1. TIC TAC TOE
2. HUMAN = 'X'
3. AI ='O'
4. EMPTY = ' '
5. WIN =[[0,1,2],[3,4,5],[6,7,8],[0,4,8],[2,4,6],[0,3,6],[1,4,7],[2,5,8]]
6. def checkWin(b):
7. for w in WIN:
8. if b[w[0]] != EMPTY and b[w[0]] == b[w[1]] == b[w[2]]:
9. return b[w[0]]
10. return None
11. def minimax(b,ai\_turn):
12. winner = checkWin(b)
13. if winner == HUMAN : return -1
14. if winner == AI : return 1
15. if EMPTY not in b : return 0
16. if ai\_turn:
17. best = -float('inf')
18. for i in range(9):
19. if b[i] == EMPTY:
20. b[i] = AI
21. best = max(best,minimax(b,False))
22. b[i]=EMPTY
23. return best
24. else:
25. best=float('inf')
26. for i in range(9):
27. if b[i] == EMPTY:
28. b[i] = HUMAN
29. best = min(best,minimax(b,True))
30. b[i]=EMPTY
31. return best
32. def ai\_move(b):
33. move=-1
34. score=-float('inf')
35. for i in range(9):
36. if b[i] == EMPTY:
37. b[i] = AI
38. best = minimax(b,False)
39. b[i]=EMPTY
40. if best > score:
41. score = best
42. move = i
43. return move
44. def print\_board(b):
45. print("\n")
46. for i in range(3):
47. print(" | ".join(b[i\*3:(i+1)\*3]))
48. if i < 2:
49. print("---------")
50. print("\n")
51. def main():
52. board = [EMPTY] \* 9
53. print("You are 'X', System is 'O'.")
54. print("Enter your move (0-8):")
55. print("0 | 1 | 2\n3 | 4 | 5\n6 | 7 | 8")
56. turn = input("Do you want to go first? (y/n): ").lower()
57. human\_turn = True if turn == 'y' else False
58. while True:
59. print\_board(board)
60. winner = checkWin(board)
61. if winner:
62. print(f"{winner} wins!")
63. break
64. if EMPTY not in board:
65. print("It's a draw!")
66. break
67. if human\_turn:
68. try:
69. move = int(input("Enter your move (0-8): "))
70. if board[move] != EMPTY:
71. print("Invalid move. Try again.")
72. continue
73. board[move] = HUMAN
74. except (ValueError, IndexError):
75. print("Invalid input. Try a number from 0 to 8.")
76. continue
77. else:y
78. move = ai\_move(board)
79. board[move] = AI
80. human\_turn = not human\_turn
81. if \_\_name\_\_ == "\_\_main\_\_":
82. main()

output:



