import math

def print\_board(board):

for row in board:

print(" | ".join(row))

print("-" \* 5)

def check\_winner(board, player):

# Rows, columns, diagonals

for row in board:

if all(cell == player for cell in row):

return True

for col in range(3):

if all(board[row][col] == player for row in range(3)):

return True

if all(board[i][i] == player for i in range(3)) or \

all(board[i][2-i] == player for i in range(3)):

return True

return False

def is\_full(board):

return all(cell != " " for row in board for cell in row)

def minimax(board, depth, is\_maximizing):

if check\_winner(board, "O"): # Computer wins

return 1

if check\_winner(board, "X"): # Player wins

return -1

if is\_full(board):

return 0

if is\_maximizing: # Computer's move

best\_score = -math.inf

for i in range(3):

for j in range(3):

if board[i][j] == " ":

board[i][j] = "O"

score = minimax(board, depth + 1, False)

board[i][j] = " "

best\_score = max(score, best\_score)

return best\_score

else: # Player's move

best\_score = math.inf

for i in range(3):

for j in range(3):

if board[i][j] == " ":

board[i][j] = "X"

score = minimax(board, depth + 1, True)

board[i][j] = " "

best\_score = min(score, best\_score)

return best\_score

def best\_move(board):

best\_score = -math.inf

move = None

for i in range(3):

for j in range(3):

if board[i][j] == " ":

board[i][j] = "O"

score = minimax(board, 0, False)

board[i][j] = " "

if score > best\_score:

best\_score = score

move = (i, j)

return move

def tic\_tac\_toe():

board = [[" " for \_ in range(3)] for \_ in range(3)]

print("Welcome to Tic-Tac-Toe! You are 'X' and computer is 'O'.")

print\_board(board)

while True:

# Player move

while True:

try:

row = int(input("Enter row (0-2): "))

col = int(input("Enter col (0-2): "))

if board[row][col] == " ":

board[row][col] = "X"

break

else:

print("Cell already taken, try again.")

except (ValueError, IndexError):

print("Invalid input! Enter numbers 0-2.")

print\_board(board)

if check\_winner(board, "X"):

print("🎉 You win!")

break

if is\_full(board):

print("It's a draw!")

break

# Computer move

print("Computer's turn...")

move = best\_move(board)

if move:

board[move[0]][move[1]] = "O"

print\_board(board)

if check\_winner(board, "O"):

print("💻 Computer wins!")

break

if is\_full(board):

print("It's a draw!")

break

if \_\_name\_\_ == "\_\_main\_\_":

tic\_tac\_toe()

