In origin when planning this I assumed that through the loophole that hedges can be any shape therefore any combination of hedges or bushes in a singular shape would comply with the project requirements. I wanted to make it somewhat personal; I really like gardens and the idea of building a small garden exhibit showcasing different hedge sculpture was the baseline. I decided that to best meet the project requirements I would design it as one large square with hedge walls and it would be divided into four quadrants. I designed it with no attention to texture but later found that textures would be easier to set up than though, due to my ability to use just two different bush textures to supply with all the textures I would need for greenery. I planned it with four easy to build sculptures. For the first sculpture I wanted to recreate the logo from a large music festival my nephew and I attended yearly called Bonnaroo that consist of three rings connecting at the edges. For my second sculpture I wanted to create a circle of thirty-six individual small bushes, each signifying a ten degree change. For my third sculpture I wanted to create a balancing act sculpture with a square base and a sphere balanced on top of the square and a pyramid balanced upside down on top of the sphere. For my fourth sculpture I wanted to make an object out of negative space, so I wanted to place four, four-sided pyramids as a base with another four-sided pyramid on top with all four of its base tips connecting to the smaller base pyramids creating a negative space upside down pyramid.

As my initial intentions seemed daunting, I would later find ways to simplify my code building. I was able to keep the code somewhat organized by diving the rendering into eight different render functions, one for the floor, one for the outer walls, one for the dividing walls, one to help with roots in quadrant two, and four individual quadrant functions. The divvying up of the rendering into multiple functions was done to make the code more readable and understandable instead of just one giant render function. For my ease of use I placed a foundation for each hedge sculpture in each quadrant that consisted of a tile edge with a gravel center. The tile image for the gravel edge was one provided from the textures in previous assignments and the gravel image I took on my phone of my fire pit area and resized to create a gravel texture. For the roots found the best way to make the root was to use one upside down cone and one right side up cone with a bark texture I found via the free commons license google search. I found my hedge textures in the same way and decided to use hedges with red berries for the wall hedges and regular green hedge for the sculptures. The designing and placement of parts for the sculptures was simple, however with quadrant two I did not place the thirty-six small bushes as planned due to sizing not allowing for a great view of each individual bush and settled on sixteen bushes dividing the circle eight times. With quadrant two having so many individual little bushes the simplest approach for the roots was to just design the same root for each bush just changing the x and z coordinates to place it under the bush if all the bushes are the same height. I was able to assure the bushes were the same height and size by using a predefined height variable for each bush.

Currently in the state of the project the user can move the camera forwards, backwards, left, and right with respect to the direction of the camera using the WASD keys. The movement is changed using the WASD keys and can be moved up and down using the q and e keys respectively. Number keys one through four change the view to orthographic projection or perspective. The one key is for front orthographic projection of quadrant one sculpture, the two key changes to side orthographic projection of quadrant one sculpture, the three key changes to top orthographic projection of quadrant one sculpture, and finally the four key sets the view to a perspective view of quadrant one’s sculpture. I chose to make all my views centered on quadrant one’s sculpture because I believe it is the most complex to make.