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CSE 150

Assignment 2 Report

Question 1

For the Evaluation Function, I decided to add variables to keep track of the next food pellet to eat, the location of the food, when to eat ghosts, and what to do next. The function checks to see the distance of the food and to get the distance of the ghosts.

Question 2

On larger boards, Pacman is good at not dying because he is able to keep his distance from all of the ghosts. However, Pacman is not good at winning because there are so many similarly valued paths that Pacman ends up backtracking trying to always use the optimum path.

Question 3

When I run the code “python pacman.py -p MinimaxAgent -l trappedClassic -a depth=3 --frameTime=-1”, Pacman moves forwards towards the closer ghost but does so slowly. Pacman is trapped and is unable to move anywhere. Pacman Is unable to get to the food and is therefore idling as long as possible, prolonging the inevitable loss.

Question 4

For alpha-beta pruning, we need to know all of the children, where in this situation we don’t. with the expectimax, we use chance nodes giving the algorithm a chance of success

Question 5

When making the evaluation function, I decided to add variables to keep track of new food being found, new positions of the pacman, new ghost states, new scared time counters, new ghost distance counters, food counters, food distance counters, etc. Then I checked to see if the game has been lost or won. The score of the route comes from the food bonus, ghost distance, pellet distance, food count, pellet count and time.

I worked on this assignment alone.