

# Searching Implicit Graphs– Eight Queens

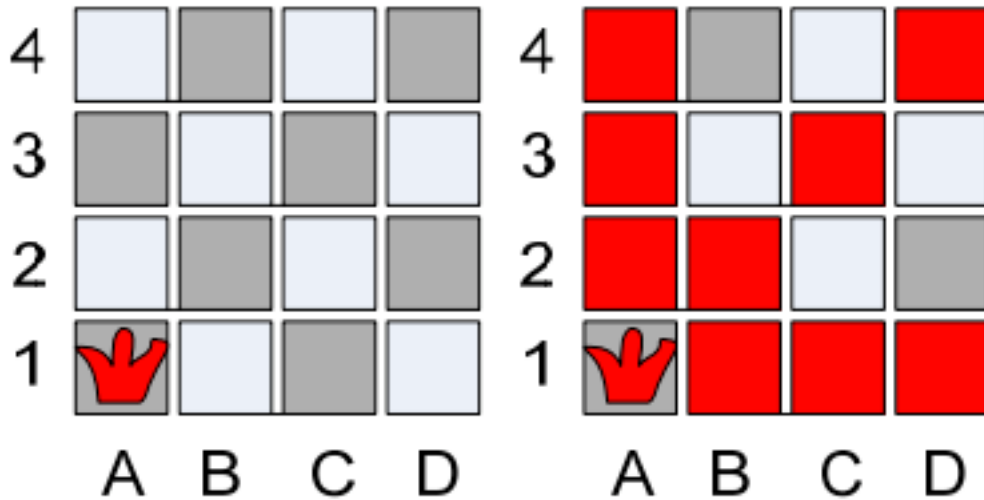
Algorithm:

Start with one queen at the first column first row

Continue with second queen from the second column first row

Go up until find a permissible situation

Continue with next queen



What choices do we have for placing the next Queen in column B?

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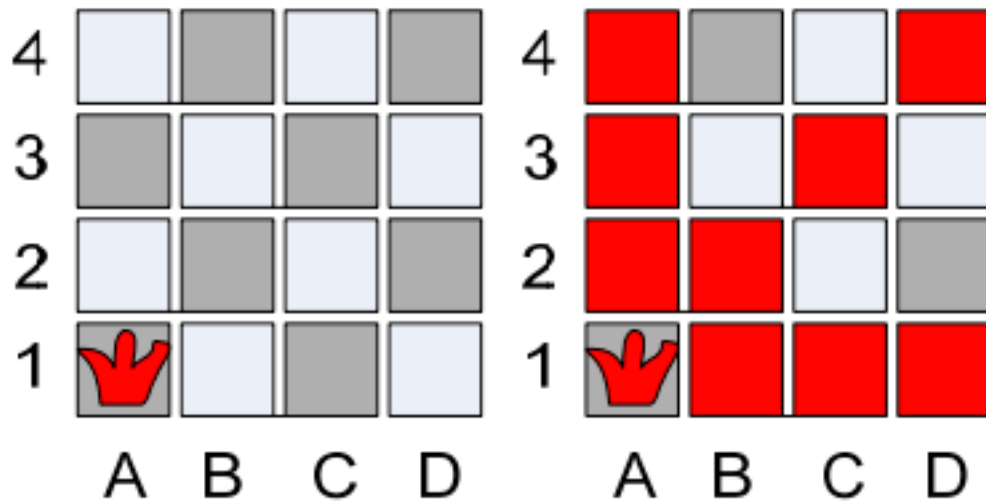
Algorithm:

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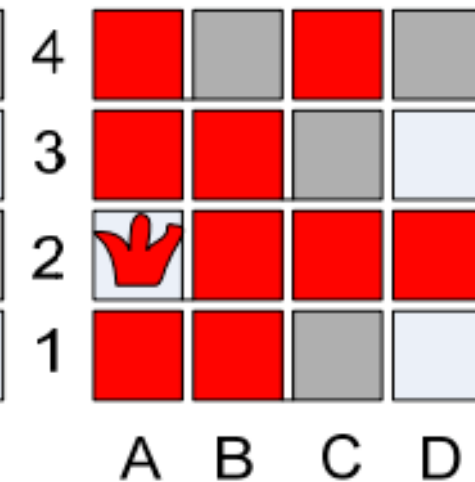
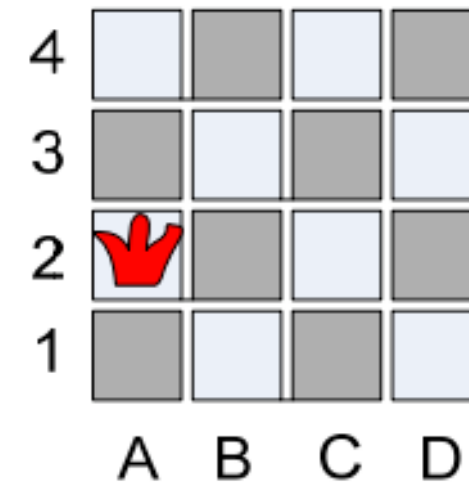
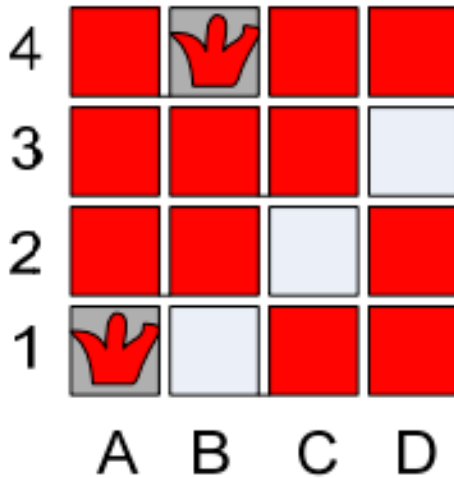
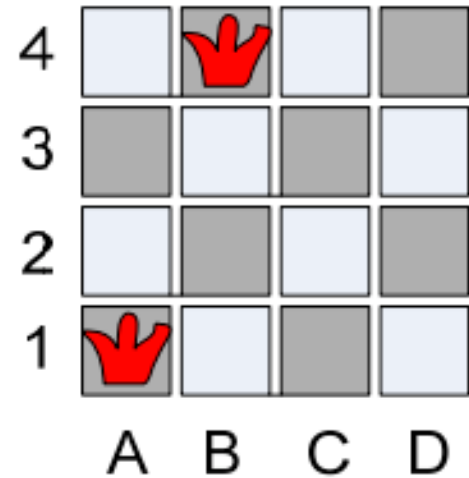
Go up until find a permissible situation

Continue with next queen



After placing a Queen in B3 what choices do we have for placing a Queen in column C? What should we do next?

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Backtracking Algorithm:

```
bool queens(board, col, n){
    if (col < n) {
        for (int row=0; row<n; row++) {
            board[col] = row
            if (noconflicts(board)){
                ...
            }
        }
        return false // none of the rows work
    }
    return true
}
```

Complete the backtracking algorithm