

***8.9

(*Game: play a tic-tac-toe game*) In a game of tic-tac-toe, two players take turns marking an available cell in a 3×3 grid with their respective tokens (either X or O). When one player has placed three tokens in a horizontal, vertical, or diagonal row on the grid, the game is over and that player has won. A draw (no winner) occurs when all the cells on the grid have been filled with tokens and neither player has achieved a win. Create a program for playing tic-tac-toe.

The program prompts two players to enter an X token and O token alternately. Whenever a token is entered, the program redisplay the board on the console and determines the status of the game (win, draw, or continue). Here is a sample run:



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|  |  |  |
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|  |  |  |
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|  |  |  |
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Enter a row (0, 1, or 2) for player X: 1 Enter
Enter a column (0, 1, or 2) for player X: 1 Enter

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|  |  |  |
-----
|  | X |  |
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|  |  |  |
-----
Enter a row (0, 1, or 2) for player O: 1 Enter
Enter a column (0, 1, or 2) for player O: 2 Enter

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

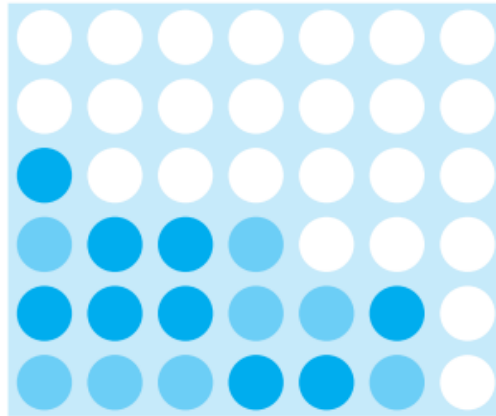
Enter a row (0, 1, or 2) for player X:

. . .

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

X player won

*****8.20** (Game: connect four) Connect four is a two-player board game in which the players alternately drop colored disks into a seven-column, six-row vertically suspended grid, as shown below.



The objective of the game is to connect four same-colored disks in a row, a column, or a diagonal before your opponent can do likewise. The program prompts two players to drop a red or yellow disk alternately. In the preceding figure, the red disk is shown in a dark color and the yellow in a light color. Whenever a disk is dropped, the program redisplay the board on the console and determines the status of the game (win, draw, or continue). Here is a sample run:

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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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Drop a red disk at column (0-6): 0 
| | | | | | |
| | | | | | |
| | | | | | |
|R| | | | | |
| | | | | | |
| | | | | | |
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```



```

Drop a yellow disk at column (0-6): 3 
| | | | | | |
| | | | | | |
| | | | | | |
|R| | | | | |
| | | | | | |
| | | | | | |
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. . .
. . .
. . .
Drop a yellow disk at column (0-6): 6 
| | | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
|R|Y|R|Y|R|R|R|
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The yellow player won

```