

Work on project. Stage 5/5: Fight!

Project: [Simple Tic-Tac-Toe](#)

 Hard  31 minutes 

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Description

Our game is almost ready! Now let's combine what we've learned in the previous stages to make a game of tic-tac-toe that two players can play from the beginning (with an empty grid) through to the end (until there is a draw, or one of the players wins).

The first player has to play as X and their opponent plays as O.

Objectives

In this stage, you should write a program that:

1. Prints an empty grid at the beginning of the game.
2. Creates a game loop where the program asks the user to enter the cell coordinates, analyzes the move for correctness and shows a grid with the changes if everything is okay.
3. Ends the game when someone wins or there is a draw.

You need to output the final result at the end of the game.

Good luck!

The project was changed. Now the coordinates start from the upper left corner. Look closely at the examples.

Example

The example below shows how your program should work.

Notice that after `Enter the coordinates:` comes the user input.

1 / 1 Prerequisites

✓ [Switch statement](#)

In project
1 ↗ ✓

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```
-----  
|   |  
|   |  
|   |  
-----
```

Enter the coordinates: 2 2

```
-----  
|   |  
|  X |  
|   |  
-----
```

Enter the coordinates: 2 2

This cell is occupied! Choose another one!

Enter the coordinates: two two

You should enter numbers!

Enter the coordinates: 1 4

Coordinates should be from 1 to 3!

Enter the coordinates: 1 1

```
-----  
| O |  
|  X |  
|   |  
-----
```

Enter the coordinates: 3 3

```
-----  
| O |  
|  X |  
|   X |  
-----
```

Enter the coordinates: 2 1

```
-----  
| O |  
| O X |  
|   X |  
-----
```

Enter the coordinates: 3 1

```
-----  
| O |  
| O X |  
| X  X |  
-----
```

Enter the coordinates: 2 3


```
-----  
| O |  
| O X O |  
| X  X |  
-----
```

Enter the coordinates: 3 2

```
-----  
| O |  
| O X O |  
| X X X |  
-----
```

X wins

 Report a typo

 See hint

 Write a program

[Code Editor](#)

[IDE](#)

Java

```
1 package tictactoe;  
2 import java.lang.*;  
3 import java.util.Scanner;  
4 public class Main {  
5     public static void main(String[] args) {  
6         int k = 0;  
7         char[][] array = {{' ',' ',' '},{ ' ',' ',' '},{ ' ',' ',' '}};  
8         printGrid(array);  
9         getInput(array);  
10    }  
11 }  
12  
13 public static int getInput(char[][] array){
```

```

13     public static int getInput(char[][] array){
14         // Scanner sc = new Scanner(System.in);
15         char[] player = {'X','O'};
16         // int x,y;
17         for(int i = 0; i < 3; i++){
18             for(int j = 0; j < 3; j++){
19                 ExceptionCase(array,i,j);
20                 printGrid(array);
21                 if(win(array, player[(i+j) % 2])){
22                     System.out.println(player[(i+j) % 2] + " wins");
23                     return(0);
24                 }
25                 else if(draw(array)){
26                     System.out.println("Draw");
27                     return 0;
28                 }
29             }
30         }
31         return 0;
32     }
33
34     public static boolean draw(char[][] array){
35         for(int i = 0; i < 3; i++){
36             for(int j = 0; j < 3; j++){
37                 if(array[i][j] == ' '){
38                     return false;
39                 }
40             }
41         }
42         return true;
43     }
44
45     public static boolean win(char[][] array, char ch){
46         boolean flag;
47         for(int i = 0; i < array.length; i++){
48             flag = true;
49             for(int j = 0; j < array[i].length; j++){
50                 if(array[i][j] != ch){
51                     flag = false;
52                     break;
53                 }
54             }
55             if(flag == true)
56                 return flag;
57         }
58
59         for(int i = 0; i < array.length; i++){
60             flag = true;
61             for(int j = 0; j < array[j].length; j++){
62                 if(array[j][i] != ch){
63                     flag = false;
64                     break;
65                 }
66             }
67             if(flag == true)
68                 return flag;
69         }
70         flag = true;
71         for(int i = 0; i < array.length; i++){
72             if(array[i][i] != ch){
73                 flag = false;
74                 break;
75             }
76         }
77         if(flag == true)
78             return flag;
79
80         flag = true;
81         for(int i = 0; i < array.length; i++){
82             if(array[i][array.length - 1 - i] != ch){
83                 flag = false;
84                 break;
85             }
86         }
87         if(flag == true)
88             return flag;
89         return false;
90     }
91
92     public static void ExceptionCase(char[][] array, int i, int j){
93         Scanner sc = new Scanner(System.in);
94         boolean flag = true;
95         int x,y;
96         char[] player = {'X','O'};
97         while(flag){
98             try{
99                 // Scanner sc = new Scanner(System.in);

```

```

99         System.out.print("Enter the coordinates: ");
100         x = sc.nextInt();
101         y = sc.nextInt();
102         if(x > 0 && x <= 3 && y > 0 && y <= 3){
103             if(array[x-1][y-1] == ' '){
104                 flag = false;
105                 array[x-1][y-1] = player[(i+j) % 2];
106             }
107             else{
108                 System.out.println("This cell is occupied! Choose another one!");
109             }
110         }
111         else{
112             System.out.println("Coordinates should be from 1 to 3!");
113         }
114     }catch(Exception e){
115         System.out.println("You should enter numbers!");
116         ExceptionCase(array,i,j);
117         flag = false;
118     }
119 }
120 }
121
122 public static void printGrid(char[][] array){
123     System.out.println("-----");
124     for(int i = 0; i < 3; i++){
125         System.out.print("| ");
126         for(int j = 0; j < 3; j++){
127             System.out.print(array[i][j] + " ");
128         }
129         System.out.println("| ");
130     }
131     System.out.println("-----");
132 }
133 }
134

```

✓ **Correct.**

It was a tricky task, but you nailed it!

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