**Brandon Hobbs**

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**CS-330: Module 2, Project Proposal**

I am proposing to turn 4 random items I found in my kitchen into OpenGL primitives throughout this course. The OpenGL primitives that we are to work with are:

* Cube
* Cylinder
* Plane
* Pyramid
* Sphere
* Torus

Based on these and the constraint that we needed 4 items, with one being a compound shape, I selected an orange paper box, a citrus reamer, an orange, and a plastic bag dispenser, Figure 1.

A picture containing text, yellow, orange

Description automatically generated

**Figure 1: Four Random Items Selected**

To begin the decomposition, I used the picture in Figure 1 to map the items into 2D shapes, Figure 2.

A picture containing text, yellow, spectacles

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**Figure 2: Potential 2D-shpes Mapped on 3D Items**

Then to facilitate building the 2D-shapes as 3D-objects, complete with correct lighting, I also captured the items in four perspectives, Figure 3.

Graphical user interface, shape

Description automatically generated

**Figure 3: Multiple Perspectives of the 4 Items Chosen**

From these perspectives and the mapped shapes, Figure 2, the primitive 3D shapes can be assigned. The trivia box is a cube, the orange a sphere, the bag dispenser a torus, and the reamer a compound shape (pyramid and cylinder), Figure 4.

Logo, icon

Description automatically generated

**Figure 4: Conversion of the 2D-shapes into Potential 3D-shapes**

All these items are good choices because they are possible within the classes scope and are different sizes and at different positions within the 3D canvas. The different sizes and positions are important to keep the assignment exciting – as opposed to all 4 laying withing the same plane and being of similar scale.