University of Antwerp
Faculty of Science

Artificial Intelligence

Assignment 5: Pacman Adversarial Search

Deadline: November 19, 2023

General Remarks

- You are free to consult with other students. The assignment is, however, individual, meaning that each submitted assignment has to be sufficiently unique.
- Always motivate your answers. Detail the steps needed to come to your conclusions.
- You are free to provide answers in either English or Dutch.
- If anything is unclear or if you experience technical problems with the assignment, contact me at joey.depauw@uantwerpen.be.

Assignment (15 points)

For this assignment, you will implement adversarial search algorithms in the context of Pacman: https://inst.eecs.berkeley.edu/~cs188/fa23/projects/proj2/. Please download the entire code again, and do not use files from the previous assignments. Solutions should work with Python version 3.10.

Solve the following questions:

Question 1 (2 points): Reflex Agent

Question 2 (4 points): Minimax

Question 3 (3 points): Alpha-Beta Pruning

Question 4 (2 points): Expectimax

Question 5 (2 points): Evaluation Function

Report (2 points): Discuss Your Evaluation Functions

- Document the features you considered, tried and/or used for your evaluation functions. You should include at least three distinct features.
- Which feature weights proved the most fruitful? Why would you (not) use reciprocals of the features?

Scoring Criteria for Question 1 and Question 5

You will receive:

- 1 point if your agent wins at least 5 games with an average score of at least 500 points
- 2 points if your agent wins all games with an average score of at least 1000 points

Submit

Upload a **zip** file containing **only** the files `report.pdf` and `multiAgents.py` via Blackboard. These files should contain your solution to all the questions. Do not change the names of these files. Good Luck!
