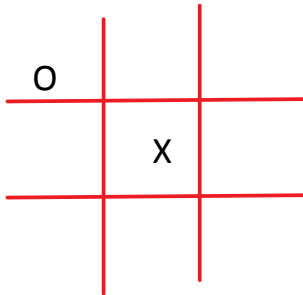# Tic-Tac-Toe

Step 7 :

a) When the program starts, it randomly picks any of available 9 cells to make its first move.. Let's assume it picked cell 5 (center piece, number is 5) and User has then selected top Left corner (number 1)..


Since every moves are recorded, hence, as per the program the current state of board is {5,1}

b) From 2nd move onward, program will try to match the current board state (ie {5,1}) in winning.properties file (first). If this is not found, then it will look in draw.properties and then finally in loss.properties file.
   ► If loss.properties file also have not got any matching combination then program will randomly pick a cell from remaining options.

Let's consider a scenarios. where winning.properties file has one of the recorded sequence like {5,1,3,2,7}. Since the first two element of this sequence matches with our current board state, hence the program will select this sequence and pick cell 3 in this move.

Note: if match is found in winning or draw files then program will blindly follow the next element in the sequence.
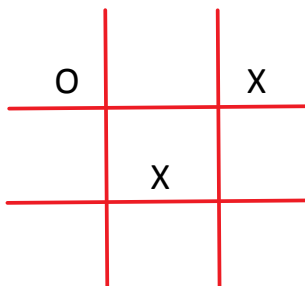
Now the state of board is {5,1,3}

Let's assume User select cell 7 to block Program win
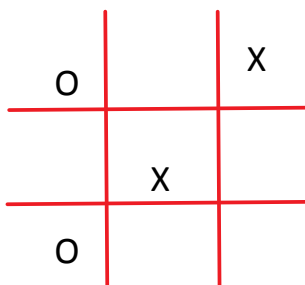
state of board is {5,1,3,7}

c) Now it's time for program to make 3rd move. It will again search winning.properties file for a sequence that represent current state of {5,1,3,7}.
   ► Let's assume there is no matching sequence in winning and draw properties file but Loss.properties file has sequence of {5,1,3,7,2,4}. This sequence was recorded in past then program failed to anticipate User's move and made a wrong selection.

Note: if match is found in loss files then program will pick the (next+1) element in the sequence.
   ► So in this case program will to select (next+1) element in the matching sequence (ie. 4 and not 2).

```
 O  |    | X
----+----+----
 X  | X  |
----+----+----
 O  |    |
```

state of board is {5,1,3,7,4}

Now User may pick cell 6 to avoid a Loss..

```
 O  |    | X
----+----+----
 X  | X  | O
----+----+----
 O  |    |
```

state of board is {5,1,3,7,4,6}

d) Now it's time to make 4th move and this time program may not find any match in winning, draw or loss files for current state {5,1,3,7,4}.
   ► In this case program will pick randomly any cell from available options of 2,8,9.
   ► And if it wins, draw or loss from this random selection, it will update the files accordingly.