

```

1  from typing import List, Tuple
2  from pprint import pprint
3  import random
4
5  def empty_slots(board: List[List[int]]) -> List[Tuple[int, int]]:
6      result = [(x//8, x%8) for x in range(64)]
7      for i, row in enumerate(board):
8          for j, slot in enumerate(row):
9              if slot != 0:
10                 for k in range(8):
11                     if (j, k) in result:
12                         result.remove((j, k))
13                     if (k, i) in result:
14                         result.remove((k, i))
15                 for k in range(j, -1, -1):
16                     if (k, i-abs(k-j)) in result:
17                         result.remove((k, i-abs(k-j)))
18                 for k in range(j, 8):
19                     if (k, i+abs(k-j)) in result:
20                         result.remove((k, i+abs(k-j)))
21                 for k in range(i, -1, -1):
22                     if (j+abs(k-i), k) in result:
23                         result.remove((j+abs(k-i), k))
24                 for k in range(i, 8):
25                     if (j-abs(k-i), k) in result:
26                         result.remove((j-abs(k-i), k))
27
28      return result
29
30  if __name__ == "__main__":
31      left_queens = 8
32      board = None
33
34      while left_queens:
35          left_queens = 8
36          board = [[0] * 8 for _ in range(8)]
37
38          while True:
39              empty = empty_slots(board)
40              if len(empty) == 0:
41                  break
42              x, y = random.choice(empty)
43              board[y][x] = 1
44              left_queens -= 1
45
46      pprint(board)

```