

## Constraint propagation and backtracking-based search

### Exercises

- 1) write a non-recursive version of chronological backtracking algorithm (note: use a while loop)
- 2) write a formal code for (improved) limited discrepancy search
- 3) prove that conflict-directed backjumping never explores more nodes than graph-directed backjumping
- 4) analyze the worst-case time complexity of AC-3 and AC-4 and show that AC-4 has optimal worst-case time complexity
- 5) propose efficient REVISE procedure(s) for a constraint  $A < B$
- 6) extend the notion of arc consistency into n-ary constraints, so called generalized arc-consistency (GAC), and propose an algorithm for making a CSP GAC
- 7) show that PC-3 algorithm by Mohr, Henderson (1996) is not sound, i.e. it can remove a consistent value
- 8) what is the best variable to be assigned first and why?

