CSCE 420, Spring 2015 Home Work 1 Dr. Ronnie Ward

Due Friday, January 30, 5pm

Your goal is to beat the Pandmat code in performance to get an "A". Beat it sometimes for a "B". Tie it for a "C" and underperform it for "D". You are to also submit answers to the following questions.

1. Do you think Pandmat exhibits intelligent behavior? Is it a rational agent according to the textbook, or not? Explain.
2. According to Chapter 2, Pandamat is not a reflexive agent. Suppose we wanted to make it a reflexive agent. It would obey the following rules. If it senses food, eat. If it senses a blank move. Otherwise, don't move. To be reflexive how would the code handle the case of sensing multiple blanks (which blank would be chosen)? Mulitple foods (which food would be taken)?
3. According to the textbook, Pandamat's environment is static. Suppose you used a randomly generated new Woods environment with the same ratio of trees, food, and blanks as WOODS7. Would its environment still be static? Explain. Suppose you used a new, randomly generated environment every time Pandamat finds food. Would its environment still be static? What if you used a new randomly generated environment after each Pandamat move? Would it be static? Explain.
4. Why does Pandamat have 24 sense demons? Why does Pandamat have only 8 action demons? Why does Pandamat have 10 OTHER demons? Does its performance improve if you gave it more, or less action demons? Explain.
5. According to chapter 2 of the textbook, what type of agent is Pandamat? A goal-based, or utility-based agent? Is it a learning agent? Explain.
6. Pandamat's control structure learns by an externally supplied gain (hard coded in the simulator). Does changing the values of the three different gains make a difference in Pandamat's performance?
7. Pandamat's control learns fast and it is simple to implement, but does it have any real world applicability? Can you think of a simple control problem where it might be good enough? What are your thoughts?