Nanyang Technological University

School of Computer Science and Engineering

CZ 2003 - Lab 1:

Visualization using polygons

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Part 1: Experimenting with given polygon (pyramid)
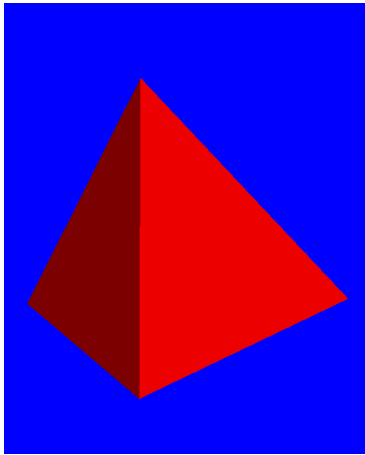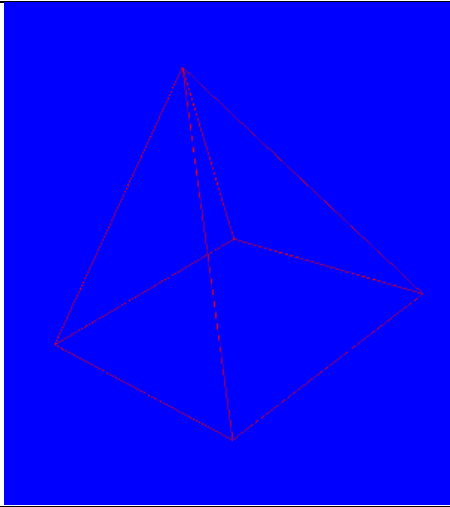
1.1 Display Simple Polygon Mesh

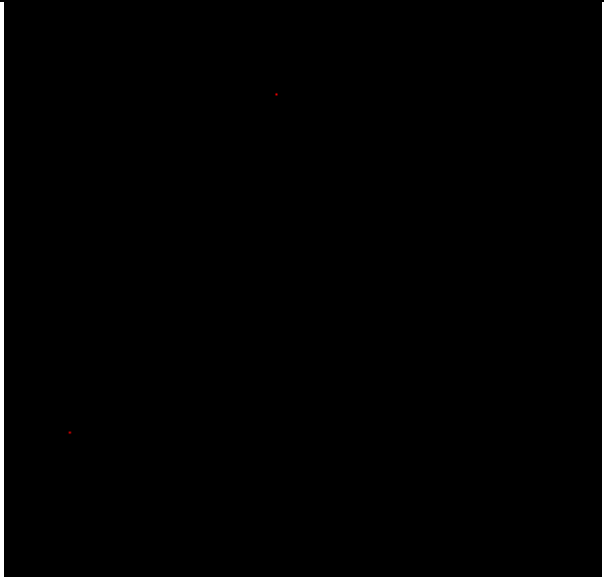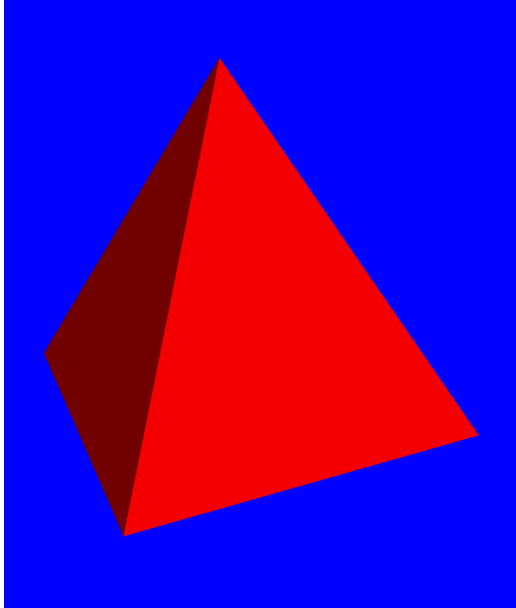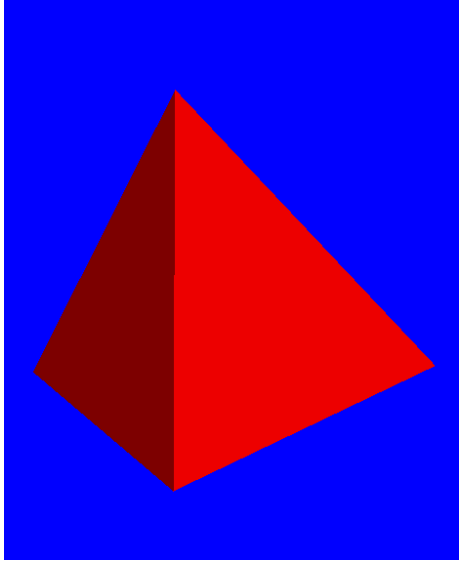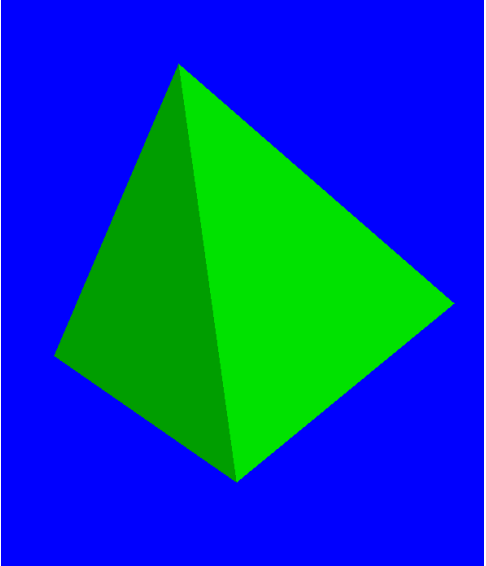*Figure 1: The red pyramid, rendered as is from polygons.wrl with no changes to code*

## 1.2 Explore different Graphics Modes of the VRML browser (Wireframe, Vertices, Flat)

Rendering	Graphic Mode
	Wireframe. Vertices are connected.
	Vertices mode. Sky color changed to black and image enlarged to show vertices more clearly. However, not all vertices can be seen clearly here.

	Flat mode. Looks identical to the default (smooth) mode.

1.3 Examine how the color of the shape defined in diffuseColor field can be changed

Original rendering	New rendering	Notes
		Color changed from 1,0,0 (red) to 0,1,0 (green).

		Color changed from 1,0,0 to 10,0,0. Red looks brighter, and edges are less visible.
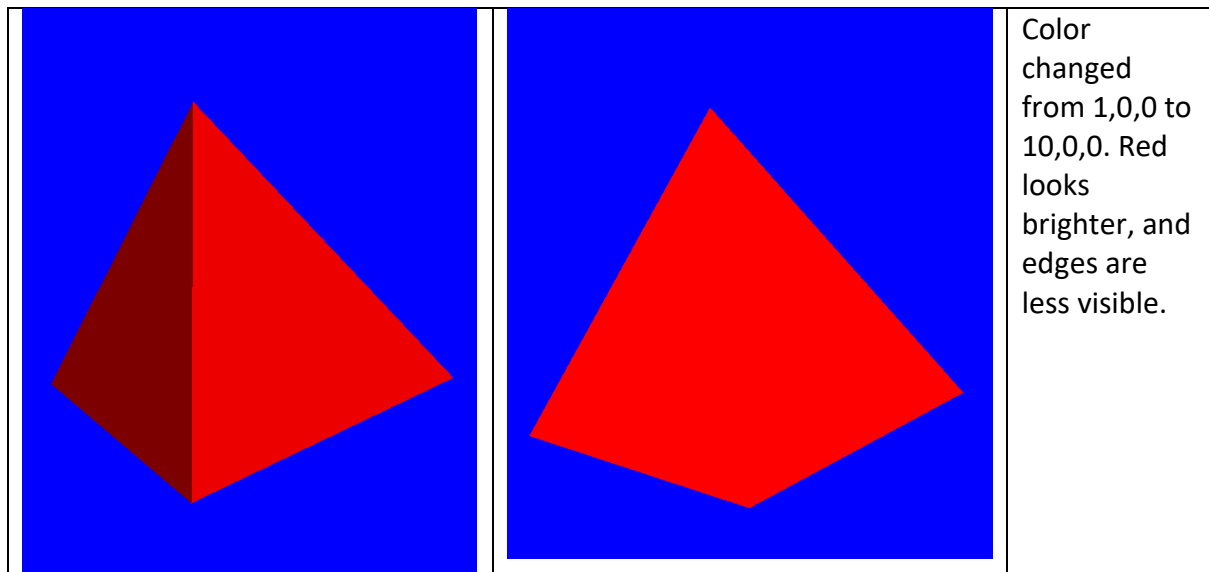
Part 2: Making New Polygons

2.1 Make a 2D Hexagon
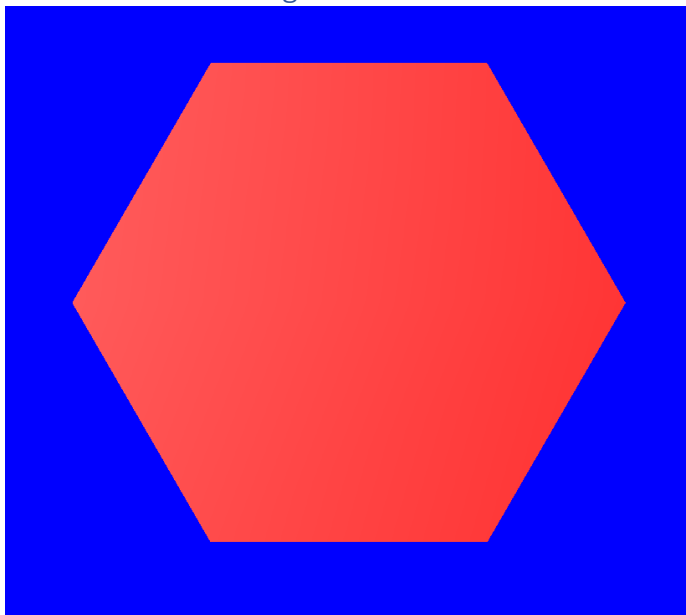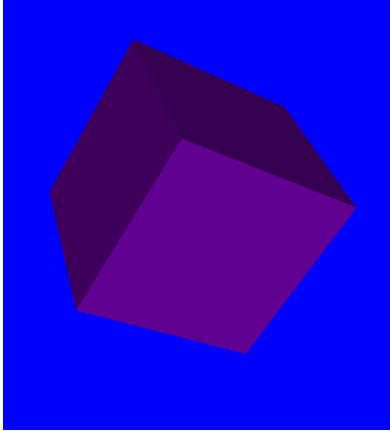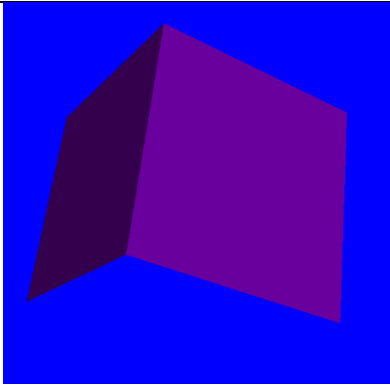
Figure 2: 2D Hexagon. Source code: hexagon.wrl

2.2 Make a cube

Rendering	Notes
Figure 3: Cube. Source code found in cube.wrl	Cube is formed by making changes to the *Coordinate* and *coordIndex* segments of the VRML code for the pyramid.
Figure 4: Base of cube is not rendered when viewed from a certain angle	When the order of vertices listed for the base is changed from 0,1,2,3 to 3,2,1,0, the base becomes 'invisible'