

A3 Heuristics

In backtracking search, heuristics are used to determine: (1) the order in which variables are assigned, i.e. `PickUnassignedVariable()` as in pseudo code; or (2) the order of values tried for each variable.

1. MRV

Minimum remaining values heuristics (MRV) is a heuristics that enforce always to branch on the smallest remaining values. In other words, MRV determines the order of values tried for each variable. Use MRV to increase efficiency of the propagators Forward Checking. In other words, we can find inconsistency much faster.

2. Priority in GAC Queue

All constraints are with different scope of variables, and those constraints with fewer variables, such as binary or unary constraints, are faster than others. We can give each constraints a priority to order them in the GAC queue and prune those inconsistent values faster.

3. Choose variables in current domain in reverse order.

Combined with MRV, choose the largest value in domain may also potentially prune values faster.