Interactive Computer Graphics Project 7:
Shadow Mapping

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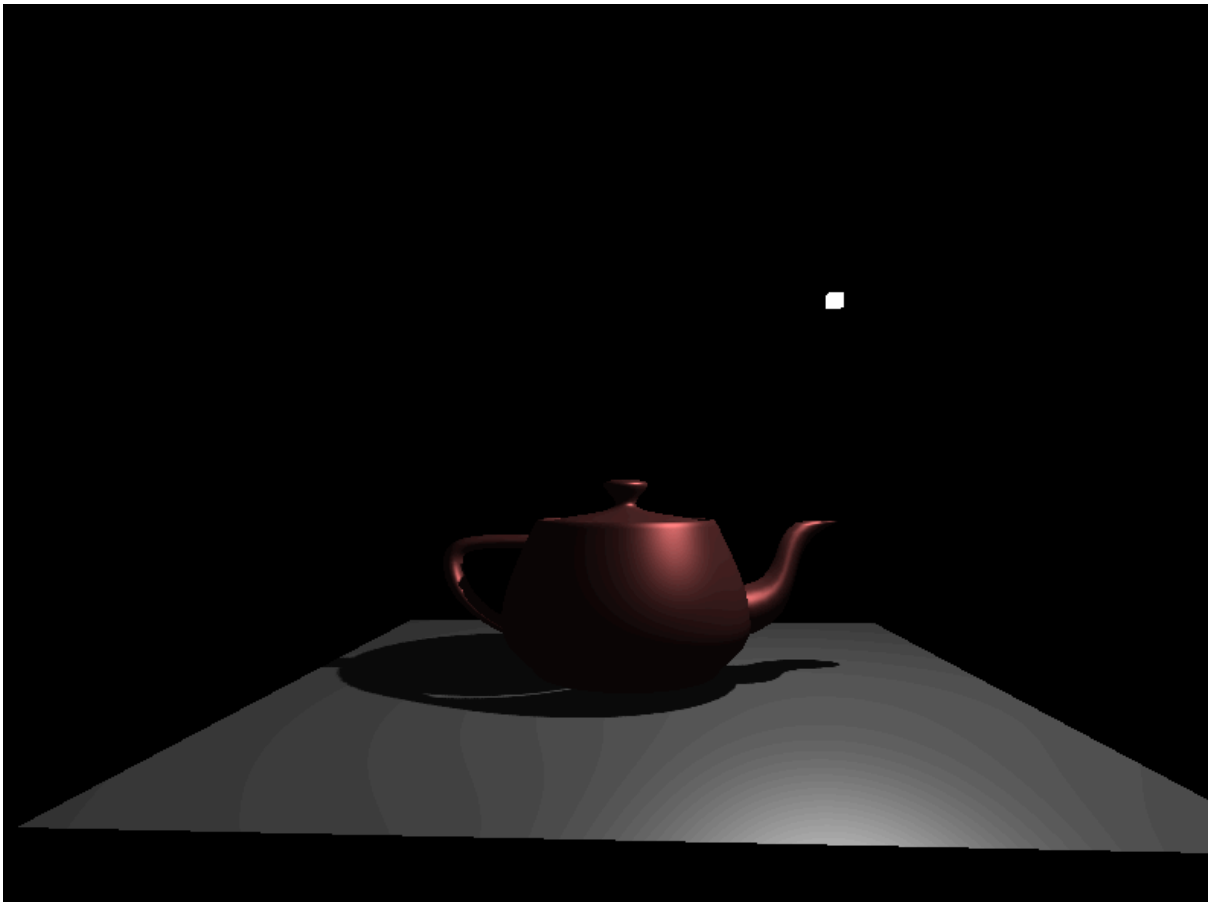
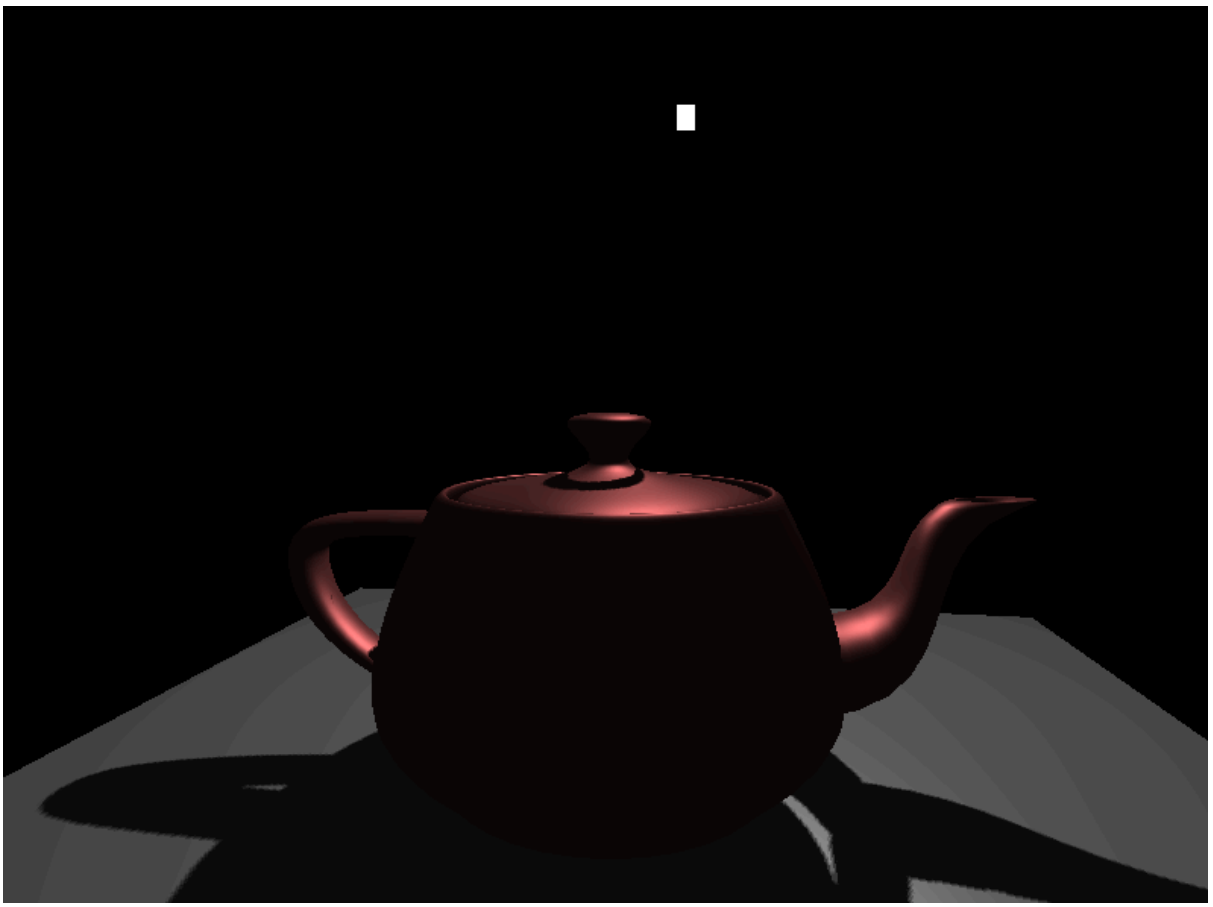
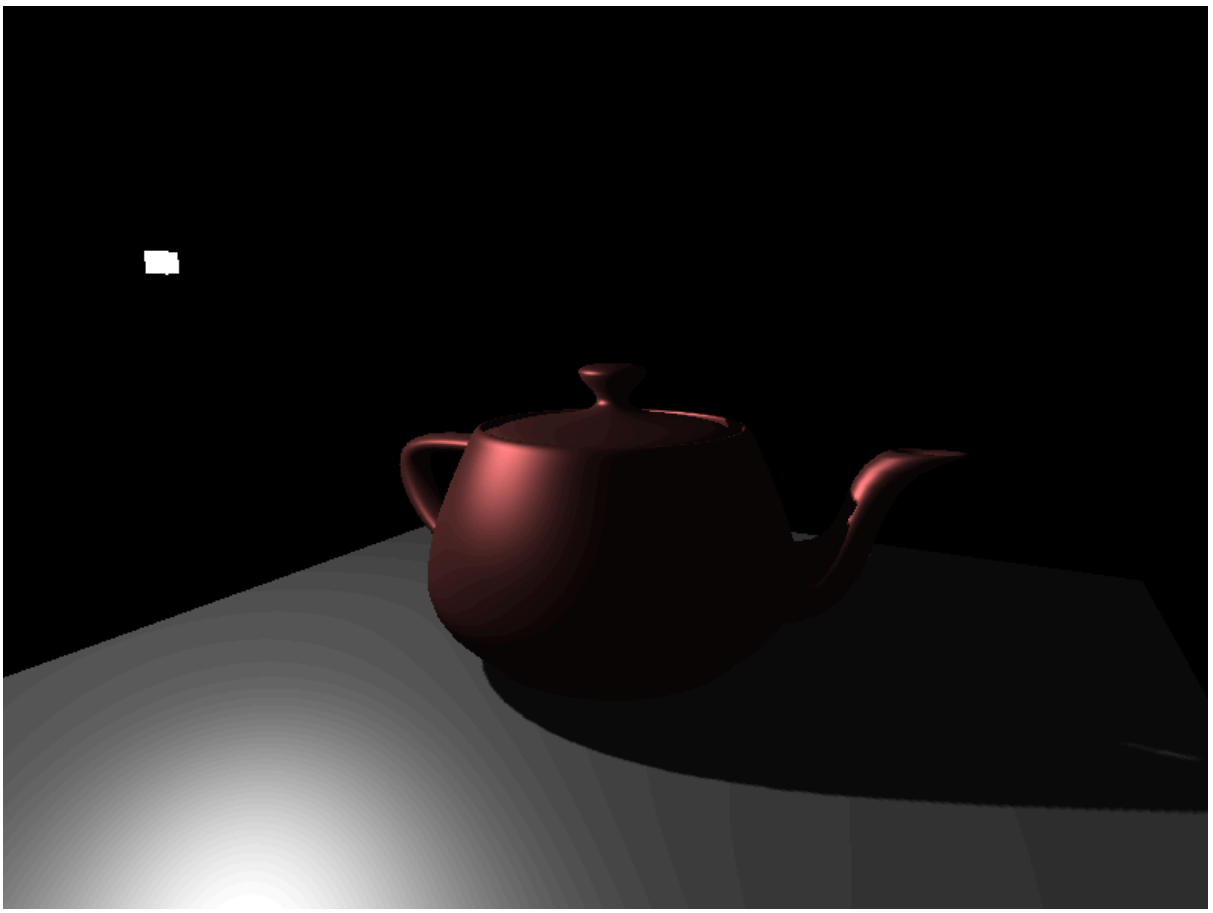
Features Implemented

- Teapot is rendered with a flat plane underneath
- Shadow depth map is computed from light perspective
- Shadows are rendered for both plane and teapot by sampling from depth map
- Light source is displayed (a cube model is drawn at the location of the light)
- The light can be controlled independently of the camera position (hold CTRL to control light)
- Bias and pcf are used for shadow calculation

Screenshots:







How to use

- “Esc” closes the window.
- Left mouse button (and drag) controls camera angles
- Right mouse button (and drag) controls camera distance
- Holding CTRL controls light rotation
- “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(project7 GL)
target_link_libraries(project7 glut)
target_link_libraries(project7 GLEW)
```