Modelling Constraint Satisfaction Problems

Consider the CSPLIB benchmarks, available at the www.csplib.org web site.

Use arithmetic constraints, as well as their combination through the logical operators (**not**, **and**, **or** and **implies**) of the Comet language to model and solve the CSPLib problems below. You may use the global constraint all_different, if you think it appropriate both to ease the problem specification and improve performance, and check the difference in execution time in the two cases.

CSPLib 15: Schur's Lemma.

Generalize it to k > 3, and test your solution for different values of n and k, to assess the efficiency of execution.

CSPLib 10: Social Golfers Problem

Test your solution for different values of n (golfers), m (groups) and p (weeks) to assess the efficiency of execution.

CSPLib 26: Round-robin Tournament

Adapt the problem and replace the requirement

"every team plays at most twice in the same period"

with requirement

"for every team, the difference between the games it plays at home and away is at most 1".

In both cases, try different values of n (an even number), and assess the efficiency of execution.