An Integrated Framework to Specify Domain-Specific Modeling Languages

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In this paper, we propose an integrated framework that can be used by DSL designers to implement their desired graphical domain-specific languages. This framework relies on Microsoft DSL Tools, a meta-modeling framework to build graphical domain-specific languages, and an extension of ForSpec, a logic-based specification language. The drawback of MS DSL Tools is it does not provide a formal and rigorous approach for semantics specifications. In this framework, we use Microsoft DSL Tools to define the metamodel and graphical notations of DSLs, and an extended version of ForSpec as a formal language to define their semantics. Integrating these technologies under the umbrella of Microsoft Visual Studio IDE allows DSL designers to utilize a single development environment for developing their desired domain-specific languages.

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