Programming practice II
Arrays and strings

Question 2. Tic-tac-toe:

Background: Tic-tac-toe, also known as "noughts and crosses", is the game known in Japanese as 三目並べ. In this game, two players take turns in marking a 3×3 **grid** with X (1st player) and O (2nd player). The game starts with an empty grid, and ends, either when a player manages to **line up** their mark in three successive **cells**, **horizontally**, **vertically** or **diagonally**; or when the grid is full and no player can win (draw game).

Problem: Write a program that lets two players play a game of Tic-tac-toe.

Hints:
> - Use a **2-dimensional** array to represent the grid.
> - Use a variable to represent whose turn it is to play.
> - In each turn, alternate between player 1 and player 2.
> - In each turn, let the player enter the **coordinates** (row and column)
> - Make sure the corresponding cell is empty!
> - In each turn, check if there is a winner.
> - When the game is over, display the final grid, and the winner (or whether it is a draw).

Example:
```
$ ./prog2-2
     1   2   3
   ------------
1 |   |   |   |
   ------------
2 |   |   |   |
   ------------
3 |   |   |   |
   ------------

Player 1, enter row and column: 2 2

     1   2   3
   ------------
1 |   |   |   |
   ------------
2 |   | X |   |
   ------------
3 |   |   |   |
   ------------

...
```

```
Player 1, enter row and column: 3 2

     1   2   3
    -------------
1 | O | X | X |
    -------------
2 |   | X | O |
    -------------
3 | O | X |   |
    -------------
Player 1 wins.
```

Vocabulary:
grid /ɡrɪd/ 格子
cell (on a grid) /sɛl/ マス
line up /ˈlaɪn ʌp/ 並べる
2-dimensional /tu dɪˈmɛnʃənəl/, /daɪ-/ 2 次元
horizontal /ˌhɔrəˈzɑntəl, ˌhɑr-/　横
vertical /ˈvɜːtɪkəl/ 縦
diagonal /daɪˈæɡənəl/ 斜め
coordinate /kəʊˈɔːdɪˌneɪt/ 座標
row /rəʊ/ 行
column /ˈkɒləm/ 列