## 8 QUEENS PROBLEM

Ans:

```
def print_board(board):
    for row in board:
        print(" ".join(row))
    print("\n")

def is_safe(board, row, col, n):
    for i in range(col):
        if board[row][i] == 'Q':
            return False
    for i, j in zip(range(row, -1, -1), range(col, -1, -1)):
        if board[i][j] == 'Q':
            return False
    for i, j in zip(range(row, n), range(col, -1, -1)):
        if board[i][j] == 'Q':
            return False
    return True

def solve(board, col, n):
    if col >= n:
        print_board(board)
        return True  # Stop after the first solution is found

    for i in range(n):
        if is_safe(board, i, col, n):
            board[i][col] = 'Q'
            if solve(board, col + 1, n):
                return True
            board[i][col] = '.'

    return False
```

```
def solve_n_queens(n):
    board = [['.' for _ in range(n)] for _ in range(n)]
    if not solve(board, 0, n):
        print("No solution exists.")

solve_n_queens(8)
```

OUTPUT :

```
Q . . . . . .
. . . . . . Q .
. . . . Q . . .
. . . . . . . Q
. Q . . . . . .
. . . Q . . . .
. . . . . Q . .
. . Q . . . . .
```

SANJAY . S  ( 241801246 )