

Tic-Tac-Toe

Code:

```
import java.util.*;
public class TicTacToe {
    static String[] board;
    static String turn;
    static String checkWinner()
    {
        for (int a = 0; a < 8; a++) {
            String line = null;

            switch (a) {
                case 0:
                    line = board[0] + board[1] + board[2];
                    break;
                case 1:
                    line = board[3] + board[4] + board[5];
                    break;
                case 2:
                    line = board[6] + board[7] + board[8];
                    break;
                case 3:
                    line = board[0] + board[3] + board[6];
                    break;
                case 4:
                    line = board[1] + board[4] + board[7];
                    break;
                case 5:
                    line = board[2] + board[5] + board[8];
                    break;
                case 6:
                    line = board[0] + board[4] + board[8];
                    break;
                case 7:
                    line = board[2] + board[4] + board[6];
                    break;
            }
            //For X winner
            if (line.equals("XXX")) {
                return "X";
            }
        }
    }
}
```

```

        // For O winner
        else if (line.equals("OOO")) {
            return "O";
        }
    }

    for (int a = 0; a < 9; a++) {
        if (Arrays.asList(board).contains(
            String.valueOf(a + 1))) {
            break;
        }
        else if (a == 8) {
            return "draw";
        }
    }

    // To enter the X Or O at the exact place on board.
    System.out.println("\n" + turn + "'s turn; ");
    System.out.print("enter a slot number to place " + turn + " in:");
    return null;
}

// To print out the board.
/* |---|---|---|
  | 1 | 2 | 3 |
  |-----|
  | 4 | 5 | 6 |
  |-----|
  | 7 | 8 | 9 |
  |---|---|---|*/

static void printBoard()
{
    System.out.println("|---|---|---|");
    System.out.println("| " + board[0] + " | "
        + board[1] + " | " + board[2]
        + " |");
    System.out.println("|-----|");
    System.out.println("| " + board[3] + " | "
        + board[4] + " | " + board[5]
        + " |");
    System.out.println("|-----|");
    System.out.println("| " + board[6] + " | "
        + board[7] + " | " + board[8]
        + " |");
    System.out.println("|---|---|---|");
}

```

```

public static void main(String[] args)
{
    Scanner in = new Scanner(System.in);
    board = new String[9];
    turn = "X";
    String winner = null;

    for (int a = 0; a < 9; a++) {
        board[a] = String.valueOf(a + 1);
    }

    System.out.println("\n\nWelcome to 3x3 Tic Tac Toe.");
    System.out.println("");
    printBoard();

    System.out.print(
        "\n\n X will play first. Enter a slot number to place X in:");

    while (winner == null) {
        int numInput;
        try {
            numInput = in.nextInt();
            if (!(numInput > 0 && numInput <= 9)) {
                System.out.print(
                    "Invalid input; re-enter slot number:");
                continue;
            }
        }
        catch (InputMismatchException e) {
            System.out.print(
                "Invalid input; re-enter slot number:");
            continue;
        }

        // This game has two player x and O.
        // Here is the logic to decide the turn.
        if (board[numInput - 1].equals(
            String.valueOf(numInput))) {
            board[numInput - 1] = turn;

            if (turn.equals("X")) {
                turn = "O";
            }
            else {
                turn = "X";
            }
        }
    }
}

```

```

        printBoard();
        winner = checkWinner();
    }
    else {
        System.out.print(
            "Slot already taken; re-enter slot number:");
    }
}

// If no one win or lose from both player x and O.
// then here is the logic to print "draw".
if (winner.equalsIgnoreCase("draw")) {
    System.out.println(
        "It's a draw! Thanks for playing.");
}

// For winner -to display Congratulations! message.
else {
    System.out.println(
        "Congratulations! " + winner
        + "'s have won! Thanks for playing.");
}
}
in.close();
}
}

```

Output:

Welcome to 3x3 Tic Tac Toe.

1	2	3
4	5	6
7	8	9

X will play first. Enter a slot number to place X in:1

X will play first. Enter a slot number to place X in:1

---	---	---
X	2	3

4	5	6

7	8	9
---	---	---

O's turn;

enter a slot number to place O in:2

---	---	---
X	0	3

4	5	6

7	8	9
---	---	---

X's turn;

enter a slot number to place X in:3

---	---	---
X	0	X

4	5	6

7	8	9
---	---	---

O's turn;

enter a slot number to place O in:4

---	---	---
X	0	X

0	5	6

7	8	9
---	---	---

X's turn;

enter a slot number to place X in:5

---	---	---
X	0	X

0	X	6

7	8	9
---	---	---

O's turn;
enter a slot number to place O in:6

X	O	X
O	X	O
7	8	9

X's turn;
enter a slot number to place X in:7

X	O	X
O	X	O
X	8	9

Congratulations! X's have won! Thanks for playing.

The End

