

1/10/24

classmate

Date _____

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Implement Tic-Tac-Toe Game:-

Algorithm:

```
board = [[' ',' ',' '], [' ',' ',' '], [' ',' ',' ']]
```

game-over():

for i ← 0 to 2:

if board[0][i] == board[1][i] == board[2][i] != '':
return True, board[0][i].

for i ← 0 to 2

if board[i][0] == board[i][1] == board[i][2] != '':
return True, board[i][0].

if board[0][0] == board[1][1] == board[2][2] != '':
return True, board[0][0].

if board[0][2] == board[1][1] == board[2][0] != '':
return True, board[1][1].

return False,

display-board()

num-generator()

r = random.randint(0)

c = random.randint(0, 2)

return r, c

take-cell()

r = int(input())

c = int(input())

return r, c.

counter = 0.

display-board().

while True:

 r1, c1 = Take-cell()

 while board[r1-1][c1-1] != '':

 print("Occupied").

 board[r1-1][c1-1] = 'X'.

 counter += 1.

 b, c = game-over()

 display-board().

 if b:

 print("won").

 break.

 r2, c2 = num-generator()

 while board[r2][c2] != '':

 r2, c2 = num-generator()

 board[r2][c2] = 'O'.

 counter += 1.

 display-board.

 b, c = game-over().

 if b:

 print("won").

 break.

 if counter == 9:

 print("draw").

 break.

Output:

Enter row and column: 1 1

X		O

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2, 2

X		O
	X	
O		

3, 3

X	O	O
	X	
O		X

X won the game.

Run 1/10/24

State space diagram:

