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COMP3411 / 9814

ARTIFICIAL INTELLIGENCE

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11 (/progress/?course=unswcourses%2Fcourses%2Fcomp3411-9814-21t0&student=tongzhang-qmji6o)



Tutorial: Constraint Satisfaction





Activity 1: Cryptarithmetic

Solve the famous Cryptarithmetic puzzle:

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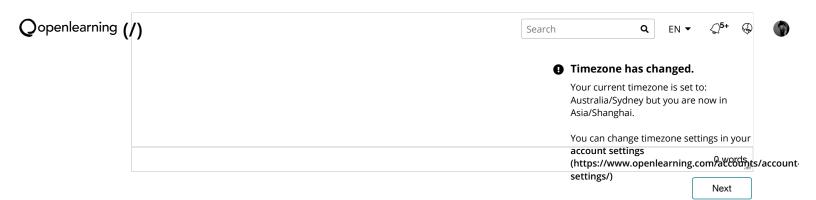
MONEY

1 Can you identify any backtracking heuristics or enhancements that you may have (unknowingly) used when you solved the problem?

Alternatively, are there any backtracking heuristics or enhancements that you would now use to solve the problem more efficiently?

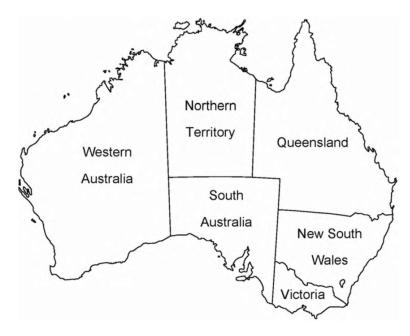
Cryparithmetric







Activity 2: Forward Checking and Arc Consistency



Use Forward Checking to show that the Australia map-colouring problem has no solution when we assign WA=green, V=Red, NT=Red. If we apply Arc Consistency as well, can the inevitable failure be detected further up the tree?

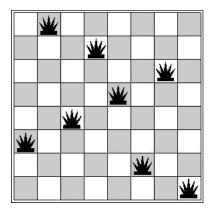
Please present your answer to this question and discuss with others in the tutorial group.

N▼





Consider the following state for the 8-queens problem:



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- 1 Is this a solution?
- What is the value of h?

3 Explain why Hill-climbing with Min Conflicts would get stuck in this state, but Simulated Annealing may be able to "escape" and eventually find a solution.



Share your thoughts:

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