CSC384 Week 7

Scheduling

Dan, Arnold, Ilir, and Andrew teach at the same time. We need to assign classrooms to them.
Note:
The constraint graph is fully connected. The constraints are binary.
Domain(Andrew) = (IB-245, DV-2080, DV-2082, CC-1080, IB-150)
Domain(Dan) = (IB-245, DV-2080, DV-2082, CC-1080)
Domain(Arnold) = (IB-245, DV-2080)
Domain(Ilir) = (IB-245).
Let's go through the entire BACKTRACK process, using heuristcs, forward checking, and arc consistency.

Cryptarthmetic puzzle

Solve the puzzle using FC with MRV heuristic.

- Higher order constraints
- Variables: $F, T, U, W, R, O, X1, X2, X3$
- Domains: $D_i = \{0, 1, \ldots, 9\}$
- Constraints:

  $O + O = R + 10 \cdot X_1$

  $X_1 + W + W = U + 10 \cdot X_2$

  $X_2 + T + T = O + 10 \cdot X_3$

  $X_3 = F$

  $\forall x, y \in \{F, T, U, W, R, O\}, x \neq y \implies value(x) \neq value(y)$

$$\begin{array}{r} T\ W\ O \\ +\ T\ W\ O \\ \hline F\ O\ U\ R \end{array}$$