Lab 6 Network Programming

Monday, March 25, 2019 12:16 PM

using tkinter, we're going to make a tec tac toe.

- tkinter is like fx in java, each object needed is created using a statement.

the tec tac toe GUI needs to be like:-

tic tac toy

player1: x
player2: o

..	..	..
..	..	..
..	..	..

9 buttons, with 9 functions

- when player1 presses, the pressed button's name turns into the letter 'x'
- when player2 presses, the pressed button's name turns into the letter 'o'

2 labels

- For telling that the first player's symbol is x, the second one's symbol is o.

CODE

```
# -*- coding: utf-8 -*-
"""
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"""

from tkinter import *
#additional class importing for preventing any invokation error.
from tkinter import messagebox
from tkinter import Label

#create an empty window
window = Tk()
#change its title
window.title ("Tic tac toe")
#change the dimensions
window.geometry ("400x300")
```

```
#create a label,
#1st parameter is the container.
#2nd parameter is the text writen in the label.
#3rd parameter is the font type, and size.
lb1= Label(window, text="Player1:x",font=('Helvertica','15'))
#positioning the label in a grid in the first row, and first column.
lb1.grid(row=0, column=0)
lb2= Label(window, text="Player2:o",font=('Helvertica','15'))
lb2.grid(row=1, column=0)

#create a flag to determine whether the game ended or not.
flag = 1
#creating a function for checking whether there's a winner or not yet, it'll be invoked
everytime a player clicks a button.
def check():
      #apply the definition of the flag variable in the global scope.
   global flag
      #check function will be called every time it's invoked.
   flag = flag + 1
   #for simplicity
   b1=btn1["text"] #equaling the text writen in btn1 with b1.
   b2=btn2["text"]
   b3=btn3["text"]
   b4=btn4["text"]
   b5=btn5["text"]
   b6=btn6["text"]
   b7=btn7["text"]
   b8=btn8["text"]
   b9=btn9["text"]
   if b1==b2 and b2==b3 and b1=='O' or b1==b2 and b2==b3 and b1=='X':
      #passing the name of the winner to the method win
      win(b1)

      #Applying other possible wins patterns
   if b4==b5 and b5==b6 and b4=='O' or b4==b5 and b5==b6 and b4=='X':
      #passing the name of the winner to the method win
      win(b4)

   if b7==b8 and b8==b9 and b7=='O' or b7==b8 and b7==b8 and b7=='X':
      #passing the name of the winner to the method win
      win(b7)
```

```
    if b1==b4 and b4==b7 and b1=='O' or b1==b4 and b4==b7 and b1=='X':
        #passing the name of the winner to the method win
        win(b1)

    if b2==b5 and b5==b8 and b2=='O' or b2==b5 and b5==b8 and b2=='X':
        #passing the name of the winner to the method win
        win(b2)

    if b3==b6 and b6==b9 and b3=='O' or b3==b6 and b6==b9 and b3=='X':
        win(b3)

    if b1==b5 and b5==b9 and b1=='O' or b1==b5 and b5==b9 and b1=='X':
        win(b1)

    if b3==b5 and b5==b7 and b3=='O' or b3==b5 and b5==b7 and b3=='X':
        win(b3)

        # if the flag reaches the value 10, that means that all the buttons are clicked
        without reaching a winning state.
    if flag == 10:
        messagebox.showinfo("Game ended","Game Ended")
        #the game closes
        window.destroy()

def win(player):
    messagebox.showinfo("Congratulations ", "Congratulations Player "+player)
    window.destroy()
#create a flag to determine the who's the player with this turn.
turn = 1
def clicked1():
    #make the turn variable global.
    global turn
    if btn1["text"] == " ":
        if turn == 1:
            #Giving turn to the other player.
            turn = 2
            btn1["text"]='X'
        else:
            turn=1
            btn1["text"]='O'
        check()
```

```
def clicked2():
    #make the turn variable global.
    global turn
    if btn2["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn2["text"]='X'
        else:
            turn=1
            btn2["text"]='O'
        check()

def clicked3():
    #make the turn variable global.
    global turn
    if btn3["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn3["text"]='X'
        else:
            turn=1
            btn3["text"]='O'
        check()

def clicked4():
    #make the turn variable global.
    global turn
    if btn4["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn4["text"]='X'
        else:
            turn=1
            btn4["text"]='O'
        check()
```

```
def clicked5():
    #make the turn variable global.
    global turn
    if btn5["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn5["text"]='X'
        else:
            turn=1
            btn5["text"]='O'
        check()

def clicked6():
    #make the turn variable global.
    global turn
    if btn6["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn6["text"]='X'
        else:
            turn=1
            btn6["text"]='O'
        check()

def clicked7():
    #make the turn variable global.
    global turn
    if btn7["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn7["text"]='X'
        else:
            turn=1
            btn7["text"]='O'
        check()
```

```
def clicked8():
    #make the turn variable global.
    global turn
    if btn8["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn8["text"]='X'
        else:
            turn=1
            btn8["text"]='O'
        check()

def clicked9():
    #make the turn variable global.
    global turn
    if btn9["text"] == " ":
        if turn == 1:
            #modifying for the next play.
            turn = 2
            btn9["text"]='X'
        else:
            turn=1
            btn9["text"]='O'
        check()

btn1 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked1)
#The value of text is space, that space is used for performing comparison in the action
so that if it's a space, that means that the button wasn't pressed before.
#the font is for the x or o when pressed.
#Command is the attribute of the method executed when the button is clicked.
btn1.grid(row=0,column=1)

btn2 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked2)
btn2.grid(row=0,column=2)

btn3 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked3)
btn3.grid(row=0,column=3)
```

```
btn4 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked4)
btn4.grid(row=1,column=1)

btn5 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked5)
btn5.grid(row=1,column=2)

btn6 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked6)
btn6.grid(row=1,column=3)

btn7 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked7)
btn7.grid(row=2,column=1)

btn8 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked8)
btn8.grid(row=2,column=2)

btn9 = Button(window, text=" ",bg="yellow",fg="black", width=3, height=1,
font=('Helvertica','15'),command=clicked9)
btn9.grid(row=2,column=3)


window.mainloop()
```