

1. In case of 1 ghost, the success rate of pacman for our evaluation function is pretty good.
Below are the stats in case of 1 ghost:

Average Score: 1118.8

Scores: 1312.0, 1333.0, 1342.0, 1030.0, 1091.0, 1112.0, 1316.0, 1243.0, 167.0, 1242.0

Win Rate: 9/10 (0.90)

Record: Win, Win, Win, Win, Win, Win, Win, Win, Loss, Win

In case of 2 ghosts, the success rate for our evaluation is 2 out of 10.

Average Score: 571.3

Scores: 496.0, 32.0, 628.0, 1911.0, 166.0, 1534.0, -38.0, 201.0, 159.0, 624.0

Win Rate: 2/10 (0.20)

Record: Loss, Loss, Loss, Win, Loss, Win, Loss, Loss, Loss, Loss

2. For 1000 runs, below are the stats for MINMAX agent. We removed DIRECTION.STOP from the possible actions for better performance.

Win Rate: 637/1000 (0.68)

TIME : 5 minutes (approximately)

Average Score: 149.78

3. For 1000 runs, below are the stats for alpha beta pruning agent.

Win Rate: 637/1000 (0.68)

TIME : 1.49 minutes (approximately)

Average Score: 149.788

Alpha Beta expands less number of nodes and therefore takes less time as compared to minmax but the success rate remains same. On removing DIRECTION.STOP, we observed that the pacman either reaches the goal or dies quickly.