

//TIC TAC TOE(Py)

```
def ConstBoard(board):  
    print("Current State Of Board : \n\n")  
    for i in range(0, 9):  
        if((i > 0) and (i % 3) == 0):  
            print("\n")  
        if(board[i] == 0):  
            print("- ", end=" ")  
        if (board[i] == 1):  
            print("O ", end=" ")  
        if(board[i] == -1):  
            print("X ", end=" ")  
        print("\n\n")
```

```
def User1Turn(board):  
    pos = input("Enter X's position from [1...9]: ")  
    pos = int(pos)  
    if(board[pos-1] != 0):  
        print("Wrong Move!!!")  
        exit(0)  
    board[pos-1] = -1
```

```
def User2Turn(board):  
    pos = input("Enter O's position from [1...9]: ")  
    pos = int(pos)  
    if(board[pos-1] != 0):  
        print("Wrong Move!!!")  
        exit(0)  
    board[pos-1] = 1
```

```
def minimax(board, player):  
    x = analyzeboard(board)  
    if(x != 0):  
        return (x*player)  
    pos = -1  
    value = -2  
    for i in range(0, 9):  
        if(board[i] == 0):  
            board[i] = player  
            score = -minimax(board, (player*-1))
```

```

if(score > value):
    value = score
    pos = i
    board[i] = 0
if(pos == -1):
    return 0
return value

```

```

def CompTurn(board):
    pos = -1
    value = -2
    for i in range(0, 9):
        if(board[i] == 0):
            board[i] = 1
            score = -minimax(board, -1)
            board[i] = 0
            if(score > value):
                value = score
                pos = i
    board[pos] = 1

```

```

def analyzeboard(board):
    cb = [[0, 1, 2], [3, 4, 5], [6, 7, 8], [0, 3, 6],
           [1, 4, 7], [2, 5, 8], [0, 4, 8], [2, 4, 6]]
    for i in range(0, 8):
        if(board[cb[i][0]] != 0 and board[cb[i][0]] == board[cb[i][1]] and board[cb[i][0]] ==
board[cb[i][2]]):
            return board[cb[i][2]]
    return 0

```

```

def main():
    choice = input("Enter 1 for single player, 2 for multiplayer: ")
    choice = int(choice)
    board = [0, 0, 0, 0, 0, 0, 0, 0, 0]
    if(choice == 1):
        print("Computer : O Vs. You : X")
        player = input("Enter to play 1(st) or 2(nd) :")
        player = int(player)
        for i in range(0, 9):
            if(analyzeboard(board) != 0):
                break
            if((i+player) % 2 == 0):
                CompTurn(board)
    else:

```

```

        ConstBoard(board)
        User1Turn(board)
    else:
        for i in range(0, 9):
            if(analyzeboard(board) != 0):
                break
            if((i) % 2 == 0):
                ConstBoard(board)
                User1Turn(board)
            else:
                ConstBoard(board)
                User2Turn(board)

    x = analyzeboard(board)
    if(x == 0):
        ConstBoard(board)
        print("Draw!!!")
    if(x == -1):
        ConstBoard(board)
        print("X Wins!!! Y Loose !!!")
    if(x == 1):
        ConstBoard(board)
        print("X Loose!!! O Wins !!!!")

main()

```