Constraint Programming

2nd Assignment

The goal of the project is to implement a simple constraint solver for processing polynomial equality constraints.

From a set of polynomial equality constraints and an initial domains box the constraint solver should identify where the solutions are.

Implementation

A branch-and-prune algorithm must be implemented to maintain a set of boxes consistent with the constraints.

The pruning results from constraint propagation over a set of narrowing functions associated with the constraints.

Each narrowing function narrows the domain of a single variable based on the interval Newton method.

Tests

Tests should be performed on a set of benchmark problems provided by the lecturer (Lecture6.pdf) to understand the capabilities and limitations of the constraint solver to deal with real world problems.