

# ASSIGNMENT 6

```
#include <stdio.h>

char board[3][3];

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

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

        if (board[0][i] == board[1][i] && board[1][i] == board[2][i] && board[0][i] != ' ')
            return 1;
    }
}
```

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

    if (board[0][2] == board[1][1] && board[1][1] == board[2][0] && board[0][2] != ' ')
        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;
}

int main() {
    int row, col, player = 1;

    initializeBoard();

    while (1) {
        printBoard();

        if (player == 1) {
            printf("Player 1 (X), enter row and column (0-2): ");
        } else {
            printf("Player 2 (O), enter row and column (0-2): ");
        }

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

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

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}  
board[row][col] = (player == 1) ? 'X' : 'O';  
  
if (checkWin()) {  
    printBoard();  
    printf("Player %d wins!\n", player);  
    break;  
}  
if (checkDraw()) {  
    printBoard();  
    printf("It's a draw!\n");  
    break;  
}  
  
player = (player == 1) ? 2 : 1;  
}  
return 0;  
}
```

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|  | 
-----
|  | 

Player 1 (X), enter row and column (0-2): 1
1

|  | 
-----
| X | 
-----
|  | 

Player 2 (O), enter row and column (0-2): 2
2

|  | 
-----
| X | 
-----
|  | O
```

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Player 1 (X), enter row and column (0-2): 0
0

X |   |
-----
  | X |
-----
  |   | O

Player 2 (O), enter row and column (0-2): 1
2

X |   |
-----
  | X | O
-----
  |   | O

Player 1 (X), enter row and column (0-2): 1
0

X |   |
-----
X | X | O
-----
  |   | O
```

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Player 2 (O), enter row and column (0-2): 0
1
X | O | 
-----
X | X | O
-----
  |  | O

Player 1 (X), enter row and column (0-2): 0
2
X | O | X
-----
X | X | O
-----
  |  | O

Player 2 (O), enter row and column (0-2): 2
1
X | O | X
-----
X | X | O
-----
  | O | O
```

```
| O | O
```

Player 1 (X), enter row and column (0-2): 2

0

```
X | O | X
```

```
-----
```

```
X | X | O
```

```
-----
```

```
X | O | O
```

Player 1 wins!

...Program finished with exit code 0

Press ENTER to exit console.