Assignment 2 Architecture

Cory Smith

Wander/seek/flee

In order to fulfill the requirement we were given to make these behaviours that could be added to units I decided to make them into components that can be added to units through the unit manager. Kinematic units now have a vector of their components attached to them and every update they call update on these components as well. In order to check if the player was in range of the component's behaviours I took the distance between the player's position vector and the unit's position vector and compared it to the length of the unit's detection range.

Collision Avoidance

I decided to use a static class to handle collision avoidance since the collision functions only required local variables aside from a few constants. After a unit updates their steering, the unit and steering are passed into a function that decides whether or not it must respond to a collision that frame. Collision between units used collision prediction while collision with walls used a raycast.

When I turned this assignment in neither forms of collision worked. The units would detect collisions with each other but would respond incorrectly, and the raycast algorithm I used didn't seem to work with the steering behaviours because the units would become frozen in place. If it's possible I would appreciate some help on fixing these issues, even if it doesn't help my grade, because I was very upset that I could not figure out how to make them work.

Debugging/UI

The debugging and UI systems also went unfinished because halfway through working on them I realized they were for bonus and decided to focus my efforts more on getting collisions working. That being said, most of the system for UI interaction is in place, minus the messages to certain functions. The UI system holds a vector of UI objects. These objects are derived from a base UIObject class and handle different UI elements, the first example being the UIText class. Another system, the debug system, would be used for different debugging purposes, and holds a pointer to its UIText object so that it can interact with it directly.