n-Queens Heuristic Analysis

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AI 1

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I solved the nQueens problem by implementing a DFS algorithm by getting the most constrained column and random row. The variables of the CSP are the n columns of a chessboard, and the values of each variable are the n rows. Initially my code could solve n=26 queens in around 2.5minutes. But my best implementation can solve n=105 n 15.642 seconds.

Code was implemented in Python 2.7 and tests were performed on a XPS15- 9950 with 2.0GHz i7.Intel® Core™ i5-6300HQ CPU @ 2.30GHz × 4.



Case 2: DFS with Random Col Heuristic

I chose a random (available) column when asked for an column to put a queen in.



Case 3: DFS, Most Constrained Columns, Reversed Rows

I chose the most constrained column and got random rows each time.



Case 4: DFS, Most Constrained Columns, Reversed Rows

I chose the most constrained columns and reversed rows each time.