#include <stdio.h>

char board[3][3]; // Game board

char player = 'X'; // Current player

// Function to initialize the board

void initializeBoard() {

    int i, j;

    for (i = 0; i < 3; i++) {

        for (j = 0; j < 3; j++) {

            board[i][j] = ' '; // Empty spaces

        }

    }

}

// Function to display the board

void displayBoard() {

    printf("\n");

    for (int i = 0; i < 3; i++) {

        for (int j = 0; j < 3; j++) {

            printf(" %c ", board[i][j]);

            if (j < 2) printf("|");

        }

        printf("\n");

        if (i < 2) printf("---|---|---\n");

    }

    printf("\n");

}

// Function to check if a player has won

int checkWin() {

    for (int i = 0; i < 3; i++) {

        // Check rows and columns

        if ((board[i][0] == player && board[i][1] == player && board[i][2] == player) ||

            (board[0][i] == player && board[1][i] == player && board[2][i] == player)) {

            return 1;

        }

    }

    // Check diagonals

    if ((board[0][0] == player && board[1][1] == player && board[2][2] == player) ||

        (board[0][2] == player && board[1][1] == player && board[2][0] == player)) {

        return 1;

    }

    return 0;

}

// Function to check if the board is full (Draw)

int isDraw() {

    for (int i = 0; i < 3; i++) {

        for (int j = 0; j < 3; j++) {

            if (board[i][j] == ' ') {

                return 0; // Empty space found, game continues

            }

        }

    }

    return 1; // No empty spaces, it's a draw

}

// Function to take player input

void playerMove() {

    int row, col;

    while (1) {

        printf("Player %c, enter row (1-3) and column (1-3): ", player);

        scanf("%d %d", &row, &col);

        row--; col--; // Convert to 0-based index

        if (row >= 0 && row < 3 && col >= 0 && col < 3 && board[row][col] == ' ') {

            board[row][col] = player;

            break;

        } else {

            printf("Invalid move! Try again.\n");

        }

    }

}

// Main function

int main() {

    int moves = 0;

    initializeBoard();

    while (1) {

        displayBoard();

        playerMove();

        moves++;

        if (checkWin()) {

            displayBoard();

            printf("Player %c wins!\n", player);

            break;

        }

        if (isDraw()) {

            displayBoard();

            printf("It's a draw!\n");

            break;

        }

        // Switch player

        player = (player == 'X') ? 'O' : 'X';

    }

    return 0;

}