TIC TAC TOE GAME

Submitted by

Name of the Students: Shirsendu Roy
Enrolment Number: 12022002016006
Section: D
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Under the supervision of
Swarnendu Ghosh

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PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE SECOND SEMESTER

DEPARTMENT OF BASIC SCIENCE AND HUMANITITES
INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA

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CERTIFICATE OF RECOMMENDATION

We hereby recommend that the project prepared under our supervision by Aditya Lahiri, entitled TIC TAC TOE Game be accepted in partial fulfillment of the requirements for the degree of partial fulfillment of the second semester.

Head of the Department
Basic Sciences and Humanities
IEM, Kolkata

Project Supervisor

1 Introduction

This is about to design a program that allows two players to play the classic game of Tic-Tac-Toe.

1.1 Objective

To create a C program on Tic Tac Toe Game project.

1.2 Organization of the Project

I used the basic ***stdio.h*** and then I used the struct system to create a structure variable and then I added functions to call them.

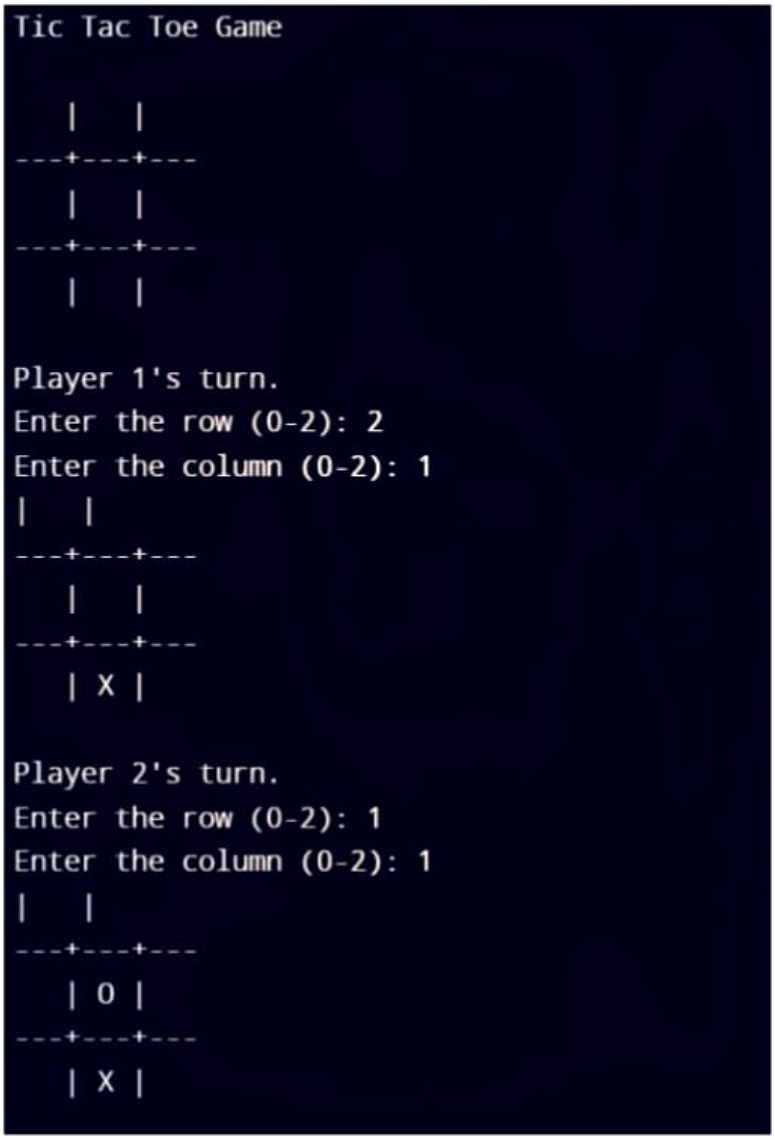
2 Programs

```
#include <stdio.h>

char board[3][3]; // Tic Tac Toe board

void initializeBoard() {
    int i, j;
   for ( i = 0; i < 3; i++) {
      for ( j = 0; j < 3; j++) {
         board[i][j] = ' ';
      }
   }
}

void printBoard() {
   printf("\n");
   printf(" %c | %c | %c\n", board[0][0], board[0][1], board[0][2]);
   printf("---+---+---\n");
   printf(" %c | %c | %c\n", board[1][0], board[1][1], board[1][2]);
   printf("---+---+---\n");
   printf(" %c | %c | %c\n", board[2][0], board[2][1], board[2][2]);
```

```
    printf("\n");
}

int checkWin() {
    // Check rows
    int i, j, k, l;
    for ( i = 0; i < 3; i++) {
        if (board[i][0] == board[i][1] && board[i][1] == board[i][2] && board[i][0] != '
') {
            return 1;
        }
    }

    // Check columns
    for ( j = 0; j < 3; j++) {
        if (board[0][i] == board[1][i] && board[1][i] == board[2][i] && board[0][i] != '
') {
            return 1;
        }
    }

    // Check diagonals
    if ((board[0][0] == board[1][1] && board[1][1] == board[2][2] && board[0][0] !=
' ') ||
        (board[0][2] == board[1][1] && board[1][1] == board[2][0] && board[0][2] !=
' ')) {
        return 1;
    }

    // Check for a tie
    int tie = 1;
    for ( k = 0; k < 3; k++) {
        for ( l= 0; l < 3; l++) {
            if (board[i][j] == ' ') {
                tie = 0;
                break;
            }
        }
    }
    if (tie) {
        return 2;
    }
```

```
    return 0;
}

int main() {
    int currentPlayer = 1; // Player 1 starts
    int row, col;
    int gameOver = 0;
    int winner;

    initializeBoard();

    printf("Tic Tac Toe Game\n");

    while (!gameOver) {
        printBoard();

        printf("Player %d's turn.\n", currentPlayer);
        printf("Enter the row (0-2): ");
        scanf("%d", &row);
        printf("Enter the column (0-2): ");
        scanf("%d", &col);

        if (row < 0 || row > 2 || col < 0 || col > 2 || board[row][col] != ' ') {
            printf("Invalid move. Please try again.\n");
            continue;
        }

        if (currentPlayer == 1) {
                board[row][col] = 'X';
                currentPlayer = 2; // switch to player 2
                }
          else {
          board[row][col] = 'O';
          currentPlayer = 1; // switch to player 1
          }
}
}
```

3. Outputs:


Tic Tac Toe Game
| |
---+---+---
| |
---+---+---
| |
Player 1's turn.
Enter the row (0-2): 2
Enter the column (0-2): 1
| |
---+---+---
| |
---+---+---
| X |
Player 2's turn.
Enter the row (0-2): 1
Enter the column (0-2): 1
| |
---+---+---
| O |
---+---+---
| X |