Computer vs. Computer.

C. Karan Naidu
1BM18CS042

AI Lab-2

TIC TAC TOE.

```
import numpy as np
import random
from time import sleep.

def create_board():
    return (np.array([[0, 0, 0],
                      [0, 0, 0],
                      [0, 0, 0]]))

def possibilities(board):
    l = []
    for i in range(len(board)):
        for j in range(len(board.)):
            if board[i][j]==0:
                l.append((i, i)).
    return(l).
```

```
def row_win (board, player):
for x in range (len (board)):
    win = True.

    for y in range (len(board)):
if board [x, y] != player:
        win= False
        continue.

    if win = True.
    return (win)
    return (win).
def diag_win (board, player):
    win = True
    y = 0
    for x in range (len (board)):
if board [x, x] != player:
        win= False
    if win:
        return win.
    win = True.
```

C. Karam Naidu
1BM18CS042

```
if win:
    for x in range(len(board)):
        y = len(board) - 1 - x
        if board[x, y] != player:
            win = False

    return win

# Evaluate whether a win or tie.
def evaluate(board):
    winner = 0.

    for player in [1, 2]:
        if (row_win(board, player) or
            col_win(board, player) or
            diag_win(board, player)):

            winner = player.
    if np.all(board != 0) and winner == 0:
        winner = -1
    return winner.
```

C. Karam Naidu

1BM18CS042

```
# Main function to start the game
def play_game():
    board, winner, counter = create_board(), 0, 1
    print(board)
    sleep(2)
    while winner == 0:
        for player in [1, 2]:
            board = random_place(board, player)
            print("Board after " + str(counter) + " move").
            print(board)
            sleep(2)
            counter += 1
            winner = evaluate(board)
            if winner != 0:
                break
    return(winner)
print("Winner is: " + str(play_game()))
```

C. Karan Naidu
1BM18CS042