

N Queens

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1 class Solution(object):
2     def nqueens(self, n):
3         """
4         input: int n
5         return: int[][]
6         """
7         # write your solution here
8         res = []
9         one_res = []
10        vertical = set()
11        left_diagonal = set()
12        right_diagonal = set()
13        self.helper(n, vertical, left_diagonal, right_diagonal, one_res, res)
14        return res
15
16    def helper(self, n, vertical, left_diagonal, right_diagonal, one_res, res):
17        if len(one_res) == n:
18            res.append(one_res[:])
19            return
20        v_size = len(vertical)
21        for i in range(n):
22            if i in vertical or v_size - i in left_diagonal or v_size + i in right_diagonal:
23                continue
24            one_res.append(i)
25            vertical.add(i)
26            left_diagonal.add(vertical - i)
27            right_diagonal.add(vertical + i)
28            self.helper(n, vertical, left_diagonal, right_diagonal, one_res, res)
29            one_res.pop()
30            vertical.remove(i)
31            left_diagonal.remove(v_size - i)
32            right_diagonal.remove(v_size + i)
```