

```
PLAYER_X, PLAYER_O, EMPTY = 1, -1, 0
```

```
def evaluate(b):  
    for i in range(3):  
        if b[i][0] == b[i][1] == b[i][2] != EMPTY: return b[i][0]  
        if b[0][i] == b[1][i] == b[2][i] != EMPTY: return b[0][i]  
    if b[0][0] == b[1][1] == b[2][2] != EMPTY: return b[0][0]  
    if b[0][2] == b[1][1] == b[2][0] != EMPTY: return b[0][2]  
    return 0
```

```
def isMovesLeft(b):  
    return any(EMPTY in row for row in b)
```

```
def minimax(b, isMax):  
    score = evaluate(b)  
    if score != 0 or not isMovesLeft(b): return score  
    best = -float('inf') if isMax else float('inf')  
    for i in range(3):  
        for j in range(3):  
            if b[i][j] == EMPTY:  
                b[i][j] = PLAYER_X if isMax else PLAYER_O  
                val = minimax(b, not isMax)  
                b[i][j] = EMPTY  
                best = max(best, val) if isMax else min(best, val)  
    return best
```

```
def findBestMove(b):  
    bestVal, move = -float('inf'), (-1, -1)  
    for i in range(3):
```

```
    for j in range(3):
        if b[i][j] == EMPTY:
            b[i][j] = PLAYER_X
            val = minimax(b, False)
            b[i][j] = EMPTY
            if val > bestVal:
                bestVal, move = val, (i, j)
    return move
```

```
def printBoard(b):
    for row in b:
        print(" ".join("X" if x == PLAYER_X else "O" if x == PLAYER_O else "." for x in row))
```

```
board = [
    [PLAYER_X, PLAYER_O, PLAYER_X],
    [PLAYER_O, PLAYER_X, EMPTY],
    [EMPTY, PLAYER_O, PLAYER_X]
]
```

```
print("Current Board:")
printBoard(board)
```

```
move = findBestMove(board)
print(f"Best Move: {move}")
board[move[0]][move[1]] = PLAYER_X
```

```
print("\nBoard after best move:")
printBoard(board)
```