

**GP106 :: PROJECT**  
**TIC TAC TOE GAME**

# Tic Tac Toe Game

## What is Tic Tac Toe game?

**Tic Tac Toe** (Also known as **Noughts And Crosses** or **Xs And Os**) is a paper-and-pencil game for two players, *X* and *O*, who take turns marking the spaces in a 3×3 grid. The player who succeeds in placing three of their marks in a horizontal, vertical, or diagonal row wins the game.

The following example game is won by the first player, X:



Players soon discover that best play from both parties leads to a draw. Hence, tic-tac-toe is most often played by young children.

Because of the simplicity of tic-tac-toe, it is often used as a pedagogical tool for teaching the concepts of good sportsmanship and the branch of artificial intelligence that deals with the searching of game trees. It is straightforward to write a computer program to play tic-tac-toe perfectly, to enumerate the 765 essentially different positions (The state space complexity), or the 26,830 possible games up to rotations and reflections (The game tree complexity) on this space.

## **Rules Of Traditional Tic Tac Toe**

Since the goal is to get 3 in a row, each person must switch taking turns, first X, then O. Players must use the board given to them, they cannot add extra sides on to the board. In order to win, the 3 letters must all connect in a straight line in one direction, up or down, left or right, or diagonally.

The object of **Tic Tac Toe** is to get three in a row. You play on a three by three game board. The first player is known as X and the second is O. Players alternate placing Xs and Os on the game board until either opponent has three in a row or all nine squares are filled.

## **How To Play Traditional Tic Tac Toe**

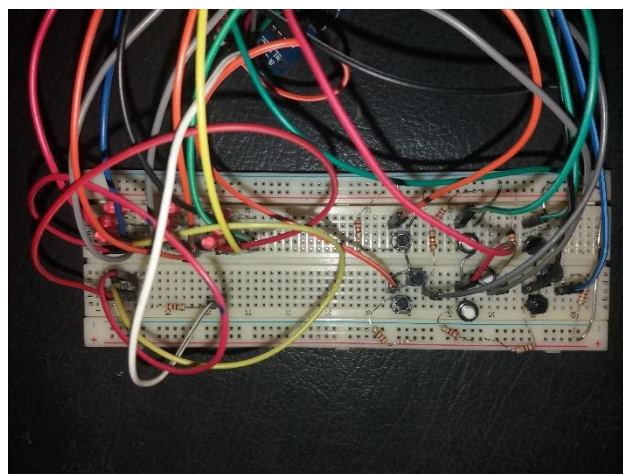
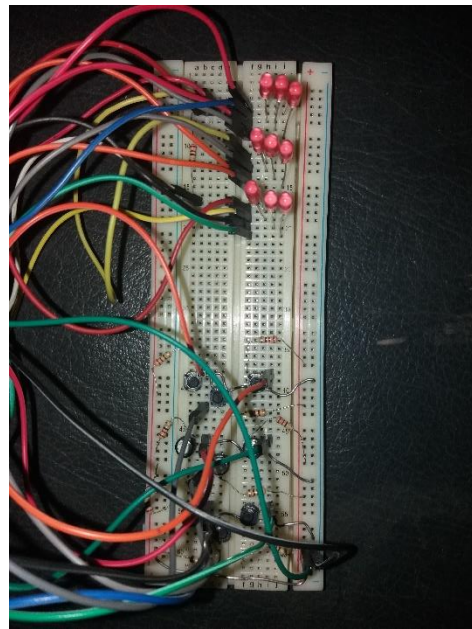
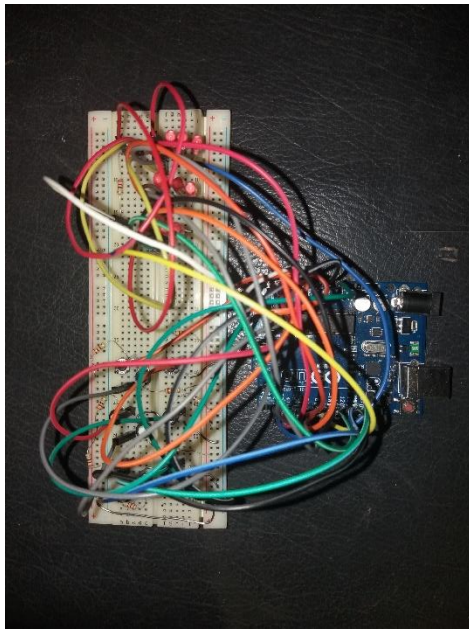
1. Draw the board. First, you have to draw the board, which is made up of a 3 x 3 grid of squares.
2. Have the first player go first.
3. Have the second player go second.
4. Keep alternating moves until one of the players has drawn a row of three symbols or until no one can win.

## Our Version Of Tic Tac Toe Game

The game board is made up with mono colour nine LEDs by arranging a 3x3 matrix structure and players are able to enter their choices using the push buttons which are attached to the corresponding LEDs.

The winner is informed by the system using a sound with a blink of the winning position. Not only that, when no one is able to win the game, it is also informed by the system using a sound. Likewise, when a player clicks a push button which is clicked before moment, it is also informed with a sound.

After one of the players has won or no one is able to win, the game will reset and begin again. Players are able to stop the game as they want.

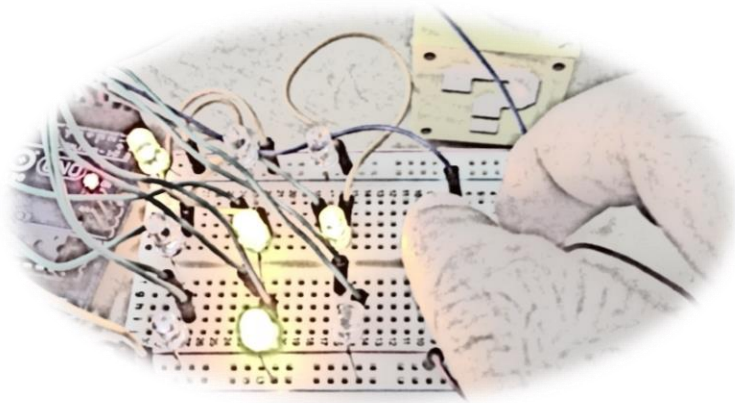


## Rules Of Our Version

Players have to click the push buttons according to their choices when their turns come and the winner is selected as the traditional way, the winner is informed by system and the game is continued until the players want to stop playing the game.

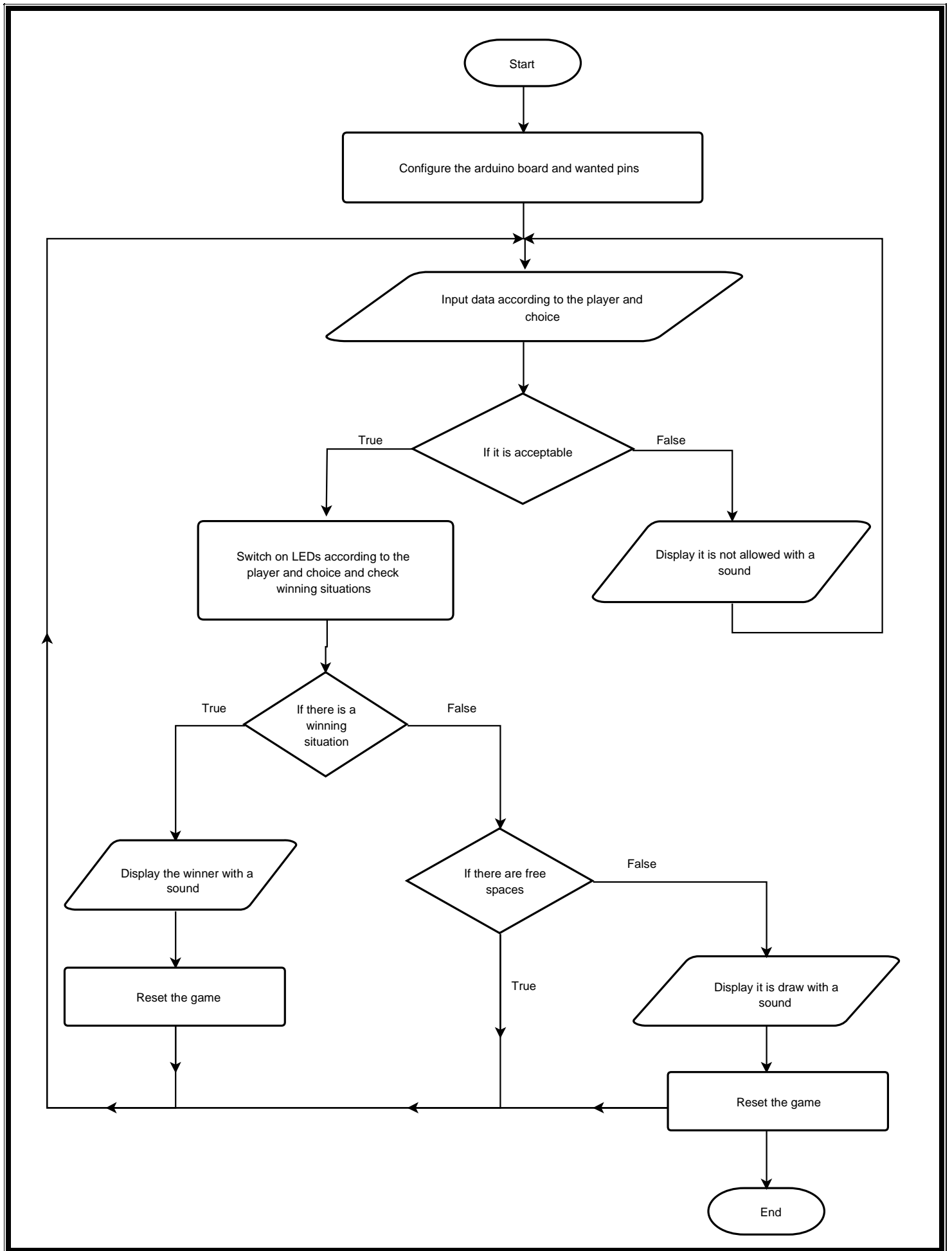
## How To Play Our Version

1. Open MATLAB and type “**a=arduino(‘COM5’);**” and click “**Enter**”.
2. Player 1 have to give his/her choice by clicking the suitable push button
3. Player 2 also have to do the same.
4. Keep entering the choices until one of the players has completed or until no one can win.
5. Continue playing until players want to stop the game.



**PLAY & ENJOY**

# **Flow Chart**



## Circuit Diagram

