Assignment 4 took a bit to get going. Once I understood how to normalize the house coordinates, it was relatively easy to make a double nested forEach loop to do so. With the new array of vertices, I took the median of each axis; **x** had values of 0, 8, and 16, I took 8, **y** had values of 0, 10, and 16, so I took 5, **z** had values of 30 and 54, so I took 42. After moving the vertices to the origin, so for **x**, 0 became -8, 8, became 0, and 16 became 8. For **y**, 0 became -5, 10 became 5, and 16 became 11. For **z**, 30 became -12 and 54 became 12. I then divided each by 20 to scale it down between -1 and 1.

The next part I did was get the current date with Date.now() and set it as a start variable. In the render function, I made 3 new variables, ex, ey and ez and put **radius\*Math.sin(phi), radius\*Math.sin(theta), and radius\*Math.cos(phi)** into each of them respectfully. I then made a constant variable elapsed time that took the current Date.now() and subtracted it from the start and then multiplied it by a scalar which was determined from the speed of the camera.

After a lot of searching, I found a parametric equation to move between two points in a 3D space: (1-t) \* x1 + t \* x2, where **t** is the elapsed time. I then made an if statement to stop the animation after 2 seconds.

The only problem I have is sometimes the house would disappear at the end, where I assume the radius was changed somehow during the line traversal.