EE466000 introduction to reinforcement learning
Homework 3: Gridworld

Due: April 25, 2021 23:59

Goal

- Use dynamic programming to find an optimal policy in HW2.2

Todo

- Implement an algorithm:
  - ✓ Use bellman equation for $q_*(s, a)$

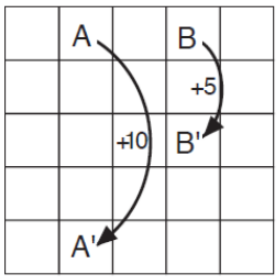
Details

- File description
  - `HW3.ipynb`: You'll implement an algorithm in the file.

- Gridworld environment

Example Gridworld

Actions



- State: cell of the grid
- Action: north, south, east, and west
- Reward:

  Actions take the agent off the grid → R=-1 and its location unchanged

  Actions move the agent out of A or B → R= 10 or 5,

  its location is relocated to A' or B'

  Other actions → R=0

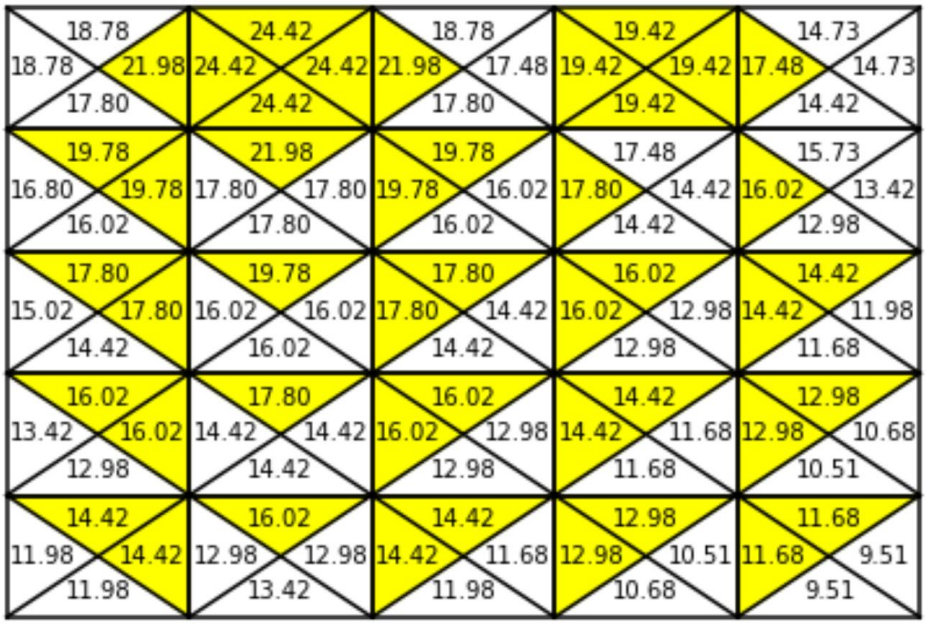


table of an algorithm.

Requirements and Installation

- Python version: 3.6
- pip install matplotlib
- pip install numpy

Report

- **Title, name, student ID**
- **Implementation**
  - ✓ Briefly describe your implementation.
- **Experiments and Analysis**
  - ✓ Plot tables of an algorithm. (As example above)
  - ✓ Whether q_values are reasonable?
  - ✓ Compare the table to the table of HW2.2.

Reminder

- Please upload your code main.py and report.pdf to iLMS before 4/25 (Sat.) 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.