# 2-3 Milestone: Project Proposal

## Scene Concept:

For my final project, I will replicate a 2D image of a small workspace setup, consisting of a laptop, a ceramic mug, a wireless mouse, and a wooden table with metallic legs. This scene offers a realistic, practical snapshot of a home or office environment and will allow me to demonstrate my skills in modeling various geometric shapes in OpenGL.

## Selected Objects for 3D Replication:

I have selected the following objects to model in 3D:  
1. Laptop (MacBook Pro)  
2. Mug with handle  
3. Wireless mouse  
4. Wooden table with foldable metal legs  
  
These objects provide a diverse yet manageable modeling challenge. They also represent real-world items, offering strong relevance for practical visualization applications such as virtual staging, product design, or interior layout tools.

## Basic 3D Shapes Used:

|  |  |  |
| --- | --- | --- |
| Object | 3D Shape(s) Used | Reasoning |
| Laptop | Box + Plane + Tapered cylinder (for corners) | The main body is a box. The keyboard and screen are textured planes. Rounded corners can be shaped with tapering. |
| Mug | Cylinder + Torus (for handle) | The mug’s body is a cylinder, and the handle is a torus bent or deformed into shape. |
| Mouse | Tapered Cylinder + Sphere | The mouse has a slightly tapered, rounded shape resembling a squashed cylinder and a small sphere for the scroll wheel. |
| Table | Plane + Cylinders (legs) + Box (thickness) | The tabletop is a plane with depth (box), and the legs are thin cylinders. |

## Scope and Feasibility:

The scene is achievable with the tools and time available. All required basic 3D shapes are utilized: box, plane, cylinder, tapered cylinder, torus, and sphere. The use of lighting and texture will enhance realism, especially for materials like wood grain on the table and the mug’s ceramic surface.  
  
The plane will act as the tabletop and serve to anchor the rest of the objects. Textures will help distinguish between materials (metal, wood, plastic). The laptop will serve as the most complex object, combining multiple shapes and requiring accurate proportions.  
  
This selection meets all project requirements and allows for creativity while staying within a manageable scope.

## Image Reference:

