Tic Tac Toe Logic

**Board setup**

The board is set up using a double set to establish tic tac toe board where there are 9 places to make a move

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

This table is set up labeled 0-8 because the set must start with 0

|  |  |  |
| --- | --- | --- |
| 0 | 1 | 2 |
| 3 | 4 | 5 |
| 6 | 7 | 8 |

**Determining Win**

To determine a win the algorithm will scan the board to tell if X has the combination win or does O.

P1 = X

P2 = O

GD = Game Draw

Win = R

If X(p) in board spots [0,1,2], [0,3,4] [0,4,8], [2,4,6], [3,4,5], [2,5,8], [1,4,7], [6,7,8] that is a win

P ^ (a^b^c) 🡪 R

If O(q) in board spots [0,1,2], [0,3,4] [0,4,8], [2,4,6], [3,4,5], [2,5,8], [1,4,7], [6,7,8] that is a win

Q ^ (a^b^c) 🡪 R

If no win is detected then the game is a draw

--|R 🡪 GD

**Making sure players do not override each other’s boxes**

To make sure players do not override each other’s space on the grid there has to be an if statement involved

If P1’s move is equal to P2’s past moves then input new move p1

P = Q 🡪 new P

Then vice versa for P2

Q = P 🡪 new Q