CS 5610/6610 - Spring 2022 - Interactive Computer Graphics

Project 3 - Shading

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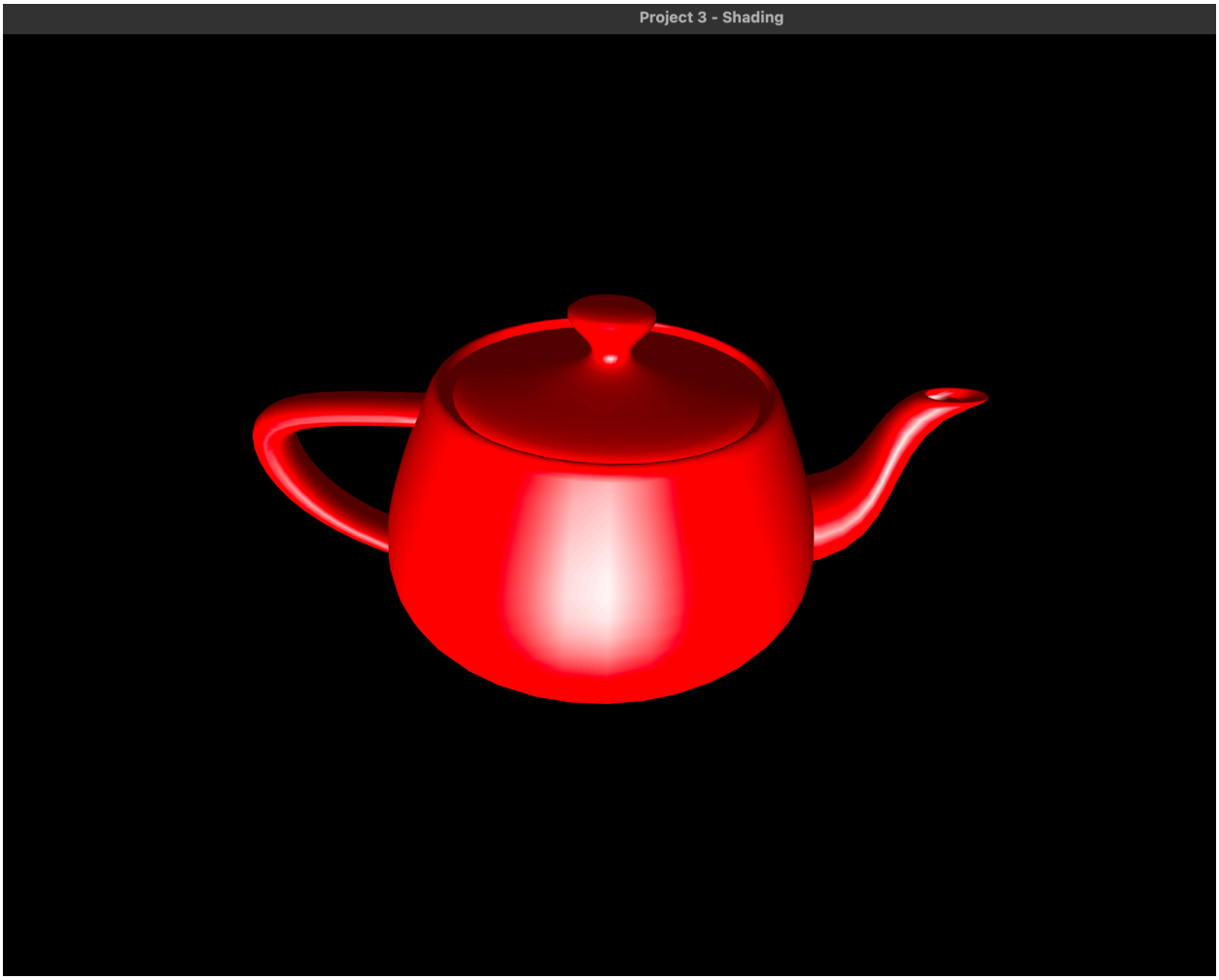
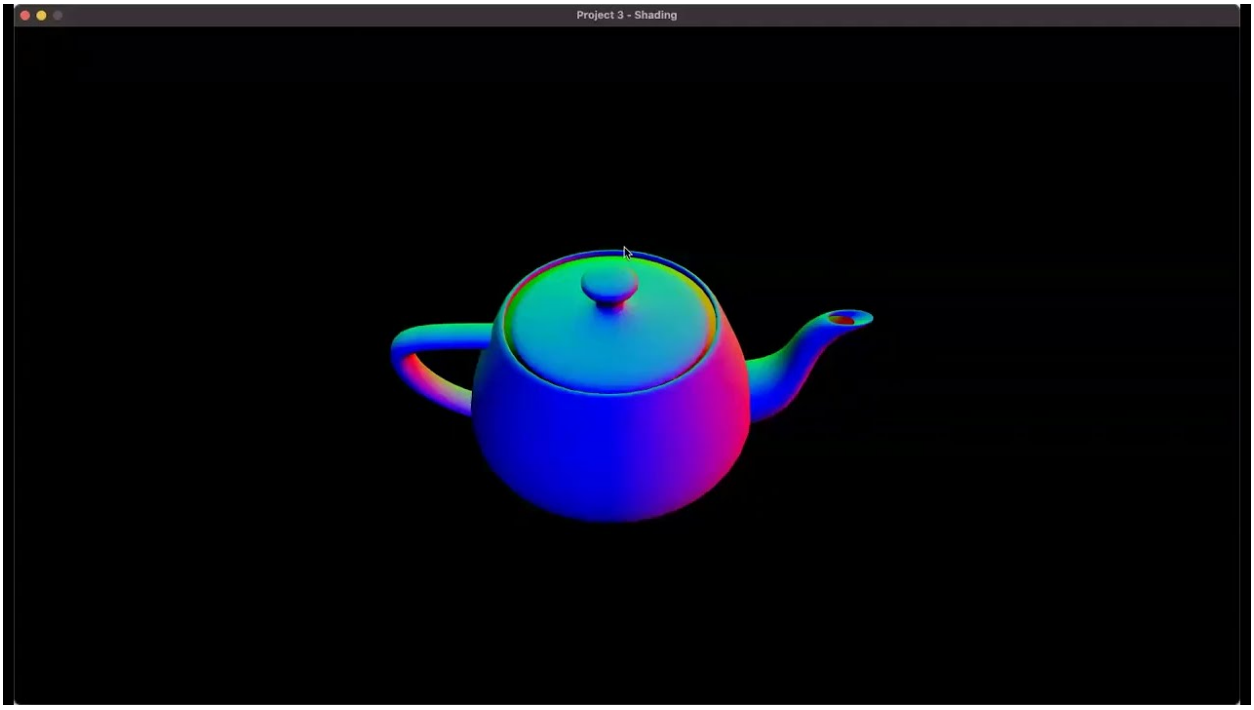
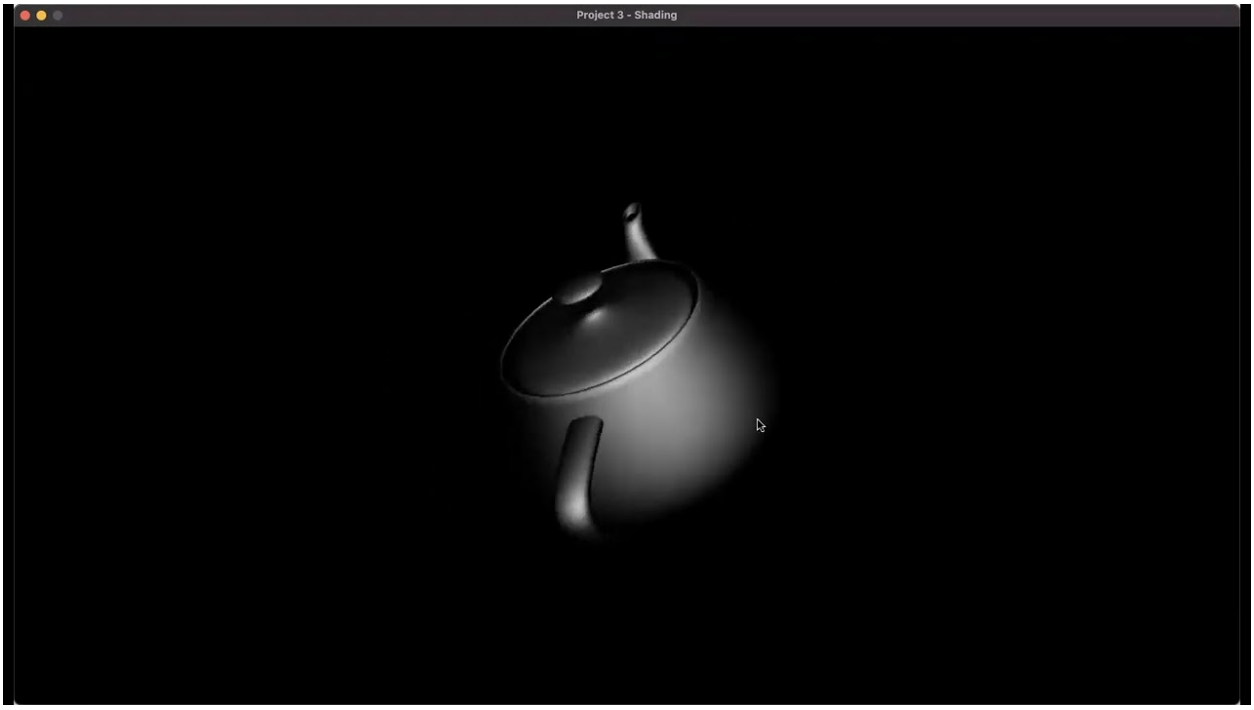
Project Screenshots:




Project 3 - Shading

Videos

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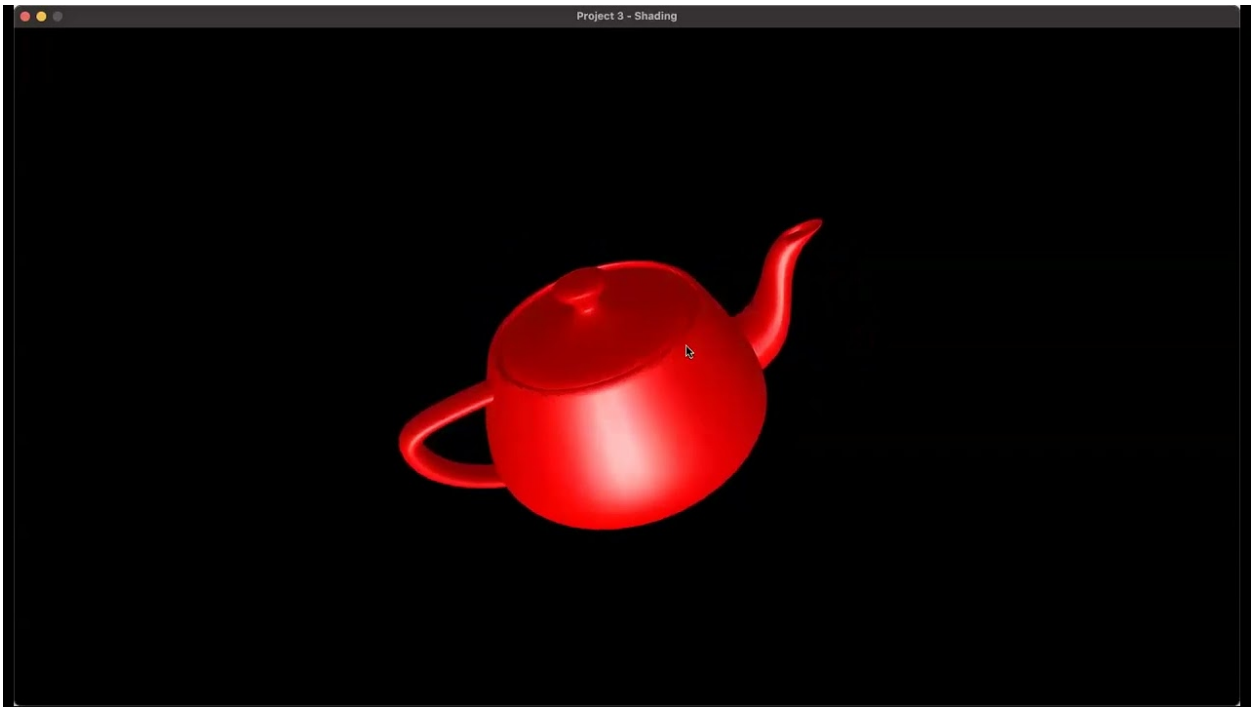
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Implemented Features:

- **B**uffers are generated for the triangle vertices of an .obj file.
- Draw the triangles using either glDrawArrays.
- For shading the triangles we will need surface normals. Generate a normal buffer.
- Implement the Blinn shading in the fragment shader, including ambient, diffuse, and specular components.
- The light position can be hard-coded as a constant or a uniform parameter.
- When the CTRL key is down, left mouse click and drag should adjust the light rotation around the object.

Development Environment:

OS: OS X 12.01
IDE: XCode 13.2.1
Compiler: clang++

External Libraries and Dependencies:

- C++
- OpenGL
- glfw
- GLEW
- glm
- cyCodeBase

All the libraries and dependencies can be found in the include and lib folder inside the project directory.

Steps to Compile and Run the Project:

- Run the below command in the project directory (inside the Project1 folder).

```
clang++  -std=c++11 -stdlib=libc++ -arch x86_64 -o run transformations/
main.cpp lib/libGLEW.2.2.0.dylib lib/libglfw.3.3.dylib -framework OpenGL
-I include -L lib
```

```
./run teapot.obj
```

Run the below command to run the executable.

- Alternatively, the project can be open in XCode and running on Rosetta.