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CS-537 Interactive Computer Graphics

Programming Assignment 5

Implementation:

I have completed the Programming Assignment 5 of implementing tessellation in Java. The algorithm works by dividing a surface into a series of triangles which is called tessellation. This assignment uses OpenGL and GLUT. The program creates tessellation of four basic shapes namely Cube, Cone, Sphere and a cylinder.

My implementation of tessellation of these shapes involves, dividing these shapes into smaller triangles in order to form the complete figure using just those triangles only.

Challenges:

It was relatively easy to implement the part of the program where we just have to create a class for triangles and define the proper points. However, I found it really challenging and interesting to implement the addTriangle function to ensure that the vertices are included in the list of the drawing. I tried to implement the exact shapes as shown in the figure. The biggest challenge for me was implementing the sphere, which I still wasn't able to achieve to perfection, but I tried to reach as close as possible.

Submission:

My submission includes four java files shaderSetup.java, cgShape.java, simpleShape.java, and tessMain.java. Apart from that there is one shader.vert and shader.frag. I only altered the cgShape.java file and rest of the files are unaltered. Apart from that, there is also a output.png file which shows the output of my program and a documentation file named Documentation.pdf