

Code explanation

Step 1: Set up the game environment in Pygame into a 3x3 block. The game design allows you to start with either X or O. Each step, the current player will rotate.

Step 2: Adding two reset buttons. Each reset button will reset the time and the board, and also reset the current player to X or O. One button resets game player X, and the other button resets game player O.

Step 3: Adding the 2 AI solves. One is a minimax algorithm, the other is a minimax algorithm with alpha-beta pruning. Also, adding a timer to measure the time efficiency of the two algorithms. The AI algorithm will make the best move at any step. It will always play for the next step's player.

As a result, the minimax algorithm with alpha-beta pruning is always faster than the regular minimax algorithm. On average, it is four times faster than the regular minimax algorithm.