Resources

Read or watch:

```
An introduction to Reinforcement Learning
Simple Reinforcement Learning: Q-learning
Markov Decision Processes (MDPs) - Structuring a Reinforcement Learning Problem
Expected Return - What Drives a Reinforcement Learning Agent in an MDP
Policies and Value Functions - Good Actions for a Reinforcement Learning Agent
What do Reinforcement Learning Algorithms Learn - Optimal Policies
Q-Learning Explained - A Reinforcement Learning Technique
Exploration vs. Exploitation - Learning the Optimal Reinforcement Learning
Policy
OpenAI Gym and Python for Q-learning - Reinforcement Learning Code Project
Train Q-learning Agent with Python - Reinforcement Learning Code Project
Markov Decision Processes
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Definitions to skim:

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Reinforcement Learning
Markov Decision Process
Q-learning
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References:

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OpenAI Gym
OpenAI Gym: Frozen Lake env
```

Learning Objectives

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What is a Markov Decision Process?
What is an environment?
What is an agent?
What is a state?
What is a policy function?
What is a value function? a state-value function? an action-value function?
What is a discount factor?
What is the Bellman equation?
What is epsilon greedy?
What is Q-learning?
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Requirements

General

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Allowed editors: vi, vim, emacs
All your files will be interpreted/compiled on Ubuntu 16.04 LTS using python3
(version 3.5)
Your files will be executed with numpy (version 1.15), and gym (version 0.7)
All your files should end with a new line
The first line of all your files should be exactly #!/usr/bin/env python3
A README.md file, at the root of the folder of the project, is mandatory
Your code should use the pycodestyle style (version 2.4)
All your modules should have documentation (python3 -c
'print(__import__("my_module").__doc__)')
All your classes should have documentation (python3 -c
'print(__import__("my_module").MyClass.__doc__)')
All your functions (inside and outside a class) should have documentation
(python3 -c 'print(__import__("my_module").my_function.__doc__)' and python3 -c
'print(__import__("my_module").MyClass.my_function.__doc__)')
All your files must be executable
Your code should use the minimum number of operations
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Installing OpenAI's Gym

pip install --user gym