CS1571
Fall 2019
12/2 In-Class Worksheet

Name: Simran Gidwani
Where were you sitting in class today: Center right

A. Pre-Reflection

On a scale of 1-5, with 5 being most confident, how well do you think you could execute these learning objectives:

- 21.3 Execute a Naïve Bayes classification _____
- 22.1 Describe the components of Q-learning _____

B. Q-Learning

1. Explain the different components of the following equation.

$$Q_{sample}(s,a) = r + \gamma \max_{a'} Q_{old}(s',a')$$

The q value of taking action a in state s = Qsample(s, a) ==
The reward r you get from taking action a in state s (new information you get from taking that action in that state) + discount factor of future rewards * max future utility of taking an action in state s' (the state you arrived in)

Gamma – value between 0 and 1 that discounts the future rewards

Qold – represents previously computed value of Q that is computed using dynamic programming – iterating over all the a'

2. Explain the different components of the following equation. What do you think is going on?

$$Q_{new}(s,a) \leftarrow Q_{old}(s,a) + \alpha*(Q_{sample}(s,a) - Q_{old}(s,a))$$

Creates weighted average that balances new info with the old
A* -- learning rate

C. Post-Reflection

On a scale of 1-5, with 5 being most confident, how well do you think you could execute these learning objectives:

- 21.3 Execute a Naïve Bayes classification _____
- 22.1 Describe the components of Q-learning _____