CS4052: Computer Graphics – Assignment 3

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Tasks:

For this assignment our task was to draw four teapots in four different viewports. The program required the following features:-

Each viewport should show a different view of the teapot. The teapot should appear moving in at least one viewport and static in at least one viewport. At least one viewport should depict an orthographic projection, and we must do this using an orthographic projection matrix. At least two viewports should depict a perspective projection, each with different properties. At least one viewport should use the look-at function for the view matrix.

Solution:

For this viewport, I began by creating four viewports using glViewport() to divide the window into quarters and then draw the teapot in each view.

Next, I started adding transformations to each of the teapots, starting from bottom-left which was already give in the sample code and bottom-right to which I just added rotation along the x-axis. For the top-left one I apply a scaling transformation in my model matrix, use the lookAt() function to place the camera above the teapot in my view matrix, and lastly apply an orthogonal perspective projection. For the top right teapot, I apply the same model matrix transformation but adjust the view matrix so we can see the back of teapot and apply a perspective transformation.