14/02/2023 - Component 1 – Flight Controller

When testing the flying controls of the script I realised that left and right were inverted, the issue was caused because I forgot to add a minus to the horizontal input.

Another issue present was the plane slowly going up when no input was made. I realised that the issue was caused by the 3D objects being used to make up the plane still having active colliders which were interacting with each other and causing the object to slowly go up.

18/02/2023 - Component 1 – Flight Controller

Originally for the flying controller I followed a tutorial by One Minute Games ([How To Make Flight Simulator In 5 Steps | Beginner Game Tutorial In Unity](#)) however, there were several issues with how the controller did things. First, when the plane was tilted to its maximum angle either left or right and you turned to the opposite direction the plane would snap to that angle rather than smoothly rotate. Another problem was that the plane could only go up at the angle specified in the script rather than doing a loop if you were continuously going up.

I decided to rewrite the script completely so that Mathf.Abs and Mathf.Sign weren't used which fixed the issues I had with the previous controller.

There was another issue caused, when flying the plane close to the ground whilst the flight speed was slow, where the plane would bounce off the surface at a high velocity. The fix was to use rigid body on the plane and turn off 'is trigger'.

21/02/2023 - Component 2 - Racing Checkpoint System

When testing the checkpoint script, I realised that going through the checkpoints didn't cause any message to appear in the console. At first, I thought that the issue was that I forgot to assign the checkpoint game objects but that wasn't the case. Eventually, I figured out that the issue was caused because the collision only counted for the object with the script on it, which was the checkpoint manager and not the checkpoints themselves.

I fixed the issue by rewriting the script and creating a new one for the checkpoints. Now a checkpoint passed method is called when the player collides with the object and the checkpoint manager tracks how many checkpoints have been passed.

22/02/2023 - Component 2 – Racing Checkpoint System

When working on the checkpoint system I realised that the number of checkpoints needed isn't something that a coder would know beforehand. Therefore, I decided to change the variable for total checkpoints from an integer to a list. Now a checkpoint can be easily added in Unity instead of going back to the script.

28/02/2023 - Component 3 – Enemy Path

When testing out if the enemy path worked, the enemies would face the same direction when moving rather than rotate to face the waypoint.

I fixed this by adding a new method called rotate towards waypoint which calculates the direction from the current position to the next waypoint and rotates the enemy to face that direction.

Furthermore, I also realised that the enemy would stop once it reached the final waypoint, which is something you wouldn't want to happen if you wanted to create an enemy roam path.

I changed the script so that the current waypoint index is set to 0 once the last one has been reached, making the enemy return to the first waypoint.

07/03/2023 - Component 4 – Collectible Coin

An issue I encountered when coding the collectible coin component had to do with text mesh pro not appearing on the canvas when the game was played. It was meant to show how many coins the player had collected however; nothing would show up.

After some troubleshooting, I realised that I forgot to assign the text mesh pro game object to the script.

I also wanted the coin score to be 1000 per coin however, the way that the script worked meant that I couldn't just change the coin value, instead I multiplied the coins collected number by 1000.

08/05/20203 - Component 2 – Racing Checkpoint

I decided to update my race checkpoint component to include a lap feature so that if the developer wants to, they can make a race with multiple laps instead of one. When implementing this feature, I ran into an issue where the final checkpoint before the lap resets would immediately disappear causing the other checkpoints to not work.

The problem was that the checkpoint would respawn whilst the player object was still in its radius, causing it to be immediately destroyed again. To fix this I added a delay before the objects respawn giving the player enough time to leave the radius of checkpoint.