Mariam Tolba
mot2995

Project B

User's Guide

Goals:

The goal of this project is to create at least two different 3D parts which are then used to create larger assemblies. The 3d objects were assembled into an assembly with 4 sequential joints. The camera was also a large component, where the view could change based on the user interaction.

The hexagonal prism was assembled to create a larger assembly, with each piece being hinged and rotating around the point of the prism beneath it. The joint angles are continuously changing. The movements in the circus pieces are not synchronized, and their varied periodic movements can be seen in the canvas. The whole circus structure can be moved around the canvas using the mouse drag interaction, as seen in Figure 3.

The camera also has varied movement in the x, y and z direction, and can translate in this way to move views on the scene. The camera's direction is also able to be varied, and it can tilt up, down, left, and right. The result of this movement can be seen in figures 2 and 3. The result of user interaction to move an assembly can be seen in figure 4. Enjoy!

User Instructions:

To move the camera forward, backward, and side to side, use w, a, s, d keys.

To change the camera's direction, use the arrow keys.

To control the big sphere location on-screen, drag it with your mouse.

Results

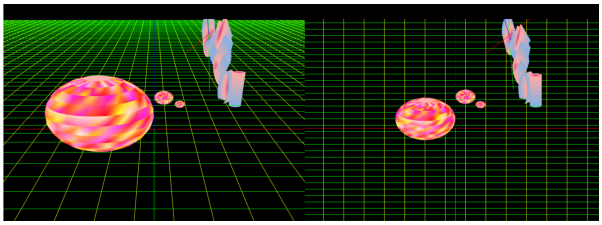


Figure 1 - the starting view +/- a few seconds, where the camera is placed at a 40 degree angle and there are two side by side views of the action. Meanwhile, the shape pieces will rotate and the pieces on top will hinge.

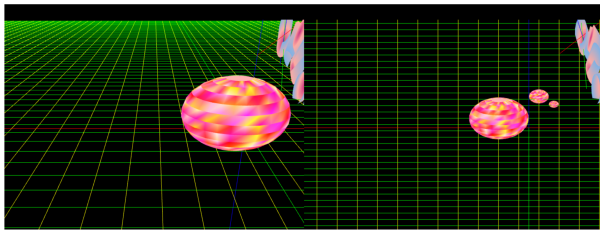


Figure 2 - after controlling the x variable in the camera view. The camera can move left and right, as well as up and down without changing the direction of the camera.

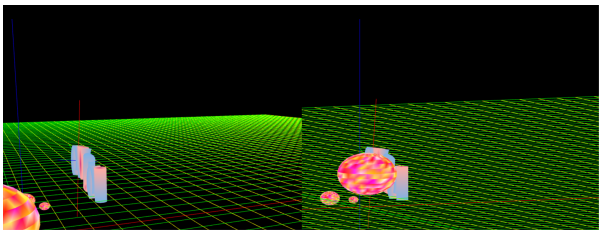


Figure 3 - After controlling the direction of the actual camera, we can see that the view can rotate around the scene.

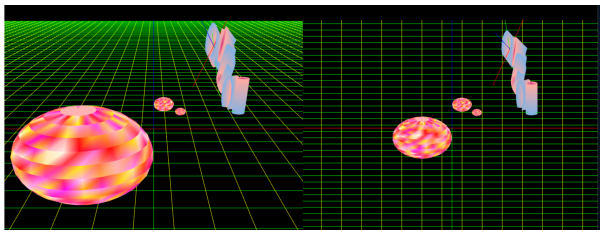
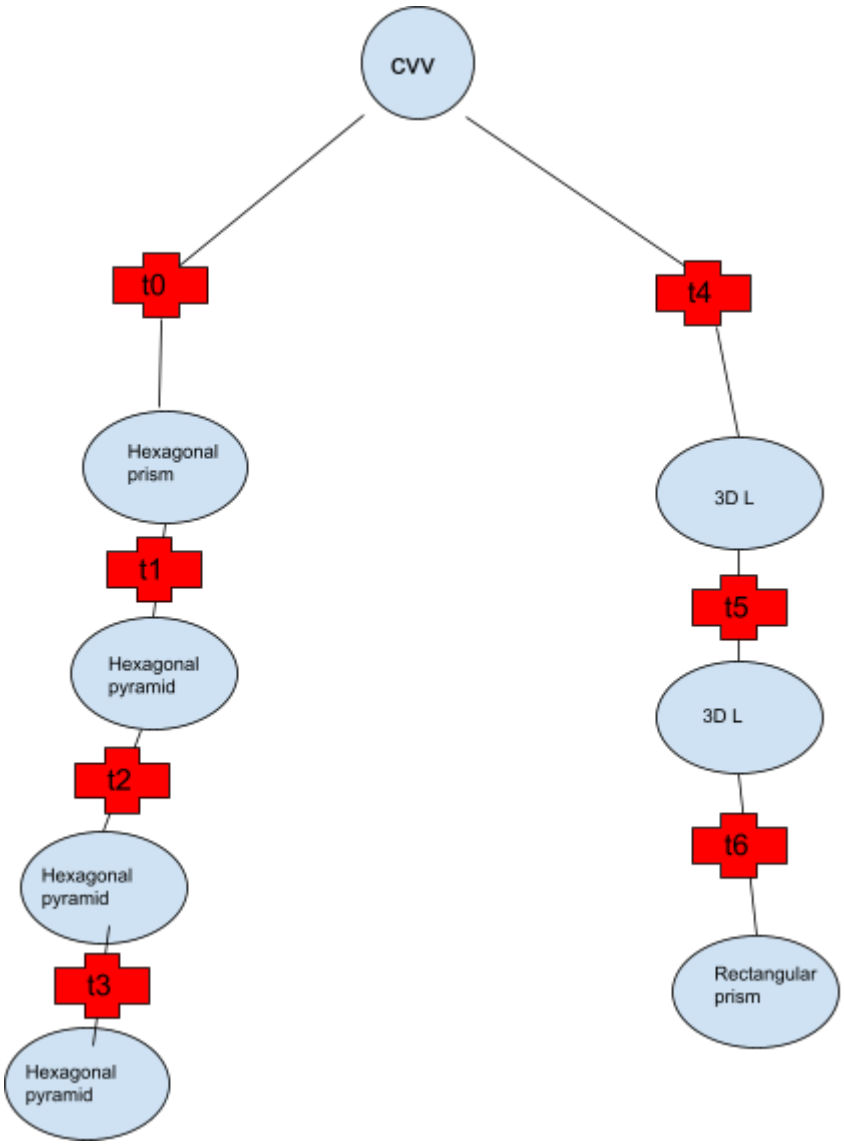


Figure 4 - after using the mouse to move the sphere, it is in a different coordinate location, most easily apparent on the left screen.

Scene Graph


CVV
t0
t4
Hexagonal prism
3D L
t1
t5
Hexagonal pyramid
3D L
t2
t6
Hexagonal pyramid
Rectangular prism
t3
Hexagonal pyramid