**Game Specialism 1 – Coursework Reflection**

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Throughout my Game Specialism 1 coursework, I completed the Radar, Speedometer and Instanced Scrolling Material briefs (in that order). With not much prior Unity and C# experience, I ran into some challenges during development, especially with the radar system. However, with plenty of research and in-class help, I was able to (for the most part) work past these issues and produce a functioning project for each brief.

My first brief was the radar system, where I created assets myself in order to ensure that I could control the sizing and positioning of them in Unity. I struggled the most with this brief, spending a long time trying to complete it exactly as required, where a spinning line would highlight icons using a raycast. However, due to my aforementioned lack of experience, I was only able to get as far as making the line rotate around the central axis and, in order to not use up too much of my time on the first brief, I had to deviate in order to finish the task. I decided to treat the radar as a minimap instead, leaving me with one script that only controlled the rotation and 2 user interface cameras (one that could only see enemies and the player, and the other for the spinning animation). This left me with something that functioned in a similar fashion, but unfortunately lacked the “pings” found on a traditional radar system. I would have liked to have finished this brief the intended way, but the various solutions I attempted to find online never did much to help fix the issues I was experiencing with raycasting, and I realised that finding a quicker solution to this and moving my focus to the other two briefs would be the best option. While my start wasn’t ideal, I do think that the research I did for this added to my knowledge and helped me complete my next brief quicker and with more success.

The second brief I tacked was the speedometer, which I was able to complete in full, and with the extra credit task. I wanted the user to be able to control the player character in a 2D, top-down space, so I started with a scene similar to the radar brief. I then added acceleration and deceleration to the controls, and calculated the speed, which was then converted into miles per hour (and capped at 60mph). I made a speedometer UI (using my own assets) with assistance from a tutorial, and set it up as a UI, something I had learnt to do from the previous brief. After some trial and error, I was then able to link the outputted speed value to the dial on the speedometer, and found myself with a successfully completed second brief. In order to make the player’s movements clear, I found a large, tileable stock rock texture that I used as a background. The biggest challenge I faced when developing this project was adding acceleration and deceleration to the moving object. Many solutions were too overcomplicated for what I needed, so it took some time to find something that would both work as intended and be easy for me to understand and edit if needed. Overall, I’m very pleased with how the speedometer turned out, especially when compared to the final version of the radar system. I was able to complete it quite quickly, too, giving me plenty of time for the third and final brief.

My third brief was the instanced scrolling material, which I decided would be the most manageable out of those that remained. I used a frame from the example GIF on the GitHub page, which I then made tileable. Initially, my attempts to use a prefab didn’t go well, so I created something that produced a similar effect, but used a game object that teleported back to the top of the screen instead. However, after getting some help in-class, I was able to modify the project. Now, the tileable texture is a prefab with an attached script that makes it move down on instantiation, and gets destroyed when it leaves the camera’s view. Another script, attached to an empty game object above the camera, spawns an instance of the object at a rate that leaves no gaps between instances. While my first approach gave me problems, the changes I made after learning how to use prefabs were quick and easy to do, making this final brief take the least time to complete.

Overall, when looking at all three briefs, I think they varied quite significantly in difficulty for me. The radar was definitely the most challenging and, while I had to do so in order to be able to spend more time on the other two briefs, I’m still unsatisfied that I was unable to complete it as intended. The speedometer and instanced scrolling material, however, are the two I’m most proud of. I’m especially happy that I went back and edited my third project, as it meant that I didn’t have to settle for two out of the three briefs having alternate solutions. When looking back, though, I can firmly say that the completion of my chosen briefs has developed my knowledge in Unity and C#. I noticed myself being able to understand better what I was writing, and found editing my code a lot easier to do. I’m definitely not fluent yet, but I see this coursework as a start to becoming so.