## Experiment:1

**1.Programs on Problem Sloving**

a).Write a program to solve 8 queen problem

Aim: To Find and write a program to solve 8 queen problem

#### Program:

N = 8

def solveNQueens(board, col):

if col == N:

print(board)

return True

for i in range(N):

if isSafe(board, i, col):

board[i][col] = 1

if solveNQueens(board, col + 1):

return True

board[i][col] = 0

return False

def isSafe(board, row, col):

for x in range(col):

if board[row][x] == 1:

return False

for x, y in zip(range(row, -1, -1), range(col, -1, -1)):

if board[x][y] == 1:

return False

for x, y in zip(range(row, N, 1), range(col, -1, -1)):

if board[x][y] == 1:

return False

return True

board = [[0 for x in range(N)] for y in range(N)]

if not solveNQueens(board, 0):

print("No solution found")

#### Output:

[[1, 0, 0, 0, 0, 0, 0, 0], [0, 0, 0, 0, 0, 0, 1, 0], [0, 0, 0, 0, 1, 0, 0, 0], [0, 0, 0, 0, 0, 0, 0, 1], [0, 1, 0, 0, 0, 0, 0, 0], [0, 0, 0, 1, 0, 0, 0, 0], [0, 0, 0, 0, 0, 1, 0, 0], [0, 0, 1, 0, 0, 0, 0, 0]]

Result: Thus the 8 queen program has been written and solved