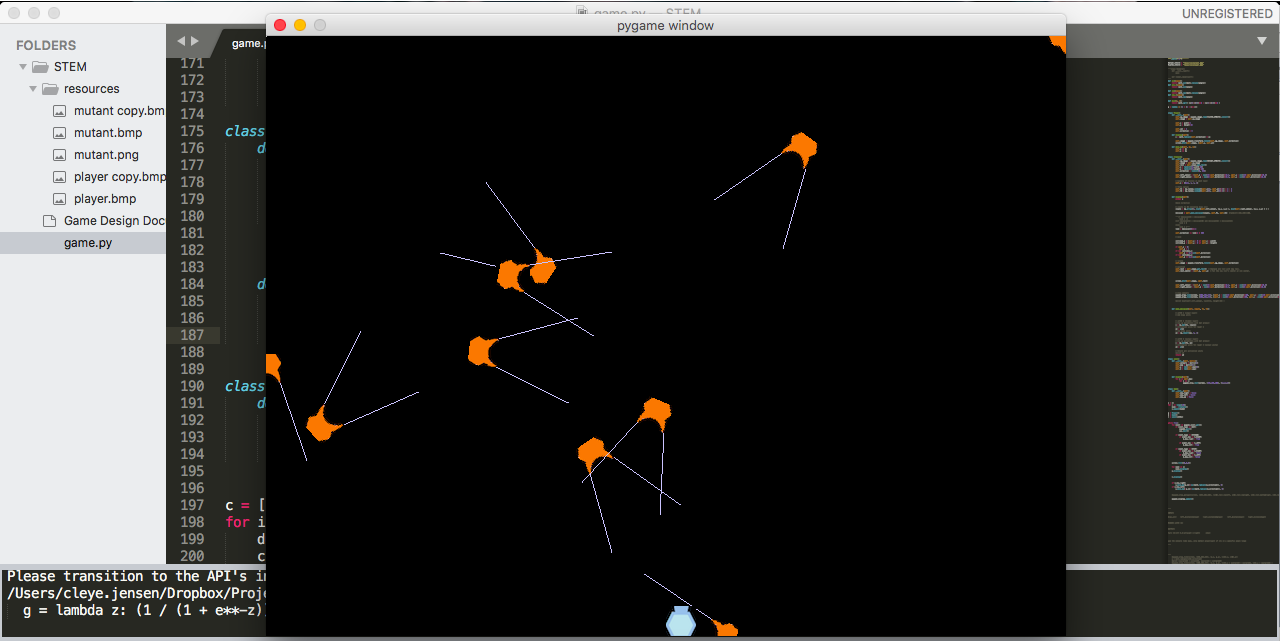
Game Design Document

I didn’t know what my game was going to be until June. Planning for the game began early 2018 when the theme was released. The aspects that stood out the most from Transformation were the mutation and evolution. I had dabbled in machine learning and neural networks before and was inspired by genetic algorithm simulators on YouTube to create something similar. At first I had no clue what to make, early brainstorms developed ideas like evolving from a fish to a human, training a car how to move through mazes and even a plant growing game. In spite of the continual emphasis on planning, planning, planning, at the time of writing this game document in early April I still don’t know what my game will be



Game Title

problems

first problem – how to rotate an image without it going everywhere, took a week to solve

what inputs and outputs should the nn have

INPUTS bias\_unit left\_distance2player right\_distance2player left\_distance2wall right\_distance2wall

HIDDEN LAYER (4)

OUTPUTS turn (0-left 0.5-straight 1-right) shoot

problem: turn was 3 different outputs (left right straight), creatures starting going straight it looked unnatural

solution: create 0-1 turning values

problem: bullets were sensed even when moving away from them

added angles to sensor, add periphery value

fitness:

not touching wall

touching player

to do:

music

storyline

gui

game:

4 waves (a wave is 16 specimens of a species) come for each generation

species:

twirlers, sharpshooters

survive as many generations as possible