# CS4052: Computer Graphics – Lab 1

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For this lab we were first asked to modify the triangle rendered in the example code to have 3 different colours at each vertex. To do this I started by creating a separate array containing the respective colours for each vertex which is bound to a buffer object. A vertex attribute pointer for the buffer object is then created and passed into the vertex shader to be outputted to the fragment shader. Inside the fragment shader, each of the colours are assigned to their respective shader and the rest of triangle is coloured by interpolation. The result is show below:
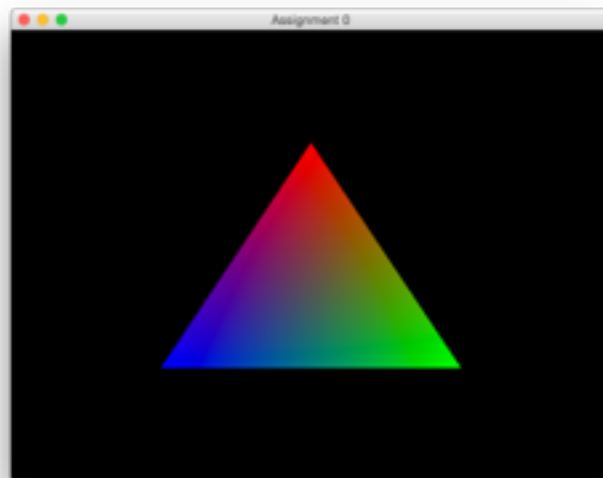


For the second part of the lab, we were asked to reduce the triangle to half of it's original size without modifying the points of it's vertices. To do this, I simply changed the vertex shader so that each vertex position is multiplied by 0.5 before being output to gl_Position. The result of this is show below:
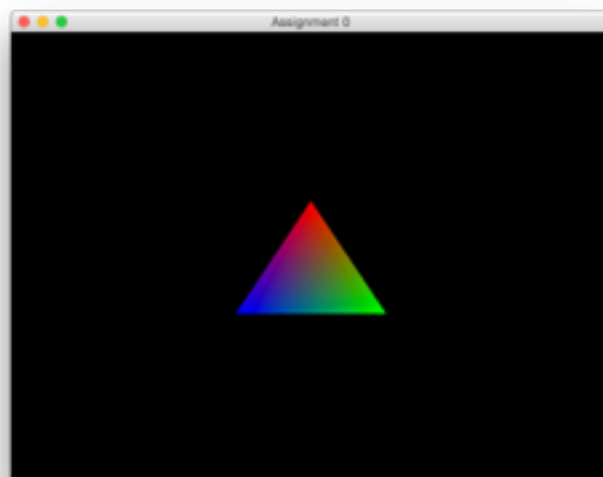
For the last part of this lab, we were asked to turn the triangle into a square with 2 red vertices and 2 yellow ones. To do this, I modified the original vertex points of the triangle to turn it into a right angle triangle and added 3 more points for another triangle, to form a square. I then modified the array of colours of so that vertices at the right angles in each triangle were yellow and the other two were red, so the square would be rendered as having 2 red and 2 yellow vertices. Finally, I changed the call to glDrawArrays in the main loop to render 6 points instead of 3. The results of this can be seen below: