Computer Graphics 203.3710 Assignment #1
Wireframe Viewer
Simple Mesh Display

Part 2 of the first assignment is to load a mesh, display it, and apply simple transformations to it. The goal is to ensure that mesh transformation are correct *before* starting to implement camera transformations.

For this part please create a markdown file 'Assignment1Report/Assignment1Report_part2.md', and do the following:

1. Load a small mesh and output it's vertices and faces to the console (using cout). Put the output in the report.

2. Scale and translate the vertices such that they will fit inside your window. The coordinates of the vertices should be around 0-1000. explain how you performed this transformation in the report.

3. From the Scene object, transfer the mesh triangles to the Renderer object, iterate over all of the triangles and draw all the lines using the DrawLine function, by ignoring one of the coordinates. You should be able to clearly display the object on the screen now. Place a screenshot in the report.

4. Create GUI items to specify the local and world transformations that should be applied to the model. Note that the user should be able to control the translation, rotation and scale in each frame independently. Put a screenshot of the GUI you designed, and explain how the transformations are computed using the basic transformations. That is, explain in what order the matrices are multiplied.

5. Compute the transformations, and in the renderer, apply them to the vertices (by multiplying) *before* drawing the lines. You should be able to see the model being transformed as you change the parameters of the transformation. Show two screenshots comparing the difference between translating in the model frame and then rotating in the world frame, vs. translating in the world frame and then rotating in the local frame.

6. For pairs only: Enable loading several models, switching between the active models and transforming each independently. Demonstrate the result in a screenshots.

7. implement one (for pairs, two) or more approaches for modifying the basic transformations using the keyboard or mouse. Describe them in the report.