

Hand-in Assignment 5

Due date: *see the website*

Use Q-Learning to create a program that can play Tic-Tac-Toe with a human player.

The basic code for Tic-Tac-Toe is given. **What you need to do is to finish the missing part of MLPlayer in the *player.py* file, following the documentations and comments given.** Your implementation should be able to directly replace the *RandomPlayer* in the two main scripts, and good enough to win human player (if a human player makes mistake) or draw every time.

Usage

To run the game with a random agent, which chooses a random available position, and put mark there. run

```
python main.py
```

for a terminal interface. or run

```
python main_gui.py
```

for a graphic interface. You will need the PyQt5 library to support it. To install it, run

```
pip install PyQt5
```

After you have finished your agent, you can run

```
python main.py -a MLPlayer
```

or

```
python main_gui.py -a MLPlayer
```

to test your agent manually.

Note: the given training script is just an example, you can change it arbitrary as long as your MLPlayer can be directly and correctly loaded in these game scripts.

Submission

Please submit your *player.py* file together with your saved table file in a zip file in canvas submission page. **Finish it by yourself, there is no tolerance for plagiarism.**

