Title of the Assignment: Design n-Queens matrix having first Queen placed. Use backtracking to place remaining Queens to generate the final n-queen‟s matrix.

Code:

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# Python3 program to solve N Queen
# Problem using backtracking
global N
N = 4
	def printSolution(board):
	for i in range(N):
		for j in range(N):
			print(board[i][j], end = " ")
		print()
# A utility function to check if a queen can
# be placed on board[row][col]. Note that this
# function is called when "col" queens are
# already placed in columns from 0 to col -1.
# So we need to check only left side for
# attacking queens
def isSafe(board, row, col):
	# Check this row on left side
	for i in range(col):
		if board[row][i] == 1:
			return False
	# Check upper diagonal on left side
	for i, j in zip(range(row, -1, -1),
		range(col, -1, -1)):
	if board[i][j] == 1:
		return False
	# Check lower diagonal on left side
	for i, j in zip(range(row, N, 1),
		range(col, -1, -1)):
	if board[i][j] == 1:
		return False
	return True
def solveNQUtil(board, col):
	# base case: If all queens are placed
	# then return true
	if col >= N:
		return True
```

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        # Consider this column and try placing
        # this queen in all rows one by one
        for i in range(N):
                if isSafe(board, i, col):
                        # Place this queen in board[i][col]
                        board[i][col] = 1
                        # recur to place rest of the queens
                        if solveNQUtil(board, col + 1) == True:
                        return True
                        # If placing queen in board[i][col
                        # doesn't lead to a solution, then
                        # queen from board[i][col]
                        board[i][col] = 0
        # if the queen can not be placed in any row in
        # this column col then return false
        return False
# This function solves the N Queen problem using
# Backtracking. It mainly uses solveNQUtil() to
# solve the problem. It returns false if queens
# cannot be placed, otherwise return true and
# placement of queens in the form of 1s.
# note that there may be more than one
# solutions, this function prints one of the
# feasible solutions.
def solveNQ():
        board = [ [0, 0, 0, 0],
                        [0, 0, 0, 0],
                        [0, 0, 0, 0],
                        [0, 0, 0, 0] ]
        if solveNQUtil(board, 0) == False:
                print ("Solution does not exist")
                return False
        printSolution(board)
        return True
# Driver Code
solveNQ()
```
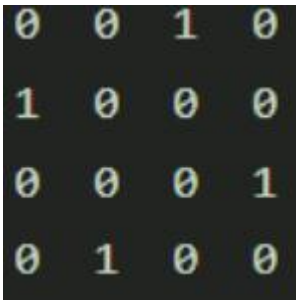

Output :


0 0 1 0
1 0 0 0
0 0 0 1
0 1 0 0