**Computer Games Development CW208 Technical Design Document Year III**

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**Game Architecture**

My research project was developed in C++ on visual studio 2019 and included external libraries like “SFML” because of this there isn’t really any other subsystems or architecture to talk about.

**Features**

Feature: Grid

Tasks:

1. Create a block class that initialises rectangle shapes.
2. Create a 2D array of this block class type.
3. Draw the grid.

Feature: Context-free Steering AI

Tasks:

1. Create a triangle using sf::circleshape from the SFML library.
2. Initialise the triangle and give it a position and velocity vector.
3. Draw the triangle.
4. Calculate a unit velocity vector using the goal’s position.
5. Add velocity to the position vector and multiply it by speed and time.
6. Add rudimentary circle to square collision detection and adjust velocity if a collision happens.

Feature: Context-sensitive Steering AI

Tasks:

1. Create a triangle using sf::circleshape from the SFML library.
2. Initialise the triangle and give it a position and velocity vector.
3. Draw the triangle.
4. Create a danger array, desire array and directional array.
5. Create a move function that takes one of the directions stored in the directional array initially and have the triangle move in that direction multiplied by speed and time.
6. Create a function that checks in 8 directions by a number of pixels and if it detects anything in a given direction it will compute the danger as a float and add it to the corresponding entry in the danger array.
7. Create a function that checks in each direction for the goal and if the goal is found calculate a unit vector towards the goal and set that as the new velocity(times speed and time).

Feature: A\* and context-sensitive steering hybrid

Tasks:



**CRC Cards**

**References**