Solving the N-Queens Problem

Interactive Configuration using Binary Decision Diagrams

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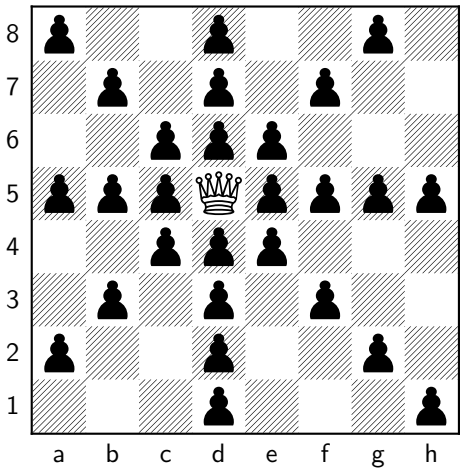
1 Introduction

Using the provided library and Java GUI components, we are to create an interactive configurator that helps a user to solve the N-Queens problem. This means doing the following:

- Compile a BDD that represents the rules of N-Queens
- Restrict the BDD every time the user adds a queen
- Relax the BDD restrictions every time the user removes a queen
- Complete the solution, if there are no choices left (the remaining queens can only be placed in one way)

2 Representing the Rules of N-Queens

We have a BDD representing the rules of the board, with one variable for each square on the board. The top left corner is variable #0, and then taking rows before columns, the lower right corner is variable $\#n * n - 1$, where n is the number of squares per row (and column).



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