In [1]:
```
from IPython.display import clear_output
import random
```

In [2]:
```
def player():
    global x
    x = input("Enter the name of first player: ")
    clear_output()
    print(x,"has been assigned the 'X' marker!")
    global o
    o = input("Enter the name of second player: ")
    clear_output()
    print(o,"has been assigned the 'O' marker!")
```

In [3]:
```
win = 0
board = {7:' ',8:' ',9:' ',4:' ',5:' ',6:' ',3:' ',2:' ',1:' '}
```

In [4]:
```
def display_board():
    print (board[7] +"|"+ board[8] +"|"+ board[9])
    print (board[4] +"|"+ board[5] +"|"+ board[6])
    print (board[1] +"|"+ board[2] +"|"+ board[3])
```

In [5]:
```
o = "placeholder"
x = "placeholder"
last_played = random.choice((o,x))
def turn():
    global last_played
    print ("Press 1-9 to play")
    if last_played == o:
        last_played = x
        print (x,"'s Turn'")
    else:
        last_played = o
        print(o,"'s Turn'")
```

In [6]:
```
def winner():
    global win
    if board[7] == board[4] == board[1] == 'O' or board[8] == board[5] == board[2] == 'O' or board[9]
        print(o, "won!")
        win = 1
    elif board[7] == board[5] == board[3] == 'O' or board[9] == board[5] == board[1] == 'O':
        print(o, "won!")
        win = 1
    elif board[4] == board[5] == board[6] == 'O' or board[1] == board[2] == board[3] == 'O' or board[7
        print (o, "won!")
        win = 1
    elif board[7] == board[4] == board[1] == 'X' or board[8] == board[5] == board[2] == 'X' or board[9
        print(x, "won!")
        win = 1
    elif board[7] == board[5] == board[3] == 'X' or board[9] == board[5] == board[1] == 'X':
        print(x, "won!")
        win = 1
    elif board[4] == board[5] == board[6] == 'X' or board[1] == board[2] == board[3] == 'X'  or board[
        print (x, "won!")
        win = 1
    elif board[1] != ' ' and board[2] != ' ' and board[3] != ' ' and board[4] != ' ' and board[5] != '
        print ("Draw")
        win = 1
    else:
        pass
```

In [7]:
```
def marker():
    global piece
    if last_played == o:
        piece = 'O'
    else:
        piece = 'X'
```

In [8]:
```
def game(a):
    global board
    if a == 1:
        board[1] = piece
    elif a == 2:
        board[2] = piece
    elif a == 3:
        board[3] = piece
    elif a == 4:
        board[4] = piece
    elif a == 5:
        board[5] = piece
    elif a == 6:
        board[6] = piece
    elif a == 7:
        board[7] = piece
    elif a == 8:
        board[8] = piece
    elif a == 9:
        board[9] = piece
    else:
        print ("Please input the correct number next time")
```

In [9]:
```
def place(a):
    global number
    q = 0
    while q == 0:
        if board[a] == 'O' or board[a] == 'X':
            print("Already filled! Try another location")
            number = int(input())
            a = number
        else:
            q = 1
            game(number)
```

In [10]:
```
def newgame():
    global board
    board2 = {7:' ',8:' ',9:' ',4:' ',5:' ',6:' ',3:' ',2:' ',1:' '}
    board = board2
    global win
    win = 0
```

In [11]:
```
def playgame():
    global board
    global number
    global piece
    global last_played
    global win
    player()
    while win == 0:
        turn()
        err = 0
        while err == 0:
            try:
                number = int(input())
                while number not in [1,2,3,4,5,6,7,8,9]:
                    print ("Enter a number between 1-9!")
                    number = int(input())
            except:
                print ("Enter a number!")
            else:
                err = 1
        marker()
        place(number)
        clear_output()
        display_board()
        winner()
        if win == 1:
            break
```

In [ ]:
```
1 newgame()
2 playgame()
```

```
 | |
X|O|
 | |
Press 1-9 to play
bb 's Turn'
Enter a number!
```

In [ ]:
```
1
```

In [ ]:
```
1
```