

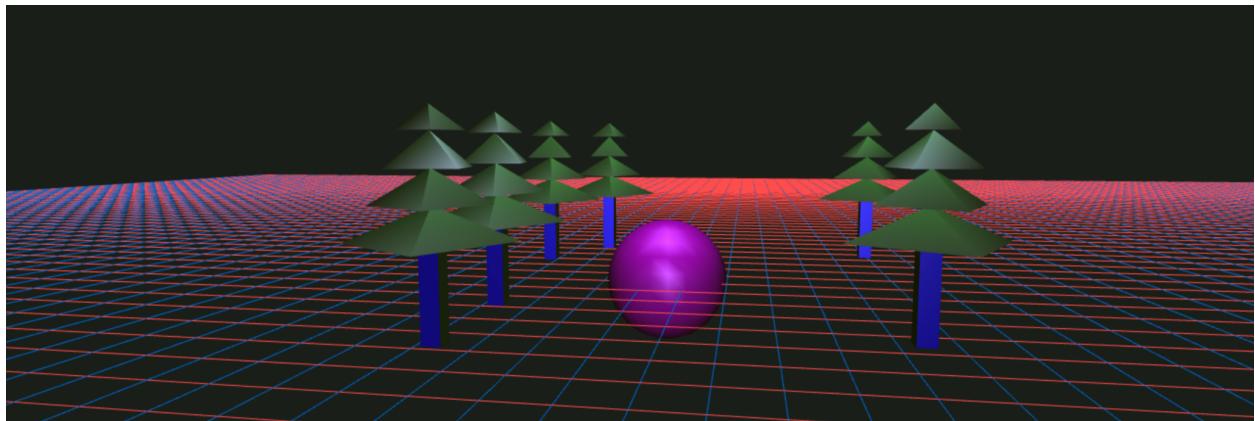
Project C report:
Shading a Forest!

User Guide:

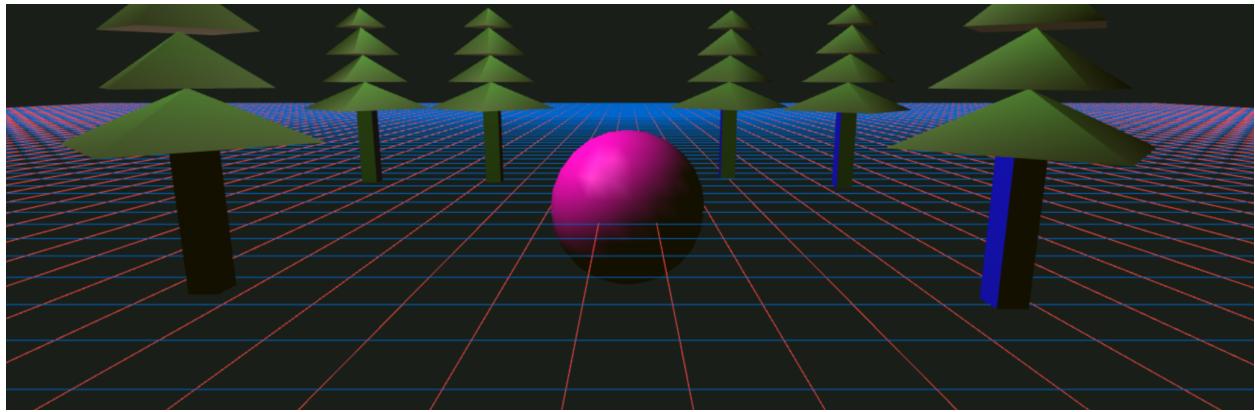
My goal was to create a 3d space with a spinning sphere at the center, surrounded by a forest of moving trees. Additionally, the goal is to make a user controllable lighting and shading system, as well as a controllable camera view. The user can use the arrow keys to move the camera up, down, left and right. The WASD keys control the tilt of the camera, and thus can be used to navigate around the shapes. Lastly, the M/N keys can be used to zoom in and out of the space, respectively.

To take advantage of the different shadings, the user can use different key inputs. The X key changes between Gouraud, Phong, and no Shading. Use the C key to change between Phong and Blinn-Phong lighting. The 4 key changes the material of the objects. The user can also use different light sources. The 5 key toggles the light that the user can control with a Mousedrag. The 6 key toggles a light source in the direction of the camera view. The 7 key toggles a light that points down from the ceiling. Lastly, when the user changes the size of the browser window, the canvas automatically adjusts.

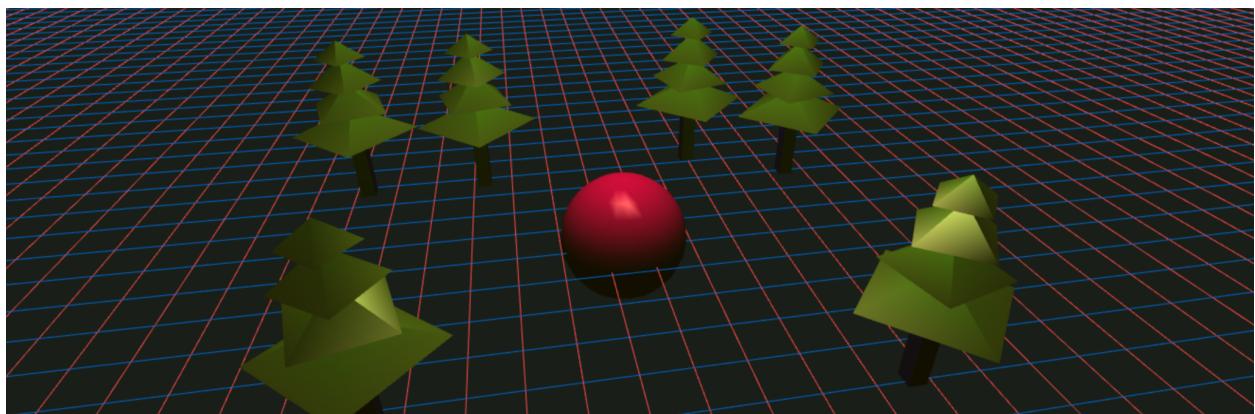
Results:



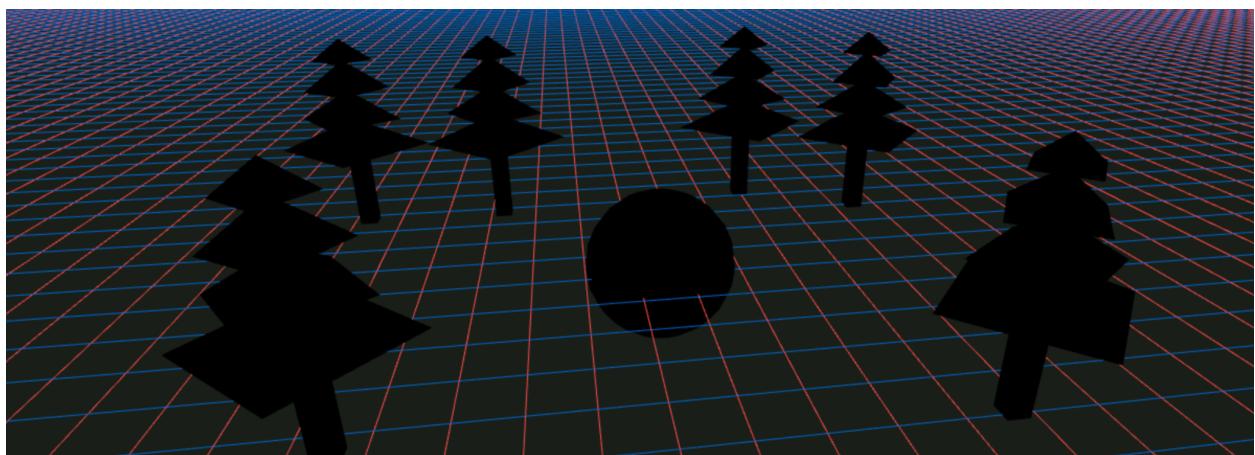
Side view with the Camera light activated, with a different material



Main View when the page first opens, with the Mouse light activated.



View from above with a different texture and the ceiling light active.

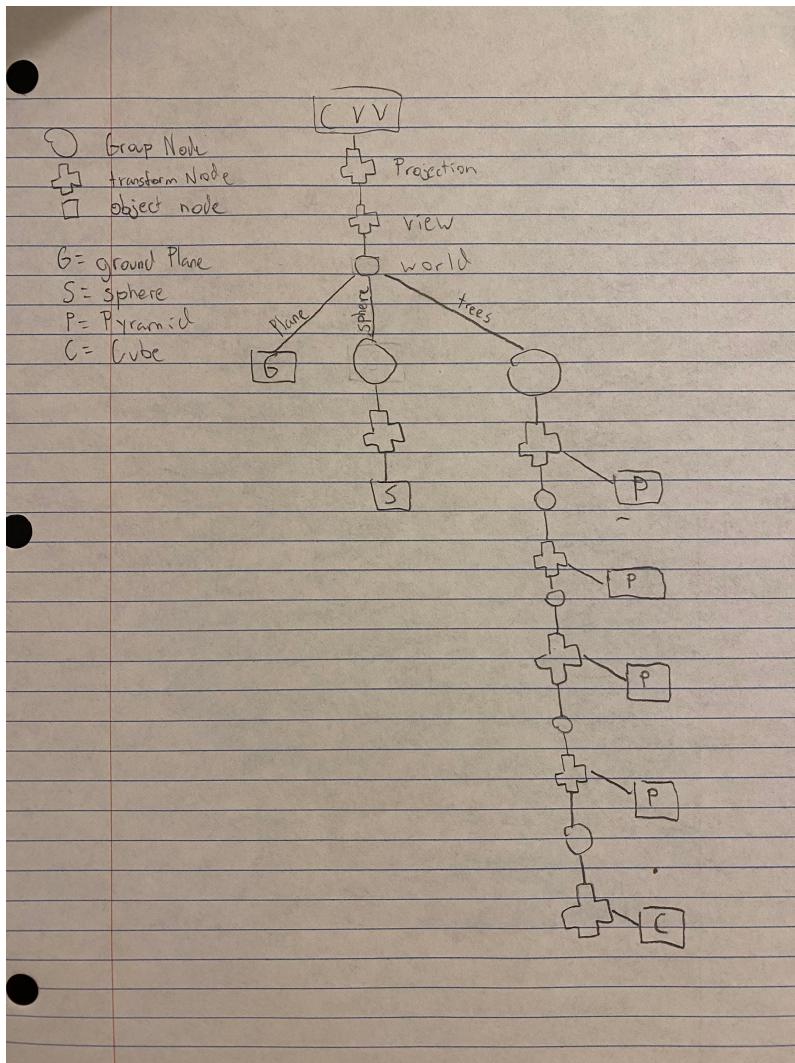


View when all light sources are turned off.

Use the arrow keys to move the location of the camera.
Use the M key to zoom in and the N key to zoom out.
Use the WASD keys to control the tilt of the camera.
Use the mouse to control the sphere's light source.

Use the X key to change between Gouraud, Phong, and no Shading
Use the C key to change between Phong and Blinn-Phong lighting
Use the 4 number key to change the material of the objects
Use the 5 number key to toggle the Mouse Light source
Use the 6 number key to toggle the Camera Light source
Use the 7 number key to toggle the Ceiling Light source

The directions displayed on the webpage.



Scene Graph