

## Owen McGann - Path Finding Snake Assignment Answers

1a)

- *Run 10 trials each of python snake\_game.py [STRATEGY] 0 where [STRATEGY] is each of the strategies you implemented.*
  - **Line of code I used to run tests through terminal:**  
for i in {1..10}; do python3 SnakePathing.py.[STRATEGY] 15; done  
(Clock Speed set to 100 for timing reasons)  
(Objects set to 15)

1b)

- *Run 10 trials each of python snake\_game.py [STRATEGY] 10 where [STRATEGY] is each of the strategies you implemented. Report the average score for each strategy.*
  - **Rand Strategy (Avg Score out of 10):**
    - 1.1
  - **Greedy Strategy (Avg Score out of 10):**
    - 2.8
  - **Dijkstra Strategy (Avg Score out of 10):**
    - 66.1
  - **AStar Strategy (Avg Score out of 10):**
    - 75.5

1c)

- *What do the results of 1a vs. 1b tell you about the strategies? Do these results indicate that one method is better at handling obstacles? Write a short (1-2 sentences) explanation of what these results demonstrate.*
  - The results of the test trials show that both the Dijkstra and AStar algorithms significantly outperform the Rand and Greedy strategies, especially when handling obstacles. The AStar algorithm, in particular, is the most efficient at navigating the Snake game with obstacles, demonstrating its superior pathfinding ability in complex environments.