

# Proposing Order-Sorted Algebra as Foundation for Declarative Programming

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## **Abstract**

Order-sorted algebras provide a well developed and expressive framework for theoretical considerations about programming languages. We show that a number of declarative program paradigms fit well into this setting. For this aim we will introduce a simple order based on which strict functional programs, lazy functional programs and lazy functional logic programs with run-time choice or call-time choice can be modelled. An interesting feature of the presented approach is that the semantic differences between strictness/laziness on one hand and run-time/call-time choice on the other hand are only reflected in the type of variables allowed in the programs. Especially, this feature allows the admission of mixed programs without any change in the underlying theory.