```
elif (board[5] == board[8] and board[5] == board[2]
    and board[2] != ' '):
    return True
elif (board[1] == board[4] and board[1] == board[7]
    and board[1] != ' '):
    return True
elif (board[2] == board[5] and board[2] == board[8]
    and board[2] != ' '):
    return True
elif (board[3] == board[6] and board[3] == board[9]
    and board[3] != ' '):
    return True
else:
    return False

def check_move_for_win(move):
    if (board[1] == board[2] and board[1] == board[3]
    and board[1] == move)
    return True
elif (board[4] == board[5] and board[4] == board[6]
    and board[4] == move)
    return True
elif (board[7] == board[8] and board[7] == board[9]
    and board[7] == move)
    return True
elif (board[1] == board[4] and board[1] == board[7]
    and board[1] == move)
    return True.
elif (board[3] == board[5] and board[3] == board[7]
    and board[3] == move)
    return True.
elif (board[1] == board[4] and board[1] == board[7]
    and board[1] == move)
```

```
        return true
    elif (board[2] == board[5] and board[2] == board[8]
        and board[2] == move)
        return true
    elif (board[3] == board[6] and board[3] == board[0]
        and board[3] == move)
        return true
    else:
        return false

def checkDraw():
    for key in board.keys():
        if (board[key] == ' '):
            return false
    return true

def insertLetter(letter, position):
    if (spaceFree(position)):
        board[position] = letter
        printBoard(board)
        if (checkDraw()):
            print('Draw!')
        elif (checkWin()):
            if (letter == 'X'):
                print('Bot wins!')
            else:
                print('You win!')
            return
    else:
        print('Position taken, please pick a
            different position:')
        position = int(input('Enter new position:'))
        insertLetter(letter, position)
        return
```

```
player = 'O'
bot = 'X'

def playermove():
    position = int(input('Enter position for O:'))
    insertletter(player, position)
    return

def compmove():
    bestscore = -1000
    bestmove = 0
    for key in board.keys():
        if(board[key] == ' '):
            board[key] = bot
            score = minimax(board, False)
            board[key] = ' '
            if(score > bestscore):
                bestscore = score
                bestmove = key

    insertletter(bot, bestmove)
    return

def minimax(board, ismaximizing):
    if(checkwhichmarkwon(bot)):
        return 1;
    elif(checkwhichmarkwon(player)):
        return -1
    elif(checkDraw()):
        return 0
    if ismaximizing:
        bestscore = -1000
        for key in board.keys():
```

```
        if board[key] == ' ':
            board[key] = bot
            score = minimax(board, False)
            board[key] = ' '
            if (score > best_score):
                best_score = score
        return best_score
    else:
        best_score = -1000
        for key in board.keys():
            if board[key] == ' ':
                board[key] = player
                score = minimax(board, True)
                board[key] = ' '
                if (score < best_score):
                    best_score = score
        return best_score

while not checkwin():
    compmove()
    playermove()
```

o/p

```
 x |   |
---+---+---
   |   |
---+---+---
   |   |
```

Enter position for o: 3

04.10.24

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Date 4/10/24
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(1) TIC TAC TOE

I/P
```
board = {1:' ', 2:' ', 3:' ',
         4:' ', 5:' ', 6:' ',
         7:' ', 8:' ', 9:' '}

def printBoard(board):
    print(board[1] + '|' + board[2] + '|' + board[3])
    print('-+-+-')
    print(board[4] + '|' + board[5] + '|' + board[6])
    print('-+-+-')
    print(board[7] + '|' + board[8] + '|' + board[9])
    print('\n')

def spaceFree(pos):
    if (board[pos] == ' '):
        return True
    else:
        return False

def checkWin():
    if (board[1]== board[2] and board[1] == board[3]
        and board[1] != ' '):
        return True
    elif (board[4] == board[5] and board[4] == board[6]
        and board[4] != ' '):
        return True
    elif (board[7] == board[8] and board[7] == board[9]
        and board[7] != ' '):
        return True
    elif(board[1] == board[5] and board[1] == board[9]
        and board[1] != ' '):
        return True
```