Complex Game Systems Assignment –

*Snake Pathfinder*

*Modular System Brief*

Purpose of the System:

The purpose of the system is to generate and then follow the quickest/most efficient paths it can to reach a target destination from the current one.

Additional Libraries needed:

No additional libraries should be needed in the development of this system or for the implementation into the application.

If the system is to be a Library (Redistributable Static or Dynamic Linker) or as Redistributable Source Code:

Mathematical operations used:

Advanced algorithms to be implemented:

The main advanced algorithm used in this application is an A\* pathfinding method. This is used to determine the shortest path from a starting point to an end. In terms of the Application, this will generate a path from the Snakes’ current position to the next available food object.

How the system will be integrated into the Application:

The system will be integrated into the application via converting the system into a standalone unity package and then importing it into a previously built snake game application. The snake game may need some altering so that the system works as intended but that is to be expected.

*Implementation Summary*

Issues Encountered

A major issue that was encountered early on was the fact that the original idea for the system created had to be changed. The original plan for the complex games system was a genetic algorithm which would learn how to play snake using a preset list of locations for the food objects to spawn, so that the algorithm could learn that set of locations. The issue arose when it came to the actual spawning of the food objects. If list of spawn locations of the food was always the same, there would be a possibility of a food object spawning inside the snake at some point along the body. This would have caused countless errors and the idea for that system was scrapped. This system was replaced with the idea of the A\* Pathfinding on a Snake game.

Performance

Changes required to make System Work