**7-1 Final Project Design Decisions**

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**Justification**

For the 3D scene, I picked a plane, sphere, and a box. The plane acts as the ground, providing a scale and the idea of the type of environment we are in. The sphere represented the wheels of my flying car, while the box represented the body. Using these basic shapes allowed me to create a simple futuristic scene.

While designing, I made sure to organize my code so it's easy to manage. Instead of hard-coding file paths, I used relative paths for textures. This makes it easier to move the project to different computers without running into problems. By breaking the code into specific functions for tasks like loading textures and setting up lights, the code is easier to read and keep up with.

**Navigation**

To navigate the scene, you use the WASD keys to move forward, backward, left, or right. The QE keys let you move up and down. You control where you’re looking with the mouse. These controls make it easy to explore the scene from different angles taking full advantage of the 3d scene.

**Custom Funct.**

In the DefineObjectMaterials function, I created two materials: one for metal and one for plastic. The metal material looks shiny and realistic, while the plastic material has a softer appearance. I tagged each material to make them easy to use later in the code. In the SetupSceneLights function, I added two lights: a bright white light to simulate sunlight and a blue light to add some color to the scene. These materials and lights work together to make the 3D scene look more realistic and visually interesting.

**Summary**

For the 3D scene, I used a plane, sphere, and box to create a simple futuristic look. The plane serves as the ground, the sphere represents wheels, and the box forms the body of a flying car. I organized the code with modular design, breaking it into functions for tasks like loading textures and setting up lights, making it easier to manage and read. Navigation is handled with WASD and QE keys for movement, and mouse control for looking around. I created materials and lights to enhance realism, with metal and plastic materials and a mix of bright and colored lights.