No.

Date 05 . 09 . 2017

5.3.2 THE EIGHT QUEENS PROBLEM

GOAL: PLACE EIGHT QUEENS ON THE CHESS BOARD SO THAT NO QUEEN CAN ATTACK ANY OTHER QUEEN.

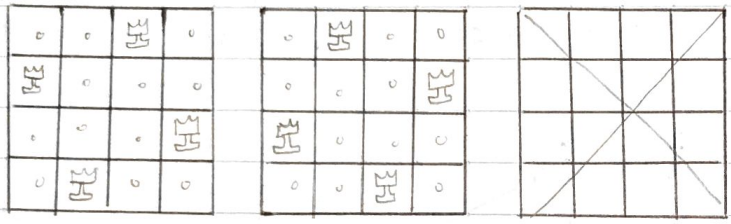
STRATEGY: GUESS AT A SOLUTION

KNOW: 64 SQUARES, 8 ROWS, 8 COLUMNS

NOTE: QUEEN CAN MOVE VERTICALLY, HORIZONTIALLY, & DIAGONALLY.

↳ SO, EACH ROW & COLUMN CAN CONTAIN EXACTLY ONE QUEEN.

QUESTION 7: CONSIDER A FOUR QUEENS PROBLEM, WHICH HAS THE SAME RULES AS THE EIGHT QUEENS PROBLEM BUT USES A 4x4 BOARD. FIND ALL POSSIBLE SOLUTIONS.



ONLY TWO POSSIBLE WAYS.

IMPLEMENTING A SOLUTION TO EIGHT QUEENS PROBLEM

THIS CAN BE WRITTEN IN MANY WAYS

EG. DEFINE TWO CLASSES

1. BOARD CLASS
   - KEEPS TRACK OF THE QUEEN OBJECTS CURRENTLY ON THE BOARD AND CONTAINS OPERATIONS.
   - REPRESENTED AS:
     a) 2D ARRAY ; SIMPLEST REP. BUT WASTES SPACE B/C 8/64 OCCUPPIED.
     b) VECTOR OR 1D ARRAY OF ONLY SQUARES THAT CONTAIN A QUEEN.
     c) DYNAMIC ARRAY (B/C ALG. USES BACKTRACKING)
   - VECTOR CONTAINER IN STL IS OFTEN USED IN PLACE OF AN ARRAY-TYPE B/C IT ALLOWS THE # OF ELEMENTS TO VARY DYNAMICALLY AND PROVIDES BUILT-IN ARRAYS.
2. QUEEN CLASS
   - REPRESENT A QUEEN ON THE BOARD.
     - KEEPS TRACK OF ITS ROW & COLS PLACEMENT AND IS ABLE TO MOVE TO THE NEXT ROW.