

## Your Task

1. **(TURN THIS IN, 5 points)** First, read the assignment specification and *estimate how long you think it will take you* and write it down.
2. Get everything loaded into an IDE of your choice (e.g., pyCharm). Integrated Development Environments, aka IDEs, offer a variety of features like debugging and profiling alongside a code editor.
3. Run the main, this will load and print MDP1, which is the one we looked at in class. Inspect it and ask any questions about the structure the data takes.
4. Adjust the main so that it also runs the second test, which will print MDP2.
5. **(TURN THIS IN, 25 points)** Draw a multi-graph embedding for MDP2, with a charting package or your pencil (phone scan is probably the easiest way to convert pencil drawings to something you can turn in)
6. **(TURN THIS IN, 15 points)** Having drawn the graph, describe a policy that you think would perform well in this domain. You may use whatever format seems natural: words, a table like the blackjack example from class (in which a state maps to an action, so in this case a 1-D table), or something different.
7. Uncomment the rest of the tests, and run them. Use the output and source code to familiarize yourself with all parts of the program, particularly MDP.py.
8. **(TURN THIS IN, 50 points)** Having seen the Sales MDP in lecture, and now the Dungeon and Parking MDPs, devise an MDP to model a phenomenon of your choosing. It should include a similar "gadget" arrangement as we see moving from a simple entity to a more complex one (e.g., 1 parking space to a parking lot).
9. **(TURN THIS IN, 5 points)** Upon completing the lab, determine how long you actually spent on the lab, and report that timeframe in addition to your estimate beforehand.

## Submit

A file that is readable (pdf, docx, etc) containing your drawing for part 4, your policy for part 5, and your modeling answer.