Assignment 1 Report

COSC363 – Computer Graphics

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Models

Car

The car is made of a series of GLU and GLUT objects, the body of the car is made of two scaled cubes. The top of the car is coloured black and the bottom of the car is coloured brown. Each headlight is made of two disks where the outer disk is black, and the inner disk is white to give the look of a headlight. The wheels are each constructed by a torus object coloured black.

The car can be seen on the left side of the building moving in a square. In front of the car is a spotlight to indicate headlights. The scene also shows backface and projected/casted shadows on the car.
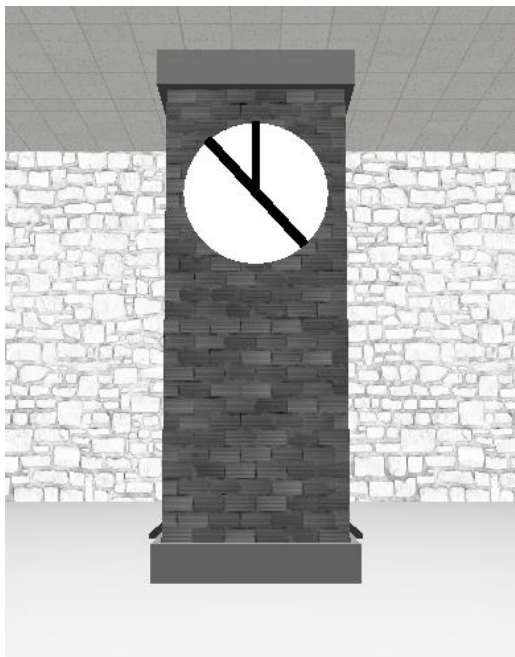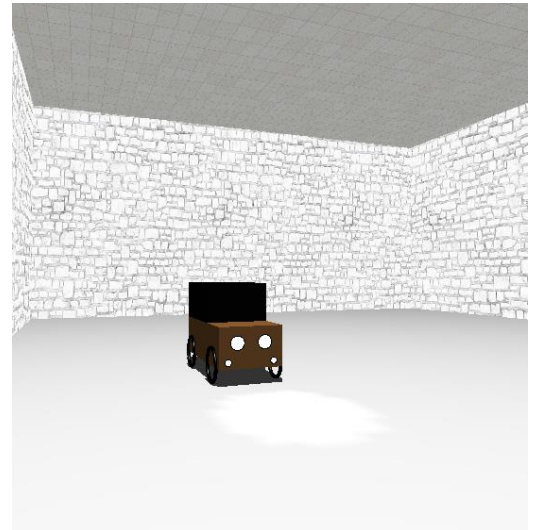

Clock Tower

The clock tower is made of a series of GLU and GLUT objects. The bottom and top of the tower are both constructed by cubes with the same scales coloured grey, each translated so they appear at the bottom and top of the tower, respectively. The body of the tower has a textured white brick finish.

The clock tower also contains an animation where the clock hands spin. The seconds hand makes constant rotations and each time it goes around, the minute hand moves 30 degrees each time the second hand makes a full rotation, and the hour hand moves each time the minute hand makes a full rotation. The scene also shows backface and projected/casted shadows on the tower.

Ancient Housing

The cone house is made of a series of GLU and GLUT objects. The bottom of the house is constructed by a cylinder where the roof/main body of the house is constructed by a cone. The door of the house contains a dead grass texture. The scene also shows backface and projected/casted shadows on the tower.
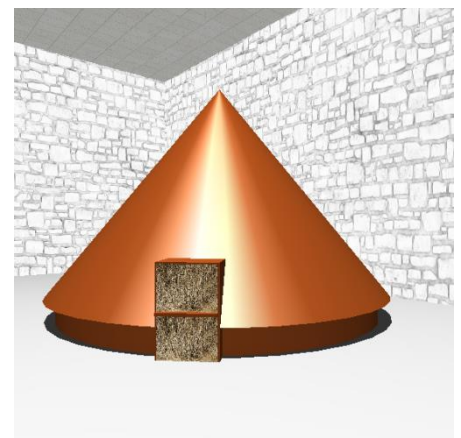
Extra Features

FEATURE	DESCRIPTION
SKYBOX	The scene features a skybox created using a series of quads for the left, right, top, bottom, front, and back.
PROJECTED/CASTED SHADOWS	Shadows have been applied to the car, tower, and ancient housing.

Control Functions

The below controls can be used to move and redirect the camera:

KEY	ACTION
UP	Move the camera forward.
DOWN	Move the camera backward.
LEFT	Redirect the camera left.
RIGHT	Redirect the camera right.
HOME	Move the camera up.
END	Move the camera down.
PGUP	Redirect the camera up.
PGDN	Redirect the camera down.

Build Commands / Instructions

To run the program, you need to compile and build using the following lines:

LABEL	COMMAND
COMPILE	g++ -Wall -c Assignment.cpp
BUILD	g++ -Wall -o Assignment Assignment.cpp -lm -lGL -lGLU -lglut

References

- Textures were downloaded from textures.com.
- The skybox was downloaded from learn.canterbury.ac.nz.