ECE 4524 - PROJECT 3 - SPRING 2020
Reinforcement Learning

Due Friday, March 20

Instructions:
The goal of this assignment is for you to gain experience with MDPs and Reinforcement Learning. You must develop and test Python code that works with Gridworld, a simulated Crawler robot, and with Pacman.

Follow the instructions that are posted here: https://computing.ece.vt.edu/~abbott/teaching/ece4524/p3/. The assignment consists of 10 parts:

Q1: Value Iteration
Q2: Bridge Crossing Analysis
Q3: Policies
Q4: Q-Learning
Q5: Epsilon Greedy
Q6: Bridge Crossing Revisited
Q7: Q-Learning and Pacman
Q8: Approximate Q-Learning

You will need to edit and test 3 files, as explained at the web site:

- `valueIterationAgents.py:` A value iteration agent for solving known MDPs.
- `qLearningAgents.py:` Q-learning agents for Gridworld, Crawler and Pacman.
- `analysis.py:` A file to put your answers to questions given in the project.

Submitting your work:
Place all of your completed files (listed above) into a single zip file. (If you also modified other files, such as `util.py`, please also include those files here.) A suggested name for the zip file is `project3_`*`LastName_FirstName`*`.zip`, using your own name. Submit that file to Canvas before the deadline. After uploading, please verify correct submission by downloading your zip file from Canvas and checking the contents. (The files that you submit to Canvas are the files that will be graded.)

If you did not complete some part of the assignment, you may provide a brief description to the grader to explain the situation, and to describe how the grader could evaluate your code for partial credit. Preferred formats for this file are *.txt or *.pdf. Place this file in the zip archive that you submit to Canvas.

Grading:
The maximum score for this assignment is 25 points, as noted in the web site. The grader will test your code using his copy of the `autograder.py` script.

Programming style:
In general, please follow the coding style that is in the starter code. Provide useful comments to explain interesting parts of code that you develop. A lengthier discussion of Python style is provided at python.org/dev/peps/pep-0008.

Honor Code:
As a reminder from the course syllabus, project assignments must be completed independently. You are allowed to refer to code provided by the instructor, a Teaching Assistant, or the textbook's web site. You should not share your code with anyone except the instructor or TA.