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CS 550- Introduction to Graphics  
Project 1  
October 5, 2020

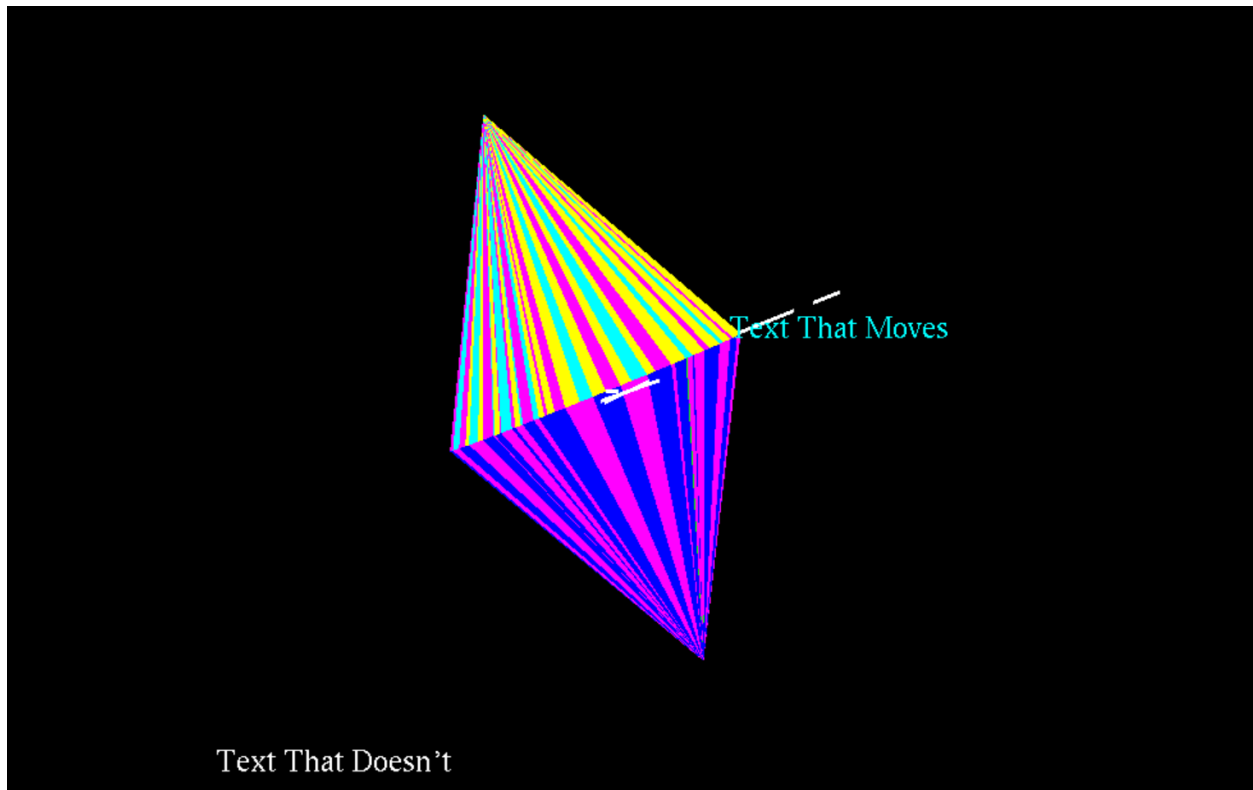
## Project 1

**Video Link** - [https://media.oregonstate.edu/media/t/1\\_tv9q99dk](https://media.oregonstate.edu/media/t/1_tv9q99dk)

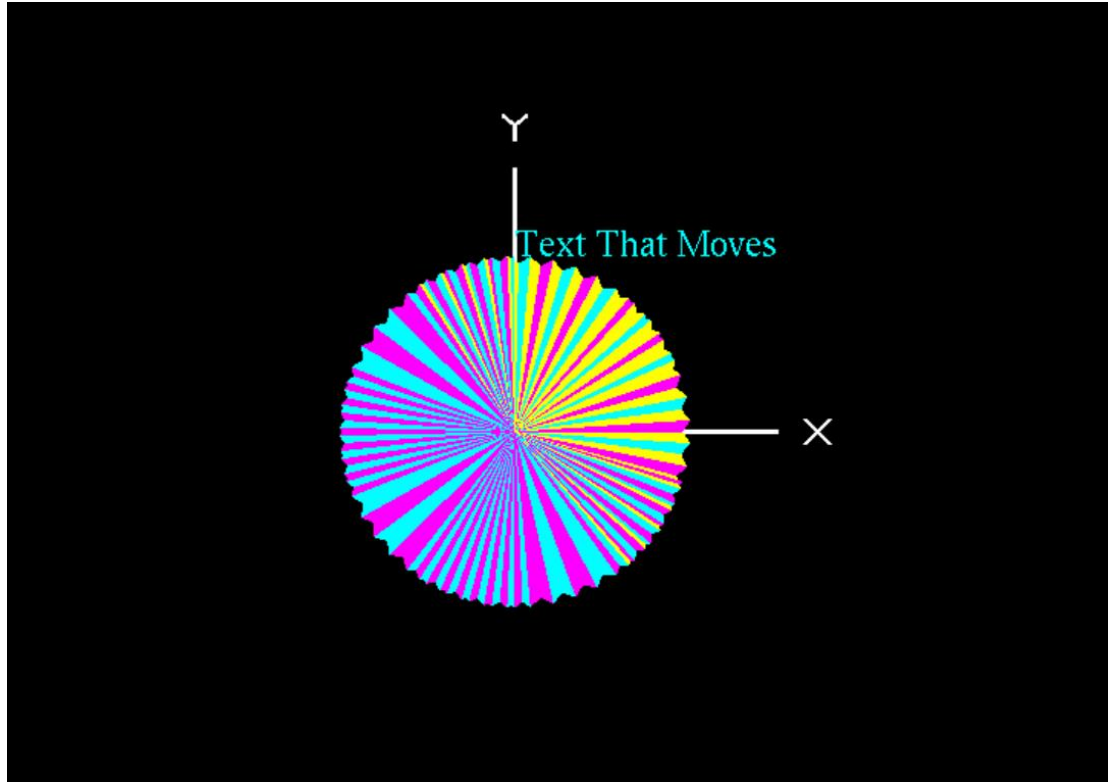
**Description** – I have created a 2 sided cone which looks like a crystal. The topology used is TRIANGLE\_FAN. I iterated the center angle from 0 to 360 with an interval of 5 for the base circle to be completed and used the points on the circle as the edge vertex of the triangle. It can be rotated any direction and scaled to any size.

Colors used – Cyan, Pink, Green, Yellow and Blue.

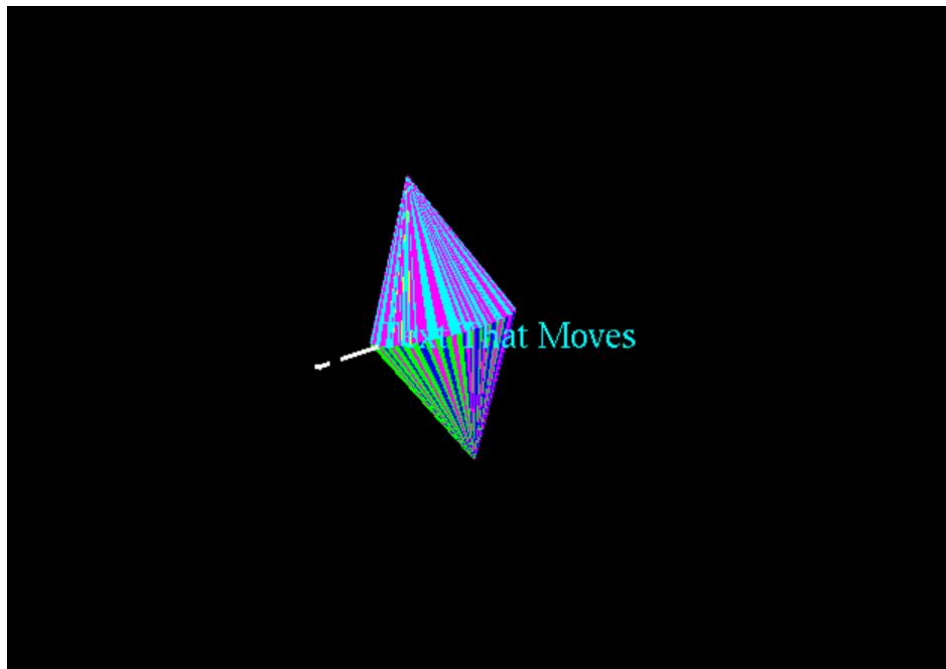
**My 3D Object :**



Top View :



After Scaling small :



Code :

```
glBegin(GL_TRIANGLE_FAN);

//Tip of Cone
glVertex3f(0, 0, 2.0);
// Looping around the circle

float angle;
int flag = 1;

for (angle = 0.0f; angle <= 360 ; angle += 5)
{
    // x and y position of the next vertex
    dx = 1.0f * sin(angle);
    dy = 1.0f * cos(angle);

    // Alternate color
    if ((flag % 5) == 0)
        glColor3f(1.0f, 1.0f, 0.0f);
    else if (flag % 2 == 0)
        glColor3f(0.0f, 1.0f, 1.0f);
    else
        glColor3f(1.0f, 0.0f, 1.0f);

    // Incrementing the flag to change color
    flag++;

    // next vertex of the triangle fan
    glVertex2f(dx, dy);
}

glEnd();

glBegin(GL_TRIANGLE_FAN);

//Tip of Cone
glVertex3f(0, 0, -2.0);
// Looping around the circle

flag = 0;
for (angle = 0.0f; angle <= 360; angle += 5)
{
    // x and y position of the next vertex
    dx = 1.0f * sin(angle);
    dy = 1.0f * cos(angle);

    // Alternate color
    if ((flag % 5) == 0)
        glColor3f(0.0f, 1.0f, 0.0f);
    else if (flag % 2 == 0)
        glColor3f(0.0f, 0.0f, 1.0f);
    else
        glColor3f(1.0f, 0.0f, 1.0f);

    flag++;
}
```

```
        // next vertex of the triangle fan
        glVertex2f(dx, dy);
    }
    glEnd();
```