Tutorial 1

Triangles

CS4052 Computer Graphics

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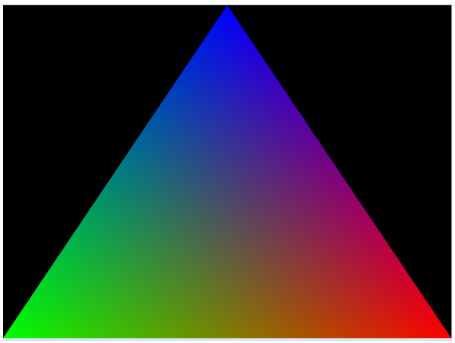
1 Making a Coloured Triangle

I called the buffer by the color preset variable name which coloured the triangle with the preset color gradient

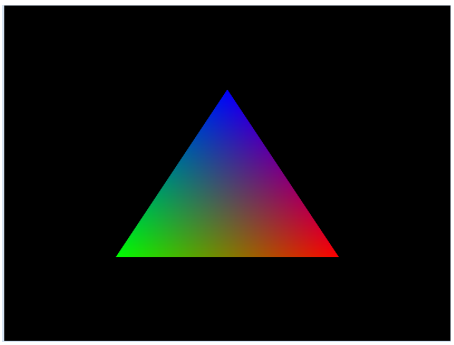
```
// Fragment Shader
// Note: no input in this shader, it just outputs the colour of all fragments, in this case set to
    red (format: R, G, B, A).
static const char* pFS = "                                                  \n\
#version 330                                                                \n\
/*since FeagColor5 is an out vector, its name does not need to corespond to anything \n\
this is onl required for the possible out vecttor FragColor */  \n\
out vec4 FragColor5;                                                          \n\
/*for future reference make sure mapping and shading names are the same*/ \n\
in vec4 color;                                                \n\
void main()                                                                 \n\
{                                                                            \n\
FragColor5 = vec4(color); }";
```



2 Making the triangle twice as small

Since I wasnt allowed to alter the vertices array I divided everything by 2

```
void main()                                             \n\
{                                                       \n\
    gl_Position = vec4(vPosition.x/2, vPosition.y/2, vPosition.z/2, 1.0); \n\
   color = vColor;                 \n\}";
```



3 Making a red and yello square

I drew another triangle and extended the original one by adding extravertices.
I also added new color coordinates for the new vertices
I looked up the color for red and yellow so as to map the points appropriatelly.
I changed the number of vertices in the display and mapping functions.

```
   GLfloat vertices[] = {
      1.0f, -1.0f, 0.0f,
      1.0f, 1.0f, 0.0f,
      -1.0f, 1.0f, 0.0f,

      -1.0f, 1.0f, 0.0f,
      -1.0f, -1.0f, 0.0f,
       1.0f, -1.0f, 0.0f};
GLfloat colors[] = {1.0f, 1.0f, 0.0f, 1.0f,
                    1.0f, 0.0f,0.0f, 1.0f,
                    1.0f, 1.0f, 0.0f, 1.0f,

                    1.0f, 1.0f, 0.0f, 1.0f,
                    1.0f, 0.0f,0.0f, 1.0f,
                    1.0f, 1.0f, 0.0f, 1.0f};

      GLuint numVertices = 6;
```