

Your name and student ID: Sam Endean 12011876
Project Name (working title): Turn based strategic AI within a 3d environment
<p>Brief description:</p> <ul style="list-style-type: none">- Strategic AI that can command units in order to navigate and strategise within a three dimensional environment.- The spheres of strategy will include both path finding, and combat strategy.- The AI system will comprise of several layers, with some focusing on local movement/combat for each unit, and others commanding the battle on the whole.- The AI will be able to play against a human player or against another AI opponent.- The entire space will be split into lots of 3d volumes with movement being limited to moving between said volumes.- An option for the fog of war will be available, meaning the AI can only see a certain number of volumes away from each unit.- These volumes will have outlines that will change colour depending on which is selected.- In order to be displayed sensibly and understandably, only the volumes that are further back or level with the currently selected volume in the direction of the camera's facing will be displayed.
<p>What do you want to achieve by doing this project?</p> <ul style="list-style-type: none">- This is a style of turn based strategy that through research cannot be found elsewhere, this is an opportunity to further the field in this regard.- Personally, I find AI the most intriguing and compelling part of video-game development.- Feeling that this is where my specialty lies, this project will be an opportunity to demonstrate my ability to both myself, the department, my peers, and future employers.
<p>What makes this project innovative/ challenging in a professional sense?</p> <ul style="list-style-type: none">- This type of AI within a 3d environment cannot be found elsewhere and so this project is a significant innovation in terms of the current market.- A big consideration is how the game world will be displayed, as a 3d environment can be very difficult to navigate and comprehend when displayed on a 2d medium such as a screen, there are currently no instances of what this project hopes to achieve within the current turn based market. However using my previously described solution to this problem a working, sensible system should be achievable.- Achieving this goal will demonstrate to the professional sphere that I am able to find an unexplored area of games and independently pursue the knowledge and technology required in order to bring it to fruition.
<p>What do you need to find out beforehand and how are you going to find that out?</p> <ul style="list-style-type: none">- Beforehand I will have to extensively research other similar topics of research such as general AI from other strategy games, this will be done through looking through research documents, tutorials and specialized textbooks.- I also need to learn how to draw the chosen 3d shape within code, how to tile them, and how to highlight them. This will be found by reading mathematics textbooks and online tutorials (along with questioning the course lecturers regarding specifics of such techniques)
<p>What technologies will you be using?</p> <ul style="list-style-type: none">- The main technology I will be using is the Unity software development engine, I have several months of intensive experience with this engine and can use it to a good standard.- This technology will be essential and should only provide a foundation for the project, as the majority of the project's functionality shall come from it's internal systems built up through the interactions within the code.
<p>Which research methods will you be using?</p> <ul style="list-style-type: none">- Second hand research methods are what will be used in the form of research documents, specialized textbooks and online tutorials.- However primary research methods will also be utilized in terms of consulting lecturers.- The system will be created through an iterative process, building complexity with each iteration up to completion.- Both of these methods will be used throughout the entire development of the project as different problems are encountered and then tackled through each iteration of the system.