Write the Python Program for Water Jug Problem

Program:

```
def check_winner(board, player):
    wins = [(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 a,b,c in wins:
        if board[a]==board[b]==board[c]==player:
            return True
    return False
def game_over(board):
    return check_winner(board,"X") or check_winner(board,"O") or " " not in board
def get_moves(board):
    return [i for i, spot in enumerate(board) if spot==" "]
def minimax(board, player):
    if check_winner(board,"X"):
        return 1
    if check_winner(board,"O"):
        return -1
    if " " not in board:
        return 0
    if player=="X":
        best = -100
        for move in get_moves(board):
            board[move]="X"
            best = max(best, minimax(board,"O"))
            board[move]=" "
        return best
    else:
        best = 100
        for move in get_moves(board):
            board[move]="O"
            best = min(best, minimax(board,"X"))
            board[move]=" "
        return best
board = [" "]*9
best_move = -1
best_score = -100
for move in get_moves(board):
    board[move]="X"
    score = minimax(board,"O")
    board[move]=" "
    if score > best_score:
        best_score = score
        best_move = move
```

Output: