LP2 (AI) Lab Exp No.4

Title: - N-queen problem

def printSolution(board):

    for i in range(N):

        for j in range(N):

            print(" Q " if board[i][j] == 1 else " . ", end="")

        print()

def solveNQUtil(board, col, ld, rd, cl):

    if col >= N:

        return True

    for i in range(N):

        if (ld[i - col + N - 1] != 1 and rd[i + col] != 1) and cl[i] != 1:

            board[i][col] = 1

            ld[i - col + N - 1] = rd[i + col] = cl[i] = 1

            if solveNQUtil(board, col + 1, ld, rd, cl):

                return True

            board[i][col] = 0

            ld[i - col + N - 1] = rd[i + col] = cl[i] = 0

    return False

def solveNQ():

    global N

    N = int(input("Enter the value of N for N-Queens problem: "))

    board = [[0 for \_ in range(N)] for \_ in range(N)]

    ld = [0] \* (2 \* N - 1)

    rd = [0] \* (2 \* N - 1)

    cl = [0] \* N

    if not solveNQUtil(board, 0, ld, rd, cl):

        print("Solution does not exist")

        return False

    printSolution(board)

    return True

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

    solveNQ()

OUTPUT: -

