DECISION ANALYTICS.

Lab08: Constraint Propagation – Propagator Iteration

BACKGROUND.

This exercise will build on Lab07 and replace the AC3 algorithm with a propagator iteration approach to achieve arc consistency.

Task 1.

Use the model class from Lab07 and replace the AC3 algorithm by a propagator iteration based approach to make all domains of all variables in the model arc consistent. The propagator should update the domains of all variables in each iteration with the projection

$$D''(x_i) = \pi_{\{x_i\}}(c_j \cap \pi_{X(c_j)}(D'))$$

The result should be the same as when using the AC3 approach.

(Again, for the purpose of using this code in a future lab exercise, please make sure that you determine equality of variables based on their names instead of their object references, i.e. for two variables x1 and x2, do not compare them with x1==x2, but rather compare them with x1.name==x2.name)