Ostbayerische Technische Hochschule
Amberg-Weiden

Task 1

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Solve the gridworld environment `Random` in file gridworld.py

1. with as few episodes as possible
   (environment `Random(size=12, water=0.3, mountain=0.0)`)
2. with as few steps as possible
   (environment `Random(size=12, water=0.0, mountain=0.3)`)

Plot your results as follows:

- for 1. as real cumulative reward of the current episode (y-axis) over episodes (x-axis), averaged over ten different environments
- for 2. as real cumulative reward of all episodes so far (y-axis) over number of steps (x-axis), averaged over ten different environments

Deadline: 4.12.2023 23:59

Hints:

- You are allowed to use any public function of the environment, except for the `step_dp` function
- Have a look at Optuna for optimizing your hyperparameters automatically (e.g. $\epsilon, \alpha, \ldots$)
- The cumulative reward is the sum of all the rewards obtained within an episode