Homework due Jul 13, 2021 22:00 +06

Exercise 1

1/1 point (graded)

For our tic-tac-toe board, we will use a numpy array with dimension 3 by 3.

Write a function `create_board()` that creates such a board with the value of each cell set to the integer 0.

Call `create_board()` and store it.

What is the correct numpy function to initialize our tic-tac-toe board?

- ○ `np.empty((3,3), dtype=int)`
- ● `np.zeros((3,3), dtype=int)`
- ○ `np.zeros_like(3, dtype=int)`
- ○ `np.full((3,3), dtype=int)`

✔

| Submit | You have used 1 of 2 attempts |

✔ Correct (1/1 point)

Exercise 2

1/1 point (graded)

Players 1 and 2 will take turns changing values of this array from a 0 to a 1 or 2, indicating the number of the player who places a marker there.
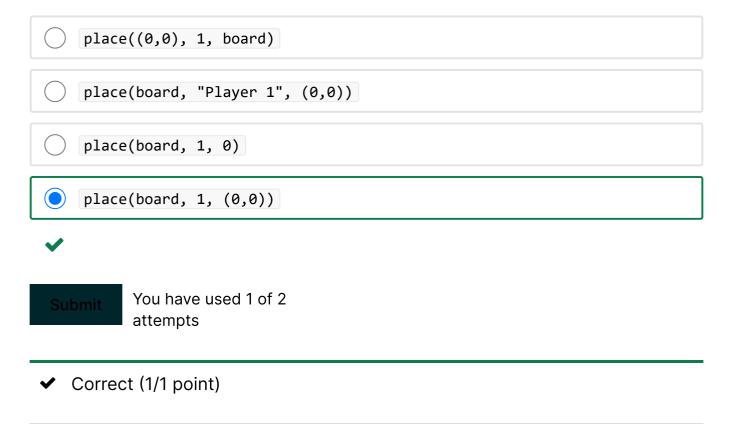
Create a function `place(board, player, position)`, where:

- `player` is the current player (an integer 1 or 2).

- `position` is a tuple of length 2 specifying a desired location to place their marker.

Your function should only allow the current player to place a marker on the board (change the board position to their number) if that position is empty (zero).

Use `create_board()` to store a board as `board`, and use `place` to have Player 1 place a marker on location (0, 0).

What is the correct way to use the `place` function to have Player 1 place a marker on location (0,0)?

○ `place((0,0), 1, board)`

○ `place(board, "Player 1", (0,0))`

○ `place(board, 1, 0)`

◉ `place(board, 1, (0,0))`

✔

Submit   You have used 1 of 2
attempts

✔ Correct (1/1 point)

Exercise 4

1/1 point (graded)

The next step is for the current player to place a marker among the available positions. In this exercise, we will select an available board position at random and place a marker there.
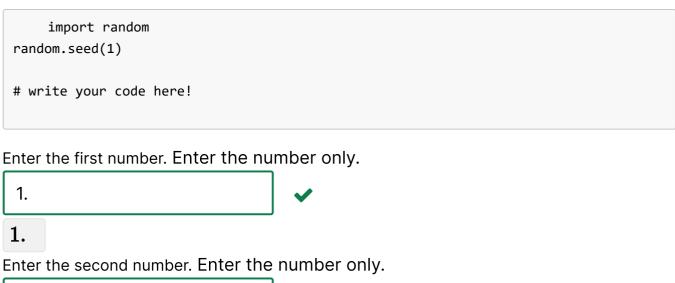
Write a function `random_place(board, player)` that places a marker for the current player at random among all the available positions (those currently set to 0).

Find possible placements with `possibilities(board)`.

Select one possible placement at random using `random.choice(selection)`.

Note that `board` is already defined as at the end of Exercise 2. Call `random_place(board, player)` to place a random marker for Player 2, and store this as board to update its value.

Use this code to get you started:

```
    import random
random.seed(1)


# write your code here!
```

Enter the first number. Enter the number only.

```
1.
```
✔

1.

Enter the second number. Enter the number only.

```
0.
```
✔

0.

Submit   You have used 2 of 5 attempts

✔ Correct (1/1 point)

Exercise 5

1/1 point (graded)

We will now have both players place three markers each.

A new board is given by the sample code. Call `random_place(board, player)` to place three pieces each on board for players 1 and 2.
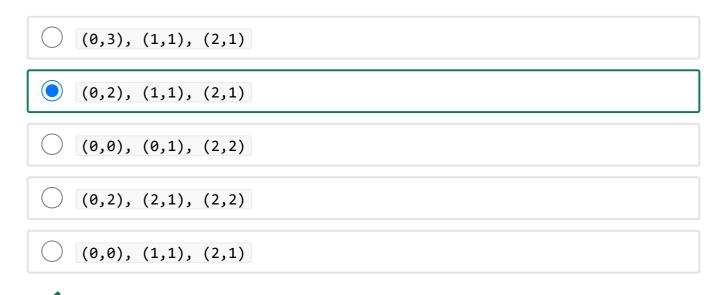
Print `board` to see your result.

Start with this sample code:

```
        random.seed(1)
 board = create_board()

 # write your code here!
```

At what positions does player 1 have markers after three rounds of random placement?

○ (0,3), (1,1), (2,1)

◉ (0,2), (1,1), (2,1)

○ (0,0), (0,1), (2,2)

○ (0,2), (2,1), (2,2)

○ (0,0), (1,1), (2,1)

✔

Submit   You have used 1 of 2 attempts

✔ Correct (1/1 point)