

CS 500
Student Choice Project
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DigiPen

Summary: The ability to read and project textures added. Texture-based global lighting added.

While not strictly necessary on every shape, every shape now has support for uv coordinates. This was used in conjunction with `stb_image` to read in textures. The largest bulk of the work came not from implementing uv compatibility with shapes, but from getting the collisions to respect that an object was using a nonuniform color.

An unanticipated issue: extracting uv coordinates is only supported in shaders in opengl. As a result, a more direct access to the memory stream had to be established. My end result consists of my solution to generically read images of any input size, and was wrapped in a function that interpreted that from uv coordinates.

In order to utilize textures as lighting, the equations which read radiance had to be overhauled. Luckily, at this point most of the work from the texture interpreting gave me a workflow to pull from. At present, the lighting method is only 1 level disconnected from the standard methods of texture reading.

All renders are 2048 steps. What is shown is the image applied to the sky sphere, followed by the render.





