AI Lab 10
Section D

Implement Tic-Tac-Toe Game with **Monte Carlo Reinforcement Learning**.
Create an environment for playing the game of Tic-Tac-Toe, where an agent learns to make optimal moves using Monte Carlo reinforcement learning. The agent should start with no prior knowledge of the game but learn through self-play. **In this task, you have to:**

1. **Implement the Tic-Tac-Toe environment**, including the game rules, state representation, and a method to display the current board.
2. **Create an agent that learns to play Tic-Tac-Toe using Monte Carlo** reinforcement learning. The agent should be able to:
    - Explore the game space through self-play.
    - Update its value function using Monte Carlo returns.
    - Make informed decisions based on its learned value function.
3. **Train the agent** through multiple episodes of self-play and update its value function based on the outcomes of these episodes.
4. **Implement an evaluation mechanism** to test the agent's performance against different opponents, such as random players or rule-based players.