

TicTacToeGameUI

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1 Tic-Tac-Toe Game

1.1 Group Project - Team 5

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1.Tic-Tac-Toe This game is very popular and even fun to build as a Python project. The game: It is a two-player game and consists of a nine-square grid. Each player chooses their move and with O or X and marks their square one at each chance. The player who succeeds in making their marks all in one line whether diagonally, horizontally, or vertically wins. The challenge for the other player is to block the game for their opponent and also to make their chain. Try to create a basic game what can be played once at least and will display which player is the winner.

```
[4]: import tkinter as tk
from tkinter import messagebox

class TicTacToe:
    def __init__(self, root):
        self.root = root
        self.root.title("Tic-Tac-Toe")

        self.board = [None] * 9
        self.current_player = 'X'

        self.buttons = []
        for i in range(9):
            button = tk.Button(
                self.root, text='', font=('normal', 20), width=15, height=5,
                command=lambda index=i: self.make_move(index)
            )
            button.grid(row=i//3, column=i%3)
```

```

        self.buttons.append(button)

        self.status_label = tk.Label(self.root, text="Next player: X",
↪font=('normal', 15))
        self.status_label.grid(row=3, column=0, columnspan=3)

    def make_move(self, index):
        if self.board[index] is None: # Ensure the cell is empty
            self.board[index] = self.current_player
            self.buttons[index].config(text=self.current_player)

            if self.check_winner():
                messagebox.showinfo("Game Over", f"{self.current_player} wins!")
                self.reset_game()
            elif None not in self.board:
                messagebox.showinfo("Game Over", "It's a draw!")
                self.reset_game()
            else:
                self.current_player = 'O' if self.current_player == 'X' else 'X'
                self.status_label.config(text=f"Next player: {self.
↪current_player}")

    def check_winner(self):
        win_conditions = [
            [0, 1, 2], [3, 4, 5], [6, 7, 8], # Rows
            [0, 3, 6], [1, 4, 7], [2, 5, 8], # Columns
            [0, 4, 8], [2, 4, 6]             # Diagonals
        ]

        for a, b, c in win_conditions:
            if self.board[a] == self.board[b] == self.board[c] and self.
↪board[a] is not None:
                return True
        return False

    def reset_game(self):
        # Reset the board and UI
        self.board = [None] * 9
        for button in self.buttons:
            button.config(text='')
        self.current_player = 'X'
        self.status_label.config(text="Next player: X")

# Run the Game
root = tk.Tk()
game = TicTacToe(root)
root.mainloop()

```

1.1.7 GitHub - <https://github.com/priyangajayasinghe/Tic-Tac-Toe-UI/blob/main/TicTacToeGameUI.ipynb>