**ASSIGNMENT NO.**

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**PROGRAM:**

from \_\_future\_\_ import print\_function

import json

def place(k):

for i in range(k):

if x[i] == x[k] or abs(x[i] - x[k]) == abs(i - k):

return False

return True

def NQueens(n):

solutions = []

k = 1

while k >= 1:

x[k] += 1

while x[k] < n and not place(k):

x[k] += 1

if x[k] < n:

if k == n-1:

solutions.append(list(x))

else:

k += 1

x[k] = -1;

else:

k -= 1

return solutions

def printBoard(solutions):

for s in solutions:

for r in range(n):

print("+---+---+---+---+---+---+---+---+\n", end="")

for c in range(n):

if c == s[r]: print("| Q ", end="")

else: print("| ", end="")

print("|")

print("+---+---+---+---+---+---+---+---+\n\n", end="")

f = open("start.json")

data = json.load(f)

f.close()

n = 8

x = [-1]\*n

x[0] = data["col0"]

print("First column position: ", x[0])

solutions = NQueens(n)

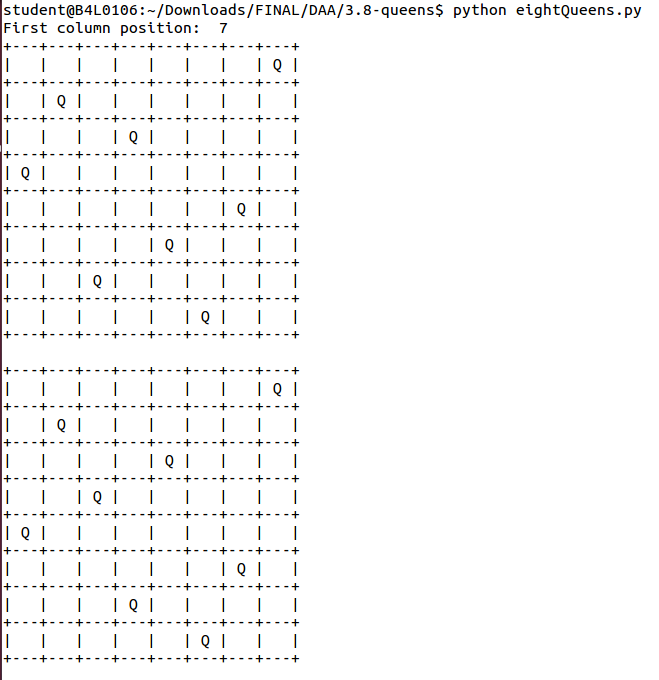
printBoard(solutions)

print("Number of solutions: ", len(solutions))

**INPUT (Start.json) :**

{"col0" : 0}

**OUTPUT :**

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