

# X-O GAME

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# Project overview

X-O game, also known as Tic-Tac-Toe, is a simple two-player game played on a 3x3 grid. The game is won by the player who successfully places three of their symbols (either X or O) in a horizontal, vertical, or diagonal row. The game was interfaced with a Tiva C microcontroller and a Nokia5110 screen, along with 2 switches for player input. The Tiva C microcontroller, also known as the TM4C123GH6PM, is a low-power, high-performance microcontroller that is widely used in embedded systems. The game can be played by two players taking turns to place their symbol on the grid using the switches. The microcontroller can read the switch input and update the grid on the Nokia5110 screen accordingly. The microcontroller can also check for a win or tie condition and display the result on the screen.

## Project hardware requirement:

1. TM4C123\_LaunchPad
2. Blue Nokia screen 5110
3. Push buttons
4. LEDs
5. Buzzer
6. Resistors
7. Jumpers
8. Breadboard

## **Configuration:**

Blue Nokia 5110 Screen

1. PIN1 (RST) connected to PA7
2. PIN2 (CE) connected to PA3
3. PIN3 (DC) connected to PA6
4. PIN4 (Din) connected to PA5
5. PIN5 (Clk) connected to PA2
6. PIN 6 (VCC) power 3.3V
7. PIN 7(BL) not connected.
8. PIN 8(GND) ground.

## **Push Buttons:**

- 1.SW1 (Play) connected to PB4
- 2.SW2 (Move) connected to PB0

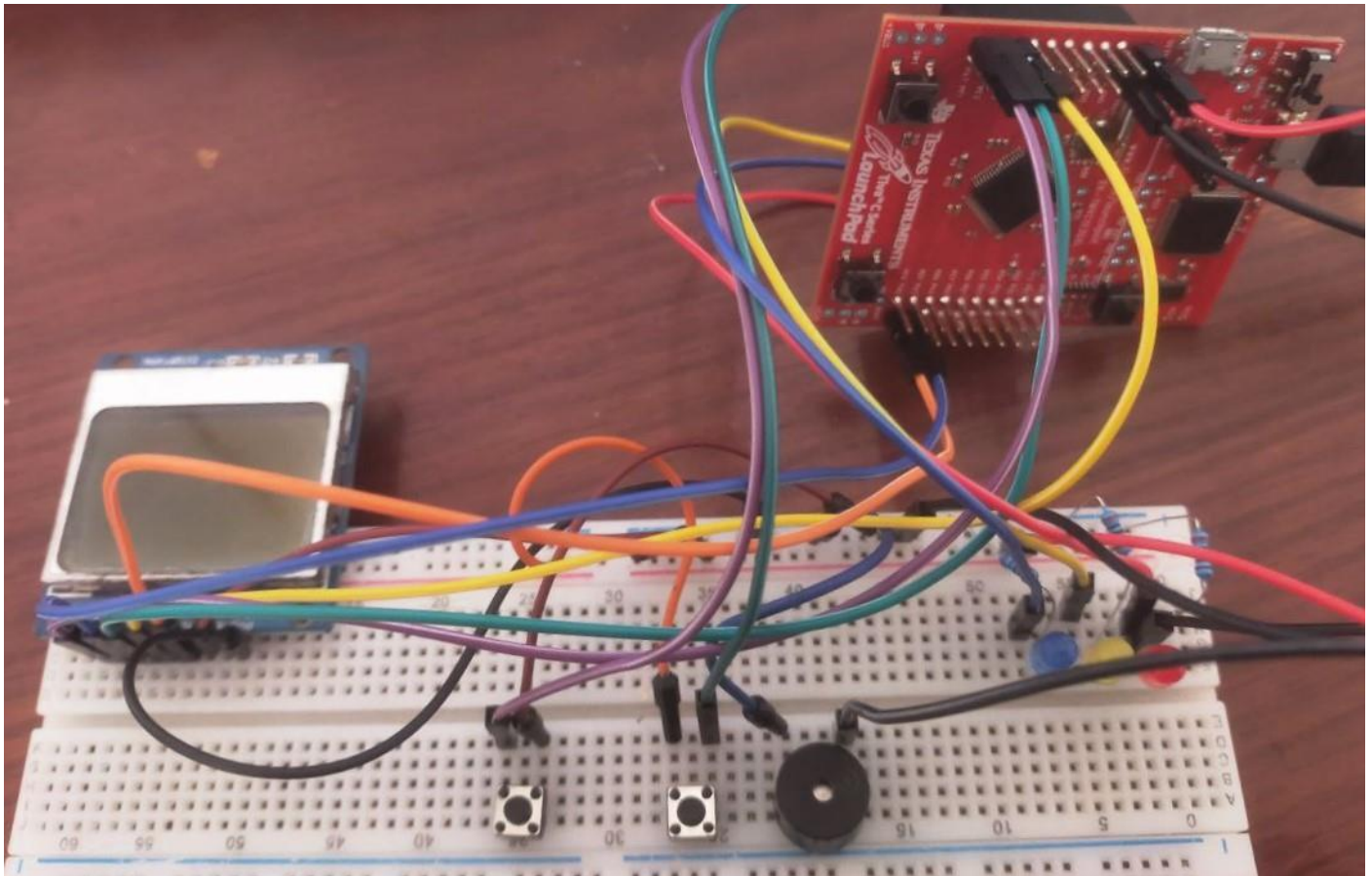
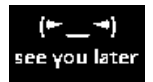
## **LEDS**

1. Blue (X-Player) connected to PB2
2. Yellow LED (O-Player) connected to PB3
3. Red LED (Alarm) connected to PB7

## **Software Requirements:**

Keil 4 software (or any other compatible Integrated Development Environment, IDE)

# Game View :



```
COM9 - PuTTY
a
X's turn:.....
A-> Move X-> Play:
x
O's turn:.....
A-> Move X-> Play:
a
O's turn:.....
A-> Move X-> Play:
x
X's turn:.....
A-> Move X-> Play:
a
X's turn:.....
A-> Move X-> Play:
a
X's turn:.....
A-> Move X-> Play:
x
O's turn:.....
A-> Move X-> Play:
a
O's turn:.....
A-> Move X-> Play:
x
X's turn:.....
A-> Mve X-> Play:
a
X's turn:.....
A-> Mve X-> Play:
a
X's turn:.....
A-> Move X-> Play:
x
X WON THE GAME
A-> Exit X-> play again:
a
```