import math

board = ['-'] \* 9

AI = 'O'

YOU = 'X'

def print\_board(board):

for i in range(0, 9, 3):

print(board[i] + ' | ' + board[i + 1] + ' | ' + board[i + 2])

print()

def check\_winner(board, player):

winning\_combinations = [

[0, 1, 2], [3, 4, 5], [6, 7, 8],

[0, 3, 6], [1, 4, 7], [2, 5, 8],

[0, 4, 8], [2, 4, 6]

]

for combo in winning\_combinations:

if all(board[i] == player for i in combo):

return True

return False

def is\_board\_full(board):

return all(cell != '-' for cell in board)

def minimax\_alpha\_beta(board, depth, alpha, beta, maximizing\_player):

if check\_winner(board, AI):

return 1

elif check\_winner(board, YOU):

return -1

elif is\_board\_full(board):

return 0

if maximizing\_player:

max\_eval = -math.inf

for i in range(9):

if board[i] == '-':

board[i] = AI

eval = minimax\_alpha\_beta(board, depth + 1, alpha, beta, False)

board[i] = '-'

max\_eval = max(max\_eval, eval)

alpha = max(alpha, eval)

if beta <= alpha:

break

return max\_eval

else:

min\_eval = math.inf

for i in range(9):

if board[i] == '-':

board[i] = YOU

eval = minimax\_alpha\_beta(board, depth + 1, alpha, beta, True)

board[i] = '-'

min\_eval = min(min\_eval, eval)

beta = min(beta, eval)

if beta <= alpha:

break

return min\_eval

def get\_best\_move(board):

best\_move = -1

best\_eval = -math.inf

for i in range(9):

if board[i] == '-':

board[i] = AI

eval = minimax\_alpha\_beta(board, 0, -math.inf, math.inf, False)

board[i] = '-'

if eval > best\_eval:

best\_eval = eval

best\_move = i

return best\_move

def play\_game():

while not is\_board\_full(board) and not (check\_winner(board, AI) or check\_winner(board, YOU)):

print\_board(board)

move = int(input("Enter your move (0-8): "))

if board[move] != '-':

print("Invalid move. Try again.")

continue

board[move] = YOU

if check\_winner(board, YOU):

print("Congratulations! You won!")

break

elif is\_board\_full(board):

print("It's a draw!")

break

print("AI is thinking...")

ai\_move = get\_best\_move(board)

board[ai\_move] = AI

if check\_winner(board, AI):

print\_board(board)

print("AI wins! Better luck next time.")

break

elif is\_board\_full(board):

print("It's a draw!")

break

play\_game()