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**BS(SE)**

**CODE:**

```
import java.util.Arrays;
```

```
import java.util.InputMismatchException;
```

```
import java.util.Scanner;
```

```
public class TicTacToe {
```

```
    static Scanner in;
```

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

```
    static String turn;
```

```
    public static void main(String[] args) {
```

```
        in = new Scanner(System.in);
```

```
        board = new String[9];
```

```
        turn = "X";
```

```
        String winner = null;
```

```
        populateEmptyBoard();
```

```
        System.out.println("Welcome to 2 Player Tic Tac Toe.");
```

```
        System.out.println("-----");
```

```
        printBoard();
```

```
System.out.println("X's 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.println("Invalid input; re-enter slot number:");  
            continue;  
        }  
    } catch (InputMismatchException e) {  
        System.out.println("Invalid input; re-enter slot number:");  
        continue;  
    }  
    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("Slot already taken; re-enter slot number:");  
    }  
}
```

```
        continue;
    }
}
if (winner.equalsIgnoreCase("draw")) {
    System.out.println("It's a draw! Thanks for playing.");
} else {
    System.out.println("Congratulations! " + winner + "'s have won! Thanks for
playing.");
}
}
```

```
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;
    }
    if (line.equals("XXX")) {
        return "X";
    } 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";
    }

    System.out.println(turn + "'s turn; enter a slot number to place " + turn + " in:");

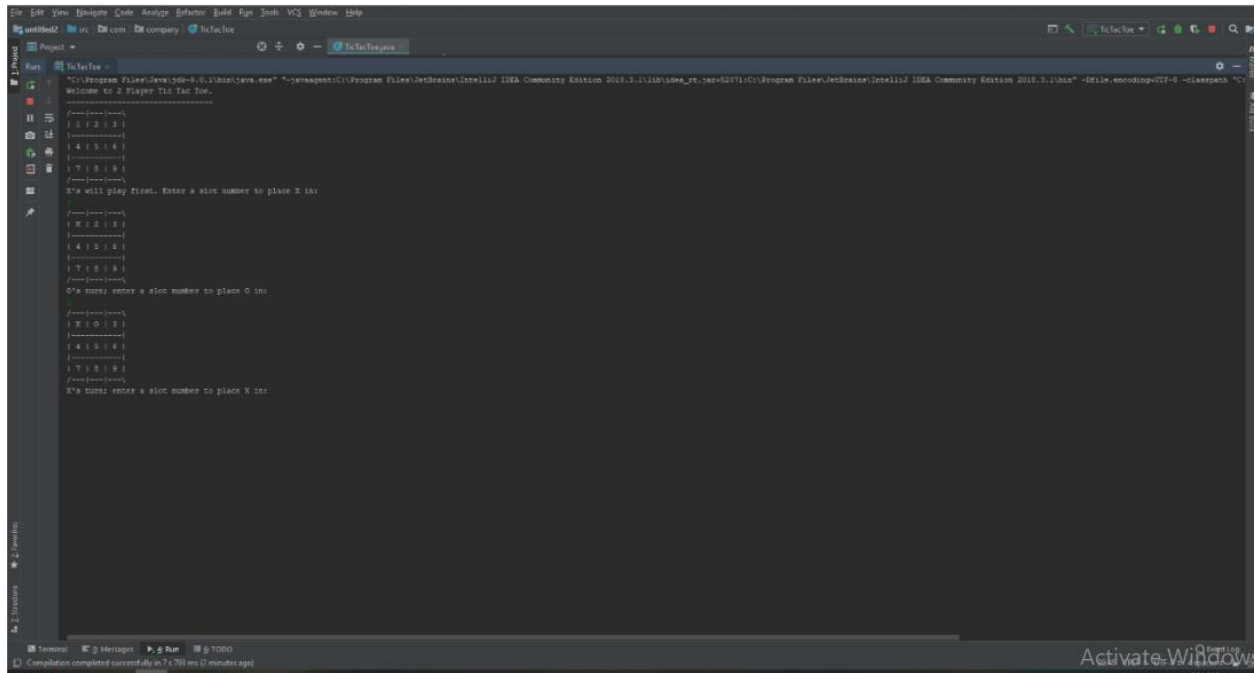
    return null;
}

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("/---|---|---\\");
}

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

```

# OUTPUT:



```
File Edit View Debug Code Analyze Software Build Run Tools VCS Window Help
untitled2 | uc. | DE.com | company | TicTacToe
Project | TicTacToe
Run | TicTacToe
"C:\Program Files\JetBrains\JDK-8.0.102\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2019.3.1\lib\idea_rt.jar=62071.C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2019.3.1\bin" -Dfile.encoding=UTF-8 -classpath "C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2019.3.1\lib\idea_rt.jar" TicTacToe
Welcome to 2 Player Tic Tac Toe.
-----
| 1 | 2 | 3 |
|-----|
| 4 | 5 | 6 |
|-----|
| 7 | 8 | 9 |
|-----|
It's O's turn to play first. Enter a slot number to place O in:
-----
| 1 | 2 | 3 |
|-----|
| 4 | 5 | 6 |
|-----|
| 7 | 8 | 9 |
|-----|
O's turn: enter a slot number to place O in:
-----
| X | 2 | 3 |
|-----|
| 4 | 5 | 6 |
|-----|
| 7 | 8 | 9 |
|-----|
X's turn: enter a slot number to place X in:
-----
| X | 2 | 3 |
|-----|
| 4 | 5 | 6 |
|-----|
| 7 | 8 | 9 |
|-----|
Terminal | Messages | Run | 1000
Compilation completed successfully in 7 s 703 ms (2 minutes ago)
Activate Windows
```