CS-330

Professor Holbert

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**Reflection**

**Justify development choices for your 3D scene**. Think about why you chose your selected objects. Also consider how you were able to program for the required functionality.  
I chose the scene because the objects could be represented with the simple shapes, we had access to. The monitor was made of 4 pieces boxes for the base, connector, and screen and a cylinder for the back stand piece. The keyboard and mousepad were simple as boxes, and they were also black which made texture selection simple. The tower was also a box but choosing a texture and material was harder due to the original material trying to mimic brushed steel. The mouse was the most unique where I used a cylinder rotated on the z axis to create a half puck through the bottom plane and I added a torus lined up with the curve to be the scrolling wheel on the mouse. For the materials I made varying levels of shiny materials to accommodate how each object would reflect light and change color as light influences it.

**Explain how a user can navigate your 3D scene**. Explain how you set up to control the virtual camera for your 3D scene using different input devices.  
The user can navigate the scene with WASD for basic forward, back, and side to side movement. Q and E controls the up and down movement. O and P switches the views from orthographic and perspective views. The mouse is used to do small movements along the pitch and yaw. I also added full pitch and yaw movement using the 1234 keys to be able to explore the scene even deeper and check the positioning of the shapes.

**Explain the custom functions in your program that you are using to make your code more modular and organized**. Ask yourself, what does the function you developed do and how is it reusable?  
The custom functions I created were the view controls for up and down movements, the mouse controls, perspective switching, and pitch and yaw controls. The code used input from the keyboard and mouse to navigate the scene and change the camera position. I was able to reuse most of the code for each key input for each one and if I want more in the future, I can reuse it and change the key pressed and what it does. I also gave the scroll wheel a function by controlling the speed that the mouse controls move in the scene.