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In the last decade logic programming experienced a new impetus by the growth of answer set programming [1]. It is used for a variety of problems, e.g., planning [2] or decision support problems [2].

Problem: 

• Difficult observability of non-monotonic programs
• Unclear semantics of constraint rules
• Linear textual representation of ASP program graphs
• Lack of tooling support (e.g., design & analysis) [4]

This thesis aims to establish a novel visual design and analysis method for ASP programs. This method shall provide an abstract meta-description layer placing a design-first paradigm in the focus of the ASP software development.

By combining concepts from model engineering with ASP formalisms, iterative solutions for entire deductive ASP programs with unconstrained arity are established.

Characteristics:

• Rule-centric visualizations
• Variable-centric rule visualization
• Advanced features, e.g., connectives, inheritance, or weights

The meta model for the design-centric approach is established with Ecore (EMF). Its models are visualized by the VIDEOS graphical editor (GMF).

These models can be transformed to code by using the VIDEOS code generator supporting programs with unconstrained arity.

The generated code is executable with DLV and can be enhanced by the VIDEOS beautifier.