348. Design Tic-Tac-Toe

Medium 685 46 Add to List Share

Design a Tic-tac-toe game that is played between two players on a *n* x *n* grid.

You may assume the following rules:

1. A move is guaranteed to be valid and is placed on an empty block.
2. Once a winning condition is reached, no more moves is allowed.
3. A player who succeeds in placing *n* of their marks in a horizontal, vertical, or diagonal row wins the game.

Example:

```
Given n = 3, assume that player 1 is "X" and player 2 is "O" in the board.

TicTacToe toe = new TicTacToe(3);

toe.move(0, 0, 1); -> Returns 0 (no one wins)
|X| | |
| | | |    // Player 1 makes a move at (0, 0).
| | | |

toe.move(0, 2, 2); -> Returns 0 (no one wins)
|X| |O|
| | | |    // Player 2 makes a move at (0, 2).
| | | |

toe.move(2, 2, 1); -> Returns 0 (no one wins)
|X| |O|
| | | |    // Player 1 makes a move at (2, 2).
| | |X|

toe.move(1, 1, 2); -> Returns 0 (no one wins)
|X| |O|
| |O| |    // Player 2 makes a move at (1, 1).
| | |X|

toe.move(2, 0, 1); -> Returns 0 (no one wins)
|X| |O|
| |O| |    // Player 1 makes a move at (2, 0).
|X| |X|

toe.move(1, 0, 2); -> Returns 0 (no one wins)
|X| |O|
|O|O| |    // Player 2 makes a move at (1, 0).
|X| |X|

toe.move(2, 1, 1); -> Returns 1 (player 1 wins)
|X| |O|
|O|O| |    // Player 1 makes a move at (2, 1).
|X|X|X|
```

Follow up:
Could you do better than O(n^2) per `move()` operation?