

LAB 8 POST PROCESSING

LAB TASKS

1. Build an application that demonstrates the **box** blur technique discussed in the lecture. Use the code from the lecture and render a simple scene containing a cube. The box blur technique should sample the current pixel and the surrounding pixels (9 in total). This requires rendering the scene to a `renderTexture`, then render that to the screen using a set of box blur shaders you create (based on code in the lecture). The box blur shaders will need to know the width and height of the window to calculate the pixel size for sampling.
2. Extend your **box blur** post processing effect to sample the next layer of surround pixels (25 in total) and add them to the blurring calculation.
3. Using the code discussed in the lecture and that provided on blackboard create an application that renders a cube using the **Gaussian blur** technique covered. Once you have the example Gaussian blur working:
 - a. Increase the number of neighbours being used in each blur. Currently there are 2 neighbours either side of the source pixel, increase this to 4 neighbours either side. For both horizontal and vertical blur. For the increased number of neighbours use the following weightings:


```
weight0 = 0.382928;  
weight1 = 0.241732;  
weight2 = 0.060598;  
weight3 = 0.005977;  
weight4 = 0.000229;
```
 - b. Change the weightings of the neighbours to your own values (you could invert them). Remember they have to have a total of 1. You may want to have the further away neighbours (weight 3 and 4) have greater values. Make a note of the effect this has on the blur you will want to take screenshots of the different weightings to see the effect on blurring.

RESEARCH TASK

Research and develop directional blur post processing effect. For the directional blur you should be able to specify the direction and distance of the blur effect.

SUGGESTED READING

I did post this to the Slack awhile back, but you didn't see it. Read this article about the render techniques applied in Alien: Isolation. It is a little biased towards AMD technology but the techniques used in rendering are interesting: <http://community.amd.com/community/amd-blogs/amd-gaming/blog/2014/10/07/high-tech-fear--alien-isolation>