

AI lab test - 1

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Date : 10/11/20

Harsha

Implement # multi,

computer vs computer tictactoe game
Code :

```
def is_empty(tile)
```

```
import random
```

```
def comp_move()
```

```
import random
```

```
class TicTacToe:
```

```
import random
```

```
def comp_move(self):
```

```
self.board = [ "" for i in range(10)]
```

```
def display_board(board)
```

```
    print (str(board[0])+" "+board[1] +board[2])
```

```
    print ( str ( board[3]+ "board[4]+ board[5])
```

```
    print ( str ( board[6]+board[7]+board[8]
```

```
def is_winner(board, ch)
```

```
    return board[0]==board[1]==board[2]
```

```
    or board[3]==board[4]==board[5]
```

```
    or board[6]==board[7]==board[8]
```

```
    or board[0]==board[4]==board[8] or
```

```
    board[2]==board[5]==board[6] or
```

```
    board[0]==board[3]==board[6] or
```

```
    board[1]==board[4]==board[7] or
```

```
    board[2]==board
```



```

def player Move
def Comp_move():
    possible_moves = [x for x, letter in
                       enumerate(board) if
                       letter == ' ' and x != 0]

```

```

for mark in ['O', 'X']:
    for i in range(possible_moves):
        copy_board = board[:]
        copy_board[i] = mark
        if isWinner(copy_board, mark):
            return i

```

~~corners~~

cornersOpen = []

```

for i in possible_moves:
    if i in [1, 3, 7, 9]:

```

~~Get append~~

cornersOpen.append(i)

```

if cornersOpen:

```

move = random.sample(cornersOpen, 1)

[0]

takes a free corner space

```

if 5 in possible_moves: # centre
    move = 5
    return 5

```


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```
e edgesOpen = []  
for i in possible_moves:  
    if i in [2, 4, 6, 8]:  
        edgesOpen.append(i)  
  
if edgesOpen:  
    move = random.sample(edgesOpen, 1)  
    return move
```

```
def main():
```

```
    while board_not_full(board):  
        play_move()  
        display_board()
```

```
    if is_winner(board, 'x'):  
        print("x wins")  
    if is_winner(board, 'o'):  
        print("o wins")
```

```
    move = comp_move()
```

```
    if not move:
```

```
        print("It's a tie");
```

```
    else:
```

```
        make_move('o', move)
```


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Date:

else:

compmove('x', move)

print('Computer placed 'x' in
position 'move') in

displayBoard()

if isWinner(board, 'x'):

print('Computer wins')

break

move = compmove()

if not move:

print('Tie')

return

else:

makeMove('o', move)

displayBoard()

if isWinner(board, 'o'):

print('Computer 2 wins')

break

if not notFull(board):

print('Tie');

if __name__ == "__main__":
main()