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1   Program to implement 8 Queen Problems

4 – Queens' problem is to place 4 – queens on a 4 x 4 chessboard
in such a manner that no queens attack each other by being in the
same row, column, or diagonal.

We will look for the solution for n=4 on a 4 x 4 chessboard in
this.

```
board = [[0]*4 for _ in range(4)]
def attack(i, j):

    for k in range(0,4):
        if board[i][k]==1 or board[k][j]==1:
            return True

    for k in range(0,4):
        for l in range(0,4):
            if (k+l==i+j) or (k-l==i-j):
                if board[k][l]==1:
                    return True
    return False
def N_queens(n):
    if n==0:
        return True
    for i in range(0,4):
        for j in range(0,4):
```

```python
            if (not(attack(i,j))) and (board[i][j]!=1):
                board[i][j] = 1
                if N_queens(n-1)==True:
                    return True
                board[i][j] = 0
    return False
N_queens(4)
for i in board:
    print (i)
```


Figure 1: Output of the program