```
def checkDraw():
    return all( board[key] != ' ' for key in board.keys())

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
        print('Position taken, please pick different
position')
        position = int(input('Enter new position: '))
        insertLetter(letter, position)

player = 'O'
bot = 'X'

def playerMove():
    position = int(input('Enter position for O: '))
    insertLetter(player, position)

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)

def minimax(board, isMaximizing):
    if checkMoveForWin(bot):
        return 1
    elif checkMoveForWin(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] = ''
                bestScore = max(score, bestScore)
        return bestScore
    else:
        bestScore = 1000
        for key in board.keys():
            if board[key] == '':
                board[key] = player
                score = minimax(board, True)
                board[key] = ''
```

```
            if board[key] == '':
                board[key] = bot
                score = minimax(board, False)
                board[key] = ''
                if score > bestScore:
                    bestScore = score
                    bestMove = key
        insertLetter(bot, bestMove)

def minimax(board, isMaximizing):
    if checkMoveForWin(bot):
        return 1
    elif checkMoveForWin(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] = ''
                bestScore = max(score, bestScore)
        return bestScore
    else:
        bestScore = 1000
        for key in board.keys():
            if board[key] == '':
                board[key] = player
                score = minimax(board, True)
                board[key] = ''
```

```
        bestScore = min(score, bestScore)
    return bestScore

while not checkWin():
    computerMove()
    playerMove()
```

Output:

Enter position: 5

X		

X		
	O	

Enter position: 3

X	X	
	O	

X	X	O
	O	

Enter position: 4

X	X	O
O	O	
X		

X	X	O
O	O	X
X		

Enter position: 9.

X	X	O
O	O	X
X	X	O

Draw!!

ok. 10/10