

CS 557 Assignment Seven A: Geometry Shaders

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Link: [CS 557 Assignment Seven a - OSU MediaSpace \(oregonstate.edu\)](#)

Project Description:

The code snippets provided are for an OpenGL Shading Language (GLSL) application, showcasing an advanced graphical rendering technique that involves vertex, geometry, and fragment shaders to create visually stunning effects. Specifically, it manipulates the appearance of 3D objects through dynamic lighting, color quantization, and chromatic depth effects to render a quantized sphere that mimics the visual properties of a rainbow under certain conditions. The vertex shader calculates the positions and normals of vertices in 3D space, the geometry shader subdivides the input triangles to increase the geometric detail, and the fragment shader computes the per-fragment color based on lighting and material properties. This technique allows for the creation of complex and vibrant visuals with a focus on depth and color variation, enhancing the overall visual experience. The application also provides a user interface to adjust parameters such as the level of subdivision, quantization multiplier, sphere diameter, and lighting model constants, enabling users to explore a wide range of visual effects.

Project Screenshot:







