CS4052: Computer Graphics – Assignment 3

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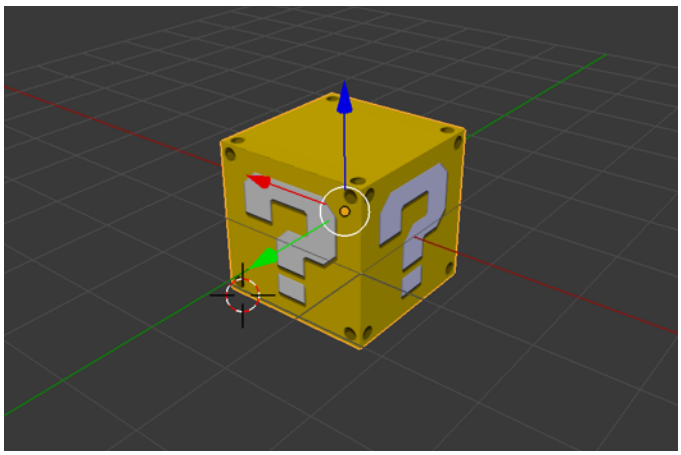
Abstract

For this assignment we were asked to create our own mesh with texture coordinates (using Blender), then load the mesh and textures into OpenGL to be displayed using texture sampling.

Solution

To start this assignment, I began by creating a mesh in Blender. I decided to just create a simple cube and apply a classic texture from Super Mario to it. The model can be seen below:



I then exported the mesh and texture coordinates as a wavefront .obj file to use with OpenGL. Inside my code, I decided to abstract a lot of the OpenGL functionality into separate classes in the hopes that for future assignments it will simplify my code. To load the textures, I created GLTexture class which takes a file path to create a texture from and binds it to OpenGL. To load a mesh I used the provided obj loader class and then pass the array of points read from the file to a GLBuffer class. This class simply acts as a wrapper around creating a vertex buffer object. I then updated fragment shader to use the texture I bound to OpenGL so when the mesh points are drawn the texture is applied to the shape. The results of this are show below: