DLP⁺: A Disjunctive Logic Programming Extension with Object-Oriented Constructs

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I have proposed, in my PhD thesis dissertation, a new language for Ontologies specification and reasoning. My approach is based on the combination of the main features of Ontologies servers with the deductive power of knowledge-representation languages from the field of logic-based Artificial Intelligence, and Disjunctive Logic Programming in particular. The language, named DLV⁺, is obtained as an extension of DLP with a number of object-oriented constructs (like inheritance, object identity, etc.), which are useful for Ontologies Representation and Reasoning. I have provided a formal definition of this language, by specifying its data model and Knowledge Representation in a rigorous way. The semantics of the language is fully declarative, and it is based on a model-theoretic approach.