# **Tic Tac Toe**

## Introduction

Tic Tac Toe is a universally cherished game. Beneath its apparent simplicity lie layers of strategic depth. By digitizing Tic Tac Toe using the C programming language, an enhanced, interactive twist on the traditional game is provided while offering a platform to explore and demonstrate fundamental programming techniques. This project aims to marry this classic game's timeless charm with modern computing capabilities.

## Objective

The primary goal is to design a console-based Tic Tac Toe game in C. Through this endeavor, the following outcomes are anticipated:

* Provide an engaging interface that accurately mimics real-life game dynamics.
* Showcase the application of fundamental programming concepts such as structures, arrays, strings, files, functions, pointers, loops, and conditional statements.
* Introduce console GUI concepts.
* Delve into game logic principles, notably the renowned Minimax algorithm.

## Features

* **Interactive Console-Based Interface:** Players will use the keyboard to input their moves in an intuitive setting.
* **User Login System:** A robust login mechanism will offer users a personalized gaming experience.
* **Two-Player Mode:** The game will support two participants, alternating between 'X' and 'O' turns.
* **Winning Move Detection:** The system immediately identifies and announces the winner.
* **Tie Game Identification:** It will promptly detect and announce games that end in a draw.
* **Replay Option:** Allows players to initiate a new game after one concludes swiftly.
* **Visual Board Updates:** The game board will continuously update, aiding players in their strategic decisions.
* **Input Verification:** Integrated checks will ensure players make only valid moves.
* **Menu-Driven System:** An intuitive menu will navigate players through various game options.
* **Record System:** Players will have the ability to create new accounts, log in, edit their profile based on predetermined criteria, save game history, review past games, and search records as needed. All changes will be saved instantaneously, guaranteeing accurate game records.
* **(Potential Expansion) Single-Player AI Mode:** Players can challenge an AI opponent.

## Conclusion

Digitizing Tic Tac Toe in C enhances the game's allure and taps into the vast potential of computational prowess. This project is a captivating gaming platform and a valuable learning tool for budding developers. Its flexible architecture promises room for future enhancements, solidifying its relevance in any coder's toolkit.