**Chan Dat Thai**

**COSC 4328 Programming Assignment 2**

**Time: 24 hours**

1. **Modeling and Viewing**

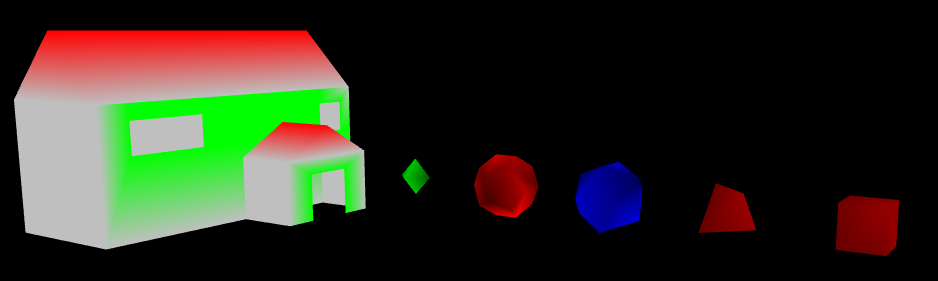


Figure First scene with all solids

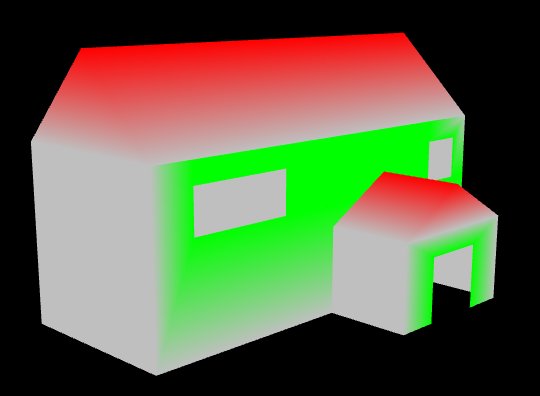


Figure The house with 35 vertices, 1 door and 2 windows (all are transparent)

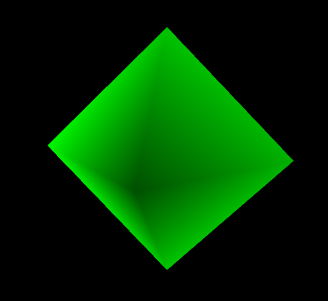
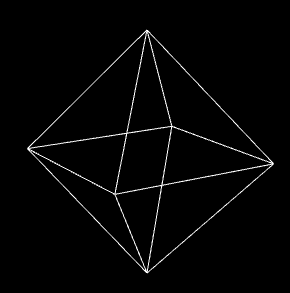
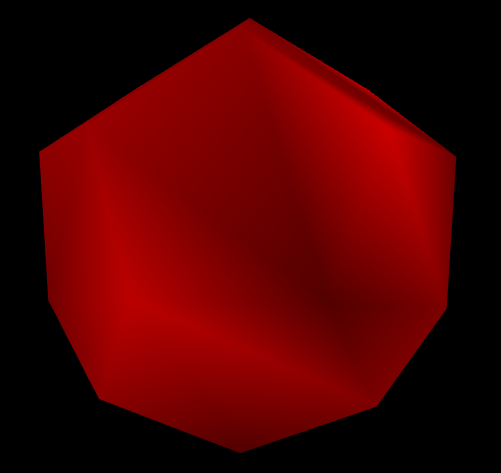
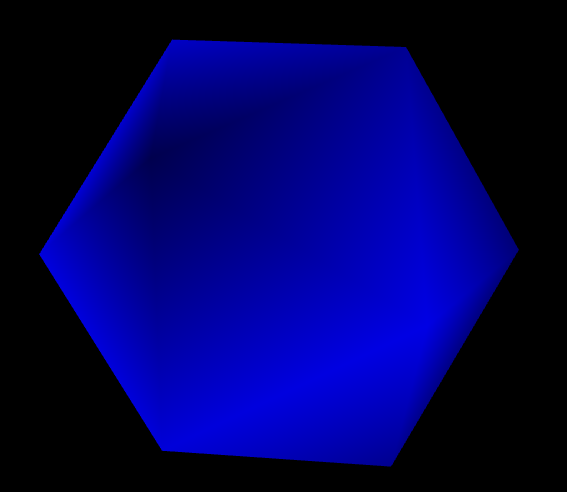
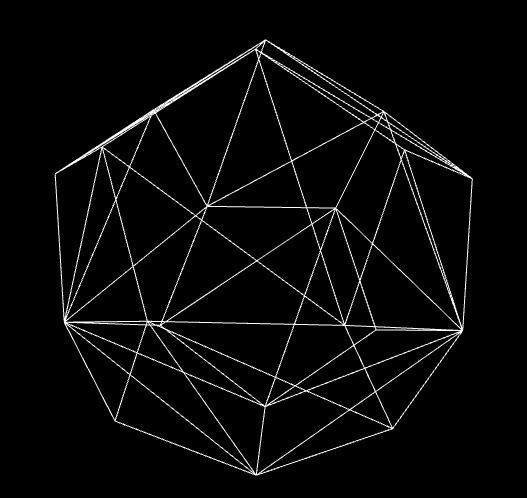
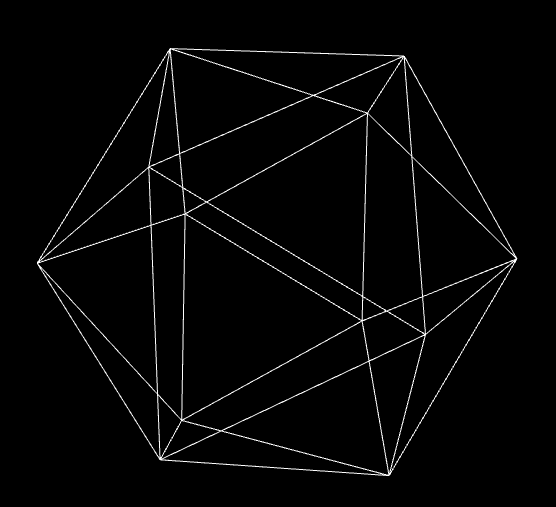
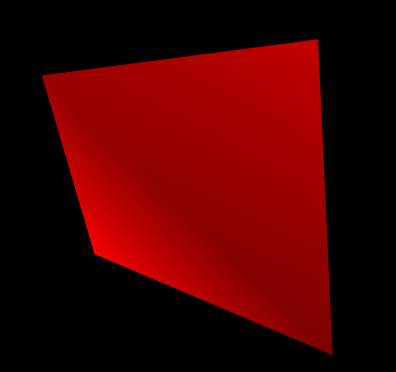
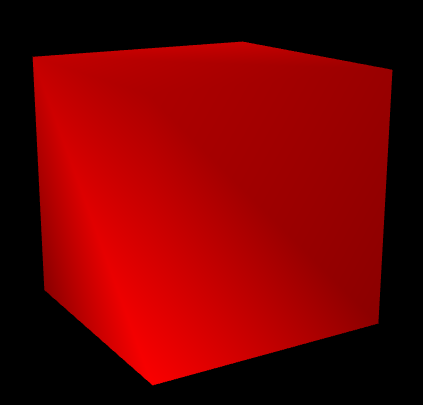
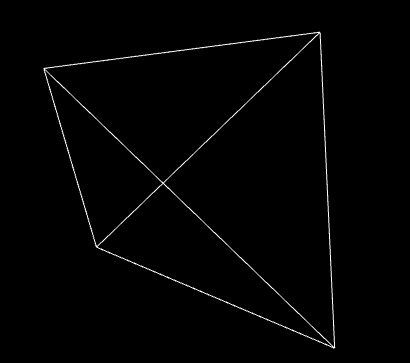
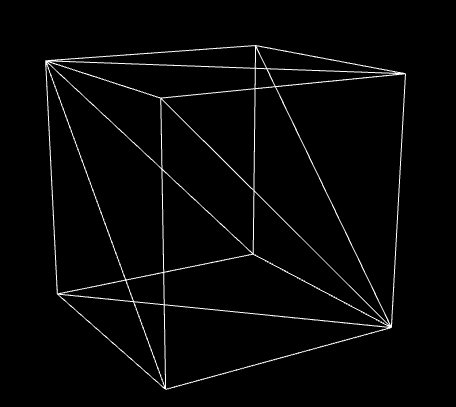
       

Figure Platonic solids

1. **EXTRA CREDIT**

For extra credit, I also implement these:

1. The tetrahedron and cube.
2. Spin around vertical axis when user presses ‘r’ key.
3. Simple zoom using mouse wheel.
4. **DISCUSSION**

Some problems I ran into:

1. Coordinates of dodecahedron.
2. Z-fighting
3. Flickering (problem with near-plane value)
4. I tried to use GL\_QUADS, thought it means OpenGL would automatically do triangulation by itself.
5. High CPU usage (have yet to figure out what’s causing the problem)
6. **SOURCES**

* <http://www.opengl-tutorial.org/beginners-tutorials/tutorial-4-a-colored-cube/>
* <http://www.opengl-tutorial.org/beginners-tutorials/tutorial-6-keyboard-and-mouse/>
* <http://paulbourke.net/geometry/platonic/> (for dodecahedron coordinates, although I can’t make it work neither)
* <https://stackoverflow.com/questions/43954385/opengl-screen-is-flickering-when-enabling-depth-test>