1. **Deep Q Learning**

   - Implement the Deep Q-Network (DQN) in *deep_q_learning.py*. Try to vary the DQN architecture (wider, deeper) and record your observations in the *observations.txt* file. What is the deepest architecture that can still solve this environment?
   - Does the same architecture work for `CartPole-v0`?
   - Add a replay buffer (i.e. sample from the most recent experiences) to solve the `LunarLander-v2` environment. How does the replay buffer size affect training performance?
   - How does the batch size (`BATCH_SIZE`) interact with your network architecture?
   - Try different optimizers. Is momentum needed for solving this environment?