

# AI assignment 5: Adversial Search

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November 19, 2023

## 1 Evaluation Function

For the evaluation function, the following variables were taken into account:

- The score
- Whether the state wins or loses the game.
- The amount of ghosts and their "scared status"
- The amount of food and their locations
- The amount of capsules and their locations

When it comes to the ghosts, food and capsules, the most rewarding technique was to issue a "standard" penalty/reward combined with their Manhattan-distance to pacman. An example of this is

```
1  for i in range(len(currentGameState.getGhostPositions())):
2      if time_scared_list[i] > 0:
3          value += -100 - (
4              50
5              * manhattanDistance(
6                  pacman_position,
7                  currentGameState.getGhostPositions()[i],
8              )
9          )
```

Because the value of *score* \* 1000 is used as a base value on which the penalties/rewards are issued, it was possible to create the function without the need for reciprocals.