Mini Project Items

Monday, February 13, 2023 1:21 PM

Movement

- Allow agents to move any distance - pathfinding to nearest food
- Starting Speed is 1
- Allow agents to continue pursuing food until everything is gone?
    - Agent should conserve energy if journey to food will kill them

Food

- Food eliminated from its position immediately upon consumption
- Food resets/ agent positions reset after all food is gone OR no agents are willing to go get the food

Energy and Speed

- Death only based on energy level of individual agents
    - Energy starting value parameter
- Speed as trait, energy costs more the faster the agent is
    - Starting coefficient is 1 energy per 1 square moved
    - Energy cost = speed^2
- Energy rewarded from food is parameter *reward*
- Average speed recorded for data collection

Reproduction and random mutation

- Reproduction occurs if an agent has *e* (param) energy stored
- When an agent survives the generation (all food consumed) if energy > *e*, reproduction occurs
- Traits of offspring have a random probability of speed trait mutating +/- 5%

Final Project Steps

- Implement secondary agent
- Implement competition behavior
- Implement aggression
    - NEW TRAIT: size.
    - if size(agent1) >= 1.2(size(agent2)) and they occupy the same square then agent1 kills agent2