­­­Game specialism 1

The reason behind choosing programming for my specialism was due to already having started working with Unity for my computer science A-Level project, since I had already been working with Unity for that project it meant that I understood many of the functions and features that Unity had as well as understanding the language of code it used, C#. Knowing some C# already meant that I wasn’t starting on a completely blank slate and C# shares many functions that were like other programming languages I had worked with such as Python, HTML and CSS alongside some JavaScript. Using unity for each of these 3 projects mean that I can improve my skills and understanding within the features that C# offers me.

The first brief that I worked on was the beginner brief for an FPS counter. During this project I learnt about how to use unity’s newer text system, text mesh pro. I knew that for this module that I would need to use some kind of text element in order to make the scene display the frames per second. During my research for using the new text elements I was refreshed on the use of canvases as it had been a while since I used them, I was shown how the canvas can act separately from your scene as an overlay or be an element within the scene instead. Once I had set up the canvas and a placeholder for the FPS counter to go in, I then had to make a script that would control what the text element would be outputting to the scene itself. I knew that I wanted to make the script as simple as I could so that it could be easily added to other projects that I would work on in the future and therefore started by making the Unity class that would be used for the scene. This would be done by using a variable for the fps as well as the update frequency and the update timer all as a float for their values. Using these variables, I would be able to use the Update method within unity scripts to count each time the method was called. I then created a class that would handle all the measuring and updating of the overlay’s text so that it can simply just be called by the Update method. Using some help from videos on YouTube to get an idea of how these scripts work mean that I was able to make a simple script that will let me add an FPS display to future projects that I make within Unity. Overall, I found this brief quite simple, and I did this one due to many games having it included in their settings, having a fps display also means that I’ll be able to see if any future projects of mine have any issues.

The next brief that I would work on would be an intermediate level brief that was the old money system. The old money system would be the brief that I had the most trouble as I would first need to create a system for the money to use before I could incorporate any of the features such as adding money and taking away money. I then looked at how money works in real life and decided on making a wallet for the player. This wallet would be implemented via a money system script which handles all the various functions such as adding and subtracting money and would feature many public methods that would be able to be called by other scripts for ease of use. I also included a method to ensure that if there is 20 shillings it would be updated to 1 pound and 12 pence being updated to 1 shilling. Alongside this script, I would make a script that would be responsible for displaying the current value of the player’s wallet by using the amount of shillings, pence and pounds in the wallet of the player and a public variable for a text element. The whole class is public so it can be seen by other scripts so all they need to do is call the display script and the text will be updated with the player’s current wallet value. I then used buttons that would then be tied to my money system script that would then use the functions I had made such as adding and subtracting each coin and also a button that would let the user buy something. If the player doesn’t have enough money then it would output to the log that the player doesn’t have enough money and no money would be taken. Overall, this brief was the hardest brief that I worked on but it helped me understand how money systems within games can be coded and managed and using this brief I can reuse this code if I need to make another money system in future projects.

The final brief that I worked on was the speedometer, the reason behind doing this as my last brief was due to me enjoying racing games and a speedometer is a big part of the HUD of a racing game as it shows the player how fast they are currently going. I started this brief by creating a canvas in the scene and I then changed its settings so that it appears in the world space instead of an overlay. I then added in a simple cube with a rigid body with gravity that means that as the scene starts it just falls downwards infinitely. After getting the scene for my brief done I then made the script for the speedometer. The script for the speedometer would simply get the magnitude of the object it was attached to and would then multiply it as unity uses meters per second while I needed miles per hour, this being 2.23693629, after that it would then be changed to a string and have “M/H” to create the UI element for the speedometer.

Overall, I enjoyed doing all three of the briefs and chose briefs that I found interesting. The skills I learnt while researching and doing these briefs are skills that I will be able to use in later years for my work and I will be able to reuse and modify the code in these scripts for later projects that I would be working on. I enjoyed the challenges that came with doing these three briefs and am excited to take this work that I have done with me into future projects I will work on.