Lab 2: Q-Learning and SARSA

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Objectives:

- Learn how to implement & analyze Q-Learning and SARSA
- Learn about the impact of the hyperparameters on training
- Learn to save and load your generated RL model

Consider the taxi driver scenario from the following URL:
https://gymnasium.farama.org/environments/toy_text/taxi/

Tasks:

1. Make sure the minimal example is working.
2. Fill the missing code in the train function.
3. Train with different learning rates (analyze).
4. Train with different discount factor (analyze).
5. Train with different epsilon (analyze).
6. Get the maximum reward with the minimum number of episodes, how?
7. Save the Q-Table.
8. Make a separate file that contain an evaluate function, load the Q-table and check the outcome.
9. Copy paste the train function and create a separate one for SARSA
10. Compare SARSA and Q-Learning for similar hyperparameters

11. How can we find the optimal hyperparameters?