ASSIGNMENT - 6

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**TIC TAC TOE GAME**

**Solution:**

#include <stdio.h>

char board[3][3], player = 'X';

void Board() {

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

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

board[i][j] = '0';

}

}

}

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("|");

}

}

printf("\n");

if (i < 2) {

printf("---|---|---\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] == '0') {

return 0;

}

}

}

return 1;

}

void switchPlayer() {

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

}

void makeMove() {

int row, column;

while (1) {

printf("Player %c, enter your move (row and column): ", player);

scanf("%d %d", &row, &column);

if (row >= 1 && row <= 3 && column >= 1 && column <= 3 && board[row - 1][column - 1] == '0') {

board[row - 1][column - 1] = player;

break;

} else {

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

}

}

}

int main() {

Board();

while (1) {

printBoard();

makeMove();

if (checkWin()) {

printBoard();

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

break;

}

else if (checkDraw()) {

printBoard();

printf("It's a draw!\n");

break;

}

switchPlayer();

}

return 0;

}