

```
# Function to check if two queens threaten each other or not
```

```
def isSafe(mat, r, c):
```

```
    # return false if two queens share the same column
```

```
    for i in range(r):
```

```
        if mat[i][c] == 'Q':
```

```
            return False
```

```
    # return false if two queens share the same `` diagonal
```

```
    (i, j) = (r, c)
```

```
    while i >= 0 and j >= 0:
```

```
        if mat[i][j] == 'Q':
```

```
            return False
```

```
        i = i - 1
```

```
        j = j - 1
```

```
    # return false if two queens share the same `/` diagonal
```

```
    (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()

def nQueen(mat, r):

    # if `N` queens are placed successfully, print the solution
    if r == len(mat):
        printSolution(mat)
        return

    # place queen at every square in the current row `r`
    # and recur for each valid movement
    for i in range(len(mat)):

        # if no two queens threaten each other
        if isSafe(mat, r, i):
            # place queen on the current square
            mat[r][i] = 'Q'

            # recur for the next row

```

```
nQueen(mat, r + 1)
```

```
# backtrack and remove the queen from the current square
```

```
mat[r][i] = 'â€'
```

```
if __name__ == '__main__':
```

```
# `N Ã— N` chessboard
```

```
N = 8
```

```
# `mat[][]` keeps track of the position of queens in
```

```
# the current configuration
```

```
mat = [['â€' for x in range(N)] for y in range(N)]
```

```
nQueen(mat, 0)
```