Solo project postmortem:

When I first decided to make a first person shooter my vision for what I could accomplish was really large. There were many features I was planning for the game like the ability to hold a button and move backward though the last 2 seconds of their position and health like the tracker character in Overwatch. I would have also liked to include things like pick ups, ammo, grenades, and animation, but I had underestimated the scope of the intended project.

The first major feature that was the most important is split screen. If the game didn't have split screen integration then the project would have no point. I had assumed that Unity provided an easy solution to multiplayer input, but it actually requires writing scripts with the function of accepting different buttons then going into the project settings, writing different buttons into existence, then writing the button names into the scripts in the hierarchy.

Another feature that I was very particular about was the map. I decided that the unity built in meshes such as the cube and sphere were not going to be enough for me to make a map from. I decided to use Blender to make the model for the map. This took a large portion of the development time since I am not an expert with 3D modeling. Making shapes like curved ramps and non-one-sided planes in blender can be complicated and cost me time reading tutorials in order to implement the map I wanted. In the end the map is still missing walls that I wanted and a few other features but overall it is close to the original vision.

After I had the map in place in Unity, it was time to get players up and running. It seemed easier to get a model online and use for the player since I would be able to find something that is already rigged. I found a model on a free blender model site that was rigged and animated, but Unity would not play the animations correctly from Blender and rejected the bones and rigging from Blender, so I was unable to animate the player at all.

After giving up on animation, the next focus was to have the player be able to move, look, and shoot. The easiest thing to do was to use the Unity standard assets for a first person player controller and camera script. These had a lot of functioning parts but to accommodate for multiplayer input, the majority of the script had to be rewritten. The camera script also had to be modified to accept input from joysticks apart from mouse input. The shooting script was taken from the survival shooter project provided by Unity and modified only slightly to use other inputs and use the PlayerHealth script instead of an EnemyHealth script.

Taking inspiration from the survival shooter, I implemented a UI canvas similar to what is shown in that project with a health bar and a flashing element when a player takes damage.

In the end, a lot of my time was cut up by needing to research Unity functions and options and reading through forums when I ran into trouble. If I would have realized how complicated it would be to implement some elements, I would have changed my design from the beginning to make something easier to implement with Unity. Through my time searching forum posts I realized that Unity has a lot of issues with its features that people complain about like the UI canvas having image clipping issues if it is attached to a moving camera and a lack of good documentation for features like multiple player inputs. I would like to clean up this project and add some features but it needs some legitimate refactoring and bug fixes as well as improving the model for the map.