**Module 5 Porfolio Milestone**

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CSC405 Graphics

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**Screenshots**

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**Interactive Viewer**

In this assignment, I designed an interactive WebGL viewer that renders a rotating 3D cube. The code builds off of the code snippets from 5.4.6 which provided the structure for rendering objects using `lookAt` and projection matrices. These matrices are utilized in my custom function, `updateCamera()`, in which `lookAt` and the projection matrices are embedded. I expanded upon by adding user-controlled sliders to control the camera movement. There is also a dropdown menu so users can view the cube either though perspective projection or orthographic projection.

The Radius, Theta, and Phi sliders allow users to dynamically adjust the camera’s position around the cube. The Radius slider determines the distance of the camera from the cube, zooming in and out. The Theta slider allows users to rotate the camera horizontally around the cube and the Phi slider tilts the camera vertically. It appears the cube is moving in a wide large circle in and out of view, but in actuality, that is the camera moving and the cube is fixed in position.

**Updated Version – 1/11/2025**

**References**

Angel, E. S., & Shreiner, D. (2015). *Interactive Computer Graphics : a top-down approach with WebGL*. Pearson, Cop.

*Creating 3D objects using WebGL*. (n.d.). MDN Web Docs. https://developer.mozilla.org/en-US/docs/Web/API/WebGL\_API/Tutorial/Creating\_3D\_objects\_using\_WebGL