

## Tic Tac Toe Game (2-Player) - C Program

### C Code:

```
#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 displayBoard() {
    printf("\n");
    for (int i = 0; i < 3; i++) {
        printf(" %c | %c | %c ", board[i][0], board[i][1], board[i][2]);
        if (i != 2)
            printf("\n-----\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] != ' ') ||
            (board[0][i] == board[1][i] && board[1][i] == board[2][i] && board[0][i] != ' '))
            return 1;
    }
    if ((board[0][0] == board[1][1] && board[1][1] == board[2][2] && board[0][0] != ' ') ||
        (board[0][2] == board[1][1] && board[1][1] == board[2][0] && board[0][2] != ' '))
        return 1;
    return 0;
}

int isDraw() {
    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;
```

## Tic Tac Toe Game (2-Player) - C Program

```
char mark;
initializeBoard();

printf("Tic Tac Toe Game\nPlayer 1 = X, Player 2 = O\n");

while (1) {
    displayBoard();
    player = (player % 2) ? 1 : 2;
    mark = (player == 1) ? 'X' : 'O';

    printf("Player %d, enter row and column (1-3): ", player);
    scanf("%d %d", &row, &col);

    row--; col--;

    if (row >= 0 && row < 3 && col >= 0 && col < 3 && board[row][col] == ' ') {
        board[row][col] = mark;
    } else {
        printf("Invalid move! Try again.\n");
        player--;
        continue;
    }

    if (checkWin()) {
        displayBoard();
        printf("Player %d wins!\n", player);
        break;
    }

    if (isDraw()) {
        displayBoard();
        printf("It's a draw!\n");
        break;
    }

    player++;
}

return 0;
}
```

### Sample Output:

```
Tic Tac Toe Game
Player 1 = X, Player 2 = O
```

```
| |
-----
| |
```

## Tic Tac Toe Game (2-Player) - C Program

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| |

Player 1, enter row and column (1-3): 1 1

x | |

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| |

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| |

Player 2, enter row and column (1-3): 2 2

x | |

-----

| o |

-----

| |

Player 1, enter row and column (1-3): 1 2

x | x |

-----

| o |

-----

| |

Player 2, enter row and column (1-3): 3 3

x | x |

-----

| o |

-----

| | o

Player 1, enter row and column (1-3): 1 3

x | x | x

-----

| o |

-----

| | o

Player 1 wins!