#include <stdio.h>

#include <stdlib.h>

char board[3][3];   // 3x3 board

// Function to initialize board

void initBoard() {

    int i, j, pos = 1;

    for (i = 0; i < 3; i++) {

        for (j = 0; j < 3; j++) {

            board[i][j] = '0' + pos; // fill with 1-9

            pos++;

        }

    }

}

// Function to display board

void printBoard() {

    printf("\n");

    for (int i = 0; i < 3; i++) {

        printf(" %c | %c | %c \n", board[i][0], board[i][1], board[i][2]);

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

    }

    printf("\n");

}

// Check winner

int checkWinner() {

    for (int i = 0; i < 3; i++) {

        // Rows

        if (board[i][0] == board[i][1] && board[i][1] == board[i][2]) return 1;

        // Cols

        if (board[0][i] == board[1][i] && board[1][i] == board[2][i]) return 1;

    }

    // Diagonals

    if (board[0][0] == board[1][1] && board[1][1] == board[2][2]) return 1;

    if (board[0][2] == board[1][1] && board[1][1] == board[2][0]) return 1;

    return 0;

}

// Check draw

int isDraw() {

    for (int i = 0; i < 3; i++)

        for (int j = 0; j < 3; j++)

            if (board[i][j] != 'X' && board[i][j] != 'O')

                return 0;

    return 1;

}

int main() {

    int player = 1, choice, row, col;

    char mark;

    initBoard();

    while (1) {

        printBoard();

        mark = (player == 1) ? 'X' : 'O';

        printf("Player %d, enter position (1-9): ", player);

        scanf("%d", &choice);

        // Convert choice into row & col

        row = (choice - 1) / 3;

        col = (choice - 1) % 3;

        // Check valid move

        if (choice < 1 || choice > 9 || board[row][col] == 'X' || board[row][col] == 'O') {

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

            continue;

        }

        board[row][col] = mark;

        // Check win

        if (checkWinner()) {

            printBoard();

            printf("Player %d WINS! 🎉\n", player);

            break;

        }

        // Check draw

        if (isDraw()) {

            printBoard();

            printf("It's a DRAW!\n");

            break;

        }

        // Switch player

        player = (player == 1) ? 2 : 1;

    }

    return 0;

}