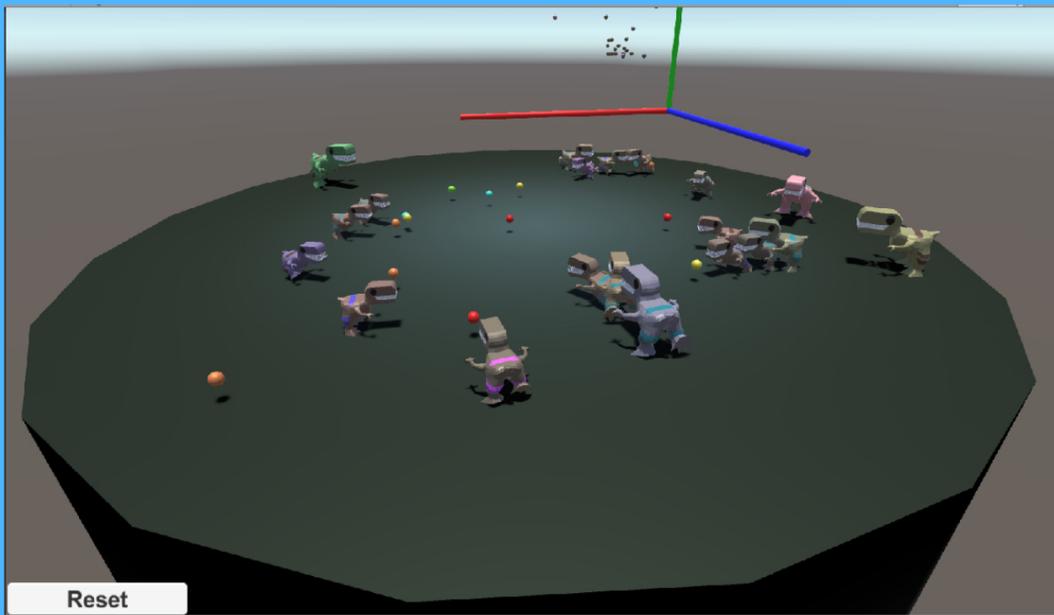




Animal Evolution

What Is It?



This project is a simulation where animals try to collect food every round in order to reproduce and create more animals. Every round, all animals are randomly placed on the edge. Then, they all race to see who can get enough food before they either get tired or food runs out. Animals pick the nearest food based on specific conditions.

When reproducing, both the original animal and the new animal get mutations which slightly alter their stats, either speed, size or food quality preference. This also changes their color to visually see more prominent stats. Whenever these animals do well, biases are altered so that they are more likely to mutate further in a specific direction.

Starting statistics for all animals can also be modified before spawning them. Character and food count modify the amount of animals or food.

Start Energy is how much energy each animal has before they tier out. Everyone starts with the same amount of energy. Every step, an animal consumes $Speed^2 * Size^3$ energy. The 3 stats are explained in the Animal Stats section.

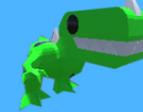
The final choice is if simpler orb models are preferred, or more complex, animated, dinosaur models.

Character Count	10
Food Count	50
Start Energy	30000
Start Speed	<input type="range"/>
Start Size	<input type="range"/>
Start Quality	<input type="range"/>
$Sp^2 * Si^3$	<input type="range"/>
Model:	Dinosaur
	<input type="button" value="Simple"/> <input type="button" value="Dinosaur"/>
<input type="button" value="Start"/>	

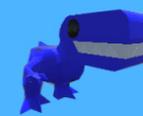
Animal Stats



Red - Faster movement at the cost of more energy consumed per step. Range 1 to 10 as floats.



Green - Size, harsher movement penalty, but can scare other animals from food if large enough. Range 1 to 4 as floats.



Blue - Quality preference. If possible, goes straight to better quality food. Range 1 to 5 as integers.

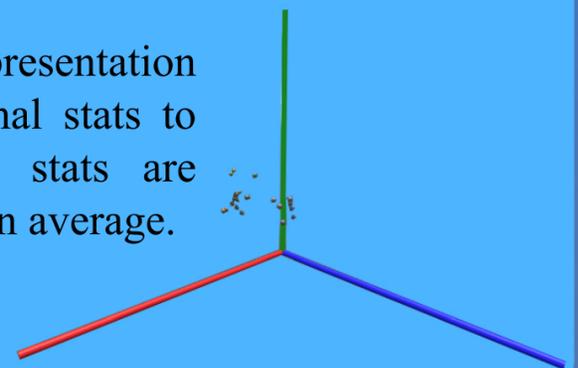
Food Quality



Food is spawned in varying qualities. Animals need 1 point to live, 2 to reproduce. Light blue gives 1 point, green 0.8, until reaching red, which gives 0.2 points.

Graph

Visual representation of all animal stats to see which stats are preferred on average.



Author - Karl - Walter Sillaots
 Computer Science, 1st year Master's
 GitHub Repository:
https://github.com/K-WS/Algorithmics_Evolution

