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| Artificial Intelligence |
| Assignment |
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| This document describes the assignment for Artificial Intelligence |

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**Option**

We have opted to do option 1 of the assignment. This option requires us to implement a demo with some AI feature(s). Code, documentation and presentation are required of this assignment.

**Game Idea**

The game is developed using Unity game engine. It is catered for Windows, Mac and Linux platforms. It is a remake of Pac – Man. It is to be in 3d. The game will be in 3rd person with the camera being top down view. The Artificial Intelligence will be will be implemented on the ghosts and will be different from that of the original.

**Gameplay**

The game will be player input based. Players will control the Pac – Man and collect as many bits as possible before the number of lives becomes 0.

**Types Of AI**

**Waypoint AI**

Ghost AI makes use of Waypoints. Waypoints are set in the CSV. Represented by letters (eg. a, b, c, d). Calculate the direction based on the next waypoint the Ghost is supposed to move to.

**A\* AI**

Ghost AI makes use of A\* Path Finding. Check the surrounding blocks by position using the Manhattan formula. All 4 paths are pushed into Open List, lowest pushed into Closed List. Repeat procedure until it has reached desired outcome.

**Prediction AI**

Ghost AI makes use of Prediction. There will be a Raytrace in front of the Player. Get Player’s position, calculate the direction and move the Ghost in the calculated direction. Also make use of A\*.