

CSP-Solver Implementation

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Overview

- 4 Objects
 - Global State
 - Knowledge Base
 - State
 - Trace
- 4 Main Algorithms:
 - Recursive Backtracking
 - MRV with Degree heuristic
 - Least-Constraining Value
 - AC-3 Consistency

Object Structure

- GlobalState:
 - Unassigned = { }
 - Assigned = { }
 - Ordered_Domain = []
- KnowledgeBase
 - Deadline = int
 - Unary = { }
 - Binary_equal
 - Binary_not_equal
 - Binary_not_simultaneous
- State:
 - Task: "A"
 - Duration: "15"
 - Domain: ["q", "r"]
- Trace
 - CSP
 - History = []



Special Enhancements

- Pre-processing with time constraint
 - Calculate total processing time
- Unary constraints are condensed in read function
 - Unary inverse function computes the complement
- Used two separate objects for CSP
 - KnowledgeBase and GlobalState



