DPML Software Report – Presentation Summary

- Slide 1. Title
    - Briefly introduce the scope of the work: comparing reducing (consistency) algorithms and search algorithms across multiple CSP types.
- Slide 2. Agenda
    - Mention the main points addressed: problems, the implemented CSP framework, reducing and search algorithms, experiments, discussion, conclusion
- Slides 3-4. Picross
    - Describe Picross as a visual constraint puzzle and explain the rules
    - Explain the CSP formalization.
- Slide 5. Paleoarithmetics
    - Introduce the SEND+MORE=MONEY puzzle.
    - Explain the CSP formalization.
- Slide 6. Dinosaurs Mystery
    - Explain the CSP formalization.
    - Emphasise the constraints diversity
    - Highlight the need for natural language interpretation while modeling the constraints
- Slide 7. Motivation of choice
    - Explain why a third problem was chosen
    - Picross and Arithmetics were originally the 2 problems work on, at evaluation time the lack of unary constraints was observed and a third problem was chosen as it looked promising and covers a wider variety of constraints
- Slides 8-11. CSP System Design Overview
    - Describe the components of the CSP modeling framework (Domain, Variable, Value, Constraint, Problem)
    - Showcase the diagrams containing reducers and solvers interfaces and the algorithm classes
    - Mention the GUI application that can be used to visualize, solve problems and measure performance
    - Showcase a simple example of using the CSP framework to declaratively model problems and seamlessly apply reducers and solve the problem.
- Slide 12. Briefly present the reducers used (NC, AC-3, AC)
- Slide 13. Briefly present the search methods used (backtracing, FC-1, HR)
- Slide 14. Describe the evaluation method
- Slide 15-16. Experiments
    - Present the constraint graphs and highlight particularities of each of them
    - Showcase the evaluation metrics (high-level overview, will discuss later)
- Slide 17. Discussion (1)
    - Explain the impact of reducers on the search space and the problem-specific behavior
- Slide 18. Discussion (2)
    - Highlight the performance of search methods, suggest use-cases for stochastic algorithms
- Slide 19. Conclusion
    - Highlight the findings of this work and suggest future improvements