**Caio Mauro**

**3D Scene**

**Development and Design Choices**

In creating my 3D scene, I made several development choices to ensure a visually appealing and functional environment. First, I selected objects that are commonly found on a desk, such as a keyboard, mouse, monitor, and lightbar. These objects are easily recognizable and relatable to users, enhancing the overall realism of the scene.

To illuminate the scene, I used a main light source to provide general lighting and a secondary light source to highlight the objects on the desk. This combination of lighting creates depth and contrast, making the scene more visually interesting.

In terms of programming, I used OpenGL to create and render the 3D objects in the scene. OpenGL is a powerful graphics library that provides a wide range of tools and functions for creating 3D graphics. OpenGL allows for custom shaders for the objects in the scene, allowing for realistic lighting and shading effects. I applied textures to the objects making it easy for users to distinguish what is what in the scene.

**User Navigation:**

Users can navigate the 3D scene using different input devices, such as a keyboard and mouse. I set up controls for the virtual camera, allowing users to move the camera around the scene and rotate the view. Users can speed up the camera movement speed and use WASD to control it around the scene. This gives users a sense of control and immersion, making the scene more engaging.

**Custom Functions:**

In my program, I developed several custom functions to make the code more modular and organized. For example, I created a function to handle texture swapping, allowing for easy customization of textures for different objects. You can assign an object an ID which can be filtered to when applying textures. These types of functions are reusable, meaning they can be easily adapted and reused in other projects. This makes the code more efficient and maintainable, saving time and effort in the long run.