N - Queens Problem Using Dynamic Memory Short Report/ Summary
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This program solves the N-Queens problem, aiming to find the number of solutions for placing N queens on an N×N chessboard such that no two queens attack each other. The main function prompts the user to input an integer, n, and then iterates from 1 to n, outputting the number of solutions for each N-Queens configuration. The program uses a backtracking algorithm, and dynamically allocates memory using the "new" function for an array, q, to represent the columns and the respective row of each queen. The check function checks the placement of the queen, considering row and diagonal checks. The function then deallocates the memory using the "delete" function and finally returns the number of solutions.

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Enter an integer for the n queens problem: 12
There are 1 solutions to the 1 queens problem.
There are 0 solutions to the 2 queens problem.
There are 0 solutions to the 3 queens problem.
There are 2 solutions to the 4 queens problem.
There are 10 solutions to the 5 queens problem.
There are 4 solutions to the 6 queens problem.
There are 40 solutions to the 7 queens problem.
There are 92 solutions to the 8 queens problem.
There are 352 solutions to the 9 queens problem.
There are 724 solutions to the 10 queens problem.
There are 2680 solutions to the 11 queens problem.
There are 14200 solutions to the 12 queens problem.
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