

Q) Implement Tic Tac Toe game

```
import numpy as np
board=np.array([[ '-','-', '-'],[ '-','-', '-'],[ '-','-', '-']])
current_player='X'
flag=0

def check_win():
    for i in range(3):
        if board[i][0] == board[i][1] == board[i][2] != '-':
            return True
    for i in range(3):
        if board[0][i] == board[1][i] == board[2][i] != '-':
            return True
    if board[0][0] == board[1][1] == board[2][2] != '-':
        return True
    if board[0][2] == board[1][1] == board[2][0] != '-':
        return True
    return False

def tic_tac_toe():
    n=0
    print(board)
    while n<9:
        if n%2==0:
            current_player='X'
        else :
```

```

    current_player='O'

row = int(input("Enter row: "))
col = int(input("Enter column: "))

if(board[row][col]=='-'):
    board[row][col]=current_player
    print(board)
    flag=check_win();
    if flag==1:
        print(current_player+' wins')
        break
    else:
        n=n+1
else :
    print("Invalid Position")

if n==9:
    print("Draw")

tic_tac_toe()

```

Output :

1) Draw

```

[ ['- ' '- ' '- ']]
[ ['- ' '- ' '- ']]
[ ['- ' '- ' '- ']]
Enter row: 0
Enter column: 1

```

```
[[ '-' 'X' '-' ]  
[ '-' '-' '-' ]  
[ '-' '-' '-' ]]
```

Enter row: 0

Enter column: 2

```
[[ '-' 'X' 'O' ]  
[ '-' '-' '-' ]  
[ '-' '-' '-' ]]
```

Enter row: 1

Enter column: 1

```
[[ '-' 'X' 'O' ]  
[ '-' 'X' '-' ]  
[ '-' '-' '-' ]]
```

Enter row: 2

Enter column: 1

```
[[ '-' 'X' 'O' ]  
[ '-' 'X' '-' ]  
[ '-' 'O' '-' ]]
```

Enter row: 2

Enter column: 2

```
[[ '-' 'X' 'O' ]  
[ '-' 'X' '-' ]  
[ '-' 'O' 'X' ]]
```

Enter row: 0

Enter column: 0

```
[[ 'O' 'X' 'O' ]  
[ '-' 'X' '-' ]  
[ '-' 'O' 'X' ]]
```

Enter row: 1

Enter column: 0

```
[[ 'O' 'X' 'O' ]  
[ 'X' 'X' '-' ]  
[ '-' 'O' 'X' ]]
```

Enter row: 1

Enter column: 2

```
[[ 'O' 'X' 'O' ]  
[ 'X' 'X' 'O' ]  
[ '-' 'O' 'X' ]]
```

Enter row: 2

Enter column: 0

```
[[ 'O' 'X' 'O' ]  
[ 'X' 'X' 'O' ]
```

```
['X' 'O' 'X']]
```

Draw

2) Win

```
['-' '-' '-']  
['-' '-' '-']  
['-' '-' '-']]
```

Enter row: 0

Enter column: 1

```
['-' 'X' '-']  
['-' '-' '-']  
['-' '-' '-']]
```

Enter row: 0

Enter column: 0

```
['O' 'X' '-']  
['-' '-' '-']  
['-' '-' '-']]
```

Enter row: 1

Enter column: 0

```
['O' 'X' '-']  
['X' '-' '-']  
['-' '-' '-']]
```

Enter row: 1

Enter column: 1

```
['O' 'X' '-']  
['X' 'O' '-']  
['-' '-' '-']]
```

Enter row: 1

Enter column: 2

```
['O' 'X' '-']  
['X' 'O' 'X']  
['-' '-' '-']]
```

Enter row: 2

Enter column: 2

```
['O' 'X' '-']  
['X' 'O' 'X']  
['-' '-' 'O']]
```

0 wins