EE551000 System Theory
Homework 3: Planning and Learning with Tabular Methods

Due: Nov 30, 2020 23:59

Goal

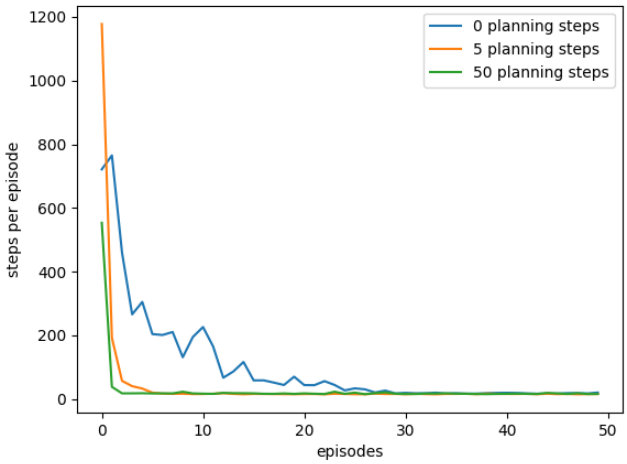
The goal of this assignment helps you understand the benefits of integrating model-based and model-free methods.

Todo

- Please implement Tabular Dyna-Q in maze environment shown in textbook (Figure 8.3)

Details

- File description
  - `env.py`: The maze environment used in this assignment. You should NOT modify this file.
  - `algo.py`: You'll implement Dyna-Q in the file. Please follow the instructions to complete your homework.
  - `main.py`: Main file for your implementation.
- After you've done all the algorithms, you should see the result similar to below. (the figure format only, the result would be different):



- You are allowed to modify all the files except env.py. Please write a README file to explain how to run your code if you implemented extra functions.

Requirements and Installation

- Python version: 3.6
- Please run `pip install -r requirements.txt` to install necessary libraries.

Report

- **Title, name, student ID**
- **Implementation**
  - ✓ Briefly describe your implementation.
- **Experiments and Analysis**
  - ✓ Plot result. (As example above)
  - ✓ Explain how learned model improves the performance.

Reminder

- Please upload your code and report.pdf to iLMS before 11/30 (Mon) 23:59. No late submission allowed.
- DO NOT zip your code into a single file.
- Please do not copy&paste the code from your classmates.
- Please write a README file to explain how to run your code if you implemented extra functions.