

The exercises in this course will teach you how to implement important RL algorithms and how every part of the RL pipeline works. The goal of this first exercise is to set up teams and learn about git and the workflow for future exercises.

### 1. Model-free Control with SARSA

You will complete the code stubs in *sarsa.py* to implement the SARSA algorithm from the lecture. You should include epsilon greedy exploration, as exploration is an important part of model-free learning algorithms. As always, use the methods provided as guidance as to what is queried in the tests, but feel free to extend our suggestions in any way you like.

### 2. Hyperparameters of SARSA

Many concepts of SARSA also apply in more powerful RL algorithms, for example the effect of its hyperparameters. Therefore you now have an opportunity to experiment with different hyperparameter values and how they influence how successful the algorithm runs. Please record the answer to these questions in *observations.txt*:

- Does setting the learning rate to 0.8 increase or decrease the number of training steps?
- For which value of  $\epsilon$  do you get the best result, 0.01, 0.1 or 0.9?
- Which works better for you, initializing Q to all 0 or initializing it randomly?