CS 5610/6610 - Spring 2022 - Interactive Computer Graphics

Project 2 - Transformations

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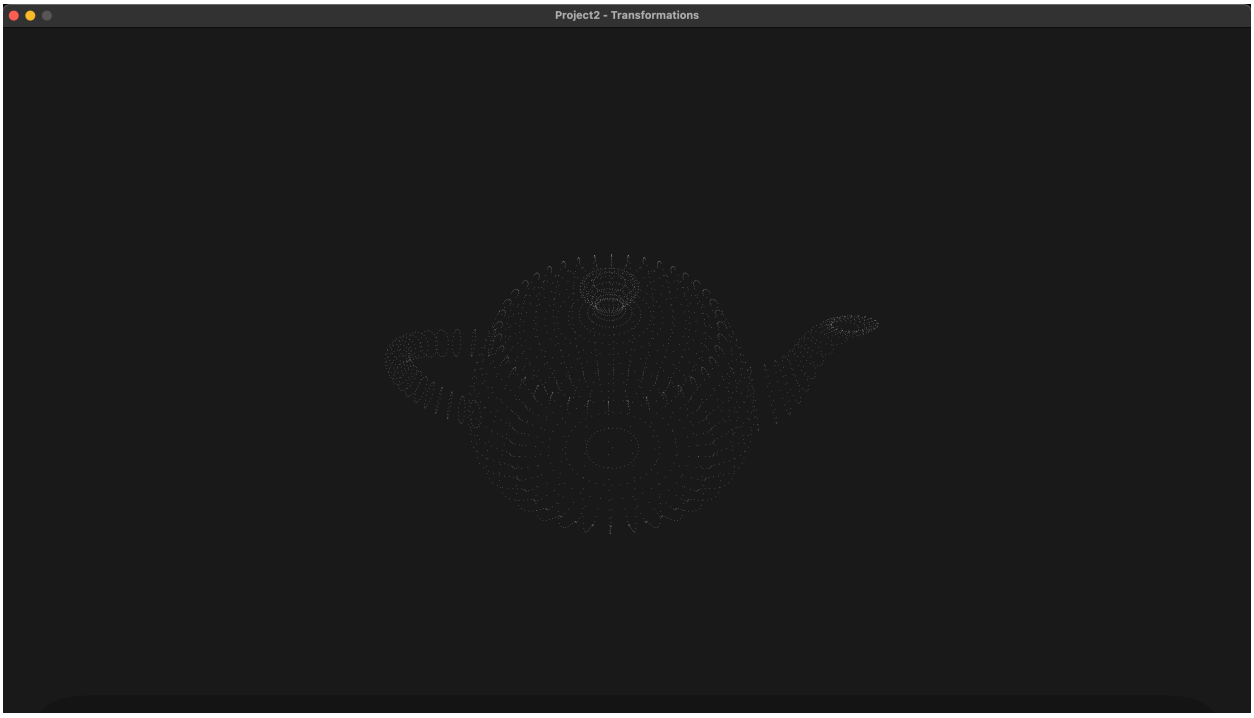
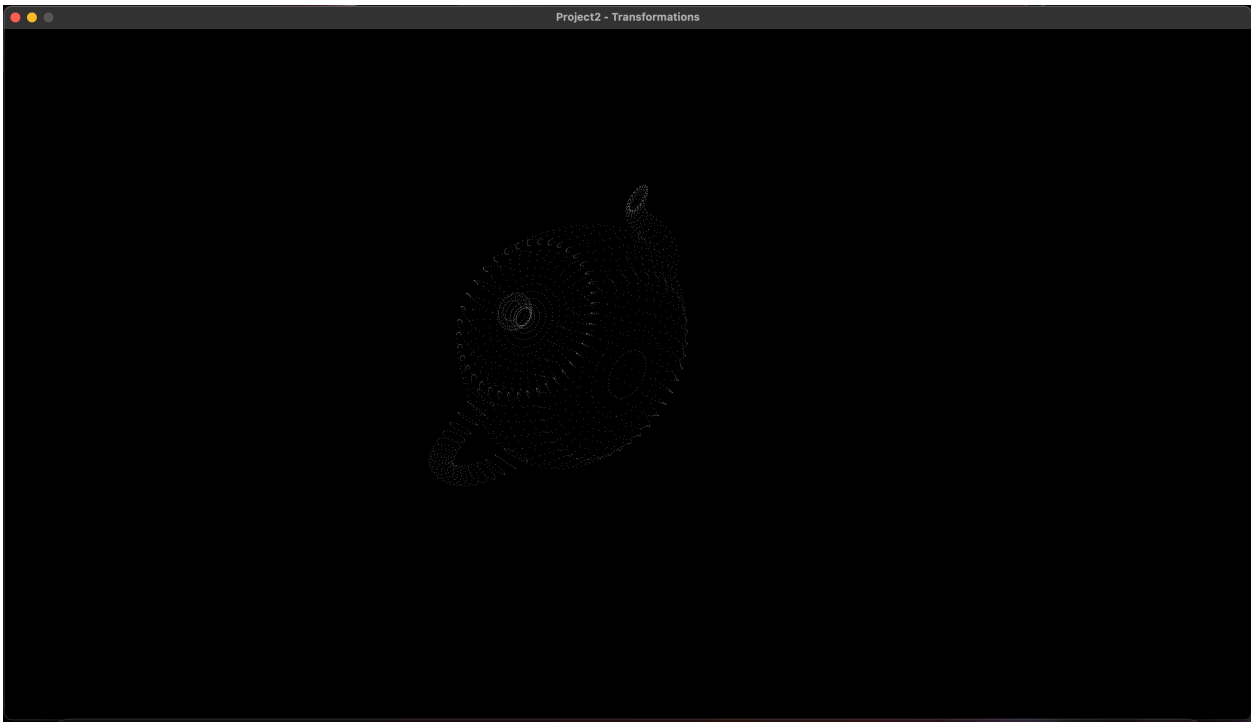
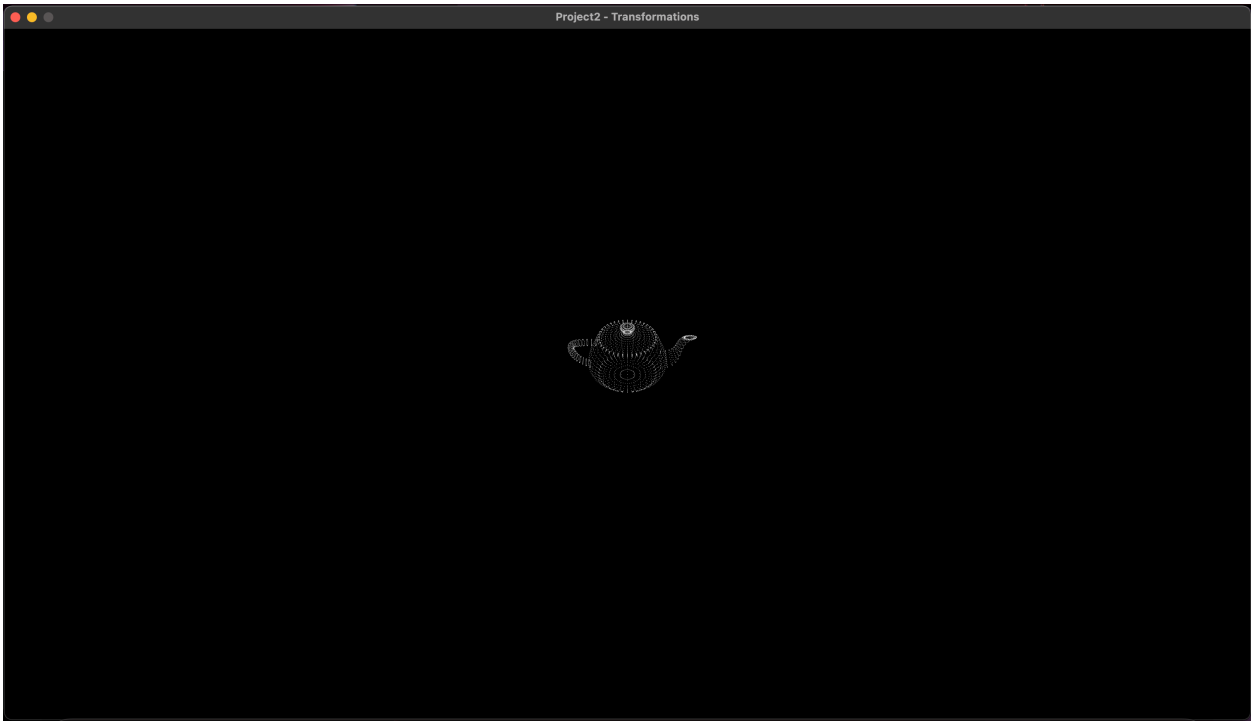
Project Screenshots:



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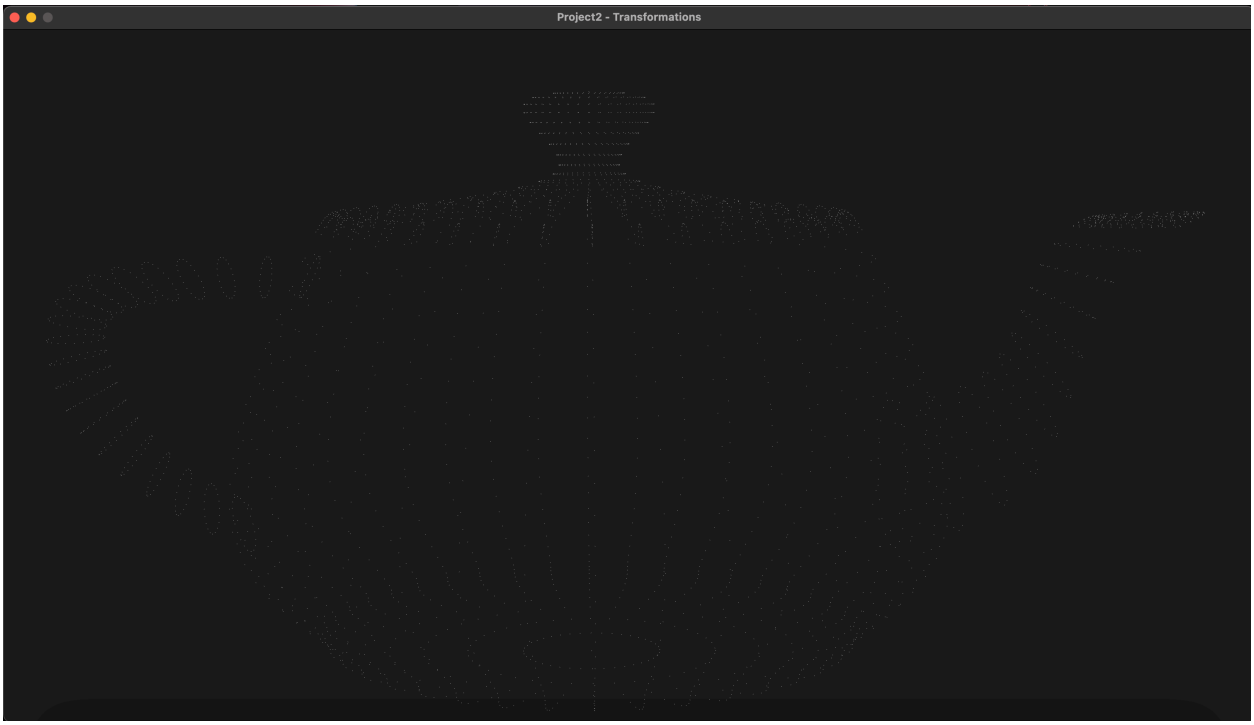
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Implemented Features:

- The vertex data is read from .obj file.
- The program takes name of the .obj file as the first command-line argument.
- Vertex array object is generated and bound.
- The GLEW library is used for initializing OpenGL extension functions.
- The vertex buffer is generated and the data is set.
- The GLSL shaders were written and compiled into GLSL program to be used for draw call.
- The left mouse button (and drag) can adjust the camera angles.
- The right mouse button (and drag) can adjust the camera distance.
- Perspective transformation is used for projection.
- The matrix to your vertex shader is sent as a uniform parameter.
- All OpenGL-related headers are placed under the GL directory of an included path.
- Pressing the F6 key recompiles GLSL shaders.
- Object is centered by adjusting the transformation matrix.

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.