

NSOC 2.0

ULTIMATE TIC-TAC-TOE

THE PREMISE

Tic-Tac-Toe. A child's game, easily solved and often ending in a draw. But what happens when you stack nine of those games into a larger battlefield, where each move dictates the future of your opponent? Welcome to Ultimate Tic-Tac-Toe – a strategic mind maze that turns a trivial game into a tactical arena where only the most intelligent bots survive. In this challenge, you're not just playing Tic-Tac-Toe – you're building a bot that plays it across nine boards at once, thinking not just locally but globally.

THE CHALLENGE

You are tasked with writing a bot that competes in the game of Ultimate Tic-Tac-Toe. The competition consists of a round-robin tournament where each bot plays against every other bot twice – once going first, once going second.

Your bot must:

- Choose legal and valid moves according to the Ultimate Tic-Tac-Toe rules.
- Make its move within 4 seconds, or forfeit the match.
- Play strategically – local wins are not enough. Your goal is to control and win the global board.

GAME STRUCTURE

Ultimate tic-tac-toe also known as super tic-tac-toe, strategic tic-tac-toe, meta tic-tac-toe, or tic-tac-tic-tac-toe-toe is a board game composed of nine tic-tac-toe boards arranged in a 3-by-3 grid. Players take turns playing in the smaller tic-tac-toe boards until one of them wins in the larger tic-tac-toe board.

Each small 3-by-3 tic-tac-toe board is referred to as a local board, and the larger 3-by-3 board is referred to as the global board.

The game starts with X playing wherever they want in any of the 81 empty spots. This move 'sends' their opponent to its relative location. For example, if X played in the top right square of their local board, then O needs to play next in the local board at the top right of the global board. O can then play in any one of the nine available spots in that local board, each move sending X to a different local board.

If a move is played so that it is to win a local board by the rules of normal tic-tac-toe, then the entire local board is marked as a victory for the player in the global board.

Once the outcome of a local board is decided (win or draw), no more moves may be played in that board. If a player is sent to such a board, then that player may play in any other board.

Game play ends when either a player wins the global board or there are no legal moves remaining, in which case the game is a draw.

Try out the game here – [Ultimate TTT](#)

ULTIMATE TIC-TAC-TOE



SCORING SYSTEM

- ✓ Win: +1 point
 - 🤝 Draw: +0.25 points for each local board captured (only in case of a draw)
 - ✗ Illegal move or time-out: Opponent wins automatically with +1 point.
- Each match is played twice, switching first and second player roles.

SUBMISSION FORMAT

- The board is a 9×9 grid (3×3 global board made of 3×3 mini boards).
- A move is made using absolute coordinates on the 9×9 board: (row, col) where $0 \leq \text{row} < 9$ and $0 \leq \text{col} < 9$.
- The mini-board a player must play in is decided by the local position (i.e. $\text{row} \% 3$, $\text{col} \% 3$) of the previous move.
- Place your bot inside the bots/ directory as a .py file with a function:

```
def play(board, prev_move, player):  
    # return a tuple: (row, col)
```

The engine handles legality and game progression. You focus on strategy.

HOW TO GET STARTED:

You are given a ZIP file that includes:

- 1.bot_vs_bot.py: A full tournament engine where two bots will play against each other
- 2.player_vs_bot.py: A mode where you can play against your bot

For Submission – Just write your bot in the bot_template.py after you have completed rename it as teamname.py and submit to the g-form

Zip file: <https://bit.ly/3TtR7jl>

Submission Link: [Submit Here](#)

The file must be submitted before 14 July 2025

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Best Of Luck