Pickup Truck

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Goal: The goal is to better explore Three primitives, cameras and lights.

Achievement:

The Three primitives used are box, cylinder, torus, circle and cone. Vectors were used to create the triangles. There are about 78 primitives in the whole scene. You can also see a tiger next to the orthogonal camera, the tiger is used to test the lights in the scene.

We have three different cameras, two of them are perspective cameras and the other one is an orthogonal camera. One of the perspective cameras is used to view the whole scene. The other perspective camera can see either what is in front of the pickup truck or what is behind it. The orthogonal camera is positioned within some distance of the front of the pickup truck and is originally pointed to the pickup truck.

There are 5 different light sources in the scene. Four of them are spot lights and one of them is a point light. The point light is within the camera and is white. Two spot lights are positioned in the headlights of the pickup truck, they are also white. The other two spot lights are positioned in the taillights of the pickup truck, their color is red.

Usage:

You can control some of the Three primitives by using the controls on the top left part of the screen. You can move the right door, right window, left door, left window, trunk, hood, right back window and left back window. Furthermore, you can also accelerate the pickup trick either forwards (by pressing the *w* key) or backwards (by pressing the *s* key).

You can control the perspective camera which sees the whole scene by using your mouse (including the scroll wheel) as well as your arrow keys. You can deactivate such functionality by clicking on *deactivate_orbit_controls*. You can also change the position of the other perspective camera by clicking on *change_driver_view*. Moreover, you can change the parameters of the orthogonal camera by using the controls at the top left corner as well.

External sources:

1) Three library, specifically the fuctions OBJLoader, MTLLoader and OrbitControls.
2) Dat.gui graphical user interface.
3) A model. In this case, the Tiger model.