

Tic-Tac-Toe AI Game

Abstract:

The Tic-Tac-Toe AI Game is a Java-based application developed using JavaFX to deliver an engaging and interactive gameplay experience. The project features two modes: a graphical user interface (GUI) mode, where players interact with a 3x3 grid layout, and a command-line interface (CLI) mode accessible through the command prompt. Players can compete against an AI opponent, which uses a fundamental algorithm to calculate optimal moves. The game dynamically updates the board and determines the outcome as a win, loss, or tie. Developed with Object-Oriented Programming (OOP) principles, the project ensures modularity and maintainability, with clear separation of game logic, AI mechanics, and user interface interactions. This project highlights the integration of JavaFX for GUI design, the utility of CLI for flexibility, and the implementation of basic AI concepts in game development.