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Class: BS AI (4A)

Roll no: su92-bsaim-f23-047

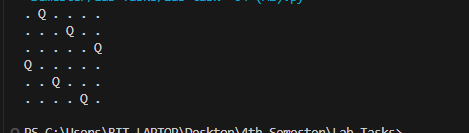
Lab task: 04

Submitted to: Sir RASIKH Ali

**Description of N-Queen Problem.**

The N-Queens Problem, a well-known puzzle in which N queens must be placed on an N x N chessboard so that no two queens attack each other. The program applies backtracking to exhaustively try all possible positions of queens.  
  
**Important Parts:**  
**Safe Function:**  
Verifies whether it is safe to place a queen at board[row][col] by checking that no other queen occupies the same column or diagonal.  
  
**solve\_n\_queen Function:**  
  
Recursively puts queens row by row.  
  
If a safe position is discovered, it puts a queen (board[row][col] = 1) and proceeds to the next row.  
  
If no safe position is discovered in a row, it backtracks by deleting the queen (board[row][col] = 0) and attempts the next column.  
  
**print\_solution Function:**  
  
Prints the chessboard, with queens represented by Q and empty squares by.  
  
**n\_queens Function:**  
  
Creates an N x N chessboard filled with zeros.  
  
It calls solve\_n\_queen to solve the puzzle and prints the solution if any. If there is no solution, it prints "No solution exists."

Output Screenshot:

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