8 QUEEN PROBLEM

PROGRAM:

```
def isSafe(mat,r,c):
    for i in range(r):
        if mat[i][c] == "Q":
            return False
    (i,j) = (r, c)
    while i >= 0 and j >=0:
            if mat[i][j] == 'Q':
                return False
            i = i-1
            j= j-1
    (i,j) = (r,c)
    while i>=0 and j<len(mat):
        if mat[i][j] == "Q":
            return False
        i = i -1
        j = j+1
    return True
def printSolution(mat):
    for r in mat:
        print(str(r).replace(',','').replace('\'' ,'' ))
    print("")
    exit()
def nQueen(mat,r):
    if r == len(mat):
        printSolution(mat)
        return
    for i in range(len(mat)):
        if isSafe(mat,r,i):
            mat[r][i] = "Q"
```

```
        nQueen(mat,r+1)
        mat[r][i] = '_'
if __name__ == '__main__':
    N = int(input("enter no of queens you want : "))
    mat = [['_'for x in range(N)]for y in range(N)]
    nQueen(mat,0)
```

OUTPUT:

```
[Q _ _ _ _ _ _ _]
[_ _ _ _ Q _ _ _]
[_ _ _ _ _ _ _ Q]
[_ _ _ _ _ Q _ _]
[_ _ Q _ _ _ _ _]
[_ _ _ _ _ _ Q _]
[_ Q _ _ _ _ _ _]
[_ _ _ Q _ _ _ _]
```