

بسمه تعالی

با سلام

این فایل یک توضیح کلی یا به اصطلاح (آنالیز) برای بازی tic tac toe است که توضیح می‌دهد این بازی از چه بخش هایی تشکیل شده و چگونه کار می‌کند.

**Imports and Initialization:** The code begins by importing the necessary modules (tkinter) and initializing some variables and structures, such as the list of players (players) and the 2D list representing the game board (buttons). It also randomly selects a player to start the game.

**Next Turn Function:** This function (next\_turn) handles the logic for a player's turn. It checks if the selected cell on the game board is empty and if there is no winner yet. If conditions are met, it updates the cell with the player's symbol, checks for a winner or a tie, and updates the player turn accordingly.

**Check Winner Function:** This function (check\_winner) determines if there's a winner or if the game is tied. It checks for winning conditions horizontally, vertically, and diagonally, highlighting the winning cells in green. If all cells are filled without a winner, it declares a tie and highlights all cells in yellow.

**Empty Spaces Function:** This function (empty\_spaces) calculates the number of empty spaces left on the game board. It iterates through all cells and decrements the count if a cell is not empty. It returns True if there are empty spaces left and False otherwise.

**New Game Function:** This function (new\_game) resets the game by selecting a random player to start, updating the label to indicate the new player's turn, and clearing the game board by resetting cell texts and background colors.

**GUI Setup:** The code sets up the graphical user interface (GUI) using Tkinter. It creates a window titled "Tic-Tac-Toe", displays the current player's turn at the top, adds a restart button, and creates a grid of buttons representing the game board. Each button is configured with appropriate text, font, size, and a command to execute next\_turn function when clicked.

**Event Loop:** The mainloop() function starts the event loop, allowing the GUI to respond to user inputs and update accordingly.

گردآورندگان: علیرضا فرمانی، علی محمد فاقدی هریس، یوسف حاجی علی لباف