Implementation Log

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| Date | Hours worked | What was implemented? | Testing | Problems Encountered? | Fixes Attempted | Fixed? |
| 14/11/23 | 2 | Added vector 3 field for normal in Geometry and updated the vertexDesc array to match. | Ran to compile, no errors. | N/A |  |  |
| 21/11/23 | 4 | Created an array to store contributing counts for vertices. Implemented logic to generate vertex normals based on polygon normals. | Unable to compile | Forgot to loop through the indices in groups of three. | Adjusted the loop accordingly. | Yes |
| 05/12/23 | 1 | Added world transformation matrix, directional light vector, and directional light colour to the constant buffer in Geometry and constant buffer in shader file. | Unable to compile | The order didn’t match between the constant buffers. | Match the order of the buffers. | Yes |
| 06/12/23 | 5 | Modified code to implement the geometry objects file to create a Teapot.  Added ObjectVertexStruct to header file and replaced accordingly in main file. | Unable to compile, multiple errors | Not using new vectors created for the vertices and indices. | Actually add the file to the project, dropping the file in the folder does not do this automatically.  Replace all instances of the previously used arrays with vectors for the vertices and indices. |  |
| 12/12/23 | 1 | Render a teapot with directional and ambient lighting. | Unable to compile | The ComputeTeapot method was being called with improper values . | Fix the values causing the error in the method. | Yes |
| 14/12/23 | 4 | Begin implementation of a scene graph, using vectors to store pointers for child nodes “\_children”  Added the methods in the scene graph ( initialise, update etc” | Unable to compile | I forgot to declare the type for the \_children in the header file leading to it not compiling.  Incorrect use of shared pointers in the add method | Declare children in the header file  Include the shared pointer as a parameter to use directly. | Yes  Yes |
| 05/01/24 | 5 | Create the SceneNode header file, created the constructors added all the DirectX resources as well as functions from the DirectX functions previously in the directxapp.h file  Create the SceneNode class, this pulls all implementation previously in the directxapp file. | Unable to compile | Forgot to inherit from scenenode  Missing colon when trying to add functions e.g. CubeNode:CalculateVertexNormals()  Shape variable missing from header file causing no identifier to be present | Added scenenode inheritance  Added the missing colons  Added a shape identifier to let the code know what shape to render in the constructor. | Yes  Yes  Yes |
| 7/01/24 | 3 | Added the shader files to the project, excluded from build  Used the new scene graph to create 2 cubes, a sphere and a cone.  Added a world transformation to the scene graph | Yes  Unable to compile  Adding the rotation matrix to the scene graph caused the rotation speed to be too fast | N/A  On creating the cone, “cone” was spelt incorrectly  Forgot to do the correct calculation on the rotation speed variable to slow it down. | Fixed the spelling error from “Cone” to “cone”  Times the rotation angle by Pi and divided it by 180. | Yes  Yes |