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**Section : 4A**

**“Documentation of Task 4”**

## **(N-Queen Problem)**

### ****Objective:****

The N-Queens problem is to place N queens on an N×N chessboard so that no two queens attack each other — meaning no two queens share the same row, column, or diagonal.

### ****Description:****

This Python program uses **backtracking** to find all possible arrangements of queens on the chessboard.  
It checks each position row by row and ensures the placement is safe before moving to the next row.

### ****Functions:****

1. **Print\_board(board)**  
   Prints the chessboard with queens (Q) and empty spaces (.).
2. **is\_safe(board, row, col, n)**  
   Checks if a queen can be safely placed at a given position (no conflicts in column or diagonals).
3. **Solve(board, row, n)**  
   Recursively tries to place queens in each row and backtracks when necessary.
4. **N\_queens(n)**  
   Initializes the board and starts the solving process.