In [2]:

```
#N = int(input())
N=4
counter = 0
board = [[0]*N for _ in range(N)]

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

def N_queen(n):
    global counter
    if n==0:
        return True
    for i in range(0,N):
        for j in range(0,N):
            if (not(is_attack(i,j))) and (board[i][j]!=1):
                board[i][j] = 1
                if N_queen(n-1)==True:
                    return True
                board[i][j] = 0
    print("\nLoop "+str(counter)+":")
    for i in board:
        print (i)
    counter += 1
    return False

N_queen(N)
print("\nLoop "+ str(counter)+": ")
for i in board:
    print (i)
```

```
Loop 0:
[1, 0, 0, 0]
[0, 0, 1, 0]
[0, 0, 0, 0]
[0, 1, 0, 0]

Loop 1:
[1, 0, 0, 0]
[0, 0, 1, 0]
[0, 0, 0, 0]
[0, 0, 0, 0]

Loop 2:
[1, 0, 0, 0]
[0, 0, 0, 1]
[0, 1, 0, 0]
[0, 0, 0, 0]

Loop 3:
```

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

Loop 4:
[1, 0, 0, 0]
[0, 0, 0, 1]
[0, 0, 0, 0]
[0, 0, 0, 0]

Loop 5:
[1, 0, 0, 0]
[0, 0, 0, 1]
[0, 1, 0, 0]
[0, 0, 0, 0]

Loop 6:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 1, 0, 0]
[0, 0, 0, 0]

Loop 7:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 1]
[0, 1, 0, 0]

Loop 8:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 1]
[0, 0, 0, 0]

Loop 9:
[1, 0, 0, 0]
[0, 0, 1, 0]
[0, 0, 0, 0]
[0, 1, 0, 0]

Loop 10:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 1]
[0, 1, 0, 0]

Loop 11:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 0]
[0, 1, 0, 0]

Loop 12:
[1, 0, 0, 0]
[0, 0, 0, 1]
[0, 0, 0, 0]
[0, 0, 1, 0]

Loop 13:
[1, 0, 0, 0]
```

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

Loop 14:
[1, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 0]
[0, 0, 0, 0]

Loop 15:
[0, 1, 0, 0]
[0, 0, 0, 1]
[1, 0, 0, 0]
[0, 0, 1, 0]
```