

## ✓ LAB 1

```

import numpy as np
import random
array = np.full((3, 3), '-', dtype=object)
def generate(choice):
    for _ in range(9):
        a = random.randint(0, 2)
        b = random.randint(0, 2)
        if array[a][b] != "X" and array[a][b] != "O":
            array[a][b] = choice
        return
    print("No empty positions left! Its a draw")

def player(choice):
    row = int(input("Enter the Row Value (0-2): "))
    column = int(input("Enter the Column Value (0-2): "))

    if 0 <= row < 3 and 0 <= column < 3:
        if array[row][column] == "X" or array[row][column] == "O":
            print("Invalid row or column index. Position already taken.")
        else:
            array[row][column] = choice
    else:
        print("Invalid row or column index.")

def check_winner():
    for line in array:
        if line[0] == line[1] == line[2] and line[0] != '-':
            return line[0]

    for col in range(3):
        if array[0][col] == array[1][col] == array[2][col] and array[0][col] != '-':
            return array[0][col]

    if array[0][0] == array[1][1] == array[2][2] and array[0][0] != '-':
        return array[0][0]

    if array[0][2] == array[1][1] == array[2][0] and array[0][2] != '-':
        return array[0][2]

    return 0

choice = random.choice(["X", "O"])
print("You are", choice)
if choice == "X":
    generate("O")
else:
    generate("X")
print(array)

for i in range(1, 10):
    player(choice)
    if choice == "X":
        generate("O")
    else:
        generate("X")

    print(array)

winner = check_winner()
if winner != 0:
    print(f"The winner is: {winner}")
    break

```

```

↔ You are O
[['-' '-' 'X']
 ['- ' '-' '-']
 ['- ' '-' '-']]
Enter the Row Value (0-2): 1
Enter the Column Value (0-2): 1
[['X' '-' 'X']
 ['- ' 'O' '-']
 ['- ' '-' '-']]
Enter the Row Value (0-2): 0
Enter the Column Value (0-2): 1
[['X' 'O' 'X']
 ['- ' 'O' 'X']]

```

```
['-' '-' '-']  
Enter the Row Value (0-2): 2  
Enter the Column Value (0-2): 1  
[['X' 'O' 'X']  
 ['X' 'O' 'X']  
 ['- ' 'O' '- ']]  
The winner is: O
```

Start coding or [generate](#) with AI.