N Queens using Hill Climbing

function HILL-CLIMBING (problem) returns a state that is a local maximum

    Current ← Make-NODE (problem. INITIAL-STATE)
    loop do
        neighbour ← a highest -valued successor of current
        if neighbour.value ≤ Current.value then return current

        Current ← neighbour

1. Initialize a random configuration of queens on the board

2. Set Current-board to the random configuration

3. Calculate the number of attacks in the Current-board (heuristic value.)

4. Repeat until no improvement can be made:
   a. Generate a list of neighbours by moving one queen at a time to a different column within its row
   b. For each neighbor, calculate its heuristic value
   c. If a neighbor has fewer attacks then current-ba -ard:
      i. Set current-board to that neighbour
      ii. Update the heuristic value to reflect the new board's attack count
   d. If no neighbor has fewer attacks, stop

5. Return the current-board as the solution.

heuristic = 6

heuristic = 3

heuristic = 1

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h = 2

h = 2

h = 1