

```
1 import java.util.Scanner;
2
3 public class Main {
4     private static char[][] board;
5     private static char currentPlayer;
6     private static boolean isGameFinished;
7
8     public static void main(String[] args) {
9         initializeGame();
10        playGame();
11    }
12
13    private static void initializeGame() {
14        board = new char[3][3];
15        currentPlayer = 'X';
16        isGameFinished = false;
17
18        // Initialize the board with empty
spaces
19        for (int row = 0; row < 3; row++) {
20            for (int col = 0; col < 3; col
21            ++ ) {
22                board[row][col] = ' ';
23            }
24        }
25
26        private static void playGame() {
27            System.out.println("Welcome to Tic-
28            Tac-Toe!");
29            System.out.println("Player 1: X |
30            Player 2: O");
31            System.out.println("Let's start the
32            game!");
```

```
31         while (!isGameFinished) {
32             printBoard();
33             makeMove();
34             checkWinCondition();
35             checkDrawCondition();
36             switchPlayer();
37         }
38     }
39
40     private static void printBoard() {
41         System.out.println("-----");
42         for (int row = 0; row < 3; row++) {
43             System.out.print("| ");
44             for (int col = 0; col < 3; col
45 ++ ) {
46                 System.out.print(board[row][
47 col] + " | ");
48             }
49             System.out.println("\n-----"
50 );
51         }
52     }
53
54     private static void makeMove() {
55         Scanner scanner = new Scanner(System.
56 in);
57         int row, col;
58
59         do {
60             System.out.print("Player " +
61 currentPlayer + ", enter the row (1-3): ");
62             row = scanner.nextInt() - 1;
63             System.out.print("Player " +
64 currentPlayer + ", enter the column (1-3): "
65 );
66         } while (row < 0 || row > 2 || col < 0 || col > 2);
67     }
68 }
```

```
59         col = scanner.nextInt() - 1;
60     } while (!isValidMove(row, col));
61
62     board[row][col] = currentPlayer;
63 }
64
65     private static boolean isValidMove(int
row, int col) {
66         if (row < 0 || row >= 3 || col < 0
|| col >= 3) {
67             System.out.println("Invalid move
! Please enter row and column values between
1 and 3.");
68             return false;
69         }
70         if (board[row][col] != ' ') {
71             System.out.println("Invalid move
! The cell is already occupied.");
72             return false;
73         }
74         return true;
75     }
76
77     private static void checkWinCondition() {
78         if (checkRows() || checkColumns() ||
checkDiagonals()) {
79             isGameFinished = true;
80             printBoard();
81             System.out.println("Player " +
currentPlayer + " wins! Congratulations!");
82         }
83     }
84
85     private static boolean checkRows() {
86         for (int row = 0; row < 3; row++) {
```

```
87         if (board[row][0] ==
    currentPlayer && board[row][1] ==
    currentPlayer && board[row][2] ==
    currentPlayer) {
88             return true;
89         }
90     }
91     return false;
92 }
93
94     private static boolean checkColumns() {
95         for (int col = 0; col < 3; col++) {
96             if (board[0][col] ==
    currentPlayer && board[1][col] ==
    currentPlayer && board[2][col] ==
    currentPlayer) {
97                 return true;
98             }
99         }
100     return false;
101 }
102
103     private static boolean checkDiagonals
    () {
104         if ((board[0][0] == currentPlayer
    && board[1][1] == currentPlayer && board[2]
    ][2] == currentPlayer) ||
105             (board[0][2] ==
    currentPlayer && board[1][1] ==
    currentPlayer && board[2][0] ==
    currentPlayer)) {
106             return true;
107         }
108     return false;
109 }
```

```
110
111     private static void checkDrawCondition
112     () {
113         if (!isGameFinished) {
114             boolean isBoardFull = true;
115             for (int row = 0; row < 3; row
116             ++ ) {
117                 for (int col = 0; col < 3;
118                 col++) {
119                     if (board[row][col] ==
120                     ' ') {
121                         isBoardFull = false;
122                         break;
123                     }
124                 }
125             }
126             if (isBoardFull) {
127                 isGameFinished = true;
128                 printBoard();
129                 System.out.println("It's a
130 draw! The game is over.");
131             }
132         }
133     }
134
135     private static void switchPlayer() {
136         if (currentPlayer == 'X') {
137             currentPlayer = 'O';
138         } else {
139             currentPlayer = 'X';
140         }
141     }
142 }
```