Project 3: Three.js Project

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Test Cases

Table 1

Test Cases for JOGL transformations

Control	Function	Expected Output	Actual Output	Pass/Fail
Light1 checkbox	Toggles Light1	Light1 should toggle on/off	Light1 toggles on/off	Pass
Light2 checkbox	Toggles Light2	Light2 should toggle on/off	Light2 toggles on/off	Pass
Light1 Color	Change color of Light1	When Green is selected, Light1 should be green	When Green is selected, Light1 is green	Pass
Light2 Color	Change color of Light2	When Red is selected, Light2 should be red	When Red is selected, Light2 is red	Pass
Light1 Intensity	Change the intensity of Light1	The intensity of Light1 should change with the slider	The intensity of Light1 changes with the slider	Pass
Light2 Intensity	Change the intensity of Light2	The intensity of Light2 should change with the slider	The intensity of Light2 changes with the slider	Pass

Note. The effects of the controls are permanent, except in the case of a page refresh. As such, a refresh is done between each screen capture to isolate the effects of the function in question. The only exception being checks for one light were done with the other light turned off.

Source Code

The source code for this project contains three JavaScript files and one HTML file: OrbitControls.js, three.min.js, scalf-homework3.js, and scalf-homework3.html. OrbitControls.js and three.min.js are provided by Threejs.org. Three.min.js is a minified version of three.js, a JavaScript 3D library. OrbitControls.js provides mouse click controls for manipulating the view of the 3D scene. The scalf-homework3.html file provides the webpage that displays the controls and 3D scene. Finally, scalf-homework3.js contains the JavaScript logic for building and updating the 3D scene.

Screen Captures

I did not capture any screen captures for the OrbitControls.js functions as they were not created by me; they were included for ease of "looking around." I have captured no more than three screen captures for each of the HTML form controls despite having more than two settings. The screen captures cover turning lights off, changing the lights' colors, and changing the lights' intensities. Since the lights are on by default, I've only included a screen capture of the lights turning off. Please keep in mind that the scene will not be completely dark due to a minor ambient light being used. Furthermore, to better display the effect of a control on one light, the other light was turned off. Finally, the `rotateScene()` method call within my `update()` method was commented out so all screen captures were from the exact same angle.

Figure 1

Screen Capture of Default Configuration

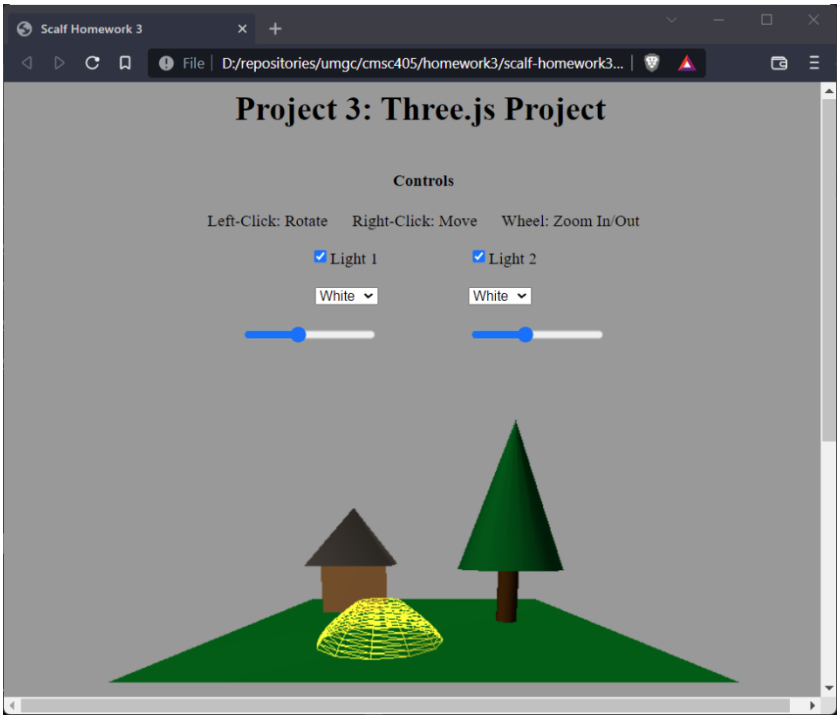

Figure 2

Screen Capture of Light 1 Turned Off

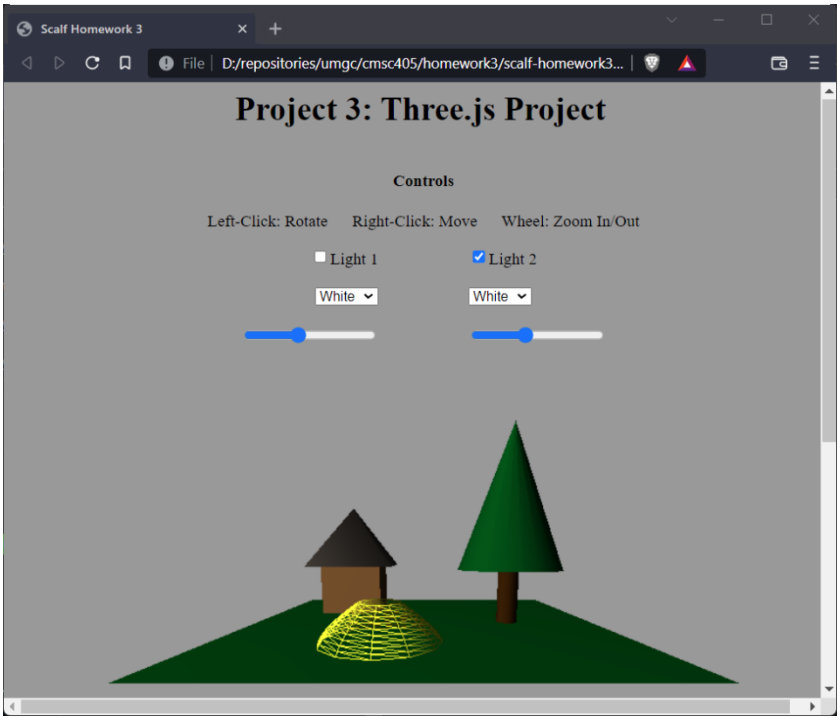

Figure 3

Screen Capture of Light 2 Turned Off

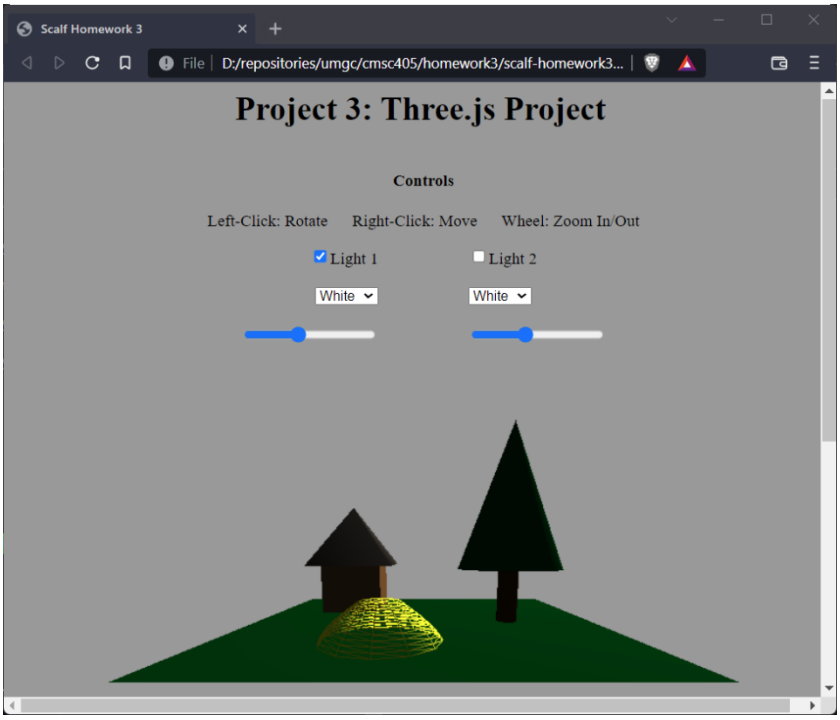

Figure 4

Screen Capture of Both Lights Turned Off

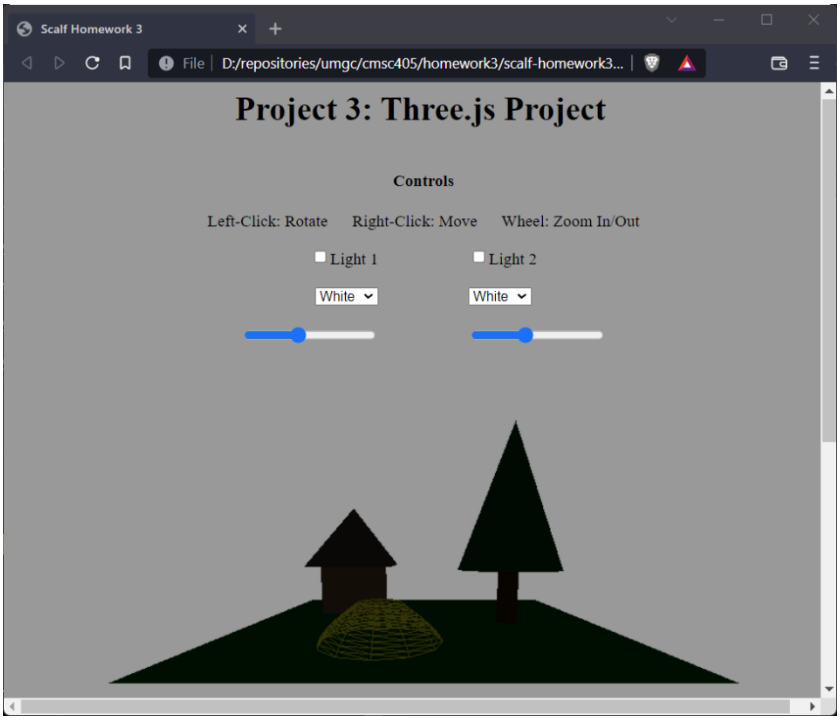

Figure 5

Screen Capture of Light 1 Set to Green

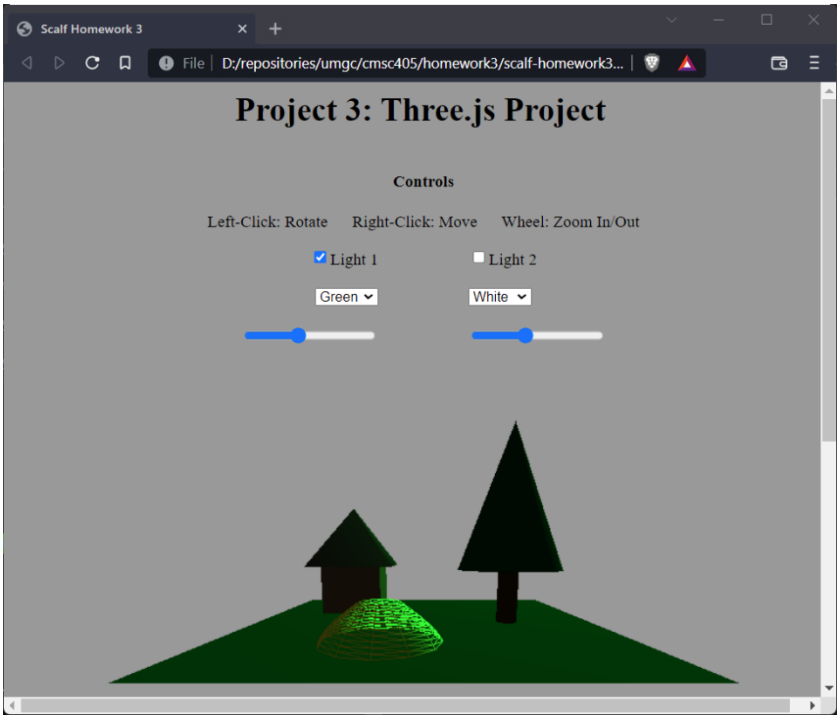

Figure 6

Screen Capture of Light 2 Set to Red

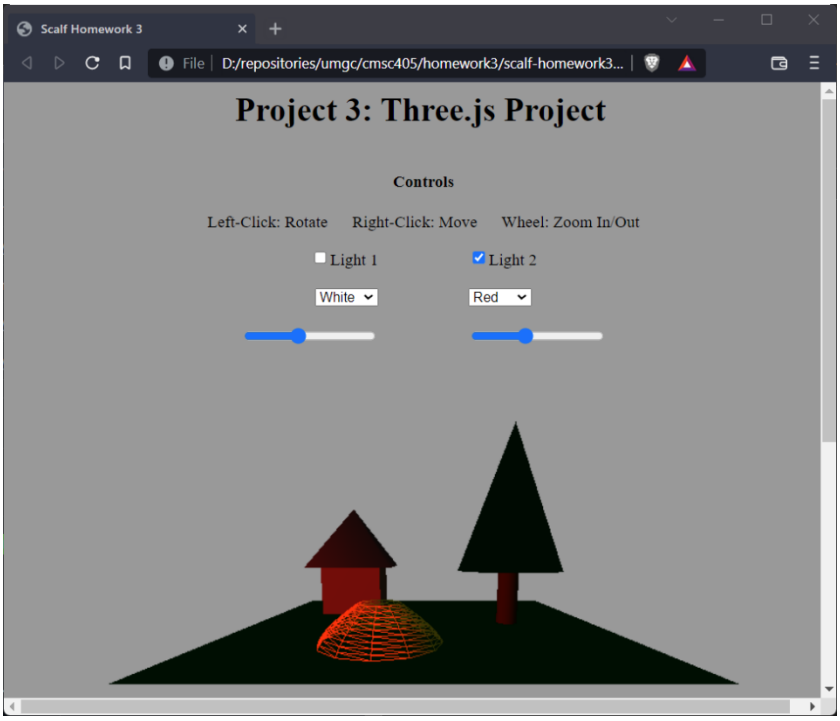

Figure 7

Screen Capture of Light 1 Set to High Intensity

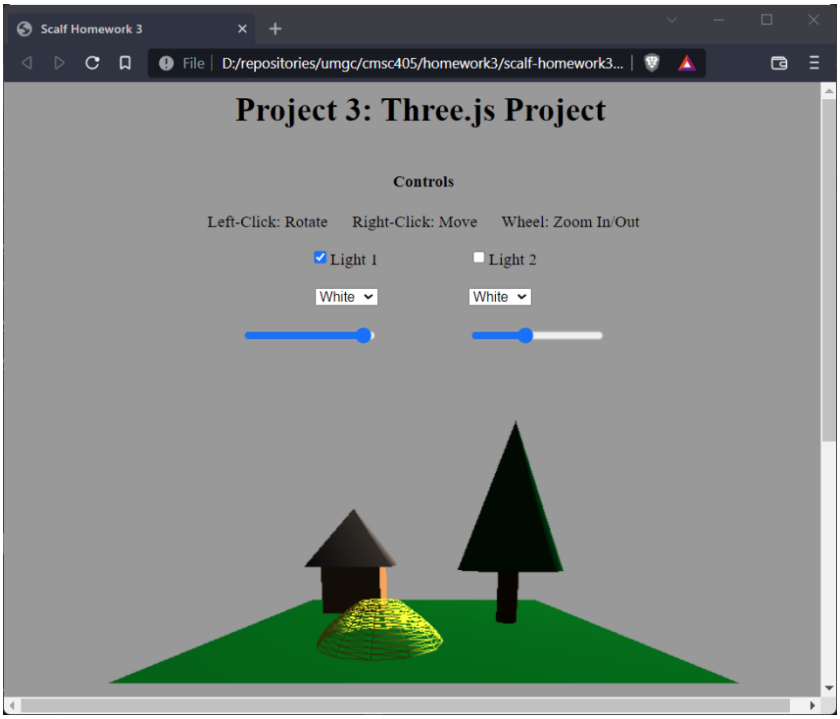

Figure 8

Screen Capture of Light 1 Set to Low Intensity

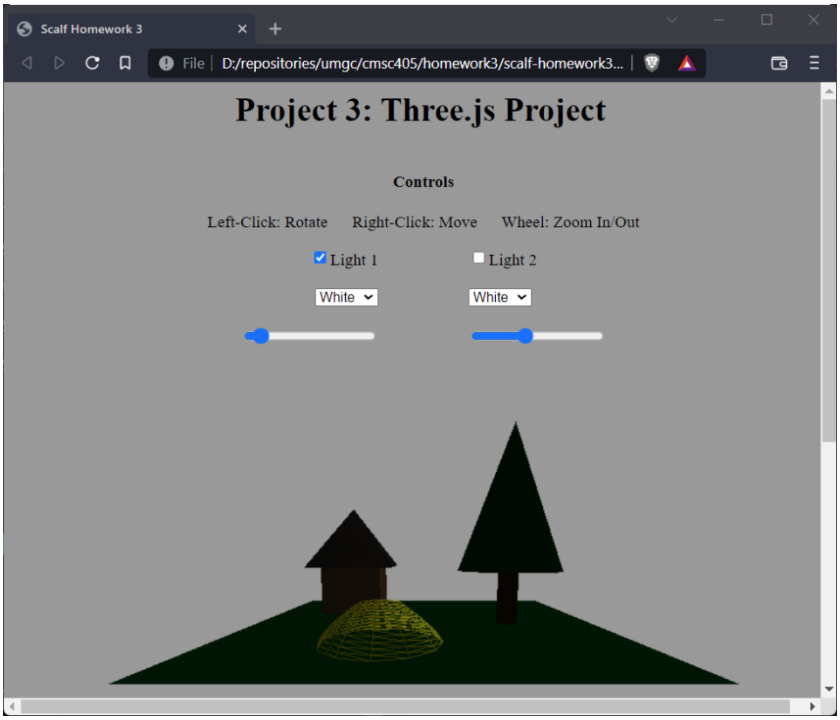

Figure 9

Screen Capture of Light 2 Set to High Intensity

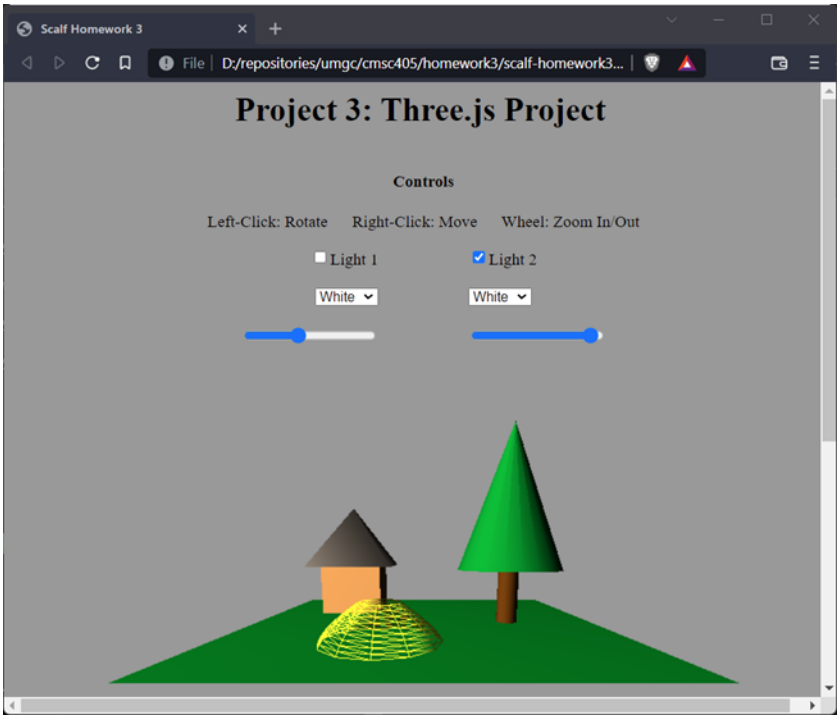

Figure 10

Screen Capture of Light 2 Set to Low Intensity

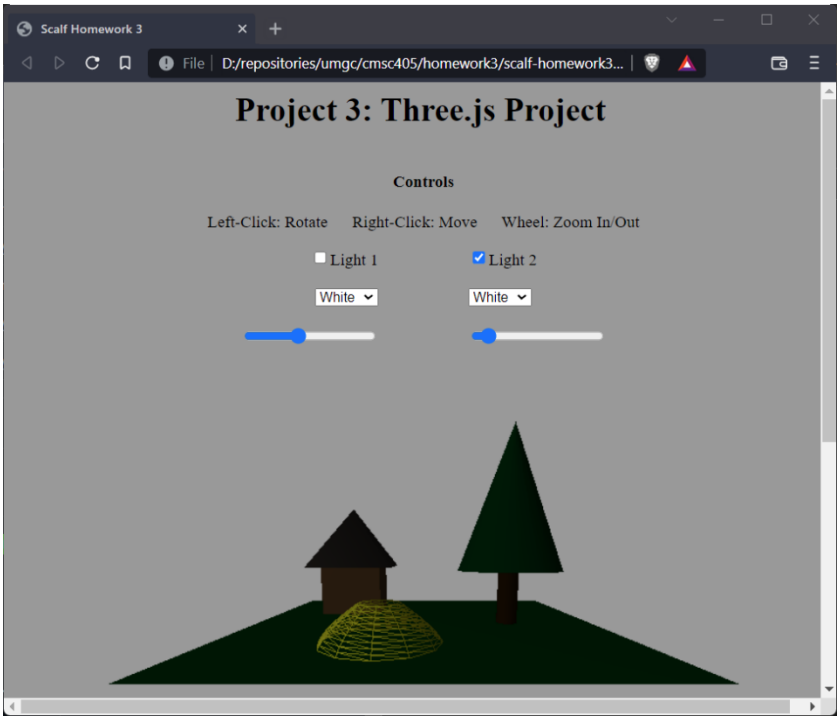

Figure 11

Screen Capture of Mixed Color Lights at High Intensity

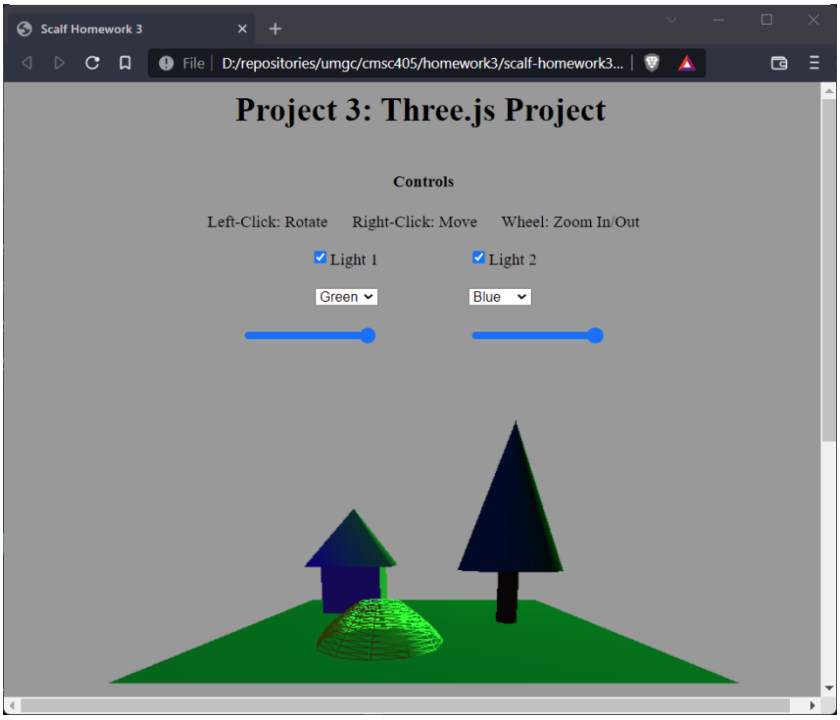

Figure 12

Screen Capture of "Black" Lights