board = {1: ' ', 2: ' ', 3: ' ',

4: ' ', 5: ' ', 6: ' ',

7: ' ', 8: ' ', 9: ' '}

player = 'O'

computer = 'X'

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 spaceIsFree(position):

if board[position] == ' ':

return True

return False

def insertLetter(letter, position):

if spaceIsFree(position):

board[position] = letter

printBoard(board)

if checkDraw():

print("Draw!")

exit()

if checkWin():

if letter == 'X':

print("Bot wins!")

exit()

else:

print("Player wins!")

exit()

return

else:

print("Invalid position")

position = int(input("Please enter a new position: "))

insertLetter(letter, position)

return

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[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

elif (board[1] == board[5] and board[1] == board[9] and board[1] != ' '):

return True

elif (board[7] == board[5] and board[7] == board[3] and board[7] != ' '):

return True

else:

return False

def checkWhichMarkWon(mark):

if (board[1] == board[2] and board[1] == board[3] and board[1] == mark):

return True

elif (board[4] == board[5] and board[4] == board[6] and board[4] == mark):

return True

elif (board[7] == board[8] and board[7] == board[9] and board[7] == mark):

return True

elif (board[1] == board[4] and board[1] == board[7] and board[1] == mark):

return True

elif (board[2] == board[5] and board[2] == board[8] and board[2] == mark):

return True

elif (board[3] == board[6] and board[3] == board[9] and board[3] == mark):

return True

elif (board[1] == board[5] and board[1] == board[9] and board[1] == mark):

return True

elif (board[7] == board[5] and board[7] == board[3] and board[7] == mark):

return True

else:

return False

def checkDraw():

for key in board.keys():

if board[key] == ' ':

return False

return True

def playerMove():

position = int(input("Enter a position for 'O' from 1-9: "))

insertLetter(player, position)

return

def compMove():

bestScore = -800

bestMove = 0

for key in board.keys():

if board[key] == ' ':

board[key] = computer

score = minimax(board, False)

board[key] = ' '

if score > bestScore:

bestScore = score

bestMove = key

insertLetter(computer, bestMove)

return

def minimax(board, isMaximizing):

if checkWhichMarkWon(computer):

return 1

elif checkWhichMarkWon(player):

return -1

elif checkDraw():

return 0

if isMaximizing:

bestScore = -800

for key in board.keys():

if board[key] == ' ':

board[key] = computer

score = minimax(board, False)

board[key] = ' '

if score > bestScore:

bestScore = score

return bestScore

else:

bestScore = 800

for key in board.keys():

if board[key] == ' ':

board[key] = player

score = minimax(board, True)

board[key] = ' '

if score < bestScore:

bestScore = score

return bestScore

while not checkWin():

compMove()

playerMove()