Development diary for final year project

Weak 1

For this weak i just focused on getting a Github repository set up and ready for development to begin.

Weak 2

I began the week by making a start scene with a plane and a capsule to use as the ground and unit respectively. After I added them into the world I added navigation to the plane and a nav mesh agent onto the capsule to be used in a script to help the unit navigate. I then set up; a base unit class which currently will only hold two boolean values for checks. The two boolean variables test if the unit is a player’s unit and if the unit is selected. After that I set up a script for the camera which adds movement to the camera when the player uses the movement keys. The movement works by applying a translation vector to the camera’s transform vector with y being 0 and x and z varying depending on input with movement keys with the value defaulting to 0 when input is not present. The camera class also holds functionality for when the player left clicks and right clicks the mouse. When the player left clicks the mouse the camera does a raycast and tests to see if the ray hits a unit. After this the camera also tests if the unit belongs to the player. If the unit is found to belong to the player it either becomes selected or deselected depending on its current selection state. If the player right clicks then the camera again does a raycast but records the point of impact if the raycast hits an object. After this the code loops through the objects to find any selected units. Any units that are selected gets given the raycast hit point to be their new destination for the nav mesh agent to navigate to.

Weak 3

At the start of this weak I added an enum to the units for the state that they are in. Right now there are three states for edle, moving and engaging. I have also added a GameObject variable to hold which unit it is currently engaging if the unit is engaged. In the camera I have added code for the selection so that if just clicking anywhere all the units will be deselected unless the player is holding shift. If the player is holding shift they will also be able to select multiple units. After this I moved on to add a test for when the player right clicks so that when the raycasts hits a point it first tests to see if the nav mesh agent can compute a complete path to the point. If the agent manages to complete a path the unit will then know that the point is reachable and will start navigating to that point. The unit will also then change its state to the moving state. There is now also a check inside the unit update testing the distance to the nest destination. This check is so that the unit will know when it reaches its destination and will change its state back to idle.

Weak 4

This weak I mainly spent time on another assignment so I wasn’t able to do as much on this project. I worked on adding more of a base for the different states. I added a state for engaging an enemy and a state for assisting an ally. I have also added a bullet into the project so that the units can fire upon enemy units and vice versa. I used unity’s invoke function to time a cool down function between shots. This way the units don’t fire too much and the cool down speed depends on a value that can be set within the editor. I have also adjusted the camera to an angle that is easier to see more of the level. I had a bug where the units stopped moving after a bit, at first I thought the unit wasn’t being selected anymore. After some investigation I found out it was that I wasn’t setting the isStopped variable back to false as I thought unity would do that automatically.

Weak 5

I have started the weak be starting production of the points of interest system, the thought process being that units would be taking points into account and then making decisions on their surroundings. Right now I have a point generating on each unit and a debug sphere drawing on every point of interest.