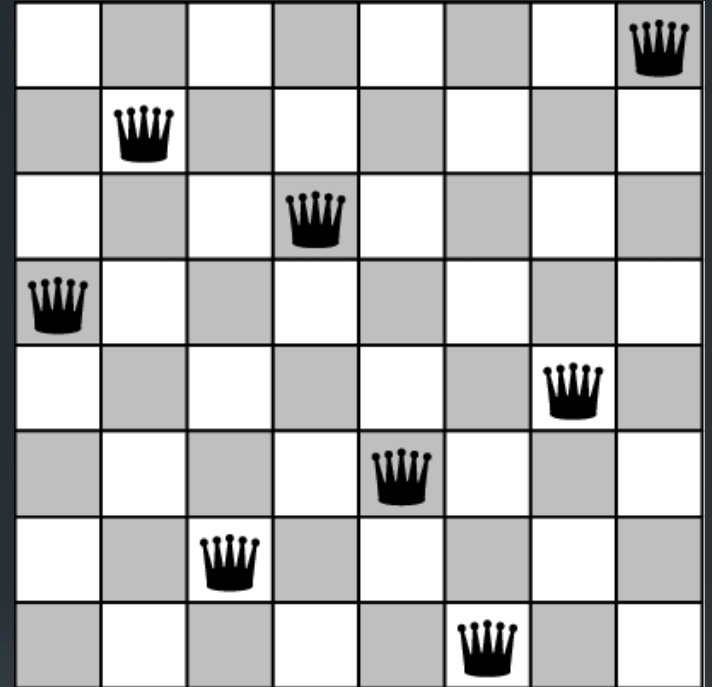# N-Queen problem

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summary

- The four queens puzzle is the problem of placing eight chess queens on an 4*4 chessboard so that no two queens threaten each other; thus, a solution requires that no two queens share the same row, column, or diagonal. There are 92 solutions. The problem was first posed in the mid-19th century. In the modern era, it is often used as an example problem for various computer programming techniques

Solutions Of N-Queen :

- • Constraint Satisfaction Problem

Type of agent programe:

- Goal-based reflex agent

Our project Idea

- 1. Start 2. Start in the leftmost column 3. If all queens are placed return true 4. Try all rows in the current column. Do following for every tried row. (a) If the queen can be placed safely in this row then mark this [row, column] as part of the solution and recursively check if placing queen here leads to a solution. (b) If placing queen in [row, column] leads to a solution then return true. (c) If placing queen does not lead to a solution then unmark this [row, column] (Backtrack) and go to step (a) to try other rows. 5. If all rows have been tried and nothing worked, return false to trigger backtracking. 6. Stop

Agent (PEAS)

- P   Speed in solving the game

- E   chessboard

- A   Queen's pieces in chess

- S   Less time to solve the game

Agent (ODESA)

- O   Fully observable

- D   Deterministic

- E   Sequential

- S   Semi Dynamic

- A   Single Agent

problem formulation

Initial state

any square in chessboard could be initial state

Actions

move any queen up , down , left and right

Transition model

Moving the chess pieces in any direction changes the shape of the board

Goal test

Putting any chess piece in a place not parallel to the other

Path cost

This is the time when you can solve the game