How to Run the Code

* These instructions are for running the code on the university computers.

Setup   Before running the code, please run the commads 'module load tensor-flow', and 'module load torch' from the terminal, to load the libraries.

Running the Code   * All code is run from the terminal by running 'main.py' using one of the commands 'python3 main.py', 'python3 main.py arg1', or 'python3 main.py arg1 arg2' (any additional arguments will be ignored).
* The argument 'arg1' determines which function/s will run:

   0 - Runs an example game. By default, the game is between a human and a defensive player. In order to change the players in the game, edit the list 'players' in the function 'run_example_game'.

   1 - Runs training and generating plots of the PPO player. The model is saved automatically every few batches, and after training, the saved models are loaded and tested against test cases. The number of games per batch, and the frequency of saving models can all be changed in the function 'train_ppo'. The number of test games per loaded model can be changed on the function 'test_and_plot_ppo'.

   2 - Runs training and generating plots of the NFSP player. The model is saved every epoch, and the testing occurs after each epoch as well. The number of games per epoch, the number of epochs, and the number of test games per epoch can all be changed in the function 'train_and_plot_nfsp'.

   3 - Runs training and generating plots of both the PPO player, and the NFSP player in the same way as described.

   If no argument is passed, or a different argument is passed, an example game will be run.
*The argument 'arg2' determines weather to show the generated plots (the plots will be saved in any case):

   f - Prevents showing the plots generated.

   If no argument is passed, or a different argument is passed, the plots will be shown.

How to Play as a Human Player   When creating a game with a human player, it will automatically set the rendering flag in the environment to 'True'. A human player plays with the mouse, by clicking the desired card to play from the cards in their hand, which are displayed at the bottom of the screen, when a message to attack or defend is displayed.
If the clicked card is not legal to play, it will not be played. Clicking the 'pass' button will pass the option to play a card (if the option is legal). In case of defending, clicking 'pass' will take all cards on the table.
At most one human is allowed to play a game at once.