



# Informed search algorithms

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## Chapter 4



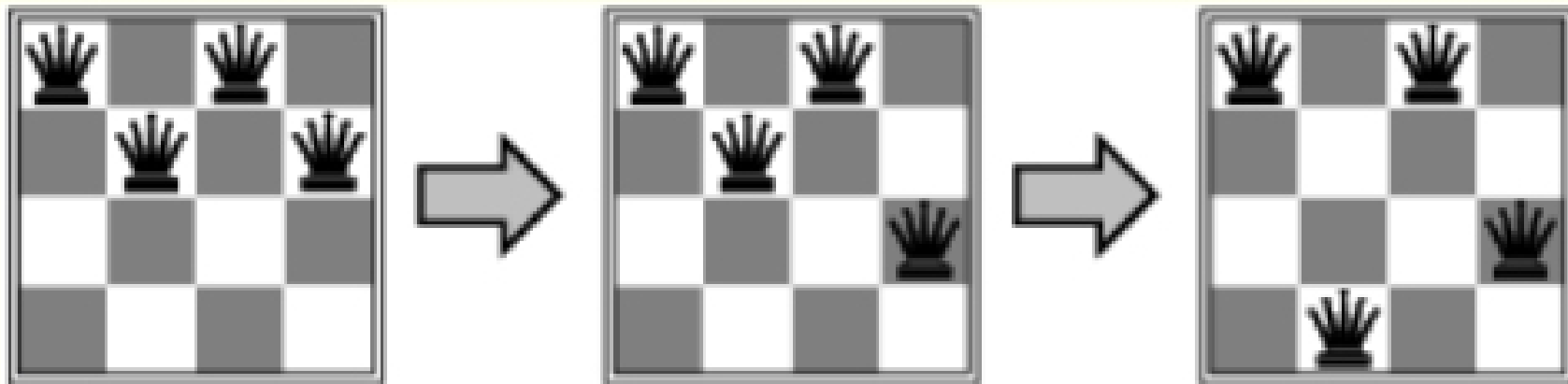
# Local search algorithms

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- In many optimization problems, the **path** to the goal is irrelevant; the goal state itself is the solution
- State space = set of "complete" configurations
- Find configuration satisfying constraints, e.g., n-queens
- In such cases, we can use **local search algorithms**
- keep a single "current" state, try to improve it.
- Very memory efficient (only remember current state)

## Example: $n$ -queens

- Put  $n$  queens on an  $n \times n$  board with no two queens on the same row, column, or diagonal



Note that a state cannot be an incomplete configuration with  $m < n$  queens