

Code:

```
// Tic-Tac-Toe Game.
```

```
import java.util.*;
```

```
public class GFG {
```

```
    static String[] board;
```

```
    static String turn;
```

```
    // CheckWinner method will
```

```
    // decide the combination
```

```
    // of three box given below.
```

```
    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(
    turn + "'s turn; 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("Welcome to 3x3 Tic Tac Toe.");
        printBoard();

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

        while (winner == null) {
            int numInput;

            // Exception handling.
            // numInput will take input from user like from 1 to 9.
            // If it is not in range from 1 to 9.
            // then it will show you an error "Invalid input."
            try {

```

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

```

        "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:

project\bin - GFG

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	2	3
4	5	6
7	8	9

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

5

X	2	3
4	O	6
7	8	9

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

4

X	2	3
X	O	6
7	8	9

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

5

Slot already taken; re-enter slot number:

6

X	2	3
X	O	O