8 QUEENS PROBLEM

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Program:

```python
N= int(input("Enter the number of queens :"))

board = [[0]*N for _ in range(N)]

def 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_queens(n):

        if n==0:

                return True

        for I in range (0,N):

                for j in range(0,N):

                        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(N)

for I in board:

        print(i)
```

OUTPUT:

```
==== RESTART: C:/Users/acer28/AppData/Local/Programs/Python/Python39/back.py ===
Enter the number of queens :8
[1, 0, 0, 0, 0, 0, 0, 0]
[0, 0, 0, 0, 1, 0, 0, 0]
[0, 0, 0, 0, 0, 0, 0, 1]
[0, 0, 0, 0, 0, 1, 0, 0]
[0, 0, 1, 0, 0, 0, 0, 0]
[0, 0, 0, 0, 0, 0, 1, 0]
[0, 1, 0, 0, 0, 0, 0, 0]
[0, 0, 0, 1, 0, 0, 0, 0]
>>>
```