Soft Assignment

KU 1

A* PathFinding avoidance: This features is set up with every individual Ai bot and its purpose is to avoid other AI bots.

A Grid Graph: Examines the entire scene and creates a grid of possible paths that the ai can take. It generates nodes in a grid pattern, the entire grid is walkable and considered. This can be a slow since the pathfinder has to scan the entire scene to create the graph, this can be especially slow when you have a large scene/map.

Point Graph: The point graph allows the user to place sever points(waypoints) on a scene and the algorithm will only follow those nodes i.e: Only the selected points are walkable. This type of graph is much faster than a grid graph as it follows just the selected points however if the points aren't place strategically the closes point might be far away from the target or unreachable.

Navmesh: This type of graph works in a similar way to the grid graph however instead of generating nodes in a grid(i.e:squares) it generates the grid made out of triangles (i.e triangle mesh). All of the different nodes generated by the triangle mesh are the walkable area for the algorithm. It is usually faster than a grid graph since it creates less nodes since it uses triangles.

KU 3

According to the unity profilers the larger spikes during the test occurred while the A* pathfinding allotted was creating the scanning of the graph. This causes more resources to be used as the game engine has to calculate every square in the grid.