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Practice Quiz

Graded Assignment • 30 min

English **Due** Jun 16, 11:59 PM +07

Your grade: 81.81%

Your latest: **81.81%** • Your highest: **81.81%**

To pass you need at least 80%. We keep your highest score.

Next item →

1. TD(0) is a solution method for: 1 / 1 point

- ○ Control
- ◉ Prediction

Correct

Correct! TD(0) is used to estimate the value function for a given policy. In other words, it is a solution method for the prediction problem.

2. Which of the following methods use bootstrapping? (Select all that apply) 1 / 1 point

- ☑ Dynamic Programming

Correct

Correct! DP algorithms are obtained by turning Bellman equations into update rules for improving approximations of the desired value functions. These methods update estimates of the values of states based on estimates of the values of successor states. That is, they update estimates on the basis of other estimates.

- ☐ Monte Carlo
- ☑ TD(0)

Correct

Correct! Temporal Difference methods update “a guess from a guess”. They estimate the value of the current state using the immediate reward and the estimate of the value in the next state. They bootstrap-off their own estimates.

3. Which of the following is the correct characterization of Dynamic Programming (DP) and Temporal Difference (TD) methods? 1 / 1 point

- ○ Both TD methods and DP methods require a model: the dynamics function p.
- ○ Neither TD methods nor DP methods require a model: the dynamics function p.
- ○ TD methods require a model, the dynamics function p, but Monte-Carlo methods do not.
- ◉ DP methods require a model, the dynamics function p, but TD methods do not.

Correct

Correct! Dynamic Programming methods solve Bellman equations using a model. TD methods use sample updates from the environment, and do not need to explicitly have the dynamics function p.

4. Match the algorithm name to its correct update (**select all that apply**) 1 point

- ☐ Monte Carlo: $V(S_t) \leftarrow V(S_t) + \alpha[R_{t+1} + \gamma V(S_{t+1}) - V(S_t)]$
- ☑ TD(0): $V(S_t) \leftarrow V(S_t) + \alpha[G_t - V(S_t)]$