**Assignment 3 Report**

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The menger sponge was implemented via 3 methods. Generate\_geometry utilized generate\_subcube (which created the geometry for a single cube) to recursively generate the larger sponge. CreateMenger then appended the geometry from all the cubes.

The lookAt function was based off generating the standard lookAt matrix. The rotate function uses the glm::rotate function after creating the axis vector, and then updates all the camera basis vectors. The other camera functions are mostly just simple increments.

The coloring of the cube is done in the fragment shader. The face normal is calculated in the geometry shader, and that is used in the fragment shader to determine the color. Coincidentally, the absolute value of the normal vector corresponds to the color values. The floor shader is done similarly. The geometry shader gets the world position and the fragment shader determines whether to color black or white based on that position.

I implemented everything on project page, however I did run into a problem with lighting, which isn’t covered on the page. Rotating the camera can cause the lighting of faces to change. I believe it’s a shader problem however I wasn’t able to pinpoint where.





