ALGORITHM DESIGN PROJECT 3

Exercise 40:

Given an $n \times n \times n$ cube containing n^3 cells, we are to place n queens in the cube so that no two queens challenge each other (so that no two queens are in the same row, column, or diagonal). Can the n-Queens algorithm (Algorithm 5.1) be extended to solve this problem? If so, write the algorithm and implement it on your system to solve problem instances in which $n = 4$ and $n = 8$.

Exercise 40, Additional Exercises, Chapter 5. Your program must print the number of legal queen configurations for n = 2, 3, 4, and 5. For simplicity and clarification, we assume the following rule:

A three-dimensional queen can move in one of the directions from a position (i, j, k), where n-1>=i, j, k>=0, to position (i+mx, j+my, k+mz), where x, y, z ∈ {-1,0,1}, m is an integer, m<=n, and {x, y, z}!={0, 0, 0}.

OUTPUT Screenshot: