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Lab task 4

N-Queens Problem (Dynamic)

Explanation of the Code

**NQueens(n):** The main function that solves the N-Queens problem. It starts the backtracking from first row and try to put queens in valid position row by row.

Backtracking:

We try to position a queen in each column of the current row.

If we fill all rows, we add the solution to the result list.

In case of a conflict, we backtrack by removing of the queen and testing the next feasible position.

Sets for Columns and Diagonals:

cols: A tracking set of the columns where the queens are.

diag1 = set()used if we have queens on (i, j) and (i+d, j-d) y = row-col is the main diagonal.

diag2: A set for the anti-diagonal, row + col.

**printBoard(board)**: This helper function formats the board into a list of strings for easier visualization.

