

Background: In this exercise, you'll create and train a custom environment using the Gymnasium API [1] for a drone that navigates from one point to another.

Requirements:

1. Create a custom Gymnasium environment named "DroneNavigation" that adheres to the Gym interface.
2. The environment should be configurable with parameters such as the size of the area where the drone can move, the starting position of the drone, and the number of steps the drone can take.
3. Implement the observation space and action space for the drone.
4. Define the reward function.
5. Implement the `step` function, which takes an action as input and returns the new state, reward, and whether the episode is done.
6. Ensure that the environment resets after each episode, placing the drone and the destination in a random starting position within the defined area.
7. Implement rendering functionality to visualize the environment.
8. Train the agent with PPO or DQN algorithms.
9. Feel free to add anything you consider is necessary.

Submission:

1. Python code implementing the custom Gym environment (GitHub repository)
2. A README.md file explaining how to install, use the environment and any additional setup required.
3. A brief report documenting the design choices, challenges faced, and any improvements/extensions that you would make given more time.

Timeline: You have 3 days to complete the exercise and submit your solution.

Note: Feel free to reach out if you have any questions or need clarification on the requirements.

[1] <https://gymnasium.farama.org/index.html>