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Professor Jenkins
CSC 470
12 December 2022

Project Summary

Our Project is a maze AI that learns how to solve the maze through a genetic algorithm. The fitness of each dot is calculated after each generation, and the top 5 dots are replicated into the lower 60 of the population. The step count is increased each generation to allow for more movement towards the goal. Currently, our dots do move towards the end of the maze, but there are a few bugs that we were not quite able to get ironed out. These include, but are not limited to: an index out of bounds range when fetching pixel color when there are less than 5 dots surviving.

We believe that this project could be used by real users after some slight cleanup of the code so that the major bugs are gone. Some lessons learned with this project include: consider using acceleration and momentum to make the dots have a more deliberate direction and randomize the movement of the 5 best dots to the rest of the 60 so that they do not clump together and also improve their fitness faster.

GitHub: https://github.com/240john/MazeAI

Accomplishments:

Teddy: Dot generation and major cleanup of bugs within the code

Jason: Majority of the UI work

Matthew: Theorizing ways in which we can solve the issues with the code

John: Created dot AI, created maze generation, and solved bugs while coding