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Simulated Worlds 2



# In this assignment I will be:

Developing a simulation of predators and prey using a code base provided by Simon Scarle.

# Research

I decided to split my research into two sub-sections. Primarily I looked into how animals react to their predators and how these predators hunt. I then researched previous BOID simulations that may have been relevant to my work.

## Hunting

During my research a predominant feature that defines the effectiveness of predators is their vision. Their eyes are generally located in forward position and allow them to see large distances whilst having a narrow field of vision. This means that the predators can keep track of a prey from far away and that they have little or no care for things in their peripheral vision, such as other predators. From this, I have deducted that the predators in my simulation will have a variable vision distance which a prey needs to be located within for the predator to begin hunting them.

# Iterations

The first iteration of my BOID simulation had a ***predatorBoid*** class and a ***preyBoid*** class. I quickly realized that this was unnecessary as both classes were almost identical, except for the polarity of the forces being applied being reversed. Therefore I merged both classes into a parent class ***Boid***. This class had a ***BoidType*** enumerator class