Helicopter Animation and Movement

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Overview:

The helicopter is modeled after a simplified Apache helicopter. This helicopter can be moved through the world using keyboard keys. The helicopter can take off, move, and land. The helicopter has movement in the XYZ plane but cannot move past the sky dome. The helicopter is textured with a nice camoflauge and both rotor blades are animated and rotate appropriately. There are trees in the world, but no collision detection has been implemented. There is a right click menu that has an option to turn the lighting on or off.

Note that the glaux library needs to be available for compiling the source code.

Controls:

The controls of the Helicopter are broken down into three sections: animation, movement, and camera.

Animation:

You can press the T key (uppercase or lowercase) when the helicopter is on the ground to initiate the Take-Off animation. After the take off animation is complete the helicopter will be flying and can be moved (see next section). Pressing the L key (uppercase or lowercase) while the helicopter is flying to land the helicopter. After the helicopter has landed it can no longer be moved.

Movement:

You can press the arrow keys on the keyboard to move the helicopter around the world. Holding the Shift key while pressing the up or down arrow keys will cause the helicopter to increase or decrease its height. Holding the shift key while pressing the left or right arrow keys will rotate the helicopter to change its direction.

Camera:

You can left click on the screen with the mouse and move while holding the button to change the eye position. Moving Left or Right will rotate the aye around the model sideways (y-axis). Moving up or down will rotate the eye around the model on the x-axis.

Press the Z key (lowercase of uppercase) to zoom into the model. Press the X key to zoom out.

You can press the Up, Down, Left, or Right arrow keys while holding CTRL to look around the world. Press C to look at the Helicopter again. Note that moving will also center the camera on the helicopter

Future Improvements:

The Helicopter model could benefit from having landing wheels attached to it. However, there are some models of Helicopters in real life that do land on their bellies with no landing wheels.

The grass could be textured. In this project this part was abandoned due to performance issues. If a more efficient texturing method could be used then the grass would be textured.