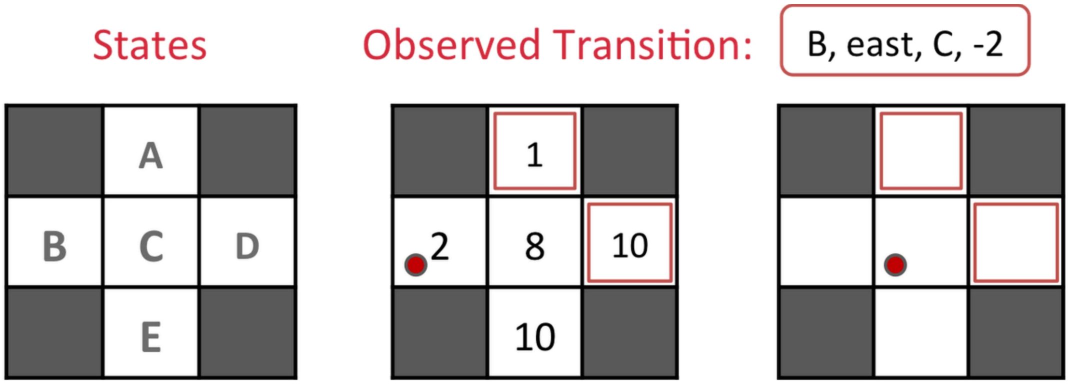
hw5_rl_q4_temporal_difference_learning

Question 4: Temporal Difference Learning

10/10 points (ungraded)

Consider the gridworld shown below. The left panel shows the name of each state A through E. The middle panel shows the current estimate of the value function V^π for each state. A transition is observed, that takes the agent from state B through taking action east into state C, and the agent receives a reward of -2. Assuming $\gamma = 1, \alpha = \frac{1}{2}$, what are the value estimates after the TD learning update? (note: the value will change for one of the states only)



Assume: γ = 1, α = 1/2

$$V^\pi(s) \leftarrow (1-\alpha)V^\pi(s) + \alpha\left[R(s,\pi(s),s') + \gamma V^\pi(s')\right]$$

$\hat{V}^\pi(A) =$

1 ✓

$\hat{V}^\pi(B) =$

4 ✓

$\hat{V}^\pi(C) =$

8 ✓

$\hat{V}^{\pi}(D) =$

10 ✓

$\hat{V}^{\pi}(E) =$

10 ✓

Submit

✓ Correct (10/10 points)