Reinforcement Learning
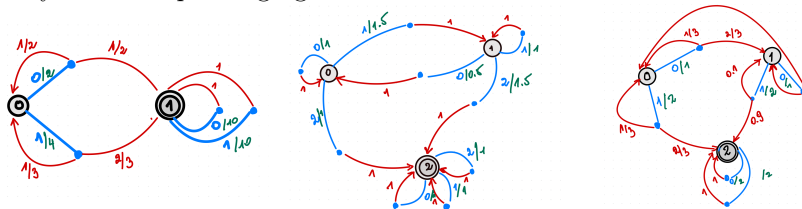
Model-Free Reinforcement Learning

Presentation

The goal of this lab is to implement model-free reinforcement learning algorithms. We first consider very simple environments and then move to more complex ones.

Exercice 1.

In this first exercice, you will implement two simple environments. The dynamic of the each environment is described by the corresponding figure.

Create a class `Env` with the following methods :

– `__init__` : the constructor of the class. It should take as input the number of states and the number of actions.

– `reset` : this method should reset the environment to its initial state.

– `play` : this method should take as input a state and an action and returns the next state and the reward.

Create three classes `Env1`, `Env2` and `Env3` that inherit from the class `Env` and implement the corresponding dynamic.