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Professor Tumblin

CS 351

7 Dec 2020

Project C Report: A Student's Desk

Video:

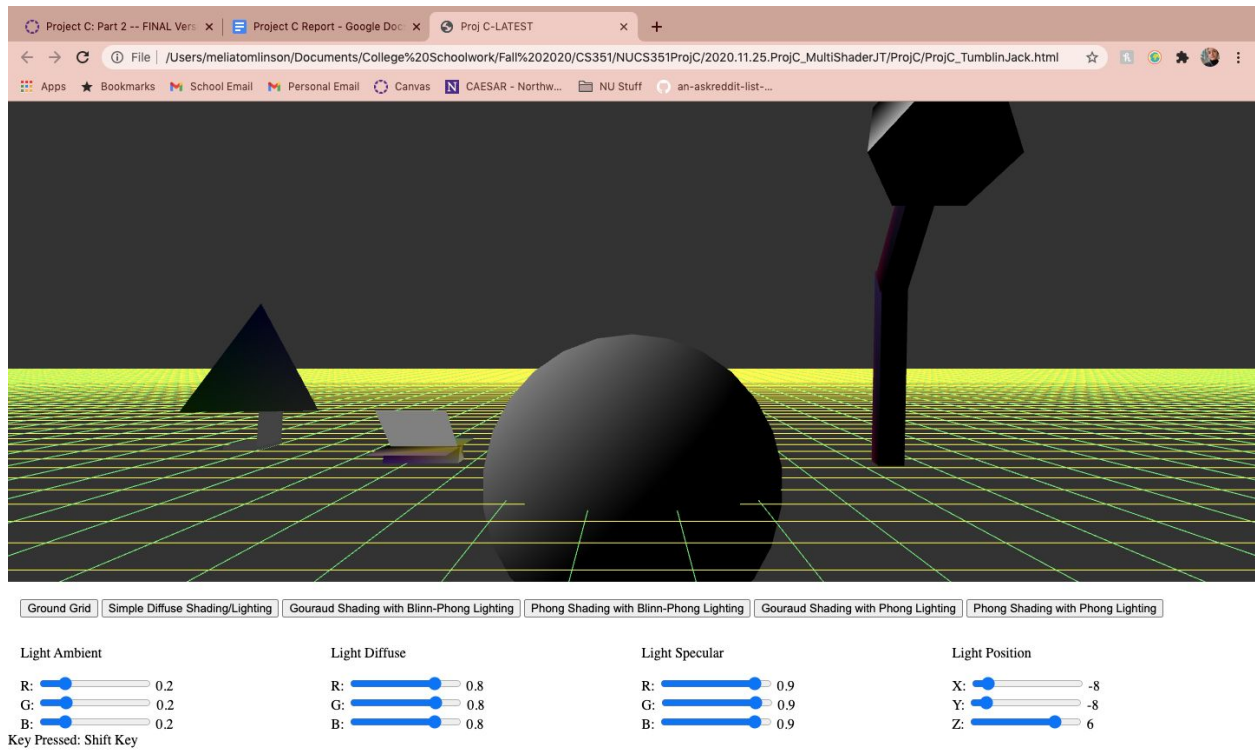
<https://northwestern.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=50731ade-95f4-403f-86e3-ac89016dc720>

The goal of this project was to combine previous knowledge of animation of 3D figures and user movements with lighting and shading to create a world including all three using two different types of shading (Gouraud and Phong) and two different types of lighting (Phong and Blinn-Phong).

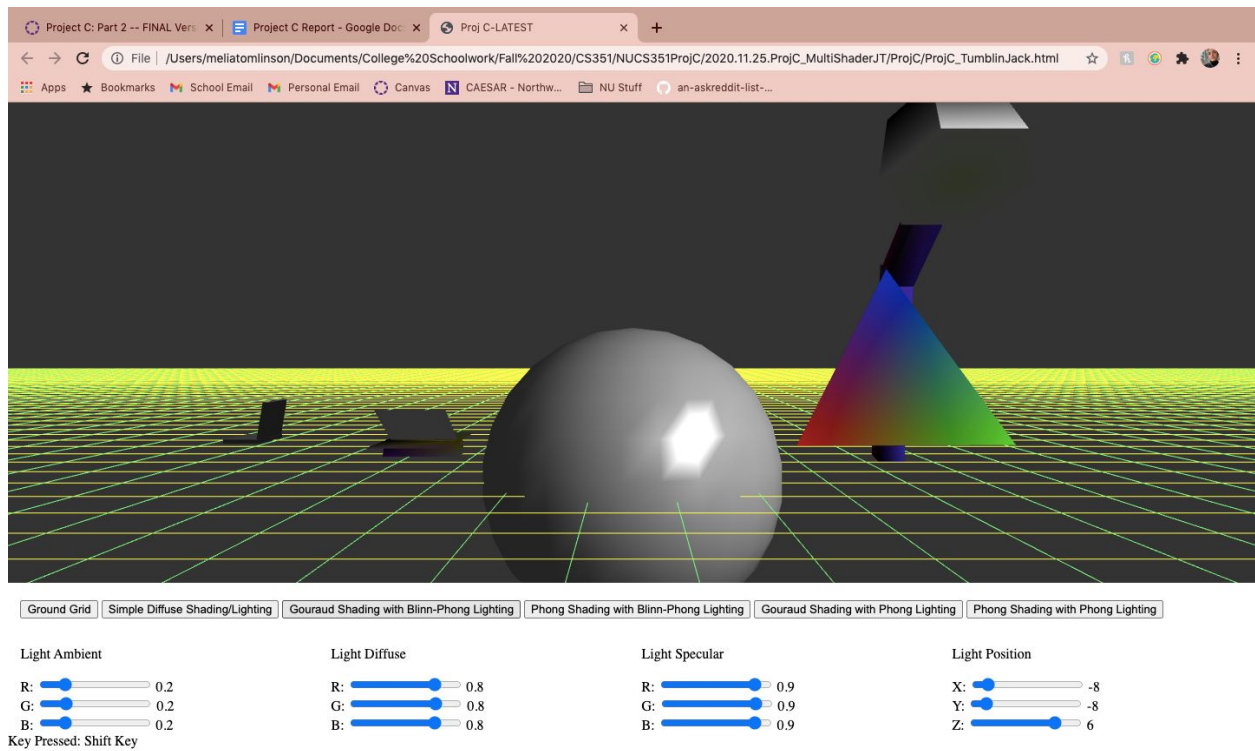
User's Guide

- WASD/Shift/Space keys for camera movement
- Arrow keys for camera aiming
- Buttons and sliders below canvas for turning off/on ground grid, and switching between diffuse, Gouraud, and Phong shading, as well as light controls to change light position, type (Phong and Blinn-Phong), and RGB values.
- M key to switch materials

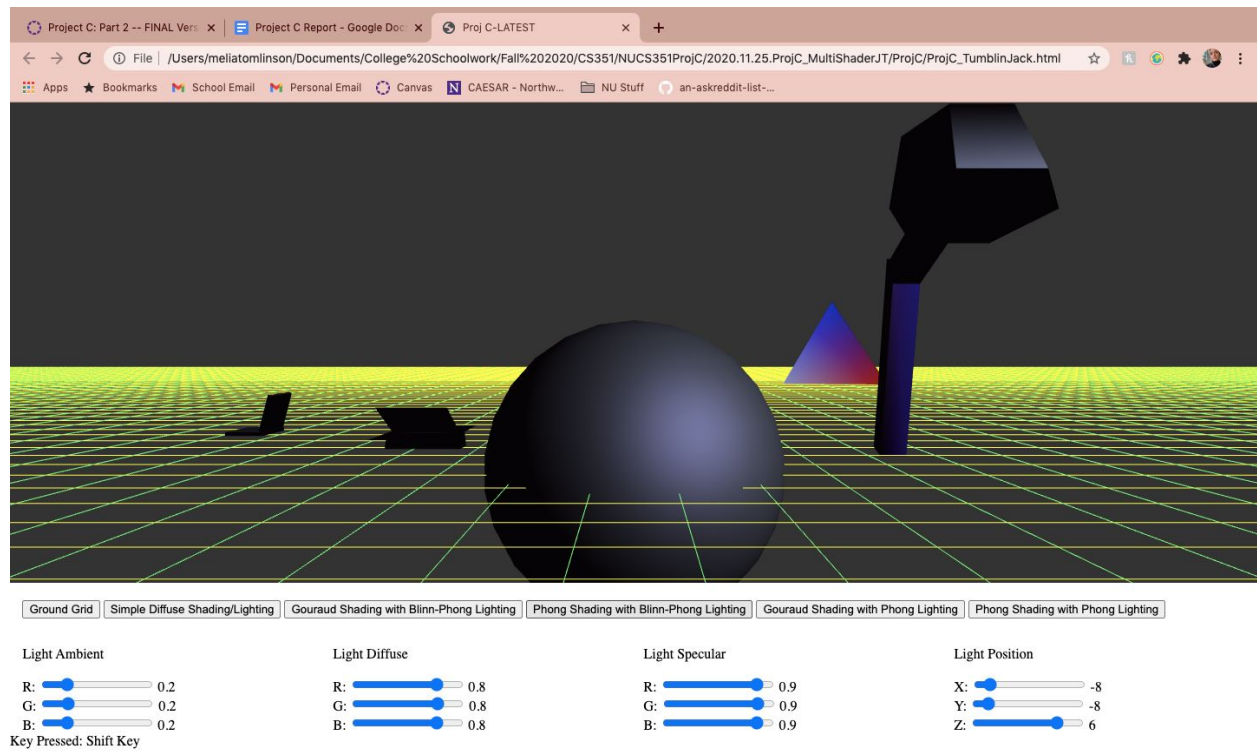
Results



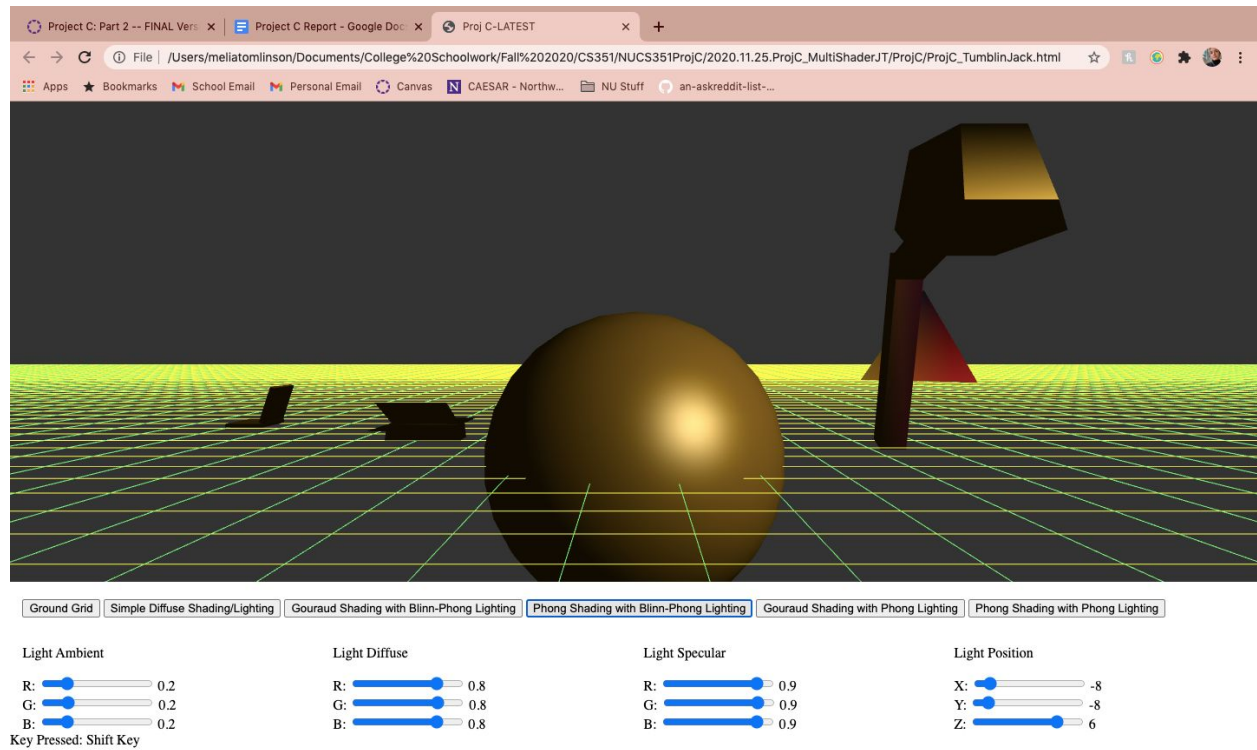
Screen on Load



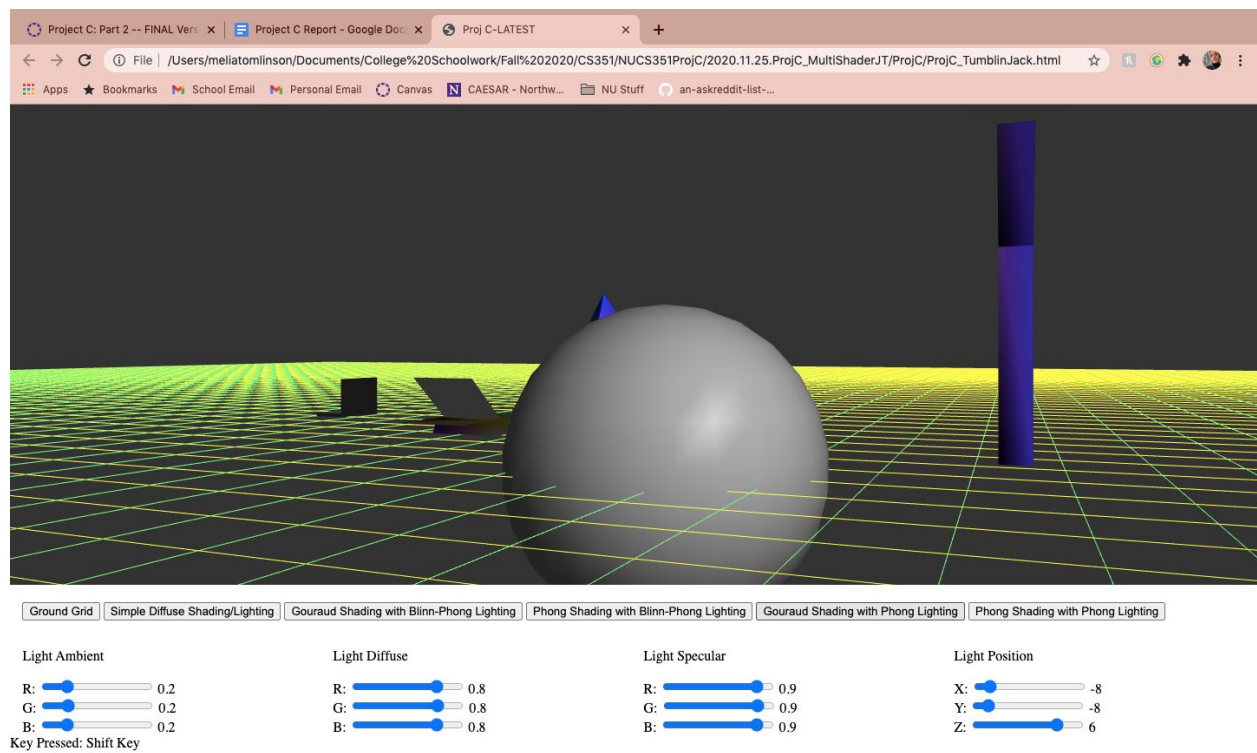
Gouraud Shading with Blinn-Phong lighting



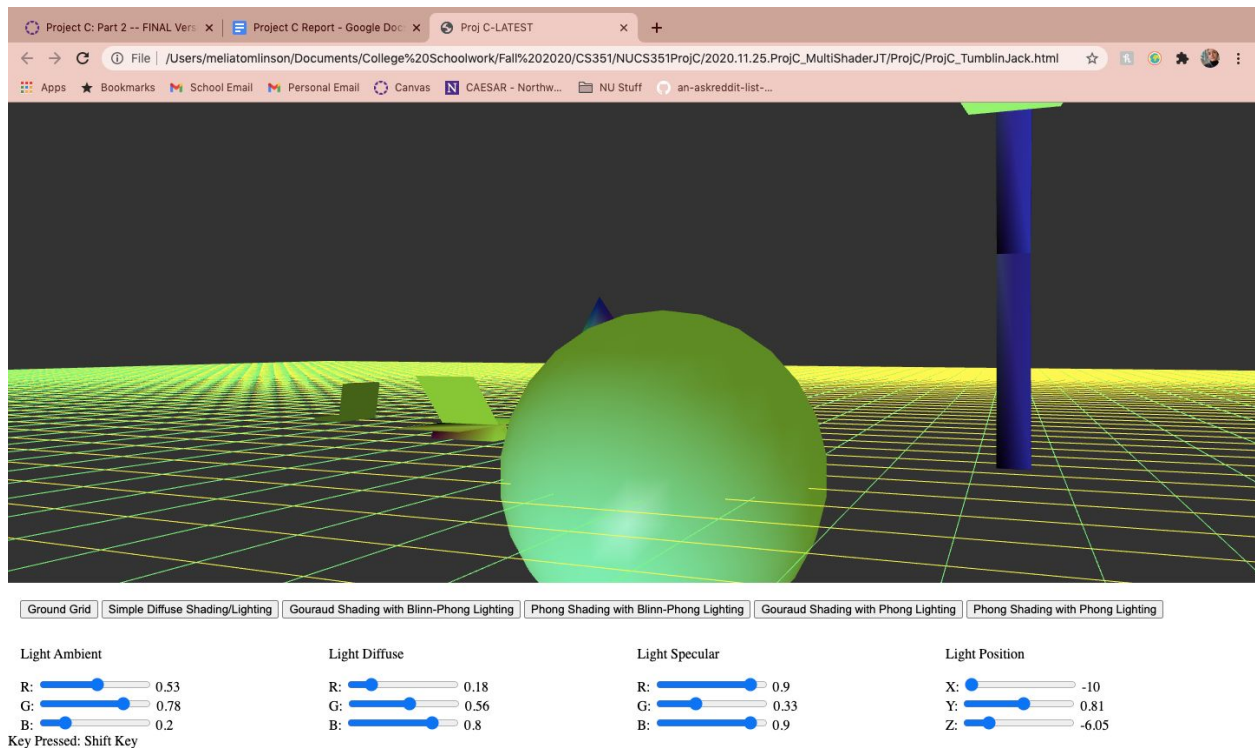
Phong Shading with Blinn-Phong Lighting



Phong-Shading with Blinn-Phong Lighting after a material change



Gouraud Shading with Phong Lighting after a camera position change



Light control changes

Scene Graph

