

ODEASA (Observability, Deterministic, Episodic, Static, Agent) for the tic-tac-toe game:

Observability:

In tic-tac-toe, the game is fully observable. Both the player and the AI can see the current state of the game board, including the positions of the X and O symbols.

Deterministic:

The game is deterministic in tic-tac-toe. The outcome of each move is entirely determined by the current state of the board and the player's and AI's actions. There is no element of chance or randomness involved.

Episodic:

Tic-tac-toe is an episodic game. Each game is independent and self-contained, starting with an empty board and ending with a win, loss, or draw. The outcome of one game does not affect the next game.

Static:

The game is static since there are no changes or updates to the game state outside of the player's and AI's actions. Once a move is made, it remains on the board until the end of the game.

Agent:

In tic-tac-toe, both the player and the AI are considered agents. They make decisions and take actions based on the current state of the game board and their objectives (winning the game or preventing the opponent from winning). The AI agent utilizes a simple strategy to select its moves, while the player agent makes moves based on user input.

In summary, the tic-tac-toe game exhibits observability as both players can see the game state, determinism as the outcome is determined by player actions, episodic nature with independent games, static game state without external changes, and the involvement of player and AI agents making decisions and taking actions.