Group6ProjectFeb2025 (1)

March 8, 2025

1 Tic-Tac-Toe Group Project

1.1 Group 6- Caitlyn Carmabella Nayeli,Tahrin Tasmim, Anuradha Lakmali Wickramage Wickramage, Abdelaziz Bouraqqadi, Shima Azizi, and Don Ravindu Sanoj Hapuarachchi

1.1.1 Feb 2025

Please note that this code uses tk interface, which is a standard python library. If this code does not run the first time, please make sure you have it installed.

[ ]:
```
# Import standard python library tk interface in order to make a small gui
from tkinter import *
from tkinter import messagebox

# Instatiate global variable
complete = False
player = "X"

# Define function to quit out of the gui window when the game is over
def quit(self):
    self.destroy()

# Change turn function, switches player from X to O and vice versa
def changeTurn():
    global player
    if (player == "X"):
        player = "O"
    else:
        player = "X"

# Define on-click function for the button on the grid of the gui
def click(row,col):

    global player

    if player == "X" and states[row][col] == 0 and complete == False:
        states[row][col] = "X"
```

```
        b[row][col].configure(text = "X")

    elif player == "O" and states[row][col] == 0 and complete == False:
        states[row][col] = "O"
        b[row][col].configure(text = "O")

    checkWin()

# Define function to check if there is a winning combination
def checkWin():

    global complete
    global player

    i = 0

    while (i < 3):
        # horizontal cases
        if (states[i][0] == states[i][1] == states[i][2] !=0):
            complete = True
            messagebox.showinfo(player + " Wins!")
            quit(root)
            break

        # vertical cases
        elif (states[0][i] == states[1][i] == states[2][i] != 0):
            complete = True
            messagebox.showinfo(player + " Wins!")
            quit(root)
            break

        # diagonal case 1
        elif (states[0][0] == states[1][1] == states[2][2] !=0):
            complete = True
            messagebox.showinfo(player + " Wins!")
            quit(root)
            break
        # diagonal case 2
        elif (states[0][2] == states[1][1] == states[2][0] !=0):
            complete = True
            messagebox.showinfo(player + " Wins!")
            quit(root)
            break
        # every box complete with no win instance
        elif (states[0][0] and states[0][1] and states[0][2] and states[1][0]␣
 ↪and states[1][1] and states[1][2] and states[2][0] and states[2][1] and␣
 ↪states[2][2] != 0):
```

```
            complete = True
            messagebox.showinfo("It's a Tie!")
            quit(root)
            break
        else:
            i = i + 1

    changeTurn()

# Define and instatiate the window of the gui
root = Tk()
root.title("Tic Tac Toe: Group 6")
messagebox.showinfo("X Starts!")
#Button
b = [
     [0,0,0],
     [0,0,0],
     [0,0,0]]

states = [
     [0,0,0],
     [0,0,0],
     [0,0,0]]

for i in range(3):
    for j in range(3):
        b[i][j] = Button(height = 4, width = 8, font = ("Helvetica","24"),␣
 ↪command = lambda row = i, col = j : click(row,col))
        b[i][j].grid(row = i, column = j)

mainloop()
```

[ ]: