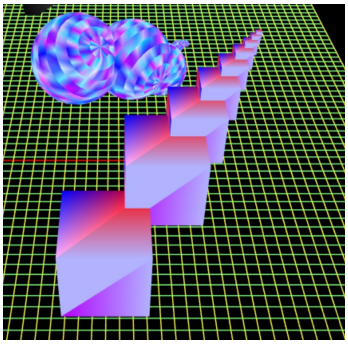

Figure 5: Stairs

For our fifth figure we implemented a stair like shape. Its assembled using several connected parts of the same square that consistently scales down.