ECM3423: Computer Graphics
Worksheet 8 - Textures

Getting the new code

For this worksheet, I have uploaded a new version of the codebase onto the VLE. You should re-download all files, as I have updated them compared to the previous ones. The main addition to the program are the following files:

- `textures.py`: This file contains a basic class for handling textures.
- `mesh.py`: This file contains the mesh class, used to load the mesh from file, not much change here.
- `material.py`: This file contains a class to hold the material information loaded from file.
- `bunny_world.mtl`: This file is a complement of the Blender file `bunny_world.obj` containing the material information.
- `textures/`: This folder contains the texture images (`.bmp` files).

Some files have been significantly updated for this workshop:

- `blender.py`: The methods for loading Blender's `.obj` files are now loading the texture coordinates per pixel and the texture image name.
- `BaseModel.py`: This class now has an additional attribute and VBO for `textureCoords`, and stores a list of textures (currently a list of two, one read from the material file, and a second one for demonstration purposes).
- `shaders.py`: I have added two new uniforms for texture.

Running the code

If you run this code, you will see a bunny mesh rendered using Flat shading The following key control the rendering:

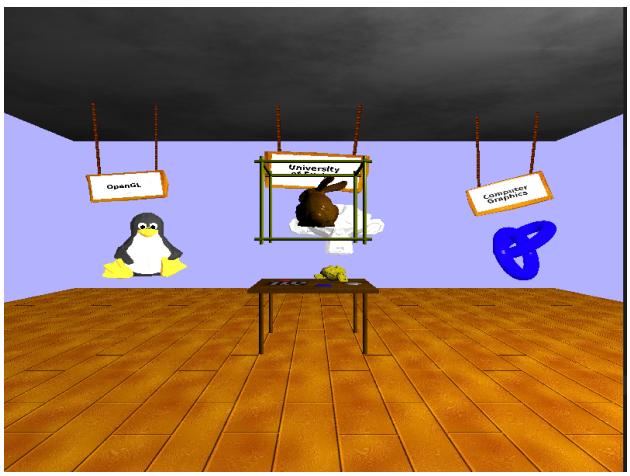
- 0: switch the rendering between wireframe and polygon fill.
- 1: Render using flat shading with textures (default)
- 2: Render using textures only

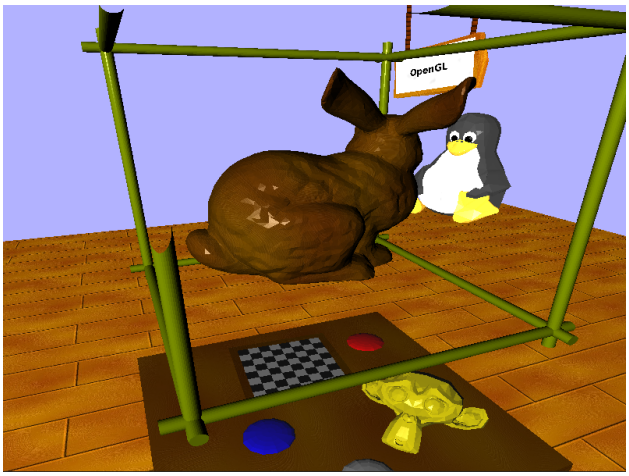
Aims

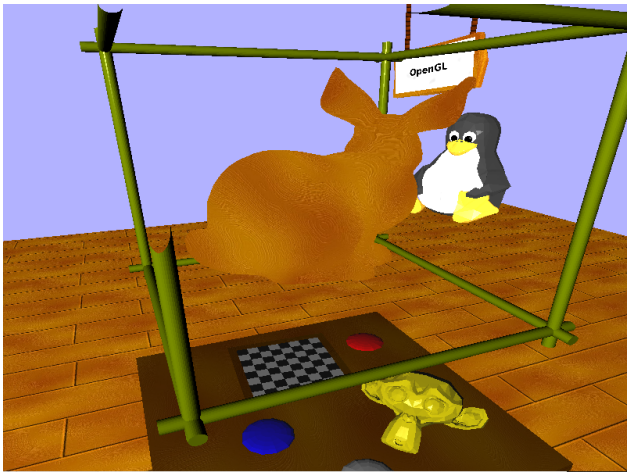
The aims of this workshop are as follows:

1. Experiment with textures loading and application.
2. Use multiple textures for rendering.

If you run the code, you should get the following output: flat shading.






OpenGL
