# Session 7

* The Tic Tac Toe game

### 1) **Displaying the Tic-Tac-Toe Board**

**User will enter Numbers between 1-9**

1 | 2 | 3   
=================  
 4 | 5 | 6  
=================  
 7 | 8 | 9

B = [" ", " ", " "," ", " ", " "," ", " ", " "]  
  
**def** print\_board():  
 print(" "+B[0]+" "+"|"+" "+B[1]+" "+"|"+" "+B[2]+" ")  
 print("=================")  
 print(" "+B[3]+" "+"|"+" "+B[4]+" "+"|"+" "+B[5]+" ")  
 print("=================")  
 print(" "+B[6]+" "+"|"+" "+B[7]+" "+"|"+" "+B[8]+" ")

print\_board()

| |   
=================  
 | |   
=================  
 | |

**We can try editing the values of elements in list B. This will cause the elements in the Board to also change**

B = [" ", " ", " ", "X", " ", " "," ", " ", " "]  
  
**def** print\_board():  
 print(" "+B[0]+" "+"|"+" "+B[1]+" "+"|"+" "+B[2]+" ")  
 print("=================")  
 print(" "+B[3]+" "+"|"+" "+B[4]+" "+"|"+" "+B[5]+" ")  
 print("=================")  
 print(" "+B[6]+" "+"|"+" "+B[7]+" "+"|"+" "+B[8]+" ")

print\_board()

### 2) Create a make\_move function

### Function to take a move. We require two arguments player and position

### 

### 3) Create a make is\_winner function

### Function to check who is the winner. We require one argument player (‘X’ or ‘O’). The code checks for eight possible winning combinations in the game, and each winning combination is checked on a separate line. To make the code more readable, the code has been split into multiple lines using the escape sequence after each "or" statement.

### 4) Create a makeis\_board\_full function

To check if our board is full or not.

### 5) The Game Loop

**The game Loop is responsible for controlling the entire game**

**for** x **in** range(0,9):  
 in1 = int(input("enter a position :"))  
   
 **if** x%2 == 0:  
 B[in1-1] = 'X'  
 **else** :  
 B[in1-1] = 'O'  
  
 print\_board()

**Running the above cell will cause the game to start asking users to enter positions and filling the positions with either X or O depending on whose turn it is**

## HOMEWORK

1. In the Tic-Tac-Toe Game, try to add a function that will help us tell if someone has won the game and stop the for-loop

## HOMEWORK SOLUTION

**def** check\_win():  
 **if** B[0] == 'X' **and** B[1] == 'X' **and** B[2] == 'X':  
 **return** "x won"  
 **if** B[0] == 'X' **and** B[3] == 'X' **and** B[6] == 'X':  
 **return** "x won"  
   
**for** x **in** range(0,9):  
 in1 = int(input("enter a position :"))  
   
 **if** x%2 == 0:  
 B[in1-1] = 'X'  
 **else** :  
 B[in1-1] = 'O'  
  
 print\_board()  
 check = check\_win()  
 **if** check == 'x won':  
 print("x has won")  
 **break**