1) (20 Points)

- Make a new directory called **lab5**.
  
  Write a shader program that displays 3 colored triangles with different colors, using one of the colors red, green and blue for each triangle.

- Comment and self-evaluate your work. State **explicitly** whether you have finished each part successfully! If you have finished all parts successfully, give yourself 20 points, otherwise deduct some points that you feel appropriate. The instructor may adjust your score depending on your submitted report.

For this lab I used the tests.cpp, tests.vert and tests.frag provided in the lab notes. I simply made some alterations to the code provided to achieve the required shaders.

Completed output:

```
void display(void)
{
    GLfloat vec[4];
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);

    // Relevant Code
```

![Completed output image]
glClearColor( 1.0, 1.0, 1.0, 0.0 ); //get white background color
glColor3f ( 1, 0, 1 ); //will have no effect if shaders correct
int loc; // for shader location
loc = glGetUniformLocation(programObject, "temp");

```cpp
glBegin ( GL_TRIANGLES );
glVertexAttrib3f(loc,1,0,0);
glVertex3f( 1, 1, 0);
glVertexAttrib3f(loc,1,0,0);
glVertex3f(0.5, -2.25, 0);
glVertexAttrib3f(loc,1,0,0);
glVertex3f(0, 1, 0);
glEnd();
```

```cpp
glBegin ( GL_TRIANGLES );
glVertexAttrib3f(loc,0,0,1);
glVertex3f( 0, 1, 0);
glVertexAttrib3f(loc,0,0,1);
glVertex3f(-0.5, -2.25, 0);
glVertexAttrib3f(loc,0,0,1);
glVertex3f(-1, 1, 0);
glEnd();
```

```cpp
glBegin ( GL_TRIANGLES );
glVertexAttrib3f(loc,0,1,0);
glVertex3f(-2, 1, 0);
glVertexAttrib3f(loc,0,1,0);
glVertex3f(-1.5, -2.25, 0);
glVertexAttrib3f(loc,0,1,0);
glVertex3f( -1, 1, 0);
glEnd();
```

```cpp
glutSwapBuffers();
glFlush();
```

This alteration changes the color of the triangle based on the position that it's rendered at through the use of a shader. This shader can be found in the files below; tests.vert and tests.frag.

Tests.vert

attribute vec3 temp;
varying vec3 color;
void main(void)
{
    color = temp;
    gl_Position = ftransform();
}
Tests.frag

varying vec3 color;
void main(void)
{
    gl_FragColor = vec4( color,1);
}

**Evaluation:**

I believe that I accomplished everything this lab set forth, so I am awarding myself the full 20 points.