# Hand-on Assignment 7

# 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

Submit your *player.py* file together with your saved table file in a zip file in canvas submission page.

Similarity penalty will not be applied to this assignment. However, the Turnitin report will be used as clues for manual plagiarism detection.

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