In [ ]:
```
import random
from array import array
import numpy as np
```

In [ ]:
```
board = [[0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0]]

neighbour = [[0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0],
    [0,0,0,0,0,0,0,0]]

queens = [0,0,0,0,0,0,0,0]
```

In [ ]:
```
def collision_count(column,row):
    coll = 0

    for j in range(8):
        if j == row:
            continue
        if board[column][j] == 1 :
            coll += 1

    while(column < 7 and row < 7):
        row += 1
        column +=1
        if board[column][row] == 1:
            coll += 1

    while(column > 0 and row > 0):
        row -= 1
        column -=1
        if board[column][row] == 1:
            coll += 1

    while(column > 0 and row < 7):
        row += 1
        column -=1
        if board[column][row] == 1:
            coll += 1

    while(column < 7 and row > 0):
        row -= 1
        column +=1
        if board[column][row] == 1:
            coll += 1

    return coll
```

In [ ]:
```
def totalcoll():
    totcoll = 0
```

```
    for i in range(8):
        totcoll += collision_count(i,queens[i])
    return totcoll
```

In [ ]:
```
while True:

    for i in range(8):
        queens[i] = random.randrange(0,8)
        board[i][queens[i]] = 1

    totalcollision =  totalcoll()

    while True:
        for i in range(8):
            oldqueen = queens[i]
        for j in range(8):
            queens[i] = j
            neighbour[i][j] = totalcoll()
        queens[i] = oldqueen

        min = neighbour[0][0]
        minqueencol = 0
        minqueenrow = 0
        for i in range(8):
            for j in range(8):
                if(neighbour[i][j]<min):
                    min = neighbour[i][j]
                    minqueenrow = j
                    minqueencol = i

        if min<totalcollision:
            totalcollision = min
            queens[minqueencol] = minqueenrow

        else:
            break

    if totalcollision == 0:
        break
```

In [ ]:
```
b = []
for i in range(8):
    for j in range(8):
       b.append(board[i][j])
```

In [ ]:
```
np.reshape(b, (8,8))
```

Out[ ]:
```
array([[1, 0, 0, 1, 0, 0, 0, 0],
       [0, 0, 0, 0, 0, 1, 0, 1],
       [0, 0, 0, 0, 0, 1, 1, 0],
       [0, 0, 0, 0, 1, 0, 0, 1],
       [1, 0, 0, 0, 0, 0, 0, 1],
       [1, 0, 0, 0, 1, 0, 0, 0],
       [0, 0, 0, 0, 0, 0, 0, 1],
       [0, 0, 0, 0, 0, 1, 0, 0]])
```