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Assignment 1 Architecture Document

The overall architecture of the solution seems pretty simple. (At least to me, as other people have disagreed with me on this in the past.) Every key press is passed directly into the input manager, translated from keypresses to events, and then sent to the message manager to be executed. The message manager then puts it on the queue, lines it up and fires it. It then communicates with whatever manager to see that the command is properly executed (Unit Manager, Game, whatever it is.) For the steering algorithms I mostly followed what was in the book except for wander steering which was just me walking around the room thinking about how to do it. The arrive steering just computes the velocity, uses it to fuel the acceleration and sets the acceleration. The Face Steering does the same thing but on an angular scale instead. The Wander Steering just uses Arrive but the position is pseudo-randomly generated from a circle around the object. The other algorithms are just a combination of the others (Wander and Chase is just Wander and Arrive). This is why I think its simple enough, but it might be a little too simple.

The top challenge faced in development was making the Face Steering. Even though the book does an explanation of it, the mapping was a bit weird for me. It works in the end but I had to a little tinkering with it in order for it to work properly. At first the rotation wasn't clamped properly, then it was off by PI, then it would only rotate clockwise and not counter-clockwise. It was a real mess up until

the end where it got together. Everything else was pretty simple to do, just a few bugs here and there.

The only bug I could find was if you switched from Face to Wander and Chase and then switched to Wander it would sort of fly off into the abyss and then return a few seconds later with way to much velocity and then have to slingshot around to hit the target.