FinishedWorkingVersion_3

February 26, 2018

1 Finished Working Version 2

1.1 How to Play

There are two players for the game.

The goal of the game is to get three noughts or crosses aligned within a 3x3 grid.

This can occur horizontally, vertically or diagonally.

If there no noughts or crosses aligned, the players have drawed and the game starts again.

```
In [ ]: Player_1 = 'X'
        Player_2 = 'O'

        def clear_board():
            board = [" "," "," "," "," "," "," "," "," "," "," "] # Creates empty spaces for the boa
            return board

        Continue = "Yes"

        def print_board(board): # Prints the board in a grid format
            print('  {}  | {} |  {}  '.format(board[1],board[2],board[3]))
            print('---------------')
            print('  {}  | {} |  {}  '.format(board[4],board[5],board[6]))
            print('---------------')
            print('  {}  | {} |  {}  '.format(board[7],board[8],board[9]))

        def winner(char,board):
            if (board[1] == board[2] == board[3] == char or
              board[4] == board[5] == board[6] == char or
              board[7] == board[8] == board[9] == char or # Checks horizontal wins

              board[1] == board[4] == board[7] == char or
              board[2] == board[5] == board[8] == char or
              board[3] == board[6] == board[9] == char or # Check vertical wins
```

```
      board[1] == board[5] == board[9] == char or # Check diagonal wins
      board[3] == board[5] == board[9] == char):
        return True
    else:
        return False

    if (board[1]!=" " and board[2]!=" " and board[3]!=" " and board[4] !=" " and board[5
        return True
    else:
        return False

    pass

def player_win(Player_1,Player_2,board): # Check if one of the players have consecutive
    if winner(Player_1,board):                # Prints out which player wins
        print("Player 1 wins!!!")
    elif winner(Player_2,board):
        print("Player 2 wins!!!")
        return True
    else:
        return False

def Game():

    global board
    board = clear_board() # Create a clear board
    print("---------- START -----------")
        while not player_win(Player_1,Player_2,board): # if there is no winner the game
            print("Player One:")
            placement = int(input("Select a position"))
            board[placement] = Player_1
            print_board(board)
            player_win(Player_1,Player_2,board)
            print("Player Two:")
            placement = int(input("Select a position"))
            board[placement] = Player_2
            print_board(board)
            player_win(Player_1,Player_2,board)

    #def tie(Player_1,Player_2,board):
        #if
            #return True
        #else:
            #print("It is a Draw!!!")
            #return False

Game()
```

In [2]:
```
def clear_board():
    board = [' ',' ',' ',' ',' ',' ',' ',' ',' ']
    return board

def print_board(board):
    print('  {}  | {} |  {}  '.format(board[0],board[1],board[2]))
    print('---------------')
    print('  {}  | {} |  {}  '.format(board[3],board[4],board[5]))
    print('---------------')
    print('  {}  | {} |  {}  '.format(board[6],board[7],board[8]))

def won(char,board):
    """
    char: X or O
    it receives a char and board and return True if one of the win conditions
    is detected
    """
    if (board[0] == board[1] == board[2] == char or
        board[3] == board[4] == board[5] == char or
        board[6] == board[7] == board[8] == char or
        board[0] == board[3] == board[6] == char or
        board[1] == board[4] == board[7] == char or
        board[2] == board[5] == board[8] == char or
        board[0] == board[4] == board[8] == char or
        board[2] == board[4] == board[6] == char):
        return True
    else:
        return False

def someone_won(player,board):
    """
    checks if any player won
    """
    if won(player,board):
        if player == 'X':
            print('Player 1 wins!!!')
        else:
            print('Player 2 wins!!!')
        return True
    else:
        return False

def main():
    player = 'X'
    next_player = 'O'
    board = clear_board()
    print("---------- START -----------")
    print("Guide to positions")
```

```
            print('  0  | 1 |  2  ')
            print('---------------')
            print('  3  | 4 |  5  ')
            print('---------------')
            print('  6  | 7 |  8  ')
            print('\n')
            while True:
                print('Current board status')
                print_board(board)
                print('Player {}:'.format(player))
                var = int(input('Select a position:'))
                board[var] = player
                print_board(board)
                if someone_won(player,board) == True:
                    return
                player, next_player = next_player, player

        main()
```

```
---------- START -----------
Guide to positions
  0  | 1 |  2
---------------
  3  | 4 |  5
---------------
  6  | 7 |  8


Current board status
     |   |
---------------
     |   |
---------------
     |   |
Player X:
Select a position:5
     |   |
---------------
     |   |  X
---------------
     |   |
Current board status
     |   |
---------------
     |   |  X
---------------
     |   |
Player O:
```

```
Select a position:4
     |   |
---------------
     | O |  X
---------------
     |   |
Current board status
     |   |
---------------
     | O |  X
---------------
     |   |
Player X:
Select a position:2
     |   |  X
---------------
     | O |  X
---------------
     |   |
Current board status
     |   |  X
---------------
     | O |  X
---------------
     |   |
Player O:
Select a position:8
     |   |  X
---------------
     | O |  X
---------------
     |   |  O
Current board status
     |   |  X
---------------
     | O |  X
---------------
     |   |  O
Player X:
Select a position:1
     | X |  X
---------------
     | O |  X
---------------
     |   |  O
Current board status
     | X |  X
---------------
```

```
     | O |  X
---------------
     |   |  O
Player O:
Select a position:0
  O  | X |  X
---------------
     | O |  X
---------------
     |   |  O
Player 2 wins!!!
```