User Instruction

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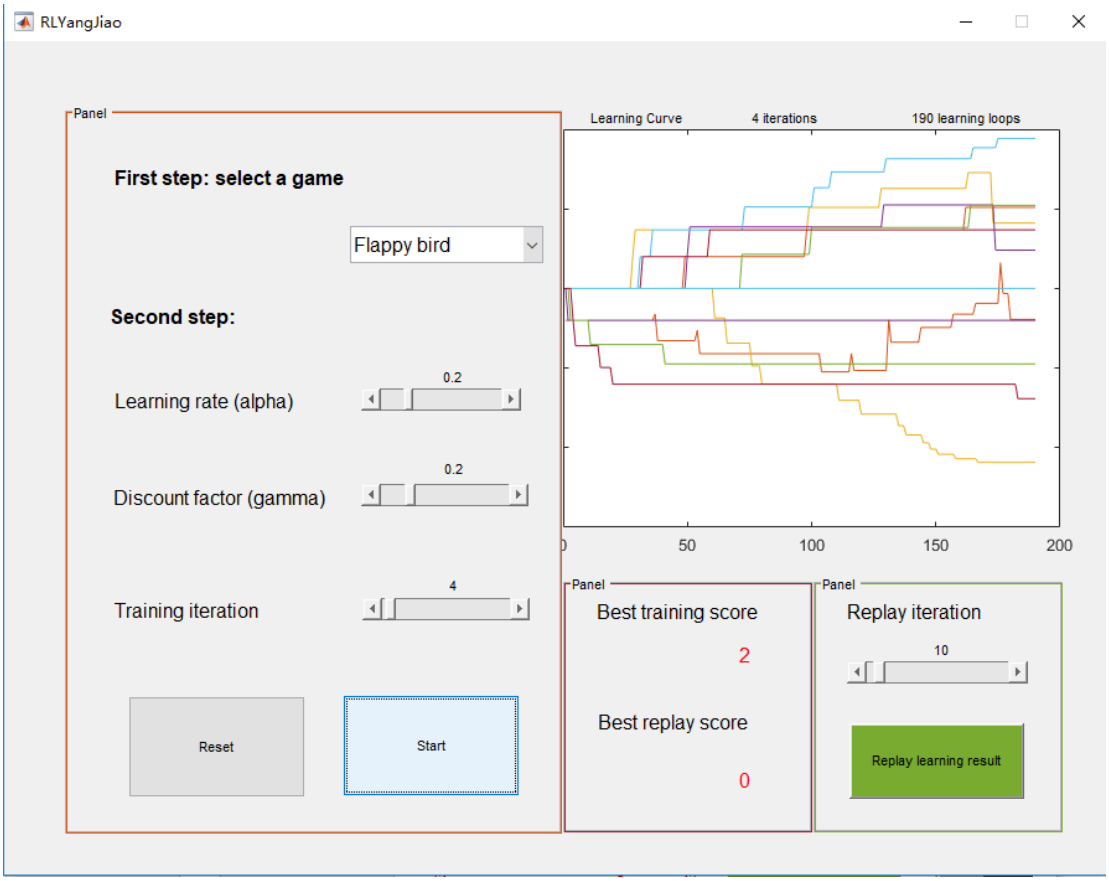
1. Start the RL tool

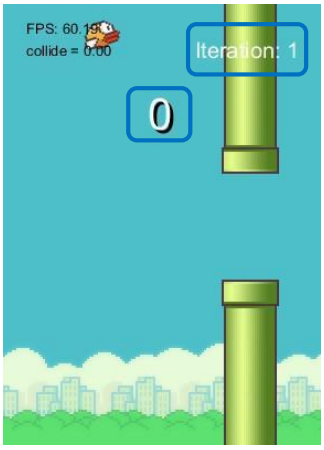
Please use MATLAB and run the file named “RLYangJiao.m”. Please known that the tool is programed and tested in MATLAB 2017a. Therefore, if it is not usable, please update the MATLAB to 2017a and try again.

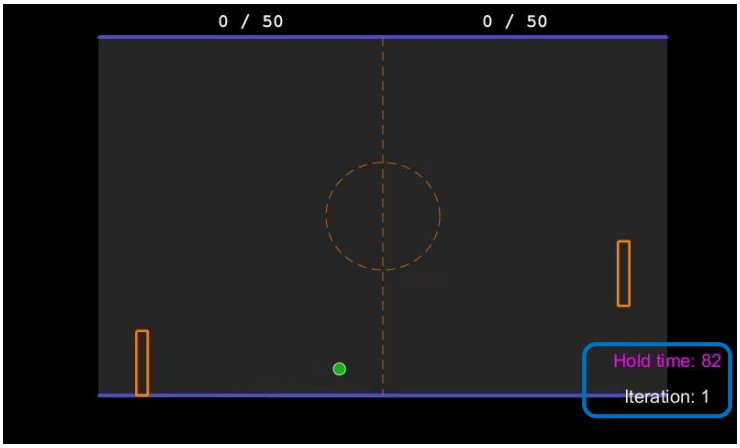
2. Before training



First, if user want to start the training process, please follow the left panel and set all parameters. By adjust the sliders, all three parameters can be customized. The learning rate and discount factor have range from 0 to 1. The maximum allowed training iteration is 200. By clicking “Start” button, the training will start.

3. During training





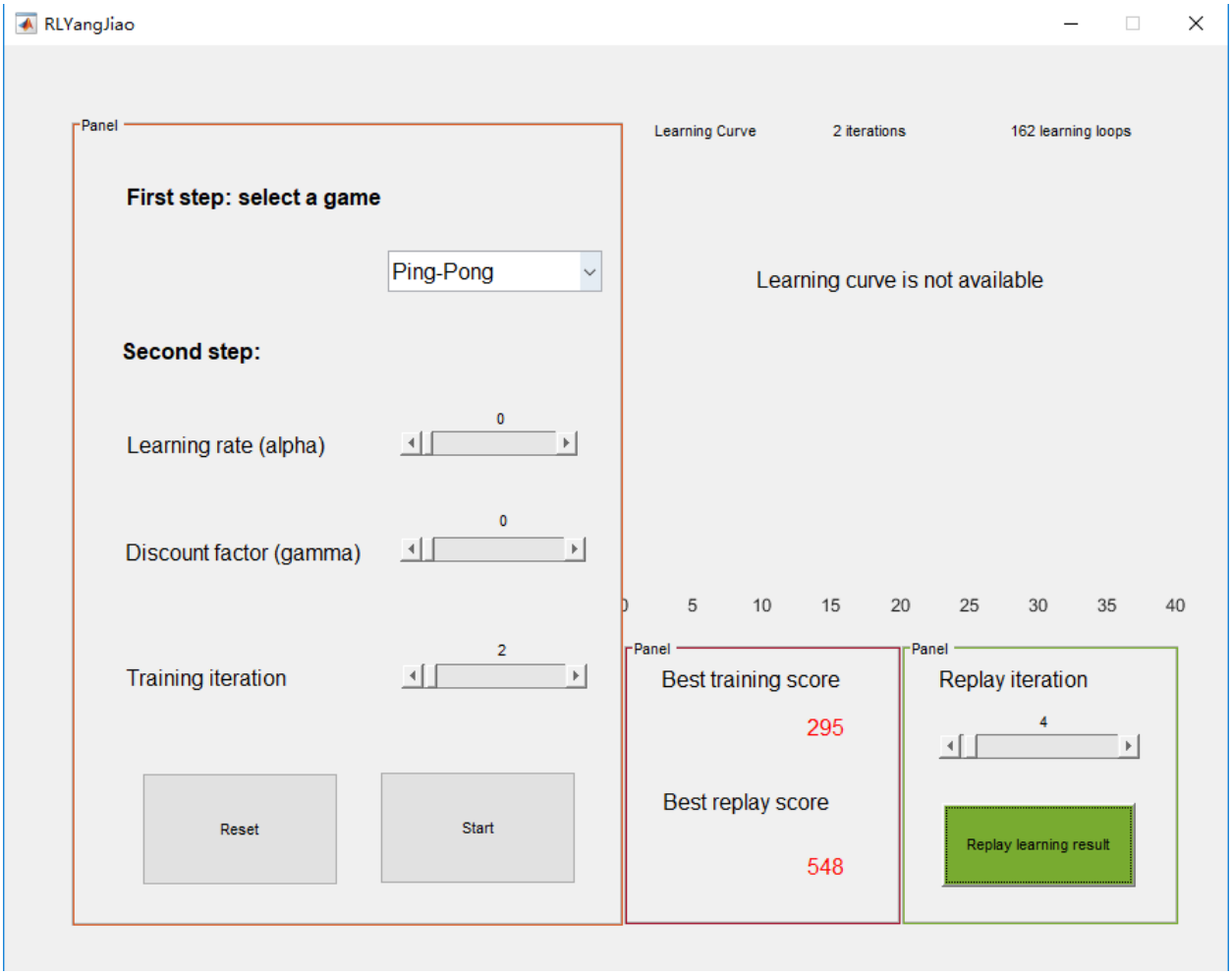
During training, the current score and iteration will be presented in the game interface. Therefore, user can monitor the learning process. User do not have to push any button or proceed any action during training, the system will automatically execute the training. After training finished, the game will be closed automatically and the result will be presented on the tool interface.

Please do not interfere the training process. Please keep mouse focus on the game. If necessary, please use **Q** or **close the game window** to stop the process.

4. After training

After training, user can see the learning curve. Also, the total training iteration and learning loops will be presented in the learning curve. The best score during training will be shown as well. If the user wants to see the result of learning, a replay function is provided. By setting replay iteration and pushing replay button, the optimized Q table during last training will be reload and the game will be played with it. After replay, the best score during replay will be shown.

Noticed, learning curve is not available for Ping-Pong since the Q table for Ping-Pong is 5-D and so unpresentable. Therefore, the tool will present “learning curve is not available”. It will not affect other presenting information.



User can start another training after finishing. The training result of one game will not overwrite the other game's result. But the tool can only store one result for one game. Therefore, retraining will make the last training result to be overwritten.

Some important data during training will be stored in **data** folder. And the tool will record the whole training process and save the video in the **video** folder.