# Interactive Computer Graphics Project 5

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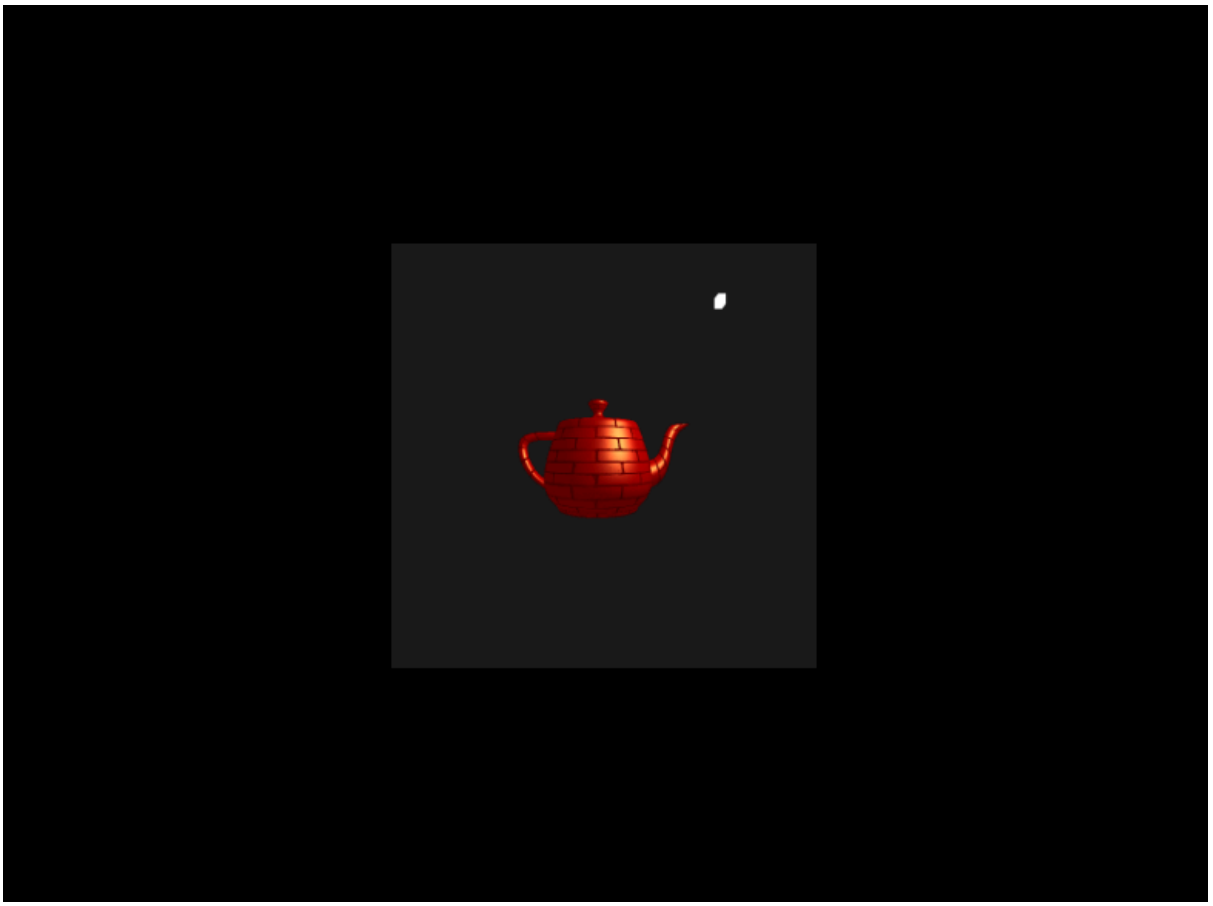
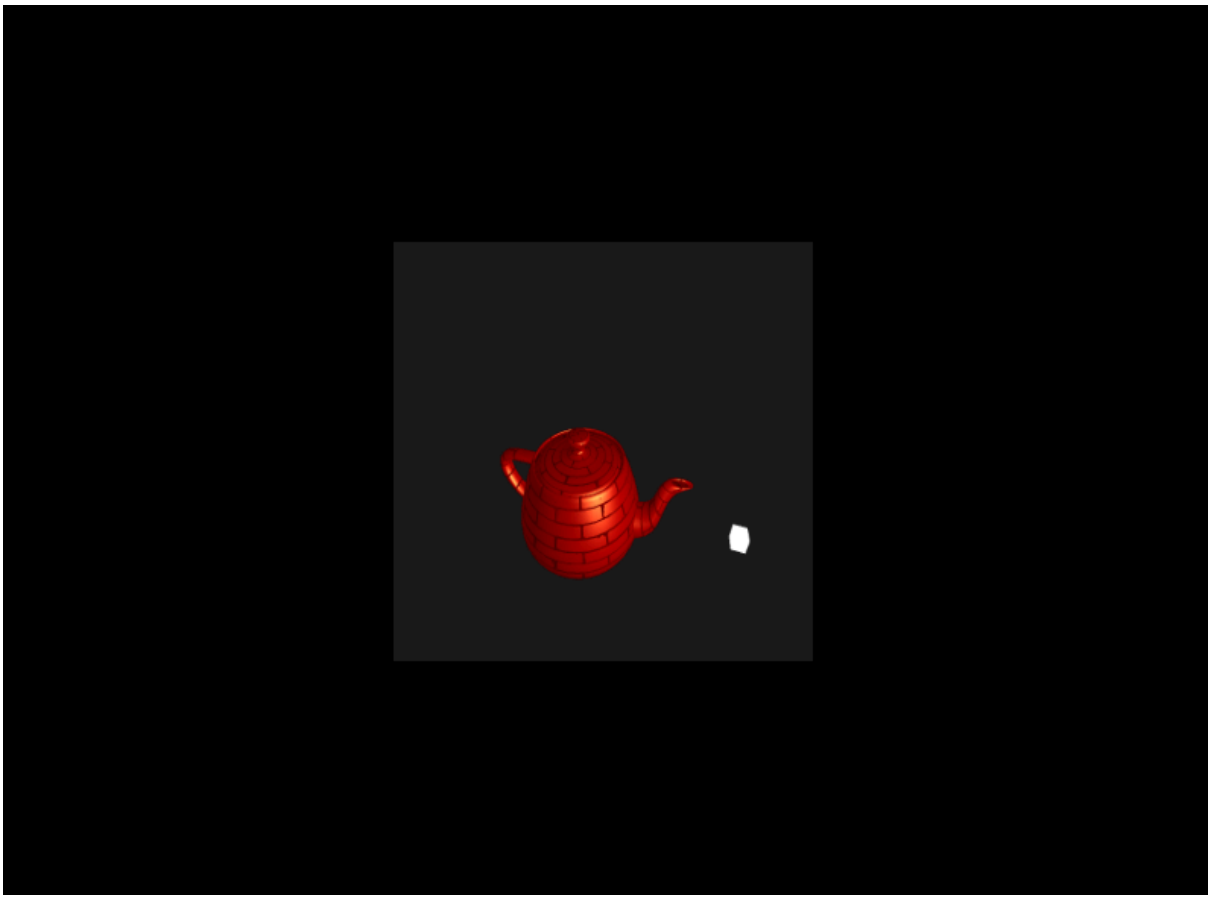
## Features Implemented

- Program takes name of obj in cmdline argument
- Parsed mtl file to get all ambient, diffuse and specular properties, diffuse and specular texture are both applied.
- Object is rendered to a texture via a render buffer
- A square plane is drawn, and the rendered texture is applied to this plane.
- Left mouse button and right mouse button control the camera used to render to the texture
- Holding CTRL key while using mouse rotates the light object
- Holding ALT key controls the camera viewing the plane in the same way
- Plane color is changed slightly with a different glClear() value
- The rendered texture uses bilinear filtering for magnification and mip-mapping with anisotropic filtering for minification.

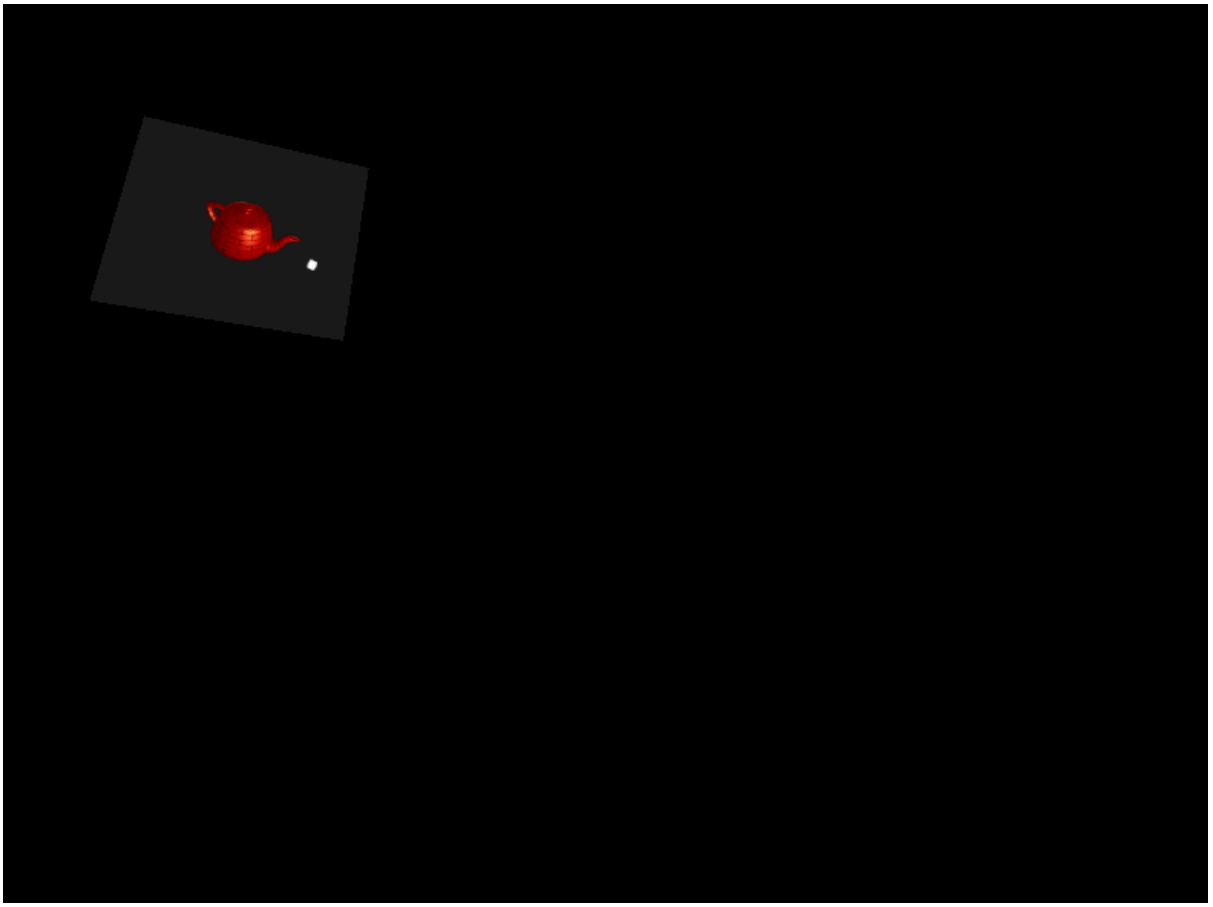
Screenshots:



From another angle:



Another angle of the plane itself:



## How to use

- “Esc” closes the window.
- “P” switches between perspective and orthographic projection
- Left mouse button (and drag) controls camera angles
- Right mouse button (and drag) controls camera distance
- Drag left mouse button while holding CTRL key rotates the light object
- Holding ALT key controls the camera viewing the plane
- “F6” recompiles shaders

## Operating System and Compiler notes

Operating System: Ubuntu 22.04.1 LTS (through WSL on windows)
Compiler: I used a Cmake build, which uses gcc to compile.

The project files can be built by running the script ./build.sh.
./run.sh then runs the program from the build folder.

External libraries:

GL, glut and GLEW are linked as specified in the cmakelists.txt file:

```
target_link_libraries(project5 GL)
target_link_libraries(project5 glut)
target_link_libraries(project5 GLEW)
```