**Liam Deering**

**Reflective Report**

Introduction:

Overall I found this module went quite well as I found there were no significant hurdles that held me up and I was able to get all the required briefs done with time to pick some of the harder ones to challenge me. This was the first time I decided to do something that was purely programming focused as last year I did design and never touched code much before this either. Over semester 1 I did quite a bit of programming for my 3dl so I was feeling fairly confident going into this module.

Edge Detection Shader:

For my first brief I decided to go with one of the harder ones. The reason I chose to do this was because at the beginning of term I would have more time to work so at the beginning would be the best time. Starting off before I could start working on this , I need to look up a type of lighting called sobel lighting. It was easy to understand the theory behind it but being able to put it into use was a bit harder. For this I needed to look into hlsl scripting this was a significant challenge and took us the better part of a week to work on. The main difficulty I faced with this was my unfamiliarity with the language and visual studio not having an error checker which hundred me more than i thought it would. After I had this script written I was able to use a custom function in shader code to begin the outline part of this brief, after that hlsl file was written I was able to finish my brief quickly after. My finished package had so you could customize the outline color and thickness along with the base color of the mesh. Overall this was definitely a challenge but I'm glad I was able to get it done sooner as I feel there would have been a lot of stress.

FPS Counter:

After fishing one of the hard briefs i decided to go on and do one of the easier briefs to save myself some time before reading week and with that in mind i decided to the FPS counter there isn’t much to say other than it was a rather simple process and the scripting was very basic and all i had to was to attach it to a ui text so it could been seen on screen and update in game. I didn’t encounter any problems for this brief which was good because at this point I was getting a few deadlines that were approaching for some pieces due in the middle of the semester but with all that said I still think I was able to fully meet what the brief wanted.

Radar:

After coming back from reading week the next brief i decided to was the radar. The reason i picked this was because out all the briefs this one seemed like it had to most potential to be useful in a future project To start with i first thought about how i would approach this method and the one i decided to was to have a ui radar and draw on other ui elements which would have the position of enemies or npcs relative to the player being the center of the radar. With a method in I then needed to work on making this wasn’t too bad there a few minor issues, those being with having to with layering of the elements these were easily fixed however and then there were no further issues after this. I am quite happy with this brief as I was able to get what the brief wanted and the way in which I set up this code and script makes it easy to add more and different things to the radar so I can easily use this in the future should I want to revisit it.

Hit a moving Target:

This was another one of the hard briefs. The reason I chose to do another of them was I had a few weeks before I finished the year so I wanted to try and push myself within the time I had left. Before i could start working and had to think about my approach for this there where a few different ways this could be approached there where to main methods that i had in mind, the first was using the players velocity and direction to predict where the player would and to shoot there and the other was to have a raycast and once the player enters the enemies range the enemy would start truing and begin firing in the direction of the player. There are benefits and cons to each method, the one I went with in the end was using the raycast as it would get a more consistent result on hitting the player once it was in the enemy range so that is the one i went with. Other than deciding the method there were no other major issues i encountered in this brief

Overall:

I found doing programming to be a great learning opportunity as I was able to force myself to try and learn different things I don't think I would have if I didn't pick. There were points in the module where I struggled but this wasn’t too bad as I was always able to solve my problem or find a way around it. I’m also happy with the results I got with all my briefs as due to it being more rigid in nature than others briefs. This resulted in me knowing they were at a more complete state rather than the design I did last year which was always more open to interpretations and didn't really have a structured end point to them. Overall I am quite happy with the outcome for all the briefs I did this year and the progress. If I was to do it again I would either have liked to do another one of the hard briefs or maybe do more than the 4 required.