Q learning for grid world

Wednesday, February 23, 2022 11:53 AM

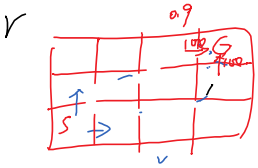
In this class, we have learned several learning algorithms (e.g., Q-learning, Monte Carlo, dynamic programming, double Q-learning, TD, SARSA and others). You are free to pick up **three algorithms** and implement on a grid world goal searching problem.

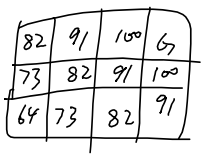
1. Choose three algorithms you are going to implement and provide their pseudo code

2. Design your own grid world example (should be bigger than 3*2)

3. Show your goal searching process with step-to-go curve, sum of squared error and/or theoretical value table

4. Please follow the project report guidelines and submit the report/code





Each episode
- step to reach the goal

Theoretical value/Q table
- wait until alg. converge
- derive by hands

V^*

Sum of squared error

$E = \frac{1}{2}\sum(\hat{V} - V^*)^2$

↓ each episode

Steps per episode