

Assignment 6 (Tic Tac Toe Game)

```
#include <stdio.h>
```

```
char board[3][3];
```

```
char player = 'X';
```

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

```
void printBoard() {  
    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("|");  
        }  
    }  
}
```

```

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

```

```

int checkWin() {
    for (int i = 0; i < 3; i++) {
        if (board[i][0] == player && board[i][1] == player &&
board[i][2] == player) return 1;
        if (board[0][i] == player && board[1][i] == player &&
board[2][i] == player) return 1;
    }
    if (board[0][0] == player && board[1][1] == player && board[2][2]
== player) return 1;
    if (board[0][2] == player && board[1][1] == player && board[2][0]
== player) return 1;

    return 0;
}

```

```

int checkDraw() {
    for (int i = 0; i < 3; i++) {
        for (int j = 0; j < 3; j++) {

```

```
        if (board[i][j] == ' ') return 0;
    }
}
return 1;
}
```

```
void switchPlayer() {
    player = (player == 'X') ? 'O' : 'X';
}
```

```
void makeMove() {
    int row, col;
    while (1) {
        printf("Player %c, enter your move (row and column): ",
player);
        scanf("%d %d", &row, &col);
        if (row >= 1 && row <= 3 && col >= 1 && col <= 3 &&
board[row-1][col-1] == ' ') {
            board[row-1][col-1] = player;
            break;
        } else {
            printf("Invalid move! Try again.\n");
        }
    }
}
```

```
}
```

```
int main() {  
    initializeBoard();  
    while (1) {  
        printBoard();  
        makeMove();  
        if (checkWin()) {  
            printBoard();  
            printf("Player %c wins!\n", player);  
            break;  
        }  
        if (checkDraw()) {  
            printBoard();  
            printf("It's a draw!\n");  
            break;  
        }  
        switchPlayer();  
    }  
  
    return 0;  
}
```

