```java
1   package com.mycompany.tttgame;
2
3   public class TicTacToe{
4       char[][] board = new char[3][3]; // TicTacToe board has 3 rows and 3 columns.
5       char PLAYER_1 = 'X';
6       char PLAYER_2 = 'O';
7       char turn; // Whose turn is it? - current turn
8
9       //the constructure
10      public TicTacToe() {
11          //Initialize the 2D array.
12          for (int i = 0; i < 3; i++) {
13              for (int j = 0; j < 3; j++) {
14                  board[i][j] = ' ';
15              }
16          }
17          turn ='X';   //X always start's first.
18      }
19      /*
20       * Check 3 rows, 3 cols and 2 diagonals for a win
21       * If there is a winner return who won : X or O
22       * Otherwise return a blank (space) character.
23       */
24      public char getWinner() {
25          //Checking 3 rows, 3 cols and 2 diagonals for a win
26          for (int a = 0; a < 8; a++) {
27              String line = "";
28
29              switch (a) {
30              case 0:
31                  for (int i = 0; i < 3; i++) {
32                      line += board[0][i];
33                  }
34                  break;
35              case 1:
36                  for (int i = 0; i < 3; i++) {
37                      line += board[1][i];
38                  }
39                  break;
40              case 2:
41                  for (int i = 0; i < 3; i++) {
42                      line += board[2][i];
43                  }
44                  break;
45              case 3:
46                  for (int i = 0; i < 3; i++) {
47                      line += board[i][0];
48                  }
49                  break;
50              case 4:
51  //                line = board[0][1] + board[1][1] + board[2][1];        //this suppose to work but it's not
52                  for (int i = 0; i < 3; i++) {
53                      line += board[i][1];
54                  }
55                  break;
56              case 5:
57                  for (int i = 0; i < 3; i++) {
58                      line += board[i][2];
59                  }
60                  break;
61              case 6:
62                  for (int i = 0; i < 3; i++) {
63                      line += board[i][i];
64                  }
```

```java
                    break;
                case 7:
                    for (int i = 0; i < 3; i++) {
                        line += board[i][2-i];
                    }
                    break;
            }
            //If there is a winner return who won : X or O
            //For X winner
            if("XXX".equals(line)) {
                return 'X';
            }

            // For O winner
            else if ("OOO".equals(line)) {
                return 'O';
            }
        }
        return ' '; //Otherwise return a blank (space) character.
    }

    /*
     * Pretty print the TTT board.
     */
    public void displayBoard() {
        System.out.println("|---|---|---|");
        System.out.println("| " + board[0][0] + " | "+ board[0][1] + " | " + board[0][2] + " |");
        System.out.println("|-----------|");
        System.out.println("| " + board[1][0] + " | " + board[1][1] + " | " + board[1][2] + " |");
        System.out.println("|-----------|");
        System.out.println("| " + board[2][0] + " | " + board[2][1] + " | " + board[2][2] + " |");
        System.out.println("|---|---|---|");
    }

    /*
     * Return the Player who has to put a mark.
     */
    public char whoseTurn() {
        return turn;
    }

    /*
     * Fill the board at [row,col] with X or O
     * depending on whose turn it is
     * then change turn from X to O or O to X.
     */
    public void putMark(int row, int col) {
        board[row][col]=turn;    //Filling board at [row,col] with X or O according 2 turn
        //change turn from X to O or O to X.
        if(turn=='X')
            turn='O';
        else if(turn=='O')
            turn='X';
    }

    /*
     * Return the mark at [row,col] in the board.
     */
    public char getMark(int row, int col) {
        return board[row][col];
    }
}
```