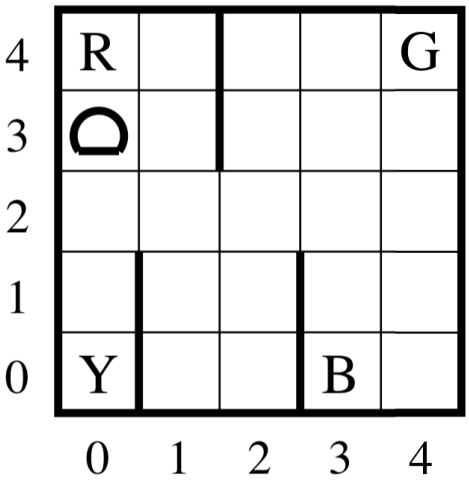
Solve OpenAI Gym's Taxi-v2 Task



Introduction

For this coding exercise, you will use OpenAI Gym's `Taxi-v2` environment to design an algorithm to teach a taxi agent to navigate a small gridworld. The goal is to adapt all that you've learned in the previous lessons to solve a new environment!

Before proceeding, read the description of the environment in subsection 3.1 of this paper.

You can verify that the description in the paper matches the OpenAI Gym environment by peeking at the code here.

Answer the quiz questions below to check your understanding of the environment.

Quiz Question

How large is the state space?

- ○

  There are 25 possible states, corresponding to each grid in the 5x5 grid world.

- ○

  There are 100 possible states, corresponding to each grid in the 5x5 grid world and each of the four possible starting locations.

- There are 500 possible states, corresponding to 25 possible grid locations, 5 locations for the passenger, and 4 destinations.

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Quiz Question

How many actions are available to the agent?

- ☐

  There are 4 possible actions, corresponding to moving North, East, South, or West.

  ✓

- There are 6 possible actions, corresponding to moving North, East, South, or West, picking up the passenger, and dropping off the passenger.

- ☐

  There are 4 possible actions, corresponding to increasing or decreasing the speed of the taxi, dropping off the passenger, and picking up the passenger.

  ✓

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